UNITED STATES Coast Pilot®

10

Oregon, Washington, Hawaii and Pacific Islands

2024 (5th) Edition

This edition cancels the 4th Edition and includes all previously published corrections.

Weekly updates to this edition are available at:
nauticalcharts.noaa.gov/publications/coast-pilot/index.html

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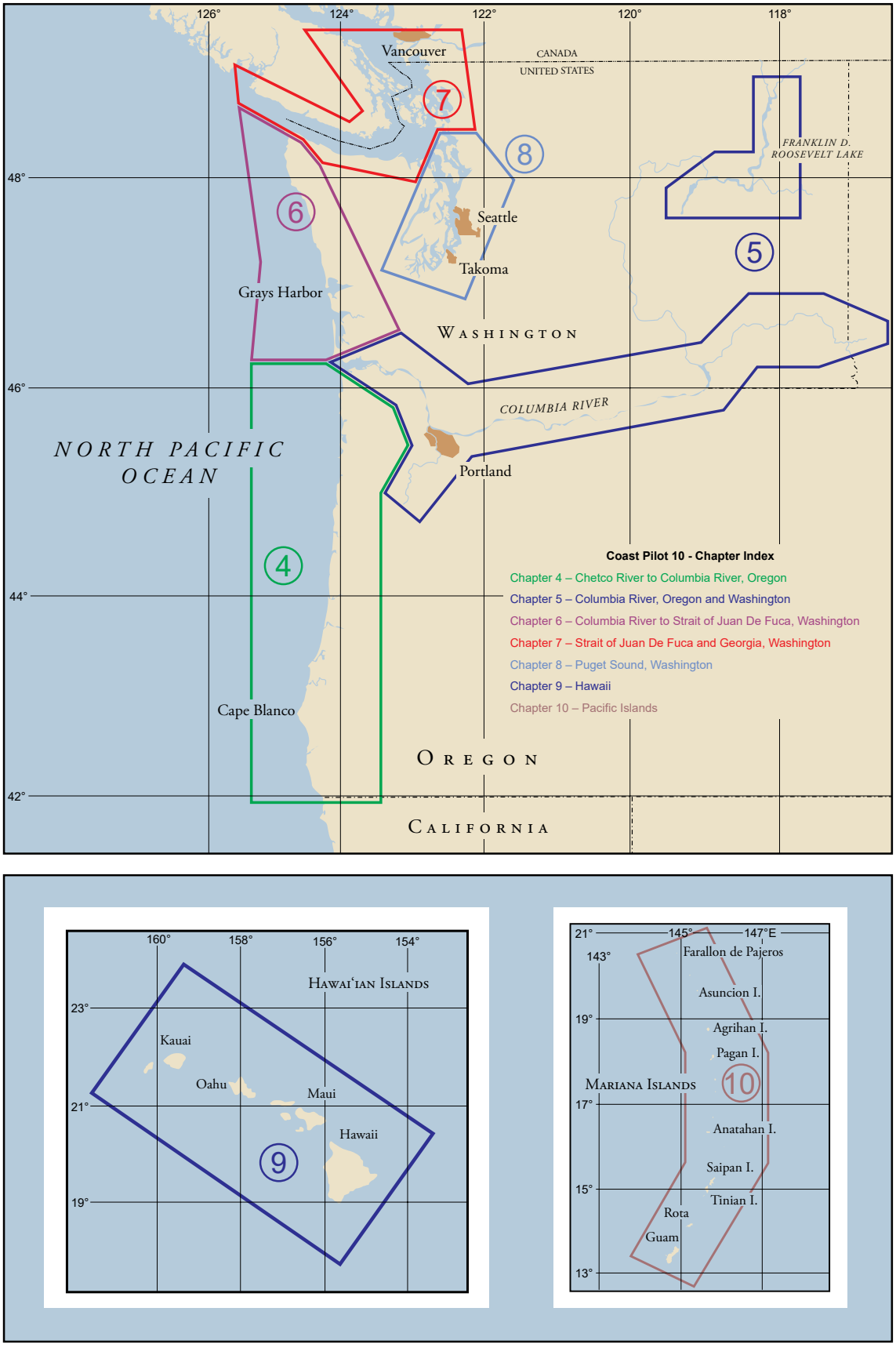
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Preface

The United States Coast Pilot is published by the National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), pursuant to the Act of 6 August 1947 (33 U.S.C. 883a and b), and the Act of 22 October 1968 (44 U.S.C. 1310).

The Coast Pilot supplements the navigational information shown on NOAA nautical charts. The publication is continually updated and maintained from inspections conducted by NOAA survey vessels and field parties, corrections published in Notices to Mariners, information from other Federal agencies, State and local governments, maritime and pilots' associations, port authorities, and concerned mariners.

NOAA's Office of Coast Survey encourages public feedback regarding its suite of nautical charting products and services through **ASSIST**, Coast Survey's stakeholder engagement and feedback tool. This allows customers to submit questions or comments or to report an error with NOAA's nautical charts and products.
Customers can access **ASSIST** at *www.nauticalcharts.noaa.gov/customer-service/assist/*
Those who prefer to communicate by telephone can contact Coast Survey at 1–888–990–6622.

Coast Pilot corrections are no longer published in the NGA Notice to Mariners effective 01 January 2021. Additional information regarding the NGA policy change can be referenced at *msi.nga.mil/NTM* in the Notice to Mariners 52/20 Hydrogram and Marine Information sections.

Coast Pilot Updates

Check for weekly critical updates for this edition at *nauticalcharts.noaa.gov/publications/coast-pilot/index.html*
(See **33 CFR 164.33 Charts and Publications**, chapter 2, for regulations.)

Customers may print the specifically affected paragraphs to revise this book, or download an updated file (PDF) of the entire volume.

A *Weekly Record of Updates* is provided directly preceding the index.

Contents

General Information

(1)

UNITED STATES COAST PILOT®

(2) The United States Coast Pilot, published by the National Oceanic and Atmospheric Administration (NOAA), is a series of ten nautical books (volumes) that encompasses a wide variety of information important to navigators of U.S. coastal/intracoastal waters and the waters of the Great Lakes. The Coast Pilot is intended to be used as a supplement to NOAA nautical charts. Much of the content cannot be shown graphically on the charts and is not readily available elsewhere. Topics which are covered include environmental factors of weather, climate, ice conditions, tides, water levels, currents, prominent coastal features and landmarks. Specific information on vertical clearances, wharf descriptions, small-craft facilities, hazards, dredged channels and depths are also provided. Navigation services and regulations are also identified including pilotage, towing, anchorages, routes and traffic separation schemes, environmental protection, and other Federal laws.

(3) New editions of each volume are issued annually. Fully updated files are posted weekly on the Internet, and are also available through NOAA Certified Chart Agents at *www.nauticalcharts.noaa.gov*.

(4) **Amendments** to this publication are available at *nauticalcharts.noaa.gov/publications/coast-pilot/index.html.*

(5)

Using the Coast Pilot

(6) **Chapter 1** contains definitions of general and standard terms used throughout the volume, discussions of NOAA charting products and services, descriptions of maritime services by various U.S. Government agencies, Notices to Mariners and other information pertinent to safe navigation.

(7) **Chapter 2** contains selected extracts from the Code of Federal Regulations (CFR) that affect mariners.

(8) **Chapter 3** contains general information that is peculiar to the region covered by a particular Coast Pilot volume. For example, practical information regarding offshore currents and dangers, coastal aids to navigation, prominent landmarks and the general character of the coast and depths helpful in approaching the region.

(9) In **Chapter 4 and the remaining numbered chapters**, the detailed description of the region begins. A map precedes each chapter and outlines the nautical charts used in the area to be discussed. In these chapters, as much as possible, the coastal description is in geographic sequence, north to south on the east coast, east to west on the gulf coast, clockwise around each of the Great Lakes and south to north on the west coast and Alaskan coast. Features are described as they appear on the largest scale chart, with that chart number prominently shown in blue.

(10) **Appendix A** contains contact information regarding the various products, services and agencies detailed throughout the volume.

(11) **Navigation Rules**— preceding Appendix A, contains the International (72 COLREGS) and Inland Navigation Rules, technical Annexes, and associated Federal rules and regulations.

(12) The **Weekly Record of Updates** is intended as a log for critical updates applied to this volume.

(13) The **Index** contains geographic names mentioned throughout a Coast Pilot volume. These names are boldfaced and indexed along with the number of the largest scale chart on which the entire feature appears. Asterisks preceding a chart number in the index of Coast Pilot 5 indicate charts published by the National Geospatial-Intelligence Agency, and in the index of Coast Pilot 6, charts published by the Canadian Hydrographic Service.

(14)

Bearings

(15) Bearings and courses are in degrees true and are measured clockwise from **000°** (north) to **359°**. The bearings of an aid to navigation (e.g., directional light, light sector, range) are given as viewed from the bridge of a vessel toward the light.

(16)

Bridges and Cables

(17) Vertical clearances of bridges and overhead cables are in feet above mean high water unless otherwise stated; clearances in Coast Pilot 6 are in feet above Low Water Datum unless otherwise stated. When the water level is above Low Water Datum, the bridge and overhead cable clearances given in the Coast Pilot and shown on the charts should be reduced accordingly. Clearances of drawbridges are for the closed position, although the open clearances are also given for vertical-lift bridges. Whenever a bridge span over a channel does not open fully to an unlimited clearance position, a minimum clearance for the sections over the channel is given; the same applies to swing and pontoon bridges with openings less than 50 feet horizontally. Clearances given in the Coast Pilot are those approved for nautical charting and are supplied by the U.S. Coast Guard (bridges) and U.S. Army Corps of Engineers (cables). See charts for horizontal clearances

of bridges, as these are generally given in the Coast Pilot only when they are less than 50 feet (15 meters). Tables listing structures across waterways, found in some Coast Pilots, show both horizontal and vertical clearances. Submarine cables are rarely mentioned.

(18)

Cable ferries

(19) Cable ferries are guided by cables fastened to shore and sometimes propelled by a cable rig attached to the shore. Generally, the cables are suspended during crossings and dropped to the bottom when the ferries dock. Where specific operating procedures are known they are mentioned in the text. Since operating procedures vary, mariners are advised to exercise extreme caution and seek local knowledge. **DO NOT ATTEMPT TO PASS A MOVING CABLE FERRY.**

(20)

Courses

(21) These are true and are given in degrees clockwise from **000°** (north) to **359°**. The courses given are the courses to be made good.

(22)

Currents

(23) Stated current velocities are the averages at strength. Velocities are in knots, which are nautical miles per hour. Directions are the true directions to which the currents set (see chapter 3, this book).

(24)

Depths

(25) Depth is the vertical distance from the chart datum to the bottom and is expressed in the same units (feet, meters or fathoms) as those soundings found on the chart. (See Chart Datum, this chapter, for further detail.) The **controlling depth** is the least known depth of a channel. This depth is determined by periodic hydrographic surveys and restricts use of the channel to drafts less than that depth. The **centerline controlling depth** applies only to the channel centerline or close proximity; lesser depths may exist in the remainder of the channel. The **midchannel controlling depth** is the controlling depth of only the middle half of the channel. **Federal project depth** is the original design dredging depth of a channel planned by the U.S. Army Corps of Engineers (USACE) and may be deeper than current conditions. For this reason, project depth must not be confused with controlling depth. **Depths alongside** wharves usually have been reported by owners and/or operators of the waterfront facilities and have not been verified by Government surveys. Since these depths may be subject to change, local authorities should be consulted for the latest controlling depths.

(26) For all maintained channels with controlling depths detailed on charts in tabular form, the Coast Pilot usually states only the project depths. For all other channels which may be depicted on charts with depth legends, notes or soundings, the Coast Pilot will list where to find the most recent information on the latest known surveys. Depths may vary considerably between maintenance dredging.

(27)

Under-keel clearances

(28) It is becoming increasingly evident that economic pressures are causing mariners to navigate through waters of barely adequate depth, with under-keel clearances being finely assessed from the charted depths, predicted tide levels and depths recorded by echo sounders.

(29) It cannot be too strongly emphasized that even charts based on modern surveys may not show all sea-bed obstructions or the shoalest depths, and actual tide levels may be appreciably lower than those predicted.

(30) In many ships an appreciable correction must be applied to shoal soundings recorded by echo sounders due to the horizontal distance between the transducers. This separation correction, which is the amount by which recorded depths therefore exceed true depths, increases with decreasing depths to a maximum equal to half the distance apart of the transducers; at this maximum the transducers are aground. Ships whose transducers are more than 6 feet (1.8 meters) apart should construct a table of true and recorded depths using the Traverse Tables. (Refer to the topic on echo soundings elsewhere in chapter 1.)

(31) Other appreciable corrections, which must be applied to many ships, are for settlement and squat. These corrections depend on the depth of water below the keel, the hull form and the speed of the ship.

(32) Settlement causes the water level around the ship to be lower than would otherwise be the case. It will always cause echo soundings to be less than they would otherwise be. Settlement is appreciable when the depth is less than seven times the draft of the ship and increases as the depth decreases and the speed increases.

(33) Squat denotes a change in trim of a ship underway, relative to her trim when stopped. It usually causes the stern of a vessel to sit deeper in the water. However, it is reported that in the case of mammoth ships, squat causes the bow to sit deeper. Depending on the location of the echo sounding transducers, this may cause the recorded depth to be greater or less than it ought to be. **Caution and common sense are continuing requirements for safe navigation.**

(34)

Distances

(35) These are in nautical miles unless otherwise stated. A nautical mile is one minute of latitude, or approximately 2,000 yards, and is about 1.15 statute miles.

(36) Coast Pilot 6 is in statute miles unless otherwise stated. A statute mile is 5,280 feet or about 0.87 nautical mile.

(37)

Geographic Coordinates

(38) Geographic coordinates listed in the Coast Pilot are referred to North American Datum of 1983 (NAD 83) unless otherwise noted for certain CFR extracts in chapter 2.

(39)

Heights

(40) These are in feet (meters) above the tidal datum used for that purpose on the charts, usually mean high water. However, the heights of the decks of piers and wharves are given in feet (meters) above the chart datum for depths.

(41) Coast Pilot 6 is in feet (meters) above the chart datum used for that purpose on the charts, usually Low Water Datum.

(42)

Light and Sound Signal Characteristics

(43) These are not described in the Coast Pilot. Also, light sectors and visible ranges are generally not fully described. This information can be found in U.S. Coast Guard Light Lists.

(44)

Obstructions

(45) Wrecks and other obstructions are mentioned only if they are relatively permanent and in or near normal traffic routes.

(46)

Radio Navigational Aids

(47) For detailed information on Radio Navigation Aids see the **United States Coast Guard Light Lists** and the National Geospatial-Intelligence Agency's **Radio Navigational Aids, Publication 117**.

(48)

Ranges

(49) These are not fully described. "**A 339°** Range" means that the rear structure bears **339°** from the front structure. (See United States Coast Guard Light Lists.)

(50)

Reported information

(51) Information received by NOAA from various sources concerning depths, dangers, currents, facilities, and other topics, which has not been verified by Government surveys or inspections, is often included in the Coast Pilot; such **unverified information** is qualified as "reported" and should be regarded with caution.

(52)

Tides

(53) Tidal information, including real-time water levels, tide predictions and tidal current predictions are available at *tidesandcurrents.noaa.gov*.

(54)

Time

(55) Unless otherwise stated, all times are given in local standard time in the 24-hour system. (Noon is 1200, 2:00 p.m. is 1400 and midnight is 0000.)

(56)

Winds

(57) Directions are the true directions from which the winds blow; however, sometimes (rarely) compass points are used. Unless otherwise indicated, speeds are given in knots, which are nautical miles per hour.

(58)

NAUTICAL CHARTS

(59) NOAA produces and maintains a suite of over 1,000 nautical charts that cover the U.S. coastal waters, the Great Lakes and U.S. territories. These charts provide a graphic representation of water depths, the shoreline, prominent topographic and man-made features, aids to navigation and other navigational information useful to the mariner. NOAA's charts are available in a variety of digital formats designed to meet the specific requirements of all mariners. Paper copies may also be obtained through one of NOAA's Print-on-Demand partners.

(60)

Paper Print on Demand Nautical Charts

(61) The content of Print-On-Demand (POD) charts is updated weekly by NOAA with the most current U.S. Coast Guard Local Notice to Mariners and other critical safety information. POD charts are printed under the authority of NOAA and shipped through partnerships between NOAA and commercial providers. POD information and a list of participating POD chart agents can be found at *nauticalcharts.noaa.gov/publications/print-agents.html#paper-charts-mobile*.

(62)

Portable Document Format (PDF) Nautical Charts

(63) Almost all of NOAA's nautical charts may be downloaded for free as Portable Document Format (PDF) files at *nauticalcharts.noaa.gov/charts/noaa-raster-charts.html#full-size-nautical-charts*. The PDF nautical charts are exact replicas of the images used to produce POD and Raster Navigational Charts (RNC). As such, they also have all the latest updates based on U.S. Coast Guard Local Notices to Mariners, National Geospatial-Intelligence Agency Notices to Mariners and other critical safety information.

(64) Most PDF charts can be printed at the proper scale from any plotter accommodating a 36-inch paper width. When printed properly, PDF charts and POD charts are very similar, but PDF charts have not yet been approved to meet Federal regulations for paper chart carriage requirements as POD charts have.

(65)

BookletCharts

(66) The NOAA BookletChart™ is a product that can be printed by the users for free. They are made to help recreational boaters locate themselves on the water. BookletCharts are reduced in scale and divided into pages for convenience but otherwise contain all the information of the full-scale nautical charts and are updated weekly. For more information visit *nauticalcharts.noaa.gov/charts/noaa-raster-charts.html#booklet-charts*.

(67)

Raster Navigational Charts (NOAA RNC®)

(68) NOAA Raster Navigational Charts (NOAA RNC®) are geo-referenced digital images of NOAA's entire suite of paper charts. NOAA RNCs are official data that can be used in many types of electronic charting systems (ECS), including Raster Chart Display Systems (RCDS) and some Electronic Chart Display and Information Systems (ECDIS). Current regulations support the use of RNCs as a primary means of navigation when ENCs are not available, but they require an accompanying minimal set of up-to-date paper charts. They can integrate position information from the Global Positioning System (GPS) and other navigational sensors, such as radar and automatic identification systems (AIS) to show a vessel's track, waypoints, and planned routes. NOAA RNCs and their weekly updates are available free of charge at *nauticalcharts.noaa.gov/charts/noaa-raster-charts.html*.

(69)

Electronic Navigational Charts (NOAA ENC®)

(70) NOAA Electronic Navigational Charts (NOAA ENC®) are databases of charted objects and their attributes with standardized content, structure and format. They comply with International Hydrographic Organization (IHO) specifications stated in IHO Publication S-57. They may be used as an alternative to paper charts required on SOLAS class vessels.

(71) ENCs are intended for use in electronic charting systems (ECS) as well as Electronic Chart Display and Information Systems (ECDIS). ECDIS are programmable to show as much or as little data as the user requires. They can integrate position information from the Global Positioning System (GPS) and other navigational sensors, such as radar and automatic identification systems (AIS) to show a vessel's track, waypoints and planned routes. Using this information ECDIS can use ENCs to give warning of impending danger in relation to the vessel's position and movement. NOAA ENCs and their updates are available free of charge at *nauticalcharts.noaa.gov/charts/noaa-enc.html*.

(72)

Nautical Chart—New Editions and Corrections

(73) New editions of paper Print-on-Demand (POD) charts are available on the Monday after NOAA clears a new edition for release. Once the authorized POD chart is available, it meets federal chart carriage requirements, and should be put into service immediately. It should be updated from the *last correction and cleared through* dates shown in the lower left corner of the chart.

(74) The chart date is of vital importance to the navigator. When charted information becomes obsolete, further use of the chart for navigation is dangerous. Natural and artificial changes, many of them critical, are occurring constantly; therefore it is important that navigators use up-to-date charts. Nautical charts and publications are available for purchase from authorized POD agents and their sales outlets.

(75) NOAA's "Nautical Chart Update" website allows mariners to update their nautical charts from one database that includes information from NOAA, NGA U.S. Notice to Mariners, U.S. Coast Guard Local Notices to Mariners and the Canadian Coast Guard Notices to Mariners at: *nauticalcharts.noaa.gov/charts/chart-updates.html*.

(76)

Nautical Chart Numbering System

(77) This chart numbering system, adopted by NOAA and National Geospatial-Intelligence Agency (NGA), provides for a uniform method of identifying charts published by both agencies. Nautical charts published by NGA and by the Canadian Hydrographic Service are identified in the Coast Pilot by an asterisk preceding the chart number.

(78)

Chart Scale

(79) The scale of a chart is the ratio of a given distance on the chart to the actual distance that it represents on the earth. For example, one unit of measurement on a 1:10,000 scale chart is equal to 10,000 of the same unit on the earth's surface. Large scale charts show greater detail of a relatively small area. Small scale charts show less detail but cover a larger area. Certain hydrographic information may be omitted on smaller scale charts. **Mariners should always obtain the largest scale coverage for near shore navigation**.

(80) The scales of nautical charts range from 1:2,500 to about 1:5,000,000. Graphic scales are generally shown on charts with scales of 1:80,000 or larger, and numerical scales are given on smaller scale charts. NOAA charts are classified according to scale as follows:

(81) **Sailing charts**, scales 1:600,000 and smaller, are for use in fixing the mariner's position approaching the coast from the open ocean or for sailing between distant coastwise ports. On such charts the shoreline and topography are generalized and only offshore soundings, principal lights, outer buoys and landmarks visible at considerable distances are shown.

(82) **General charts**, scales 1:150,000 to 1:600,000, are for coastwise navigation outside of outlying reefs and shoals.

(83) **Coast charts**, scales 1:50,000 to 1:150,000, are for inshore navigation leading to bays and harbors of considerable width and for navigating large inland waterways.

(84) **Harbor charts**, scales larger than 1:50,000, are for harbors, anchorage areas and the smaller waterways.

(85) **Special charts**, at various scales, cover the Intracoastal waterway and miscellaneous small-craft areas.

(86)

Chart Projections

(87) The **Mercator projection** used on most nautical charts has straight-line meridians and parallels that

intersect at right angles. On any particular chart the distances between meridians are equal throughout, but distances between parallels increase progressively from the equator toward the poles so that a straight line between any two points is a rhumb line. This unique property of the Mercator projection is one of the main reasons why it is preferred by the mariner.

(88) The **Polyconic projection** is used on most U.S. nautical charts of the Great Lakes. On this projection, parallels of latitude appear as non-concentric circles, and meridians appear as curved lines converging toward the pole and concave to the central meridian. The scale is correct along any parallel and along the central meridian of the projection. Along other meridians the scale increases with increased difference of longitude from the central meridian.

(89)

Chart Datum, Tidal Waters

(90) Chart Datum is the particular tidal level to which soundings and depth curves on a nautical chart or bathymetric map are referred. The tidal datum of **Mean Lower Low Water** is used on all NOAA charts, except for charts in the Great Lakes and non-tidal inland waterways. For information on **Chart Datum, Great Lakes System**, see Coast Pilot 6, chapter 3.

(91)

Horizontal Datum

(92) Nautical charts are constructed based on one of a number of horizontal datums which are adopted to best represent individual regions around the world. Note that the terms horizontal datum, horizontal geodetic datum, and horizontal control datum are synonymous.

(93) The exact placement of lines of latitude and longitude on a nautical chart is dependent on the referenced horizontal datum. Charts of the United States are currently referenced primarily to the North American Datum of 1983 (NAD 83), and the World Geodetic System 1984 (WGS 84). WGS 84 is equivalent to the NAD 83 for charting purposes.

(94) NAD 83 and WGS 84 have replaced the North American Datum of 1927 and other regional datums as the primary horizontal datum to which NOAA charts are referenced. Since some geographic positions may still be referenced to the older datums, NOAA has included notes on charts which show the amount to shift those positions in latitude and longitude to fit the chart's NAD 83 or WGS 84 projection.

(95) It should be noted that the physical shift between positions on older datums and NAD 83/WGS 84 was significant. Mariners should always be certain the positions they are plotting on a nautical chart are on the same datum as the chart.

(96)

Chart Accuracy

(97) The value of a nautical chart depends upon the accuracy of the surveys on which it is based. The chart reflects what was found by field surveys and what has been reported to NOAA. It also represents general conditions at the time of surveys or reports and does not necessarily portray present conditions. Significant changes may have taken place since the date of the last survey or report.

(98) Each sounding represents an actual measure of depth and location at the time the survey was made, and each bottom characteristic represents a sampling of the surface layer of the sea bottom at the time of the sampling. Areas where sand and mud prevail, especially the entrances and approaches to bays and rivers exposed to strong tidal current and heavy seas, are subject to continual change.

(99) In coral regions and where rocks and boulders abound, it is always possible that surveys may have failed to find every obstruction. Thus, when navigating such waters, customary routes and channels should be followed, and areas where irregular and sudden changes in depth indicate conditions associated with pinnacle rocks, coral heads, or boulders should be avoided.

(100) Information charted as "reported" should be treated with caution when navigating the area, because the actual conditions have not been verified by government surveys.

(101)

Source Diagrams and Zone of Confidence Diagrams

(102) The age and accuracy of hydrographic survey data that support nautical charts can vary. Depth information on nautical charts, paper or digital, is based on data from the latest available hydrographic survey, which in many cases may be quite old. Diagrams are provided on nautical charts to assist mariners in assessing hydrographic survey data and the associated level of risk to navigate in a particular area. There are currently two types of diagrams shown on NOAA paper and raster navigational charts (RNCs) of 1:500,000 scale and larger—**Zone of Confidence (ZOC) Diagrams** and **Source Diagrams**. ZOC information (designated CATZOC) is also found on electronic navigational charts (ENCs). This provides consistency in the display of source data between ENCs and newer paper charts.

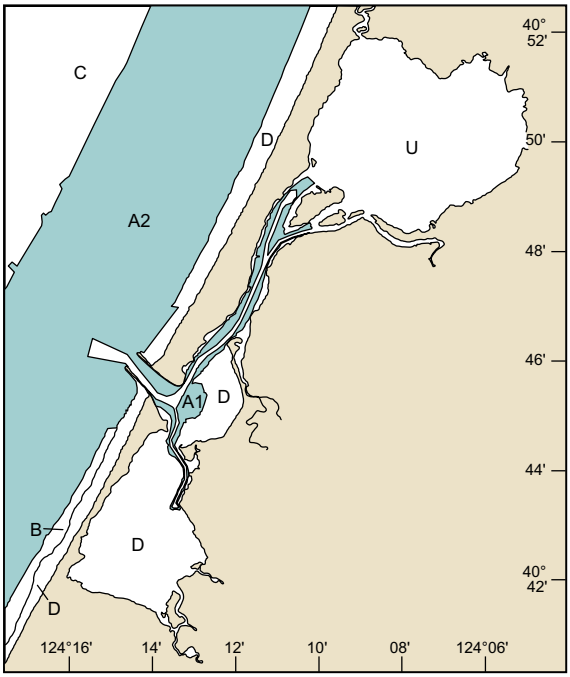
(103) Both types of diagrams consist of a graphic representation of the extents of hydrographic surveys within the chart and accompanying table of related survey quality categories. CATZOC information on an ENC, unlike the diagrams on a paper chart or RNC, is displayed over the ENC data using symbols rather than letters. These symbols are displayed on a separate layer, which can be viewed when planning a route, then switched off until needed again at another time.

(104) On **ZOC Diagrams**, the quality of the hydrographic data is assessed according to six categories; five quality categories for assessed data (A1, A2, B, C and D) and a sixth category (U) for data that has not yet been assessed. On the ENC, the categories are shown using a rating system of stars—the higher the quality, the greater the number of stars. Assessment of hydrographic data quality and classification into zones of confidence is based on a combination of: survey date, position accuracy, depth

(106)

Zone of Confidence Diagrams

ZOC CATEGORIES				
ZOC	DATE	POSITION ACCURACY	DEPTH ACCURACY	SEAFLOOR COVERAGE
A1	2008–2016	± 16.4 ft	= 1.6 feet + 1% depth	All significant seafloor features detected
A2	—	± 65.6 ft	= 3.3 feet + 2% depth	All significant seafloor features detected
B	2005	± 164.0 ft	= 3.3 feet + 2% depth	Uncharted features hazardous to surface navigation are not expected but may exist
C	—	± 1640.4 ft	= 6.6 feet + 2% depth	Depth anomalies may be expected
D	—	Worse than ZOC C	Worse than ZOC C	Large depth anomolies may be expected
U	Unassessed – The quality of the bathymetric data has yet to be assessed.			



accuracy and sea floor coverage (the survey's ability to detect objects on the seafloor.)

(105) **Source Diagrams** provide the mariner with additional information about the density and adequacy of the sounding data depicted on the chart. The adequacy with which sounding data reflects the configuration of the bottom depends on the following factors: survey technology employed (sounding and navigation equipment), survey specifications in effect (prescribed survey line spacing and sounding interval) and type of bottom (e.g., rocky with existence of submerged pinnacles, flat sandy, coastal deposits subject to frequent episodes of deposition and erosion). Source diagrams will be replaced with ZOC diagrams as new editions are created.

(108)

Chart Symbols, Abbreviations and Terms

(109) The standard symbols and abbreviations approved for use on nautical charts produced by the U.S. Government are described in **U.S. Chart No. 1: Symbols, Abbreviations and Terms used on Paper and Electronic Navigational Charts.** This reference, jointly maintained by the National Geospatial-Intelligence Agency (NGA) and NOAA, is available at *nauticalcharts.noaa.gov/publications/us-chart-1.html.*

(110) The publication **Chart 1: Symbols, Abbreviations and Terms** published by the Canadian Hydrographic Service, is available online at *charts.gc.ca/publications/chart1-carte1/index-eng.asp.*

(111) Some symbols and abbreviations used on foreign charts, including reproductions of foreign charts made by NGA, are different than those used on U.S. charts. It is recommended that mariners who use foreign charts also obtain the symbol sheet or Chart No. 1 produced by the appropriate foreign agency.

(112) Mariners are warned that the buoyage systems, shapes and colors used by other countries often have a different significance than the U.S. system.

(113)

Areas with Blue Tint

(114) A blue tint is shown in water areas on many charts to accentuate shoals and other areas considered dangerous for navigation when using that particular chart. Since the danger curve varies with the intended purpose of a chart a careful inspection should be made to determine the contour depth of the blue tint areas.

(115)

Bridge and Cable Clearances

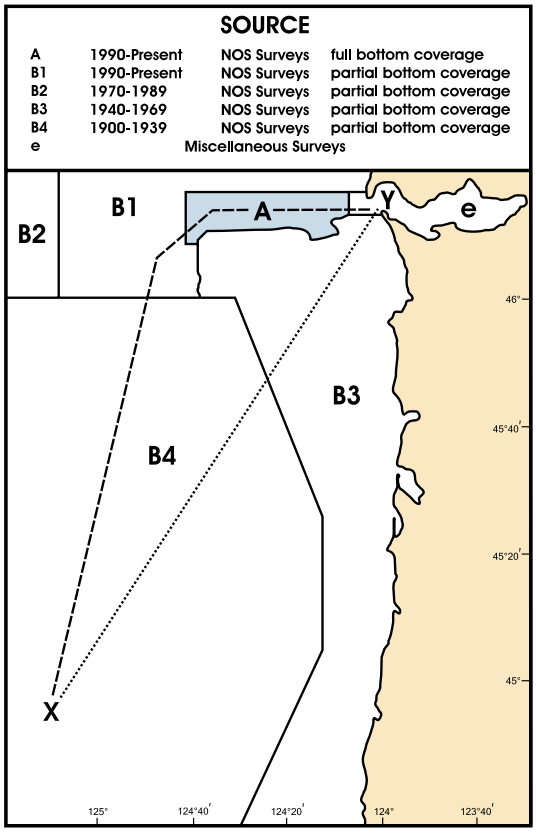
(116) For bascule bridges whose spans do not open to a full vertical position, unlimited overhead clearance is not available for the entire charted horizontal clearance when the bridge is open, due to the inclination of the drawspans over the channel.

(117) Charted in black text, vertical clearances of overhead cables are for the lowest wires at mean high water as authorized and permitted by the U.S. Army Corps of Engineers (USACE). Reported clearances received from sources other than the USACE are labeled as such. When

(107)

Source Diagrams

Referring to the accompanying sample Source Diagram to the right and the previous discussion of survey methods over time, transiting from Point X to Point Y, along the track indicated by the dotted line, would have the following information available about the relative quality of the depth information shown on the chart.



Point X lies in an area surveyed by NOAA between 1900-1939. The sounding data in this area would have been collected by leadline. Depths between sounding points can only be inferred, and undetected features might exist between the sounding points in areas of irregular relief — caution should be exercised.

The transit then crosses an area surveyed by NOAA between 1940-1969. The sounding data in this area would have been collected by continuous recording single beam echo sounder. It is possible that features could have been missed between sounding lines, although echo sounders record all depths along a sounding line with varying beam widths.

The transit ends in an area charted from miscellaneous surveys. These surveys may be too numerous to depict or may vary in age, reliability, origin or technology used. No inferences about the fitness of the data can be made in this area from the diagram.

Referring again to the accompanying sample Source Diagram, and the previous discussion of survey methods over time, a mariner could choose to transit from Point X to Point Y, along the track shown with a dashed line.

The transit starts again in an area surveyed by NOAA between 1900-1939. The sounding data in this area would have been collected by leadline. Depths between sounding points can only be inferred, and undetected features might still exist between the sounding points in areas of irregular relief — caution should be exercised.

The transit then crosses an area surveyed by NOAA between 1990–present, with partial bottom coverage. The data is collected in metric units and acquired by continuous recording single beam echo sounder. It is possible that features could have been missed between the sounding lines, although echo sounders record all depths along a sounding line with varying beam widths.

The transit then crosses into an area surveyed by NOAA etween 1990–present, having full bottom coverage. This area of the charted diagram is shaded with a blue screen to draw attention to the fact that full bottom coverage has been achieved. The data in this area would have been collected in metric units and acquired by side scan sonar or multibeam sonar technology. Undetected features in this area, at the time of the survey, would be unlikely.

The transit ends in an area charted from miscellaneous surveys. These surveys may be too numerous to depict or may vary in age, reliability, origin or technology used. No inferences about the fitness of the data can be made in this area from the diagram. By choosing to transit along the track shown by the dashed line, the mariner would elect to take advantage of survey information that is more recent and collected with modern technology.

provided, safe vertical clearances are shown in magenta text and indicate the highest points of a ship that can pass under an overhead power cable without risk of electrical discharge from the cable to the ship or without making contact with a bridge. **Vessels with masts, stacks, booms or antennas should allow sufficient clearance under power cables to avoid arcing.**

(118)

Submarine Cables and Submerged Pipelines

(119) **Submarine cables** and **submerged pipelines** cross many waterways used by both large and small vessels, but all of them may not be charted. For inshore areas, they usually are buried beneath the seabed, but for offshore areas they may lie on the ocean floor. Warning signs are often posted to warn mariners of their existence.

(120) The installation of submarine cables or pipelines in U.S. waters or the Continental Shelf of the United States is under the jurisdiction of one or more Federal agencies, depending on the nature of the installation. They are shown on the charts when the necessary information is reported to NOAA and they have been recommended for charting by the responsible agency. The chart symbols for submarine cable and pipeline areas are usually shown for inshore areas, whereas chart symbols for submarine cable and pipeline routes may be shown for offshore areas. Submarine cables and pipelines are not described in the Coast Pilots.

(121) In view of the serious consequences resulting from damage to submarine cables and pipelines, vessel operators should take special care when anchoring, fishing or engaging in underwater operations near areas where these cables or pipelines may exist or have been reported to exist. Mariners are also warned that the areas where cables and pipelines were originally buried may have changed and they may be exposed; extreme caution should be used when operating vessels in depths of water comparable to the vessel's draft.

(122) Certain cables carry high voltage, while many pipelines carry natural gas under high pressure or petroleum products. Electrocution, fire or explosion with injury, loss of life or a serious pollution incident could occur if they are broached.

(123) Vessels fouling a submarine cable or pipeline should attempt to clear without undue strain. Anchors or gear that cannot be cleared should be slipped, but no attempt should be made to cut a cable or a pipeline.

(124)

Artificial Obstructions to Navigation

(125) **Disposal areas** are designated by the U.S. Army Corps of Engineers for depositing dredged material where there is sufficient depth not to cause shoaling or create a danger to surface navigation. The areas are charted without blue tint, and soundings and depth curves are retained.

(126) **Disposal sites** are areas established by Federal regulation (**40 CFR 220** through **228**) in which dumping of dredged and fill material and other nonbuoyant objects is allowed with the issuance of a permit. Dumping of dredged and fill material is supervised by the U.S. Army Corps of Engineers and all other dumping by the Environmental Protection Agency (EPA). (See U.S. Army Corps of Engineers and Environmental Protection Agency, this chapter, and Appendix A for office addresses.)

(127) **Dumping grounds** are also areas that were established by Federal regulation (**33 CFR 205**). However, these regulations have been revoked and the use of the areas discontinued. These areas will continue to be shown on nautical charts until such time as they are no longer considered to be a danger to navigation.

(128) Disposal Sites and Dumping Grounds are rarely mentioned in the Coast Pilot, but are shown on nautical charts. **Mariners are advised to exercise caution in the vicinity of all dumping areas.**

(129) **Spoil areas** are for the purpose of depositing dredged material, usually near and parallel to dredged channels. Spoil areas are usually charted from survey drawings from U.S. Army Corps of Engineers after-dredging surveys, though they may originate from private or other Government agency surveys. On nautical charts, spoil areas are tinted blue, labeled and have all soundings and depth curves omitted from within their boundaries. Spoil areas present a hazard to navigation and even the smallest craft should avoid crossing them.

(130) **Fish havens** are artificial shelters constructed of various materials including rocks, rubble, derelict barges/oil rigs and specially designed precast structures. This material is placed on the sea floor to simulate natural reefs and attract fish. Fish havens are often located near fishing ports or major coastal inlets and are usually considered hazards to shipping. Before such a reef may be built, the U.S Army Corps of Engineers must issue a permit specifying the location and depth over the reef. Constructed of rigid material and projecting above the bottom, they can impede surface navigation and therefore represent an important feature for charting. Fish havens may be periodically altered by the addition of new material, thereby possibly increasing the hazard. They are outlined and labeled on charts and show the minimum authorized depth when known. Fish havens are tinted blue if they have a minimum authorized depth of 11 fathoms or less. If the minimum authorized depth is unknown and they are in depths greater than 11 fathoms, they are considered a danger to navigation. Navigators should be cautious about passing over fish havens or anchoring in their vicinity.

(131) **Fishtrap areas** are areas established by the U.S. Army Corps of Engineers, or State or local authority, in which traps may be built and maintained according to established regulations. The fish stakes that may exist in these areas are obstructions to navigation and may be dangerous. The limits of fishtrap areas and a cautionary note are usually charted. Navigators should avoid these areas.

(132)

Local Magnetic Disturbances

(133) If measured values of magnetic variation differ from the expected (charted) values by several degrees, a magnetic disturbance note will be printed on the chart. The note will indicate the location and magnitude of the disturbance, but the indicated magnitude should not be considered as the largest possible value that may be encountered. Large disturbances are more frequently detected in the shallow waters near land masses than on the deep sea. Generally, the effect of a local magnetic disturbance diminishes rapidly with distance, but in some locations there are multiple sources of disturbances and the effects may be distributed for many miles.

(134)

Compass Roses

(135) Each compass rose shows the date, magnetic variation and the annual change in variation. Prior to the new edition of a nautical chart, the compass roses are reviewed. Corrections for annual change and other revisions may be made as a result of newer and more accurate information. On some general and sailing charts, the magnetic variation is shown by isogonic lines in addition to the compass roses.

(136)

Echo Soundings

(137) The echo sounder on a ship may indicate small variations from charted soundings; this may be due to the fact that various corrections (instrument corrections, settlement and squat, draft and velocity corrections) are made to echo soundings in surveying which are not normally made in ordinary navigation, or to observational errors in reading the echo sounder. Instrument errors vary between different equipment and must be determined by calibration aboard ship. Most types of echo sounders are factory calibrated for a velocity of sound in water of 800 fathoms per second, but the actual velocity may differ from the calibrated velocity by as much as 5 percent, depending upon the temperature and salinity of the waters in which the vessel is operating; the highest velocities are found in warm, highly saline water and the lowest in icy freshwater. Velocity corrections for these variations are determined and applied to echo soundings during hydrographic surveys. All echo soundings must be corrected for the vessel's draft, unless the draft observation has been set on the echo sounder.

(138) Observational errors include misinterpreting false echoes from schools of fish, seaweed, etc., but the most serious error that commonly occurs is where the depth is greater than the scale range of the instrument; a 400–fathom scale indicates 15 fathoms when the depth is 415 fathoms. Caution in navigation should be exercised when wide variations from charted depths are observed.

(139)

NOTICES TO MARINERS

(140) **Notices to Mariners** are published to advise operators of marine information affecting the safety of navigation. The notices include changes in aids to navigation, depths in channels, bridge and overhead cable clearances, reported dangers and other useful marine information. They should be used routinely for updating the latest editions of nautical charts and related publications.

(141) **Local Notices to Mariners** are issued by each Coast Guard District Commander for the waters under their jurisdiction. (See Appendix A for Coast Guard district(s) covered by this volume.) These notices are usually published weekly and are available at *navcen.uscg.gov*.

(142) **U.S. Notice to Mariners**, published weekly by the National Geospatial-Intelligence Agency, are prepared jointly with NOAA and the Coast Guard. These notices contain selected items from the Local Notices to Mariners and other reported marine information required by oceangoing vessels operating in both foreign and domestic waters. Special items covering a variety of subjects and generally not discussed in the Coast Pilot or shown on nautical charts are published annually in Notice to Mariners No. 1. These items are important to the mariner and should be read for future reference. These notices are available at *msi.nga.mil/NGAPortal/MSI.portal*.

(143) **Broadcast Notices to Mariners** are made by the Coast Guard to report deficiencies and important changes in aids to navigation. (See Navigational Warnings, Information and Weather, this chapter.)

(144) The **Special Notice to Mariners** is an annual publication containing important information for mariners on a variety of subjects which supplements information not usually found on charts and in navigational publications. It includes excerpts from various Federal laws and regulations regarding marine pollution reporting, aids to navigation and Vessel Traffic Service (VTS) procedures. There are tips for trip planning, updates to the Rules of the Road and information on local hazards. Also included are points of contact, phone numbers and email addresses for various subject matter experts to assist the mariner in locating further information.

(145) Vessels operating within the limits of the Coast Guard districts can obtain information affecting NOAA charts and related publications from the Local Notices to Mariners. Small craft using the Intracoastal Waterway and other waterways and small harbors within the United States that are not normally used by oceangoing vessels will require the Local Notices to Mariners to keep charts and related publications up to date.

(146)

AIDS TO NAVIGATION

(147)

U.S. Aids to Navigation System

(148) The navigable waters of the United States are marked to assist navigation using the U.S. Aids to Navigation System, a system consistent with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Maritime Buoyage System. The **IALA Maritime Buoyage System** is followed by most of the world's maritime nations and will improve maritime safety by encouraging conformity in buoyage systems worldwide. IALA buoyage is divided into two regions made up of Region A and Region B. All navigable waters of the United States follow IALA Region B, except U.S. possessions west of the International Date Line and south of 10° north latitude, which follow IALA Region A. Lateral aids to navigation in Region A vary from those located within Region B. Nonlateral aids to navigation are the same as those used in Region B. Appropriate nautical charts and publications should be consulted to determine whether the Region A or Region B marking schemes are in effect for a given area.

(149) As standard protocol, the U.S. Coast Guard reported assigned positions of aids to navigation uses the North American Datum of 1983 (NAD 83). Due to the development of new navigational systems and the retirement of old systems, the World Geodetic System 1984 (WGS 84) has become the preferred standard. In 2020, the U.S. Coast Guard Chief of the Office of Navigation Systems (CG-NAV) announced that all geographic coordinates for aids to navigation assigned positions will be reported using WGS 84.

(150)

Reporting Defects in Aids to Navigation

(151) Promptly notify the nearest Coast Guard District Commander if an aid to navigation is observed to be missing, sunk, capsized, out of position, damaged, extinguished or showing improper characteristics.

(152) **Aids to navigation** in United States waters of the Great Lakes and their connecting waters, except for the St. Lawrence River, are maintained by the U.S. Coast Guard. Local jurisdiction for the region is assigned to the Commander, Ninth Coast Guard District. The Lake Champlain region and the Hudson River are under the jurisdiction of the Commander, First Coast Guard District. (See Appendix A for the addresses.)

(153) It is unlawful to establish or maintain any aid similar to those maintained by the U.S. Coast Guard without first obtaining permission from the Coast Guard District Commander. The licensed officer in command of a vessel which collides with any aid must report the fact promptly to the nearest U.S. Coast Guard Sector.

(154)

Lights

(155) **Nominal range** is the term for the range of visibility of lights as defined in the U.S. Coast Guard Light List and shown on nautical charts. It is the maximum distance a light can be seen in clear weather (meteorological visibility of 10 nautical miles). Nominal range is listed for all lighted aids to navigation except range lights, directional lights, and private aids to navigation.

(156) **Luminous range** is the greatest distance a light may be seen given its nominal range and the prevailing meteorological visibility. The Luminous Range Diagram, found in the U.S. Coast Guard Light List, enables the mariner to determine the approximate luminous range of a light when the nominal range and the prevailing meteorological visibility are known. The nominal range and the luminous range do not take into account elevation, observer's height of eye, or the curvature of the earth.

(157) **Geographic range** is the greatest distance the curvature of the earth permits an object, of a given height, to be seen from a particular height of eye without regard to luminous intensity or visibility conditions. To determine the actual geographic range for height of eye, the geographic range must be corrected by a distance corresponding to the height difference. The Geographic Range Table, found in the U.S. Coast Guard Light List, gives the approximate geographic range of visibility for an object which may be seen by an observer at sea level.

(158) The maximum distances at which lights can be seen may at times be increased by abnormal atmospheric refraction and may be greatly decreased by unfavorable weather conditions such as fog, rain, haze or smoke. All except the most powerful lights are easily obscured by such conditions. In some conditions of the atmosphere white lights may have a reddish hue. During weather conditions which tend to reduce visibility, colored lights are more quickly lost to sight than white lights. Navigational lights should be used with caution because of the following conditions that may exist.

(159) A light may be extinguished and the fact not reported to the Coast Guard for correction, or a light may be located in an isolated area where it will take time to correct.

(160) In regions where ice conditions prevail the lantern panes of unattended lights may become covered with ice or snow, which will greatly reduce the visibility and may also cause colored lights to appear white.

(161) Brilliant shore lights used for advertising and other purposes, particularly those in densely populated areas, make it difficult to identify a navigational light.

(162) At short distances flashing lights may show a faint continuous light between flashes.

(163) The distance of an observer from a light cannot be estimated by its apparent intensity. The characteristics of lights in an area should always be checked in order that powerful lights visible in the distance not be mistaken for nearby lights showing similar characteristics at low intensity such as those on lighted buoys.

(164) The apparent characteristic of a complex light may change with the distance of the observer, due to color and intensity variations among the different lights of the group. The characteristic as charted and shown in the Light List may not be recognized until nearer the light.

(165) Motion of a vessel in a heavy sea may cause a light to alternately appear and disappear, and thus give a false characteristic.

(166) Where lights have different colored sectors, be guided by the correct bearing of the light; do not rely on being able to accurately observe the point at which the color changes. On either side of the line of demarcation of colored sectors there is always a small arc of uncertain color.

(167) On some bearings from the light, the range of visibility of the light may be reduced by obstructions. In such cases, the obstructed arc might differ with height of eye and distance. When a light is cut off by adjoining land and the arc of visibility is given, the bearing on which the light disappears may vary with the distance of the vessel from which observed and with the height of eye. When the light is cut off by a sloping hill or point of land, the light may be seen over a wider arc by a ship far off than by one closer.

(168) Arcs of circles drawn on charts around a light are not intended to give information as to the distance at which it can be seen, but solely to indicate, in the case of lights which do not show equally in all directions, the bearings between which the variation of visibility or obscuration of the light occurs.

(169) Lights of equal candlepower but of different colors may be seen at different distances. This fact should be considered not only in predicting the distance at which a light can be seen, but also in identifying it.

(170) Lights should not be passed close aboard, because in many cases riprap mounds are maintained to protect the structure against ice damage and scouring action.

(171) Many prominent towers, tanks, smokestacks, buildings and other similar structures, charted as landmarks, display flashing and/or fixed red aircraft obstruction lights. Lights shown from landmarks are charted only when they have distinctive characteristics to enable the mariner to positively identify the location of the charted structure.

(172)

Articulated Lights

(173) An articulated light is a vertical pipe structure supported by a submerged buoyancy chamber and attached by a universal coupling to a weighted sinker on the seafloor. The light, allowed to move about by the universal coupling, is not as precise as a fixed aid. However, it has a much smaller watch circle than a conventional buoy, because the buoyancy chamber tends to force the pipe back to a vertical position when it heels over under the effects of wind, wave or current.

(174) Articulated lights are primarily designed to mark narrow channels with greater precision than conventional buoys.

(175)

Daybeacons

(176) Daybeacons are unlighted aids affixed to stationary structures. They are marked with dayboards for daytime identification. The dayboards aid navigation by presenting one of several standard shapes and colors which have navigational significance. Dayboards are sometimes referred to as daymarks.

(177) Daybeacons are found on-shore and in shallow water. They are frequently used to mark channel edges.

(178)

Articulated Daybeacons

(179) Articulated daybeacons are similar to articulated lights, described above, except they are unlighted.

(180)

Buoys

(181) The aids to navigation depicted on charts comprise a system consisting of fixed and floating aids with varying degrees of reliability. Therefore, prudent mariners will not rely solely on any single aid to navigation, particularly a floating aid.

(182) The approximate position of a buoy is represented by the dot or circle associated with the buoy symbol. The approximate position is used because of practical limitations in positioning and maintaining buoys and their sinkers in precise geographical locations. These limitations include, but are not limited to, inherent imprecisions in position fixing methods, prevailing atmospheric and sea conditions, the slope of and the material making up the seabed, the fact that buoys are moored to sinkers by varying lengths of chain and the fact that buoy body and/or sinker positions are not under continuous surveillance, but are normally checked only during periodic maintenance visits which often occur more than a year apart. The position of the buoy body can be expected to shift inside and outside of the charting symbol due to the forces of nature. The mariner is also cautioned that buoys are liable to be carried away, shifted, capsized, sunk, etc. Lighted buoys may be extinguished or sound signals may not function as a result of ice, running ice or other natural causes, collisions or other accidents.

(183) For the foregoing reasons, a prudent mariner must not rely completely upon the charted position or operation of floating aids to navigation but will also utilize bearings from fixed objects and aids to navigation on shore. Further, a vessel attempting to pass close aboard always risks collision with a yawing buoy or with the obstruction the buoy marks.

(184) Buoys may not always properly mark shoals or other obstructions due to shifting of the shoals or of the buoys. Buoys marking wrecks or other obstructions are usually placed on the seaward or channelward side and not directly over a wreck. Since buoys may be located some distance

from a wreck they are intended to mark, and since sunken wrecks are not always static, extreme caution should be exercised when operating in the vicinity of such buoys.

(185)

Automatic Identification System (AIS) Aids to Navigation

(186) AIS is an automatic communication and identification system intended to improve the safety of navigation by assisting the efficient operation of a Vessel Traffic Services (VTS), ship reporting, ship-to-ship and ship-to-shore operations. AIS is increasingly being used as an aid to navigation. An AIS-equipped aid to navigation may provide a positive identification of the aid. It may also have the capability to transmit an accurate position and provide additional information such as actual tide height and/or weather information.

(187) The AIS message may represent an aid to navigation that physically exists (physical AIS Aid to Navigation) or the message, transmitted from a remote location, may represent an aid to navigation that does not physically exist (virtual AIS Aid to Navigation). A virtual aid to navigation is a digital information object promulgated by an authorized service provider that can be presented on navigational systems.

(188) Physical AIS aids to navigation are charted with the symbol for the physical aid (such as a buoy or light) with a magenta circle surrounding the symbol and labeled AIS. Virtual aids to navigation are charted with a small central dot with a topmark symbol indicating the purpose of the aid, surrounded by a magenta circle and labeled V-AIS. Temporary AIS aids to navigation and stations remotely transmitting an AIS signal are not charted. See U.S. Chart No. 1, Section S, for additional information and examples.

(189)

Examples of Charted AIS Aids to Navigation

(190)

Bridge Lights and Clearance Gages

(191) The Coast Guard regulates marine obstruction lights and clearance gages on bridges across navigable waters. Where installed, clearance gages are generally vertical numerical scales, reading from top to bottom, and show the actual vertical clearance between the existing water level and the lowest point of the bridge over the channel; the gages are normally on the right-hand pier or abutment of the bridge, on both the upstream and downstream sides.

(192) Bridge lights are fixed red or green and are privately maintained; they are generally not charted or described in the text of the Coast Pilot. All bridge piers (and their protective fenders) and abutments that are in or adjacent to a navigation channel are marked on all channel sides by red lights. On each channel span of a fixed bridge, there is a range of two green lights marking the center of the channel and a red light marking both edges of the channel, except that when the margins of the channel are confined by bridge piers, the red lights on the span are omitted, since the pier lights then mark the channel edges. For multiplespan fixed bridges, the main-channel span may also be marked by three white lights in a vertical line above the green range lights.

(193) On all types of drawbridges, one or more red lights are shown from the drawspan (higher than the pier lights) when the span is closed; when the span is open, the higher red lights are obscured and one or two green lights are shown from the drawspan, higher than the pier lights. The number and location of the red and green lights depend upon the type of drawbridge.

(194) Bridges and their lighting, construction and maintenance are set forth in **33 CFR 114**, **115**, **116**, and **118** (not carried in this Coast Pilot). Aircraft obstruction lights prescribed by the Federal Aviation Administration may operate at certain bridges.

(195)

Sound Signals

(196) Caution should be exercised in the use of sound signals for navigation purposes. They should be considered solely as warning devices.

(197) Sound travels through the air in a variable manner, even without the effects of wind, and, therefore the hearing of sound signals cannot be implicitly relied upon.

(198) Experience indicates that distances must not be judged only by the intensity of the sound; that occasionally there may be areas close to a sound signal in which it is not heard; and that fog may exist not far from a station, yet not be seen from it, so the signal may not be operating. It is not always possible to start a sound signal immediately when fog is observed.

(199)

Channel Markers

(200) Lights, daybeacons, and buoys along dredged channels do not always mark the bottom edges. Due to local conditions, aids may be located inside or outside the channel limits shown by dashed lines on a chart. The Light List tabulates the offset distances for these aids in many instances.

(201) Aids may be moved, discontinued or replaced by other types to facilitate dredging operations. Mariners should exercise caution when navigating areas where dredges with auxiliary equipment are working.

(202) Temporary changes in aids are not included on the charts.

(203)

Light Lists

(204) The Coast Guard Light Lists are a means for communicating aids to navigation information to the maritime public. They are updated weekly and

available for download on the United States Coast Guard Navigation Center's website at *www.navcen.uscg.gov*. Mariners should refer to these lists for detailed information regarding the characteristics and visibility of lights, and the description of light structures, buoys, sound signals and electronic aids.

(205)

ELECTRONIC POSITIONING SYSTEMS

(206) **Global Positioning System (GPS)**permits land, sea, and airborne users to determine their three-dimensional position, velocity and time 24 hours a day, in all weather, anywhere in the world. The basic system is defined as a constellation of satellites, the navigation payloads which produce the GPS signals, ground stations, data links and associated command and control facilities, that are operated and maintained by the Department of Defense. Please report GPS problems or anomalies at *navcen.uscg.gov* or contact the USCG Navigation Information Service at 703–313–5900.

(207)

LORAN-C

(208) LORAN, an acronym for LOng RAnge Navigation, was an electronic aid to navigation consisting of shore-based radio transmitters. In accordance with the Department of Homeland Security Appropriations Act, the U.S. Coast Guard terminated the transmission of all LORAN-C signals as of August 2010, rendering them unusable and permanently discontinued. For more details, visit *navcen.uscg.gov*. The Coast Guard strongly urges mariners accustomed to using LORAN-C for navigation to shift to a GPS navigation system and become familiar with its operation. NOAA is removing LORAN-C lines of position from all of its charts as new editions are published.

(209)

SEARCH AND RESCUE

(210)

Coast Guard Search and Rescue

(211) The Coast Guard conducts and/or coordinates search and rescue operations for surface vessels or aircraft that are in distress or overdue. Search and rescue vessels and aircraft have special markings, including a wide slash of red-orange and a small slash of blue on the forward portion of the hull or fuselage. Other parts of aircraft, normally painted white, may have other areas painted red to facilitate observation. The cooperation of vessel operators with Coast Guard helicopters, fixed-wing aircraft, and vessels may mean the difference between life and death for some seaman or aviator; such cooperation is greatly facilitated by the prior knowledge on the part of vessel operators of the operational requirements of Coast Guard equipment and personnel, of the international distress signals and procedures and of good seamanship.

(212)

Search and Rescue Great Lakes

(213) The United States Coast Guard has established a toll-free search and rescue telephone number for the Great Lakes. The number is intended for use when the telephone number of the nearest Coast Guard station is unknown or when that station cannot be contacted. The toll-free number should not be used without first attempting to contact the nearest Coast Guard station. In all Great Lakes States the telephone number is 800-321-4400. This number is to be used for public reports of distress incidents, suspicious sightings, pollution or other maritime concerns.

(214)

Radiotelephone Distress Message

(215) Distress calls indicate a vessel or aircraft is threatened by grave and imminent danger and requests immediate assistance. They have absolute priority over all other transmissions. All stations which hear a distress call must immediately cease any transmission capable of interfering with the distress traffic and continue to listen on the frequency used for the emission of the distress call. This call should not be addressed to a particular station, and acknowledgment of receipt should not be given before the distress message which follows it is sent.

(216) Distress calls are made on VHF-FM channel 16 (MAYDAY). For less serious situations than warrant the distress procedure, the radiotelephone urgency signal consisting of three repetitions of the word PAN-PAN (pronounced PAWN-PAWN), or the safety signal SECURITE (pronounced SECURITAY) spoken three times, are used as appropriate. For complete information on emergency radio procedures, see **47 CFR 80** or **Radio Navigational Aids, Pub. 117**.

(217)

Global Maritime Distress and Safety System (GMDSS)

(218) This international system, developed by the International Maritime Organization (IMO), is based on a combination of satellite and terrestrial radio services and has changed international distress communications from being primarily ship-to-ship based to primarily ship-to-shore (Rescue Coordination Center) based. Prior to the GMDSS, the number and types of radio safety equipment required to be carried by vessels depended upon the tonnage. Under GMDSS, the number and type of radio safety equipment vessels are required to carry depend on the areas in which they travel; GMDSS sea areas are defined by governments. All GMDSS-regulated ships must carry a satellite Emergency Position Indicating Radio Beacon (EPIRB), a NAVTEX receiver (if they travel in any areas served by NAVTEX), an Inmarsat-C SafetyNET receiver (if they travel in any areas not served by NAVTEX), a DSC-equipped VHF radiotelephone, two or more VHF handhelds and a search and rescue radar transponder (SART).

(219)

Automated Mutual Assistance Vessel Rescue System (AMVER)

(220) AMVER is a worldwide voluntary ship reporting system operated by the United States Coast Guard to promote safety of life and property at sea. AMVER's mission is to quickly provide search and rescue (SAR) authorities, on demand, accurate information on the positions and characteristics of vessels near a reported distress. Any merchant vessel anywhere on the globe, on a voyage of greater than 24 hours duration, is welcome in the AMVER system and family. International participation is voluntary regardless of the vessel's flag of registry, the nationality of the owner or company or ports of call.

(221) According to U.S. Maritime Administration (MARAD) regulations, U.S. flag merchant vessels of 1,000 gross tons or more operating in foreign commerce and foreign flag vessels of 1,000 gross tons or more for which an Interim War Risk Insurance Binder has been issued under the provisions of Title XII, Merchant Marine Act, 1936, must report and regularly update their voyages and positions to AMVER in accordance with instructions set forth in the AMVER Ship Reporting System Manual. For more information contact AMVER Maritime Relations U.S. Coast Guard, 1 South Street Battery Park Building, New York, NY 10004; Phone: 212–668–7764, Fax: 212-668-7684, Telex: 127594-AMVER NYK, or go to *amver.com*.

(222)

COSPAS-SARSAT

(223) COSPAS: Space System for Search of Distress Vessels - SARSAT: Search and Rescue Satellite-Aided Tracking. COSPAS-SARSAT is an international satellite system designed to provide distress alert and location data to assist search and rescue operations using satellites and ground facilities to detect and locate the signals of distress beacons operating on 406 MHz. For more information on the Cospas-Sarsat System go to *cospas-sarsat.int*.

(224)

Digital Selective Calling (DSC)

(225) The U.S. Coast Guard offers VHF and MF/HF radiotelephone service to mariners as part of the Global Maritime Distress and Safety System. This service, called digital selective calling (DSC), allows mariners to instantly send an automatically formatted distress alert to the Coast Guard or other rescue authority anywhere in the world. Digital selective calling also allows mariners to initiate or receive distress, urgency, safety and routine radiotelephone calls to or from any similarly equipped vessel or shore station, without requiring either party to be near a radio loudspeaker. Each ship or shore station equipped with a DSC terminal has a unique Maritime Mobile Station Identity (MMSI). This is a nine-digit number that specifically identifies a ship, coast station, or group of stations. The DSC system alerts an operator when a distress call is received. It will provide the operator with a pre-formatted message that can include the distressed vessel's nine-digit MMSI, location, nature of distress, desired mode of communication and preferred working frequency.

(226)

Emergency Position Indicating Radiobeacons (EPIRB)

(227) EPIRBs emit a radio signal that can be used to locate mariners in distress. SARSAT satellites can locate the position of a 406 MHz EPIRB which greatly increases a mariner's chances of survival. While orbiting the earth, the satellites continuously monitor EPIRB frequencies. When SARSAT receives an EPIRB signal, it determines the beacon's position that is ultimately relayed to the nearest Coast Guard Rescue Coordination Center where rescue units are dispatched to the scene.

(228) Mariners should ensure that their EPIRB is in working condition and stowed properly at all times to avoid non-distress emissions. Mariners are required to register their 406 MHz EPIRBs for improved search and rescue response and keep the registration current at all times. Registration can be accomplished online at *beaconregistration.noaa.gov*.

(229)

EPIRB Types

Type	Frequency	Description
Cat I	406 MHz	Float-free, automatically activated EPIRB. Detectable by satellite anywhere in the world. Recognized by the Global Maritime and Distress Safety System (GMDSS).
Cat II	406 MHz	Similar to Category I, except is manually activated. Some models are also water activated.

(230)

Medical Advice

(231) Ships at sea with no medical personnel embarked and experiencing a medical emergency onboard can receive medical advice via radiotelex, radiotelephony or Inmarsat. Messages are generally addressed RADIOMEDICAL followed by the name of the coast station to which the message is sent. The priority of the message should depend on the severity of the ailment. In extreme emergency, the urgency signal (PAN-PAN) should precede the address. Messages are sent using distress and safety frequencies.

(232)

Vessel Identification

(233) Coast Guard search and rescue aircraft and surface craft use radar to assist in locating disabled vessels. Wooden and fiberglass vessels are often poor radar targets. Operators of disabled craft that are the object of a search are requested to hoist, as high above the waterline as possible, a radar-reflecting device. If no special radar-reflecting device is aboard, an improvised device can be used. This should consist of metallic objects of irregular shape. The more irregular the shape, the better will be the radar-reflective quality. For quick identification at night, shine spotlights straight up. If aircraft are involved, once

(241)

U.S. VHF Channel Information

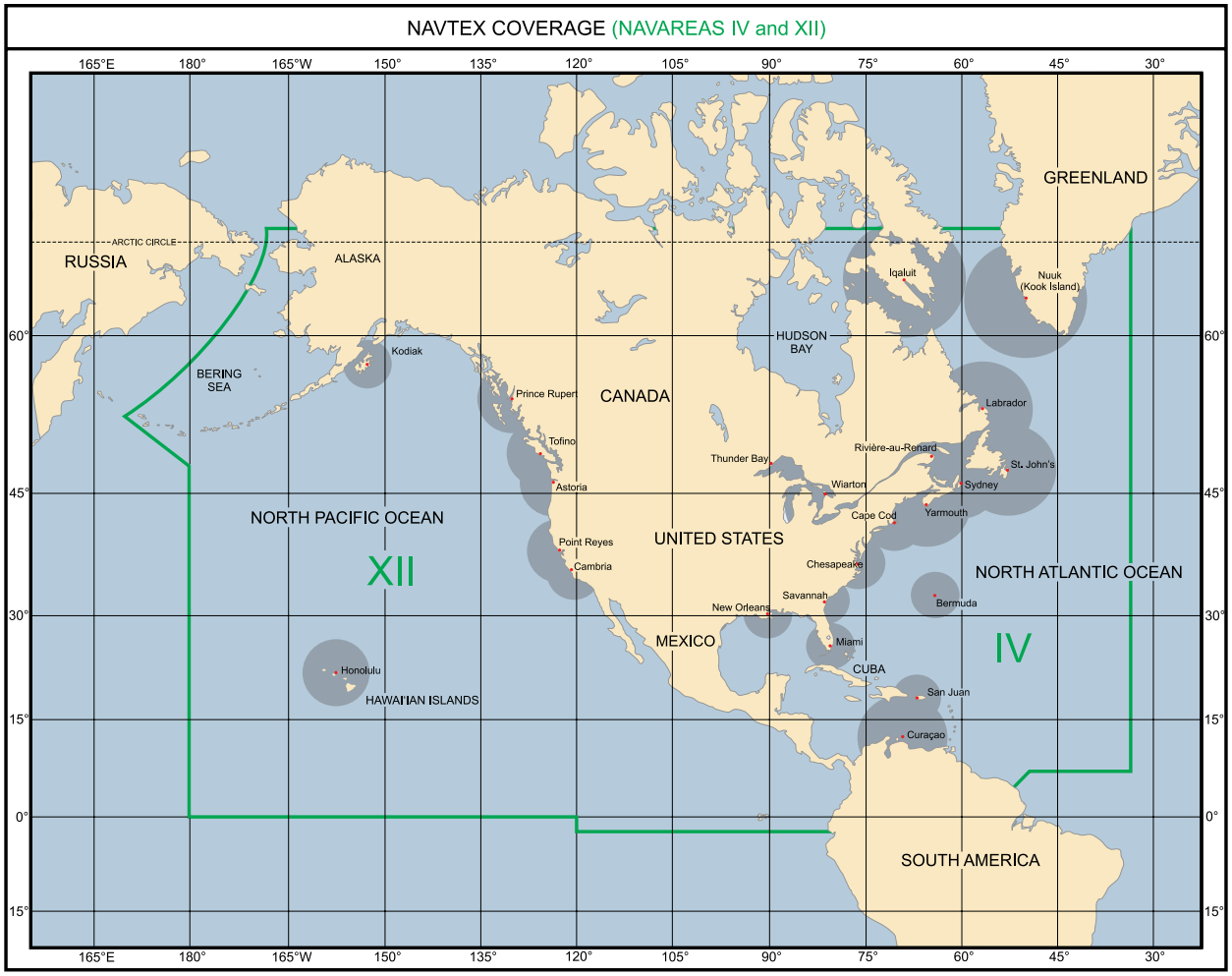
New Channel	Old Channel	Ship Frequency (MHz)		Channel Usage
		Transmit	Receive	
1001	01A	156.050	156.050	Port Operations and Commercial, VTS. Available only in New Orleans / Lower Mississippi area.
1005	05A	156.250	156.250	Port Operations or VTS in the Houston, New Orleans and Seattle areas
06	06	156.300	156.300	Intership Safety
1007	07A	156.350	156.350	Commercial. VDSMS
08	08	156.400	156.400	Commercial (Intership only) VDSMS
09	09	156.450	156.450	Boater Calling; Commercial and Non-commercial. VDSMS
10	10	156.500	156.500	Commercial. VDSMS
11	11	156.550	156.550	Commercial; VTS in selected areas. VDSMS
12	12	156.600	156.600	Port Operations; VTS in selected areas
13	13	156.650	156.650	Intership Navigation Safety (Bridge-to-Bridge). Ships greater than 20m maintain a listening watch on this channel in U.S. waters.
14	14	156.700	156.700	Port Operations; VTS in selected areas
15	15	- -	156.750	Environmental (Receive only) Used by Class C EPIRBs
16	16	156.800	156.800	International Distress, Safety and Calling. Ships required to carry radio, USCG, and most coast stations maintain a listening watch on this channel. *(Refer to: Radio Watchkeeping Regulations).*
17	17	156.850	156.850	State and local government maritime control
1018	18A	156.900	156.900	Commercial. VDSMS
1019	19A	156.950	156.950	Commercial. VDSMS
20	20	157.000	161.600	Port Operations (duplex)
1020	20A	157.000	157.000	Port Operations
1021	21A	157.050	157.050	U.S. Coast Guard only
1022	22A	157.100	157.100	Coast Guard Liaison and Maritime Safety Information Broadcasts. *(Broadcasts announced on Channel 16)*
1023	23A	157.150	157.150	U.S. Coast Guard only
24	24	157.200	161.800	Public Correspondence (Marine Operator). VDSMS
25	25	157.250	161.850	Public Correspondence (Marine Operator). VDSMS
26	26	157.300	161.900	Public Correspondence (Marine Operator). VDSMS
27	27	157.350	161.950	Public Correspondence (Marine Operator). VDSMS
28	28	157.400	162.000	Public Correspondence (Marine Operator). VDSMS
1063	63A	156.175	156.175	Port Operations and Commercial, VTS. Available only in New Orleans / Lower Mississippi area.
1065	65A	156.275	156.275	Port Operations
1066	66A	156.325	156.325	Port Operations
67	67	156.375	156.375	Commercial. Used for Bridge-to-Bridge communications in lower Mississippi River. (Intership only.)
68	68	156.425	156.425	Non-Commercial. VDSMS
69	69	156.475	156.475	Non-Commercial. VDSMS
70	70	156.525	156.525	Digital Selective Calling (voice communications not allowed)
71	71	156.575	156.575	Non-Commercial. VDSMS
72	72	156.625	156.625	Non-Commercial (Intership only). VDSMS
73	73	156.675	156.675	Port Operations
74	74	156.725	156.725	Port Operations
77	77	156.875	156.875	Port Operations (Intership only)
1078	78A	156.925	156.925	Non-Commercial. VDSMS
1079	79A	156.975	156.975	Commercial. Non-commercial in Great Lakes only. VDSMS
1080	80A	157.025	157.025	Commercial. Non-commercial in Great Lakes only. VDSMS
1081	81A	157.075	157.075	U.S. Government only - Environmental protection operations.
1082	82A	157.125	157.125	U.S. Government only
1083	83A	157.175	157.175	U.S. Coast Guard only
84	84	157.225	161.825	Public Correspondence (Marine Operator). VDSMS
85	85	157.275	161.875	Public Correspondence (Marine Operator). VDSMS
86	86	157.325	161.925	Public Correspondence (Marine Operator). VDSMS
87	87	157.375	157.375	Public Correspondence (Marine Operator). VDSMS
88	88A	157.425	157.425	Commercial (Intership only). VDSMS
AIS 1	AIS 1	161.975	161.975	Automatic Identification System (AIS)
AIS 2	AIS 2	162.025	162.025	Automatic Identification System (AIS)

Boaters should normally use channels listed as Non-Commercial. Channel 16 is used for calling other stations or for distress alerting. Channel 13 should be used to contact a ship when there is danger of collision. All ships of length 20m or greater are required to guard VHF channel 13, in addition to VHF channel 16, when operating within U.S. territorial waters. Users may be fined by the FCC for improper use of these channels. Frequencies are in megahertz (MHz). Modulation is 16KF3E or 16KG3E. VDSMS (VHF Digital Small Message Services). Transmissions of short digital messages in accordance with RTCM Standard 12301.1 is allowed. Four-digit VHF maritime channel numbers: US channel 05A is now designated and recognized internationally by the channel 1005, and the U.S. Coast Guard channel 22A is now designated and recognized internationally by the channel “1022”. These new channel number designations are being displayed on new models of VHF marine radios.

Further information can be obtained by visiting the following:

U.S. VHF Channel Information - *https://www.navcen.uscg.gov/us-vhf-channel-information*
Radio Watchkeeping Regulations - *https://www.navcen.uscg.gov/radio-watchkeeping-regulations*
International Telecommunications Union (ITU) Radio Regulations Appendix 18 - *https://navcen.uscg.gov/international-vhf-marine-radio-channels-freq*

(247)



you are identified, turn lights away so as not to blind aircraft crew.

(234)

Float Plan

(235) Small craft operators should prepare a float plan before starting a trip and leave it ashore with a yacht club, marina, friend or relative. It is advisable to regularly use a checking-in procedure by radio or telephone for each point specified in the float plan. A float plan is vital for determining if a boat is overdue and will assist in locating a missing vessel in the event search and rescue operations become necessary.

(236)

NAVIGATIONAL WARNINGS, INFORMATION AND WEATHER

(237) Marine radio warnings and weather are disseminated by many sources and through several types of transmissions. For complete information on radio warnings and weather, see **Radio Navigational Aids, Pub. 117** and the National Weather Service (NWS) publication **Worldwide Marine Radiofacsimile Broadcast Schedules**.

(238) Radio navigational warning broadcasts are designed to provide the mariner with up-to-date marine information vital to safe navigation. There are three types of broadcasts: coastal and local, long range and worldwide.

(239) Coastal and local warnings are generally restricted to ports, harbors and coastal waters and involve items of local interest. Usually, local or short-range warnings are broadcast from a single coastal station, frequently by voice and also radiotelegraph, to assist small craft operators in the area. The information is often quite detailed. Foreign area broadcasts are frequently in English as well as the native language. In the United States, short-range radio navigational warnings are broadcast by the U.S. Coast Guard Districts via NAVTEX and subordinate coastal radio stations.

(240) Long range warnings are intended primarily to assist mariners on the high seas by promulgating navigational safety information concerning port and harbor approaches, coastlines and major ocean areas. Long-range radio navigational warnings are usually broadcast by means of radiotelegraphy and in many instances by radio-teletypewriter. A NAVAREA system of navigational warning areas has been developed providing worldwide coverage using standard format and procedures. The U.S. participates as Area Coordinator for both NAVAREA IV

(Western North Atlantic) and NAVAREA XII (Eastern North Pacific).

(242) The United States also maintains worldwide coverage using the HYDROLANT/HYDROPAC Navigational Warning System outside of NAVAREAs IV and XII.

(243)

NAVTEX

(244) NAVTEX is a standard international method of broadcasting notices to mariners and marine weather forecasts using small, low cost receivers designed to be installed in the pilothouse of a vessel. NAVTEX receivers screen incoming messages, inhibiting those which had been previously received or are of a category not of interest to the user, and print the rest on adding machine-size paper. NAVTEX not only provides marine information previously available only to those knowledgeable in Morse code but also allows any mariner who cannot man a radio full time to receive safety information at any hour. All NAVTEX transmissions are made on 518 kHz. Mariners who do not have NAVTEX receivers but have Simplex Teletype Over Radio (SITOR) radio equipment can also receive these broadcasts by operating it in the Forward Error Correction (FEC) mode and tuning to 518 kHz.

(245) Information broadcast over NAVTEX includes offshore weather forecasts, offshore marine advisory warnings, search and rescue information and navigational information that applies to waters from the line of demarcation (separating Inland Rules from COLREG Rule waters) to 200 miles offshore. Navigational information that affects the safety of navigation of deep draft (15 feet or more) vessels within the U.S. Inland Rules waters will also be included. Gulf Stream location is also included from Miami and Portsmouth. Coastal and high seas weather forecasts are not being broadcast over NAVTEX. The Safety of Life at Sea Convention, as amended in 1988, requires vessels regulated by that convention to carry NAVTEX receivers.

(246) See Appendix A, U.S. NAVTEX Transmitting Stations, for a list of NAVTEX broadcast stations and message content covered by this Coast Pilot.

(248)

Broadcast Notice to Mariners

(249) The U.S. Coast Guard transmits **Urgent Marine Information Broadcast** (UMIB) safety warnings and communicates with mariners on VHF channel 1022 (previously channel 22A). These safety broadcasts contain information such as notices to mariners, storm warnings, distress warnings and other pertinent information that is vital for safe navigation. Following a preliminary call on VHF-FM channel 16 (156.800 MHz), mariners are instructed to shift to VHF-FM channel 1022 (157.100 MHz). A shipboard radio tuned to channel 1022 (U.S. mode) both transmits and listens on 157.100 MHz, and can receive UMIBs transmitted by the U.S Coast Guard. A shipboard radio tuned to channel 22 (international mode) transmits on 157.100 MHz and listens on 161.700 MHz, and cannot receive these safety warnings. In accordance with **33 CFR 26.03(d)**, "The radiotelephone required by (this Bridge-to-bridge radiotelephone regulation) must be capable of transmitting and receiving on VHF FM channel 22A (157.100 MHz)." This regulation applies to foreign ships in U.S. waters as well as to U.S. ships.

(250)

NOAA Weather Radio Broadcasts

(251) NOAA Weather Radio provides continuous broadcasts of the latest weather information directly from (NWS) offices. In addition to general weather information, marine weather is provided by stations along the sea coasts and the Great Lakes. During severe weather, NWS forecasters can interrupt the regular broadcasts and substitute special warning messages. The stations operate 24 hours daily, and messages are repeated every 4 to 6 minutes and are routinely revised every 1 to 3 hours or more frequently if necessary. The broadcasts are made on seven VHF-FM frequencies, 162.40 to 162.55 MHz. The 162.475 MHz frequency is only used in special cases where needed to avoid channel interference. They can usually be heard as far as 40 miles from the antenna site, sometimes more. The effective range depends on many factors, including the height of the broadcast antenna, terrain, quality of the receiver and the type of receiving antenna. As a general rule, listeners close to or perhaps beyond the 40 mile range should have a good quality receiver system to get reliable reception. (See Appendix A for a list of these stations in the area covered by this Coast Pilot.)

(252)

Commercial Maritime Coast Stations and Weather Nets

(253) Commercial maritime coast stations, which provide communications services, broadcast weather information to ships at sea as a public service, or make forecast information available on demand, either free or for a nominal fee. These transmissions are most commonly performed using HF SITOR and Pactor/E-Mail; however, several of these stations also offer services via Inmarsat satellite and other means.

(254) There are also a number of maritime weather *nets* operating on commercial marine VHF, MF and HF, where weather information is exchanged. These *nets* are extremely popular in areas of the world that have a large yachting population and where weather is dynamic, such as in the Caribbean, and typically incorporate volunteers ashore.

(255) Information on commercial maritime coast stations, including schedules and frequencies, is available in the **Radio Navigational Aids, Pub. 117**.

(256)

Standard Abbreviations for Broadcasts

(257) A listing of Standard Abbreviations for Textual Maritime Safety Broadcasts can be found in this chapter. These abbreviations were jointly approved by the U.S.

(258)

Standard Abbreviations Used in Broadcasts

Aids to Navigation

AERO RBN — Aeronautical Radiobeacon
ART DBN — Articulated Daybeacon
ART LT — Articulated Light
DESTR — Destroyed
DISCONTD — Discontinued
ESTAB — Established
ELB — Exposed Location Buoy
FOG SIG — Fog Signal Station
LNB — Large Navigation Buoy
LT — Light
LLNR — Light List Number
LBB — Lighted Bell Buoy
LB — Lighted Buoy
LGB — Lighted Gong Buoy
LHB — Lighted Horn Buoy
LWB — Lighted Whistle Buoy
ODAS — Ocean Data Acquisition System
PRIV MAINTD — Privately Maintained
RACON — Radar Beacon
RA REF — Radar Reflector
TRUB — Temporarily Replaced by Unlighted Buoy
TRLB — Temporarily Replaced by Lighted Buoy
WHIS — Whistle

Light Characteristics

AL — Alternating
CHAR — Characteristic
FL(2+1) — Composite Group-Flashing
OC(2+1) — Composite Group-Occulting
Q — Continuous Quick-Flashing
FFL — Fixed and Flashing
F — Fixed
FL(3) — Group-Flashing
OC(2) — Group-Occulting
IQ — Interrupted Quick-Flashing
ISO — Isophase
MO(A) — Morse Code
OC — Occulting
FL — Single-Flashing

Colors (Color refers to light characteristics of Aids to Navigation only)

B — Black
BU — Blue
G — Green
OR — Orange
R — Red
W — White
Y — Yellow

Organizations

CCGD(#) — Commander, Coast Guard District (#)
CG — Coast Guard
COE — Corps of Engineers
NGA — National Geospatial-Intelligence Agency
NOS — National Ocean Service
NWS — National Weather Service

Vessels

A/C — Aircraft
F/V — Fishing Vessel
LNG — Liquified Natural Gas Carrier
M/V — Motor Vessel*
P/C — Pleasure Craft
R/V — Research Vessel
S/V — Sailing Vessel

* M/V includes: Steam Ship, Container Vessel, Cargo Vessel, etc.

Compass Directions

N — North
S — South
E — East
W — West
NE — Northeast
NW — Northwest
SE — Southeast
SW — Southwest

Various

ANCH — Anchorage
ANCH PROHIB — Anchorage Prohibited
APPROX — Approximate
ATLC — Atlantic
AUTH — Authorized
AVG — Average
BRG — Bearing
BKW — Breakwater
BNM — Broadcast Notice to Mariners
CHAN — Channel
CFR — Code of Federal Regulations
CONT — Continue
DEG — Degrees (temp, geo-position)
DIA — Diameter
ED — Edition
EFF — Effect/Effective
ENTR — Entrance
EXPLOS ANCH — Explosive Anchorage
FM(S) — Fathoms
FT — Foot/Feet
HBR — Harbor
HT — Height
HZ — Hertz
HOR CL — Horizontal Clearance
HR — Hour
COLREGS — International Regulations for Preventing Collisions at Sea
KHZ — Kilohertz
KM — Kilometer
KT(S) — Knot(s)
LAT — Latitude
LNM — Local Notice to Mariners
LONG — Longitude
MAINTD — Maintained
MAX — Maximum
MHZ — Megahertz
MB — Millibar
MM — Millimeter
MIN — Minute (time, geo position)
MOD — Moderate
MT —Mountain, Mount
NM — Nautical Mile(s)
NTM — Notice to Mariners
OBSTR — Obstruction
OCCASION — Occasion/Occasionally
OPAREA — Operating Area
PAC — Pacific
PT(S) — Point(s)
POS — Position
PA —Position Approximate
PRES — Pressure
PRIV — Private/Privately
PROHIB — Prohibited
PUB — Publication
RGE — Range
REP — Reported
RESTR — Restricted
RK — Rock
ST — Saint
SEC — Second (time, geo position)
SIG STA — Signal Station
STA — Station
SM — Statute Mile(s)
S SIG STA — Storm Signal Station
TEMP — Temporary
TSTORM — Thunderstorm
THRU — Through
T — True
UNCOV — Uncovers
UTC — Universal Coordinate Time
UMIB — Urgent Marine Information Broadcast
VEL — Velocity
VERT CL — Vertical Clearance
VIS — Visibility
YD — Yard(s)
WARN — Warning
WX — Weather
WK — Wreck

Coast Guard, National Weather Service, National Geospatial-Intelligence Agency and the Radio Technical Commission for Maritime Services. In addition to appearing in radio broadcasts of the U.S. Coast Guard and National Weather Service, they appear in Notices to Mariners of the U.S. Coast Guard and National Geospatial-Intelligence Agency and in NAVTEX.

(259)

Voluntary Observing Ship Program (VOS)

(260) The Voluntary Observing Ship program is organized for the purpose of obtaining weather and oceanographic observations from moving ships. An international program under World Meteorological Organization auspices, the VOS has over 5000 vessels participating from 23 countries. Any vessel willing to take and transmit observations in marine areas can join the program. Weather observations are essential to meteorologists preparing weather forecasts for coastal, offshore and high seas areas. For more information on the VOS, including a comprehensive observing handbook, visit *vos.noaa.gov*.

(261)

National Institute of Standards and Technology (NIST)

(262) The National Institute of Standards and Technology maintains the standards for time and frequency for most users in the United States. NIST provides a variety of services designed to deliver time and frequency signals to the people who need them. The signals are broadcast via several mediums, including high and low frequency radio, the Internet and telephone lines. Broadcasts of time and frequency signals are made by stations operating in the part of the radio spectrum that is properly known as high frequency (HF) but is commonly called shortwave. Station WWV is located just north of Fort Collins, Colorado, and station WWVH is located on the island of Kaua'i, Hawaii. Both stations broadcast continuous time and frequency signals on 2.5, 5, 10 and 15 MHz; WWV also broadcasts on 20 MHz.

(263) **NIST Time and Frequency Services, Special Publication 432** gives a detailed description of the signals and services offered by NIST, how they work and how you can use them. The publication is available for download at *nist.gov/pml/div688/generalpubs.cfm*.

(264)

CAUTIONARY INFORMATION

(265)

Hurricanes and Tropical Storms

(266) Hurricanes, tropical storms and other major storms may cause considerable damage to marine structures, aids to navigation and moored vessels, resulting in submerged debris in unknown locations. Fixed aids to navigation may have been damaged or destroyed. Buoys may have been moved from charted positions, damaged, sunk, extinguished or otherwise made inoperative. Mariners should not rely upon the position or operation of an aid to navigation. Charted soundings, channel depths and shoreline may not reflect actual conditions following these storms. Wrecks and submerged obstructions may have been displaced from charted locations. Pipelines may have become uncovered or moved. Mariners are urged to exercise extreme caution and are requested to report aids to navigation discrepancies and hazards to navigation to the U.S. Coast Guard.

(267)

Destructive Waves

(268) Unusual sudden changes in water level can be caused by tsunamis or violent storms. These two types of destructive waves have become commonly known as **tidal waves,** a name which is technically incorrect as they are not the result of tide-producing forces.

(269) **Tsunamis** (seismic sea waves) are ocean waves generated by any rapid large-scale disturbance of the sea water. Most tsunamis are generated by earthquakes, but they may also be caused by volcanic eruptions, landslides, undersea slumps or meteor impacts.

(270) The waves radiate outward in all directions from the disturbance and can propagate across entire ocean basins. Tsunami waves are distinguished from ordinary ocean waves by their great length between peaks, often exceeding 100 miles in the deep ocean, and by the long interval of time between these peaks, ranging from five minutes to an hour. The speed at which tsunamis travel depends on the ocean depth. A tsunami can exceed 500 knots in the deep ocean but slows to 20 or 30 knots in the shallow water near land. In less than 24 hours, a tsunami can cross the entire Pacific Ocean.

(271) In the deep ocean, a tsunami is barely noticeable and will only cause a small and slow rising and falling of the sea surface as it passes. Only as it approaches land does a tsunami become a hazard. As the tsunami approaches land and shallow water, the waves slow down and become compressed, causing them to grow in height. In the best of cases, the tsunami comes onshore like a quickly rising tide and causes a gentle flooding of low-lying coastal areas. In the worst of cases, a bore will form.

(272) A bore is a wall of turbulent water that can exceed several yards in height and can rush onshore with great destructive power. Behind the bore is a deep and fast-moving flood that can pick up and sweep away almost anything in its path. Minutes later, the water will drain away as the trough of the tsunami wave arrives, sometimes exposing great patches of the sea floor, then the water will rush in again as before, causing additional damage. This destructive cycle may repeat many times before the hazard finally passes. Sometimes the first noticeable part of the wave is the trough, which causes a recession of the water from shore, and people who have gone out to investigate this unusual exposure of the beach have been engulfed by the oncoming crest. Such an unexplained withdrawal of the sea should be considered as nature's warning of an approaching wave.

(273) Tsunamis do not have a season and do not occur regularly or frequently. Yet they pose a major threat to the coastal populations of the Pacific and other world oceans and seas. Nothing can be done to prevent them, but their adverse impact can be reduced with proper planning. The loss of life and property can be lessened if shipmasters and others acquaint themselves with the behavior of these waves so that intelligent action can be taken when they become imminent.

(274) NOAA oversees the U.S. Tsunami Program with its mission to provide a 24-hour detection and warning system and increase public awareness about the threat of tsunamis. The NOAA National Weather Service operates two tsunami warning centers The West Coast/Alaska Tsunami Warning Center in Palmer, Alaska, and the Richard H. Hagemeyer Pacific Tsunami Warning Center in ‘Ewa Beach, Hawaii: *www.tsunami.gov*. These centers continuously monitor data from seismological and tidal stations, evaluate earthquakes that have the potential to generate tsunamis and disseminate tsunami information and warning bulletins to government authorities and the public.

(275) A tsunami warning is issued when a potential tsunami with significant inundation is imminent or expected. Warnings alert the public that widespread, dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after arrival of the initial wave. Warnings also alert emergency management officials to take action for the entire tsunami hazard zone. When a tsunami warning has been issued, use a NOAA Weather Radio or stay tuned to a Coast Guard emergency frequency station or a local radio or television station for updated emergency information.

(276)

Storm Surge

(277) A considerable rise or fall in the level of the sea along a particular coast may result from strong winds and sharp change in barometric pressure. In cases where the water level is raised, higher waves can form with greater dept,h and the combination can be destructive to low regions, particularly at high stages of tide. Extreme low levels can result in depths which are considerably less than those shown on nautical charts. This type of wave occurs especially in coastal regions bordering on shallow waters which are subject to tropical storms.

(278) **Seiche** is a stationary vertical wave oscillation with a period varying from a few minutes to an hour or more but somewhat less than the tidal periods. It is usually attributed to external forces such as strong winds, changes in barometric pressure, swells or tsunamis disturbing the equilibrium of the water surface. Seiche is found both in enclosed bodies of water and superimposed upon the tides of the open ocean. When the external forces cause a short-period horizontal oscillation on the water, it is called **surge**.

(279) The combined effect of seiche and surge sometimes makes it difficult to maintain a ship in its position alongside a pier even though the water may appear to be completely undisturbed, and heavy mooring lines have been parted repeatedly under such conditions. Pilots advise taut lines to reduce the effect of the surge.

(280)

Immersion Hypothermia

(281) Immersion hypothermia is the loss of heat when a body is immersed in water. With few exceptions, humans die if their core temperature of approximately 99.7° F drops below 78.6° F. Cardiac arrest is the most common direct cause of death. During prolonged immersion, the main threat to life is cold or cold and drowning combined.

(282)

SURVIVAL TIME VERSUS WATER TEMPERATURE

Water Temperature (°F)	Exhaustion or Unconsciousness	Expected Time of Survival
32	15 minutes	15 to 45 minutes
32 to 41	15-30 minutes	30 to 90 minutes
41 to 50	30-60 minutes	1 to 3 hours
50 to 59	1-2 hours	1 to 6 hours
59 to 68	2-7 hours	2 to 40 hours
68 to 77	3-12 hours	3 hours to indefinite
77 and above	indefinite	indefinite

(283) The length of time that a human survives in water depends on the water temperature and to a lesser extent on the person’s behavior and body type. The table shows approximate human survival time in the sea. Body type can cause deviations, as small people become hypothermic more rapidly than large people. The cooling rate can be slowed by the person’s behavior and insulated gear. The Heat Escape Lessening Posture (HELP) was developed for those in the water alone and the huddle for small groups. Both require a PFD (personal flotation device), or life preserver. HELP involves holding the arms close to the body, keeping the thighs together, and raising the knees to protect the groin area. In the huddle, people face each other and keep their bodies as close together as possible. These positions improve survival time to approximately two times that of a swimmer and one and a half times that of a person in the passive position.

(284) Near-drowning victims in cold water (less than 70° F) are revivable for much longer periods than usual. Keys to a successful revival are immediate cardiopulmonary resuscitation (CPR) and administration of pure oxygen. Total re-warming is not necessary at first. The whole revival process may take hours and require medical help.

(285)

Wind Chill and Frostbite

(286) When the body is warmer than its surroundings, it begins to lose heat. The rate of loss depends on barriers such as clothing and insulation, the speed of air movement and air temperature. Heat loss increases dramatically in moving air that is colder than skin temperature (91.4° F). Even a light wind increases heat loss, and a strong

wind can lower the body temperature if the rate of loss is greater than the body's heat replacement rate.

(287) When skin temperature drops below 50° F, there is a marked constriction of blood vessels, leading to vascular stagnation, oxygen want and cellular damage. The first indication that something is wrong is a painful tingling. Swelling of varying extent follows, provided freezing has not occurred. Excruciating pain may be felt if the skin temperature is lowered rapidly, but freezing of localized portions of the skin may be painless when the rate of change is slow. Possible effects of cold include cold allergy (welts), chilblains, which appear as reddened, warm, itching, swollen patches on the fingers and toes, and trench foot and immersion foot, which present essentially the same picture. Both result from exposure to cold and lack of circulation. Wetness can add to the problem as water and wind soften the tissues and accelerate heat loss.

(288) Frostbite usually begins when the skin temperature falls within the range of 14° to 4° F. Ice crystals form in the tissues and small blood vessels. The rate of heat loss determines the rate of freezing, which is accelerated by wind, wetness, extreme cold and poor blood circulation. Parts of the body susceptible to freezing are those with surfaces large in relation to their volume, such as toes, fingers, ears, nose, chin and cheeks.

(289) Injuries from the cold may, to a large extent, be prevented by maintaining natural warmth through the use of proper footgear and adequate, dry clothing, by avoiding cramped positions and constricting clothing and by active exercise of the hands, legs and feet.

(290)

MARINE POLLUTION

(291)

The Federal Water Pollution Control Act (Clean Water Act)

(292) The Federal Water Pollution Control Act (FWPCA) or Clean Water Act (CWA) was passed to restore and maintain the chemical, physical and biological integrity of the waters within the United States.

(293)

No-Discharge Zones

(294) Section 312 of the FWPCA gives the Environmental Protection Agency (EPA) and States the authority to designate certain areas as No-Discharge Zones (NDZ) for vessel sewage. Freshwater lakes, freshwater reservoirs or other freshwater impoundments whose entrances and exits prohibit traffic by regulated vessels (vessels with installed toilets) are, by regulation, NDZs. Rivers that do not support interstate navigation vessel traffic are also NDZs by regulation. Water bodies that can be designated as NDZs by States and EPA include the Great Lakes and their connecting waterways, freshwater lakes and impoundments accessible through locks and other flowing waters that support interstate navigation by vessels subject to regulation.

(295) Inside NDZ waters, discharge of any sewage, whether treated or untreated, is completely prohibited.

(296) Discharge of sewage in waters not designated as NDZs is regulated by the Marine Sanitation Device Standard (see **40 CFR 140** in chapter 2.)

(297) Additional information concerning the regulations may be obtained from *water.epa.gov*.

(298)

Oil Spill Reporting

(299) Reporting requirements for any oil discharge, noxious liquid substance or harmful substance occurring in waters under U.S. jurisdiction are found in **33 CFR 153**, subpart B (not in this Coast Pilot.) Any person in charge of a vessel or an onshore/offshore facility must, as soon as they have knowledge of any discharge of oil or a hazardous substance, immediately notify the National Response Center (NRC) at 800-424-8802 or NRC@uscg.mil.

(300)

Ocean Dumping

(301) The Marine Protection Research and Sanctuaries Act of 1972, as amended (33 USC 1401 et seq.), regulates the dumping of all material, except fish waste, into ocean waters. Radiological, chemical and biological warfare agents and other high level radioactive wastes are expressly banned from ocean disposal. The USACE issues permits for the disposal of dredged spoils; the EPA is authorized to issue permits for all other dumping activities. Surveillance and enforcement to prevent unlawful transportation of material for dumping or unlawful dumping under the Act has been assigned to the U.S. Coast Guard. The Act provides civil penalties of up to $50,000 and criminal penalties of up to $50,000 and/or one year imprisonment.

(302)

SELECT NAVIGATION RULES

(303)

Improper use of searchlights

(304) No person shall flash or cause to be flashed the rays of a searchlight or other blinding light onto the bridge or into the pilothouse of any vessel underway. The International Code Signal "PG2" may be made by a vessel inconvenienced by the glare of a searchlight in order to apprise the offending vessel of the fact.

(305)

Use of Radar

(306) Navigation Rules, International-Inland, Rule 7, states, in part, that every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist. Proper use shall be made of radar equipment if fitted and operational, including long-range scanning to obtain early warning of risk of collision and radar plotting or equivalent systematic observation of detected objects.

(306) <Deleted Paragraph>

(307) This rule places an additional responsibility on vessels that are equipped and manned to use radar to do so while underway during periods of reduced visibility without in any way relieving commanding officers of the responsibility of carrying out normal precautionary measures.

(308) Navigation Rules, International-Inland, Rules 6, 7, 8, and 19 apply to the use of radar.

(309)

Danger signal

(310) Navigation Rules, International-Inland, Rule 34(d), states that when vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by a light signal of at least five short and rapid flashes.

(311)

Narrow channels

(312) Navigation Rules, International-Inland, Rule 9(b) states that a vessel of less than 20 meters in length or a sailing vessel shall not impede the passage of a vessel that can safely navigate only within a narrow channel or fairway.

(313)

REGULATED WATERS

(314)

Traffic Separation Schemes (Traffic Lanes)

(315) To increase the safety of navigation, particularly in converging areas of high traffic density, routes incorporating traffic separation have been adopted by the IMO in certain areas of the world. In the interest of safe navigation, it is recommended that through traffic use these schemes, as far as circumstances permit, by day and by night and in all weather conditions. When approved or established, traffic separation scheme details are announced in Notice to Mariners and later depicted on appropriate charts and included in the U.S. Coast Pilot. See **33 CFR 167**, chapter 2, for regulations.

(316) The IMO is recognized as the only international body responsible for establishing and recommending measures on an international level concerning ships' routing. In deciding whether or not to adopt or amend a traffic separation scheme, IMO will consider whether the scheme complies with the design criteria for traffic separation schemes and with the established methods of routing. IMO also considers whether the aids to navigation proposed will enable mariners to determine their position with sufficient accuracy to navigate the scheme in accordance with Rule 10 of the International Regulations for Preventing Collisions at Sea (72 COLREGS).

(317) The IMO approved routing measures which affect shipping in or near U.S. waters are:

(318)

IMO-Approved Traffic Separation Routes
Portland, Maine (approaches to)
Boston, Massachusetts (approaches to)
Narragansett Bay, Rhode Island (approaches to)
Buzzards Bay, Massachusetts (approaches to)
New York, New York
Delaware Bay
Chesapeake Bay (approaches to)
Cape Fear River (approaches to)
Galveston Bay (approaches to)
Off San Francisco, California
Los Angeles/Long Beach, California (approaches to)
Strait of Juan de Fuca (approaches to and in)
Puget Sound (approaches to and in)
Haro Strait, Boundary Pass and the Strait of Georgia
Prince William Sound, Alaska

(318.001)

MARITIME ZONES AND BOUNDARIES

(318.002) The maritime zones recognized under international law include internal waters, the territorial sea, the contiguous zone, the exclusive economic zone (EEZ), the continental shelf, the high seas, and the Area (see Figure 1). The breadth of the territorial sea, contiguous zone, and EEZ (and in some cases the continental shelf) is measured from the baseline determined in accordance with customary international law as reflected in the 1982 **Law of the Sea Convention**.

(318.003) The limits of these zones are officially depicted on NOAA nautical charts. The limits shown on the most recent chart edition takes precedence. The boundaries of maritime zones between coastal States are established through international agreements entered into by those nations. For the official description of the U.S. maritime boundaries with other nations, contact the U.S. Department of State. For more information on NOAA's U.S. Maritime Limits & Boundaries visit: *https://www.noaa.gov/maritime-zones-and-boundaries*

(319)

Baseline

(320) Generally speaking, the normal baseline is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State. (LOSC art. 5). Special rules for determining the baseline apply in a variety of circumstances, such as with bays, ports, mouths of rivers, deeply indented coastlines, fringing reefs, and roadsteads. (LOSC arts. 6-15). Consistent with these rules, the U.S. baselines are the mean of the lower low tides as depicted on the largest-scale NOAA nautical charts. The U.S. normal baselines are ambulatory and subject to changes as the coastline accretes and erodes. NOAA's nautical charts depict the baselines from which

the seaward limits of the U.S. territorial sea, contiguous zone, and exclusive economic zone are measured as well as the seaward boundary of the Three Nautical Mile Line and the Natural Resources Boundary, as described below.

(322)

Internal Waters

(323) Internal waters are the waters on the landward side of the baselines from which the breadth of the territorial sea is measured. (LOSC art. 8). The United States has full sovereignty over its internal waters as if they were part of its land territory and may exclude foreign flag vessels from its internal waters subject to the right of entry of vessels in distress. The right of innocent passage does not apply in internal waters. Ships and aircraft may not enter or overfly internal waters without permission of the coastal State. Examples of internal waters include rivers, harbors, lagoons, some bays and canals, and lakes, including the Great Lakes.

(324)

Territorial Sea

(325) Each coastal State may claim a territorial sea that extends seaward up to 12 nautical miles (nm) from its baselines. (LOSC arts. 3, 4). The coastal State exercises sovereignty over its territorial sea, the airspace above it, and the seabed and subsoil beneath it. (LOSC art. 2). Foreign flagged ships enjoy the right of innocent passage while transiting the territorial sea subject to laws and regulations adopted by the coastal State that are in conformity with the Law of the Sea Convention (LOSC arts. 17-26) and other rules of international law relating to such passage.

(325.001) In 1988, the United States claimed a 12 nm territorial sea. The extension of the territorial sea of the United States includes the belt of seas around the Commonwealth of Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Commonwealth of the Northern Mariana Islands and any other territory or possession over which the United States exercises sovereignty. (Presidential Proclamation No. 5928 of December 27, 1988, 54 Fed. Reg. 777 (Dec. 27, 1988)). The territorial sea of the United States extends seaward to 12 nm from the baselines, which is determined in accordance with the Law of the Sea Convention except as otherwise established in a maritime boundary treaty of the United States. Vessels of all States navigating through the territorial sea enjoy the right of innocent passage. (LOSC art. 17). However, as a coastal State, the United States may adopt certain laws and regulations relating to innocent passage so long as they are in conformity with the provisions of LOSC and other rules of international law. (LOSC art. 21(1)).

(326)

Contiguous Zone

(327) Each coastal State may claim a contiguous zone adjacent to and beyond its territorial sea that extends seaward up to 24 nm from its baselines. (LOSC art. 33(1) & (2)). In its contiguous zone, a coastal State may exercise the control necessary to prevent the infringement of its customs, fiscal, immigration, or sanitary laws and regulations within its territory or territorial sea, and punish infringement of those laws and regulations committed within its territory or territorial sea. (LOSC art. 33(1)(a) & (b)). In addition, in order to control traffic in archeological and historical objects, a coastal State may presume that the removal of archeological and historical objects (e.g., underwater cultural heritage) found at sea within its contiguous zone without its approval would result in an infringement of its laws and regulations. (LOSC art. 303).

(321)

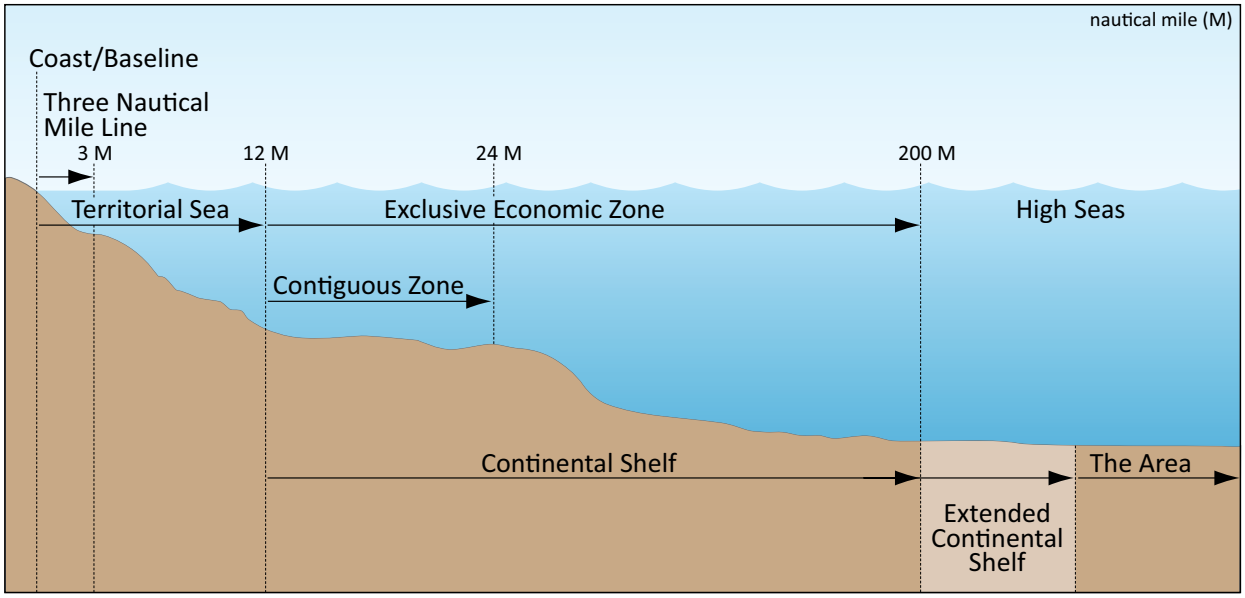


Figure 1: Offshore extent of maritime zones beyond internal waters
https://www.noaa.gov/maritime-zones-and-boundaries

(327.001) The contiguous zone of the United States includes the waters off of all U.S. coastal states, the Commonwealth of Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Commonwealth of the Northern Mariana Islands and any other territory or possession over which the United States exercises sovereignty. In 1999, the United States claimed a contiguous zone extending from 12 to 24 nm offshore. (Presidential Proclamation No. 7219 of August 2, 1999, Contiguous Zone of the United States, 64 Fed. Reg. 48,701 (Aug. 8, 1999)).

(328)

Exclusive Economic Zone

(329) Each coastal State may claim an exclusive economic zone (EEZ) beyond and adjacent to its territorial sea that extends seaward up to 200 nm from its baselines (or out to a maritime boundary with another coastal State). (LOSC art. 55). Within its EEZ, a coastal State has: (a) sovereign rights for the purpose of exploring, exploiting, conserving, and managing natural resources, whether living or nonliving, of the seabed and subsoil and the superjacent waters and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents, and winds; (b) jurisdiction as provided for in the relevant provisions of the LOSC with regard to the establishment and use of artificial islands, installations, and structures, marine scientific research, and the protection and preservation of the marine environment; and (c) other rights and duties provided for in the LOSC. (LOSC art. 56).

(330) The United States claimed a 200 nm EEZ in 1983. The U.S. EEZ extends no more than 200 nm from the territorial sea baselines and is adjacent to the 12 nm territorial sea of the United States, including the Commonwealth of Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Commonwealth of the Northern Mariana Islands and any other territory or possession over which the United States exercises sovereignty. (Presidential Proclamation No. 5030 of March 10, 1983; Exclusive Economic Zone and Maritime Boundaries; Notice of Limits; 60 Fed. Reg. 43,825 (Aug. 23, 1995)). As such, the exclusive economic zone overlaps the 12 nm-24 nm contiguous zone. In December 2023, the U.S. Department of State released the geographic coordinates defining the outer limits of the U.S. extended continental shelf. (U.S. Dep't of State, Announcement of U.S. Extended Continental Shelf Outer Limits (Dec. 19, 2023); see also Continental Shelf and Maritime Boundaries; Notice of Limits; 88 Fed. Reg. 88,470 (Dec. 21, 2023)). In addition, the U.S. Department of State also updated information pertaining to the geographic coordinates defining the outer limits of the U.S. EEZ. (Exclusive Economic Zone and Maritime Boundaries; Notice of Limits; 88 Fed. Reg. 88,477 (Dec. 21, 2023)).

(331) Note: Under certain U.S. fisheries laws, such as the Magnuson-Stevens Fishery Conservation and Management Act, the term EEZ is defined as having an inner boundary that is coterminous with the seaward (or outer) boundary of each of the individual coastal states of the U.S. See 16 U.S.C. § 1802(11). Under the Submerged Lands Act, the seaward boundary of each of the individual coastal states is generally three nautical (or geographic) miles from the coast line. The seaward boundaries of Florida (Gulf of America coast only), Texas, and Puerto Rico extend nine nautical miles from the coast line. In the Great Lakes, each U.S. state's seaward boundary may extend to the international maritime boundary with Canada. See 43 U.S.C. § 1312. Under the Submerged Lands Act, a coastal state's seaward boundary may be fixed by Supreme Court decree. (See below for further information on the Three Nautical Mile Line and the Natural Resources Boundary).

(331.001)

Continental Shelf

(331.002) The continental shelf of a coastal State is comprised of the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nm from its baselines where the outer edge of the continental margin does not extend up to that distance. (LOSC art. 76(1)). The extent of the continental shelf can also be limited by a maritime boundary with another coastal State. (LOSC art. 76(10)).

(331.003) Where the outer edge of a coastal State's continental margin extends beyond 200 nm from its baselines, the outer limits of its continental shelf are determined in accordance with Article 76 paragraphs 2-7 of the **Law of the Sea Convention.** (LOSC art. 76 (2-7)). The portion of a coastal State's continental shelf that lies beyond the 200 nm limit is often called the extended continental shelf (ECS).

(331.004) A coastal State exercises sovereign rights and exclusive jurisdiction over its continental shelf for the purpose of exploring it and exploiting its natural resources, as well as for other purposes specified in the Law of the Sea Convention. The natural resources of the continental shelf consist of the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or subsoil. (LOSC art. 77).

(331.005) In 1945, the United States proclaimed jurisdiction and control over its continental shelf (Presidential Proclamation No. 2667 of Sept. 28, 1945; 10 Fed. Reg. 12,303 (Oct. 2, 1945)). Consistent with international law, the United States exercises its continental shelf rights out to a distance of at least 200 nautical miles from the baselines through several domestic laws. The U.S. Extended Continental Shelf Project, led by the U.S. Department of State, NOAA, and the U.S. Geological Survey, determines the outer limits of the U.S. continental

shelf beyond 200 nautical miles (i.e., extended continental shelf). In December 2023, the U.S. Department of State released the geographic coordinates defining the outer limits of the U.S. extended continental shelf. (U.S. Dep't of State, Announcement of U.S.Extended Continental Shelf Outer Limits (Dec. 19, 2023); see also Continental Shelf and Maritime Boundaries; Notice of Limits; 88 Fed. Reg. 88,470 (Dec. 21, 2023)).

(331.006)

High Seas

(331.007) The high seas comprise all parts of the sea that are not included in the exclusive economic zone, the territorial sea or the internal waters of a State, or in the archipelagic waters of an archipelagic State. (LOSC art. 86).

(331.008)

Area

(331.009) The Area is comprised of the seabed and ocean floor and subsoil thereof beyond the limits of national jurisdiction. (LOSC art. 1(1)). It does not include superjacent waters (i.e., the water column) or the air space above those waters. (LOSC arts. 1(1), 135). No State may claim or exercise sovereignty or sovereign rights over any part of the Area or its resources. (LOSC art. 137(1)). The term "resources" means all solid, liquid or gaseous mineral resources in situ in the Area at or beneath the seabed, including polymetallic nodules. (LOSC art. 133(a)).

(331.010)

Straits Used for International Navigation

(331.011) "Straits used for international navigation" are those that are used or are capable of use for international navigation between one area of the high seas or exclusive economic zone ("EEZ") and another area of the high seas or EEZ. (LOSC art. 37). Part III of the Law of the Sea Convention (LOSC arts. 34-45) describes the regime of transit passage through such straits and the rights, jurisdiction, and duties of the States bordering such straits. Transit passage means the exercise in accordance with Part III of the Law of the Sea Convention of the freedom of navigation and overflight solely for the purpose of continuous and expeditious transit of the strait. (LOSC arts. 37, 38). The right of transit passage applies throughout straits used or capable of use for international navigation, including to all normally used approaches to and from such straits. Ships and aircraft in transit passage must comply with the duties outlined in LOSC article 39, which include proceeding without delay and refraining from any activities other than those incident to their normal modes of continuous and expeditious transit. Ships in transit passage may not carry out any research or survey activities without the prior authorization of the States bordering the strait. (LOSC art. 40). States bordering straits used for international navigation may designate sea lanes and prescribe traffic separation schemes for navigation in accordance with Part III where necessary to promote safe passage of ships. (LOSC art. 41). They may also adopt laws and regulations relating to transit passage in respect of certain activities, such as fishing. (LOSC art. 42). States bordering straits used for international navigation may not hamper transit passage. (LOSC art. 44). The transit passage regime does not otherwise affect the legal status of the waters forming an international strait or the exercise of sovereignty or jurisdiction by the bordering States over the waters, air space, seabed, and subsoil of the strait. (LOSC art. 34).

(332)

Three Nautical Mile Line

(333) The Three Nautical Mile Line, as measured from the territorial sea baselines and previously identified as the outer limit of the U.S. territorial sea, is retained on NOAA charts because it continues to be used in certain federal laws.

(334) Note: Since the "coast line," a term used in the Submerged Lands Act (43 USC Section 1301 et seq.), and the baselines are determined using the same criteria under international law, the Three Nautical Mile Line is generally the same as the seaward boundaries of individual U.S. coastal states under the Submerged Lands Act. There are exceptions; therefore, the Three Nautical Mile Line does not necessarily depict the seaward boundaries of all U.S. coastal states in all circumstances under the Submerged Lands Act.

(335)

Natural Resources Boundary

(336) The nine (9) nm Natural Resources Boundary is the seaward boundary of the submerged lands of Puerto Rico, Texas and the Gulf coast of Florida. It coincides with the inner limit of the U.S. outer continental shelf under the Outer Continental Shelf Lands Act (43 U.S.C. Section 1331 et seq.).

(336.001)

SUPPLEMENTAL INFORMATION

(337)

Notification of Arrival and Vessel Response Plans

(338) A **Notification of Arrival (NOA)** must be submitted by all U.S. and foreign vessels bound for or departing from ports or places in the United States. (See **33 CFR 160 – Subpart C**, chapter 2). Additionally, tank vessels and non-tank vessels are required to submit an oil spill response plan. (See **33 CFR 155**– Subparts D and J, not contained in this Coast Pilot.)

(339)

Marine Protected Area (MPA)

(340) Marine Protected Areas (MPAs) are particular places in ocean, coastal and estuarine ecosystems where vital natural and cultural resources are given greater protection than in surrounding waters. MPAs have been established in the U.S. for more than a century. Currently, there are over 1,700 MPAs in U.S. marine waters and the Great Lakes, with levels of protection ranging from a few "no-take" areas that prohibit all extractive uses to the more common multiple use areas that allow vessel access,

anchoring, fishing and non-consumptive activities. MPAs are managed by dozens of Federal, state, tribal and local authorities. For detailed information on MPA locations, types, interactive map, purposes and legal restrictions, visit *marineprotectedareas.noaa.gov.*

(341)

Archaeological Resource Preservation

(342) Under Federal and state laws it is illegal to destroy, deface, collect, transport, sell or trade archaeological, cultural, submerged and historic resources without authorization. Applicable laws include, but are not limited to, the Historic Sites Act, the Archaeological Resource Protection Act, the National Historic Preservation Act the Abandoned Shipwreck Act, and the Sunken Military Craft Act. These laws protect archaeological resources on lands administered by the National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management, and National Marine Sanctuaries as well as state, private and Native lands.

(343)

DEPARTMENT OF AGRICULTURE

(344)

Animal and Plant Health Inspection Service

(345) The Animal and Plant Health Inspection Service is responsible for protecting the Nation's animal population, food and fiber crops and forests from invasion by foreign pests. They administer agricultural quarantine and restrictive orders issued under authority provided in various acts of Congress. The regulations prohibit or restrict the importation or interstate movement of live animals, meats, animal products, plants, plant products, soil, injurious insects, and associated items that may introduce or spread plant pests and animal diseases which may be new to or not widely distributed within the United States or its territories. Inspectors examine imports at ports of entry as well as the vessel, its stores and crew or passenger baggage.

(346) The Service also provides an inspection and certification service for exporters to assist them in meeting the quarantine requirements of foreign countries. (See **Appendix A** for a list of ports where agricultural inspectors are located and inspections conducted.)

(347)

DEPARTMENT OF COMMERCE

(348)

National Oceanic and Atmospheric Administration (NOAA)

(349) The National Oceanic and Atmospheric Administration (NOAA) conducts research and gathers data about the global oceans, atmosphere, space and sun, and applies this knowledge to improve our understanding and stewardship of the environment.

(350) NOAA provides services to the nation and the public through five major organizations: the National Ocean Service; the National Weather Service; the National Marine Fisheries Service; the National Environmental Satellite, Data and Information Service (NESDIS); and NOAA Research; and numerous special program units. In addition, NOAA research and operational activities are supported by the Nation's seventh uniformed service, the NOAA Corps, a commissioned officer corps of men and women who operate NOAA ships and aircraft and serve in scientific and administrative positions.

(351)

National Ocean Service (NOS)

(352) The National Ocean Service's primary concern is the health and safety of our Nation's coastal and oceanic environment. Within NOS, the **Office of Coast Survey** is responsible for producing and maintaining the suite of over 1000 nautical charts and the Coast Pilots that cover the coastal waters of the U.S. and its territories. Nautical charts are published primarily for the use of the mariner but serve the public interest in many other ways. Cartographers in Coast Survey receive and compile information from a variety of government and non-governmental sources for portrayal on nautical charts and the Coast Pilots. In addition, Coast Survey hydrographers, as well as private contractors, conduct new surveys that are used to update these products. The principal facilities of Coast Survey are located at NOAA headquarters in Silver Spring, MD; Norfolk, VA (Marine Operations Center Atlantic); and Seattle, WA (Western Regional Center).

(353) The **Center for Operational Oceanographic Products and Services (CO-OPS)** collects and distributes observations and predictions of water levels and currents to ensure safe, efficient and environmentally sound maritime commerce. Users can find a variety of information, including observed water level and currents data, tide and current predictions, sea level trends and coastal inundation information. TIdes and Currents information is available at *tidesandcurrents.noaa.gov.*

(354) **PORTS® (Physical Oceanographic Real-Time System)** is a decision support tool that improves the safety and efficiency of maritime commerce and coastal resource management. Data from PORTS® supports navigation safety, improves the efficiency of U.S. ports and harbors, and ensures the protection of coastal marine resources. PORTS® collects and disseminates observations of water levels, currents, salinity, bridge air gap and meteorological parameters (e.g., winds, atmospheric pressure, air and water temperatures) that mariners need to navigate safely and allows seaport and terminal facilities to make good decisions. PORTS® data and information is provided via the internet at *tidesandcurrents.noaa.gov/ports_info.html* and, in some areas, via telephone voice response.

(355)

NOAA Tide Predictions and Tidal Current Predictions

(356) NOAA discontinued the annual printed Tide Tables and Tidal Current Tables in 2020, and has transitioned to

providing this information digitally online. The online prediction service equals or exceeds the accuracy of the historically printed publications. Tide and tidal current predictions needed for navigation can be generated in real-time for any time period required by the mariner, for as short as one day, or as long as an entire year. All predictions for U.S. waters are available at *tidesandcurrents.noaa.gov*.

(357) U.S. Coast Guard regulations do not consider access to NOAA's online prediction service "while navigating" as meeting carriage requirements. In order to use predictions from these services, the predictions must be generated in advance and either be stored on the user's device as an electronic file (PDF, screen image, data table, etc.), or as a printed page.

(358) **NOAA Tide Predictions** - *tidesandcurrents.noaa.gov/tide_predictions.html* - allows the generation of predicted tides for more than 3000 locations along the U.S. coastline. Tide predictions may be generated as times and heights of high and low tides for all locations, or as interval predictions (hourly, 15-minute, 6-minute, etc.) for many locations. Tide predictions may be generated for past, present, or future dates; with lengths of 1 day to 1 month, or the full calendar year. The Users Guide - *tidesandcurrents.noaa.gov/PageHelp.html* - describes the displays, formats, additional capabilities, and uses of this online service.

(359) **Caution** –When using Tide Predictions, slack water should not be confused with high or low water. For ocean stations there is often little difference between the time of high or low water and the start of flood/ebb currents; but for places in narrow channels, landlocked harbors or on tidal rivers, the time of slack current may differ by several hours from the time of high or low water. The relationship of the times of high or low water to the flood and ebb of the current depends upon a number of factors unique to each location; no simple general rule can be given which applies to every location. For navigation or other activities which depend on slack water, tidal current predictions should be used to provide times of slack water.

(360) **NOAA Tidal Current Predictions** –*https://tidesandcurrents.noaa.gov/* - allows the generation of predicted currents for more than 2500 locations along the U.S. coastline. Tidal current predictions may be generated as times and speeds of flood/ebb currents and times of slack water for all locations; or as interval predictions of speed (hourly, 30-minute, 6-minute) for many locations. Tidal current predictions may be generated for past, present or future dates; with length of 1 day to 2 weeks, or the full calendar year. The Users Guide - *https://tidesandcurrents.noaa.gov/PageHelp.html* - describes the displays, formats, additional capabilities, and uses of this online service.

(361)

National Weather Service (NWS)

(362)

National Data Buoy Center Meteorological Buoys

(363) The National Data Buoy Center (NDBC) deploys moored meteorological buoys that provide weather data directly to the mariner as well as to marine forecasters.

(364) These buoys have a watch circle radius (WCR) of 2,000 to 4,000 yards from assigned position (AP). In addition, any mooring in waters deeper than 1,000 feet will have a floating "loop" or catenary that may be as little as 500 feet below the surface. This catenary could be anywhere within the buoy's WCR. Any underwater activity within this radius may contact the mooring, causing a failure.

(365) To avoid cutting or damaging a mooring, mariners are urged to exercise extreme caution when navigating in the vicinity of meteorological buoys and to remain well clear of the watch circle. If a mooring is accidentally contacted or cut, please notify NDBC at 228-688-2835 or 228-688-2436.

(366) For further information relating to these buoys visit *ndbc.noaa.gov*.

(367)

Marine Weather Forecasts

(368) The NWS provides marine weather forecasts and warnings for the U.S. coastal waters, the Great Lakes, offshore waters and high seas areas. Scheduled marine forecasts are issued four times daily from **National Weather Service Offices** with local areas of responsibility around the United States, Guam, American Samoa and Puerto Rico. (See Appendix A for NWS Offices located in the area covered by this Coast Pilot.)

(369) Typically, marine forecasts contain information on wind speed and direction, wave heights, visibility, weather and a general synopsis of weather patterns affecting the region. The forecasts are supplemented with special marine warnings and statements, radar summaries, marine observations, small-craft advisories, gale warnings, storm warnings and various categories of tropical cyclone warnings, e.g., tropical depression, tropical storm and hurricane warnings. Specialized products such as coastal flood, seiche, and tsunami warnings, heavy surf advisories, low water statements, ice forecasts and outlooks and lake shore warnings and statements are issued as necessary. For further information, visit: *https://www.weather.gov/marine/* .

(370) The principal means of disseminating marine weather services and products in coastal areas is **NOAA Weather Radio**. This network of more than 900 transmitters, covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands and the U.S. Pacific Territories, is operated by the NWS and provides continuous broadcasts of weather information for the general public. These broadcasts repeat recorded messages every 4 to 6 minutes. Messages are updated periodically, usually every 2-3 hours and amended as

required to include the latest information. When severe weather threatens, routine transmissions are interrupted and the broadcast is devoted to emergency warnings. (See Appendix A for NOAA Weather Radio Stations covered by this Coast Pilot.)

(371) In coastal areas, the programming is tailored to the needs of the marine community. Each coastal marine forecast covers a specific area. For example, "Cape Henlopen to Virginia Beach, out 20 miles." The broadcast range is about 40 miles from the transmitting antenna site, depending on terrain and quality of the receiver used. When transmitting antennas are on high ground, the range is somewhat greater, reaching 60 miles or more. Some receivers are equipped with a warning alert device that can be turned on by means of a tone signal controlled by the NWS office concerned. This signal is transmitted for 13 seconds preceding an announcement of a severe weather warning.

(372) Marine weather warnings are displayed to small-craft operators and others within sight of the shore by the flags, pennants and lights of the **Coastal Warning Display** program. These displays are meant to warn the public of approaching storm conditions and visually communicate that citizens should take personal responsibility for individual safety in the face of an approaching storm. Anyone observing the signals displayed by the program is urged to tune to the NWS radio broadcasts for the latest information. (See **National Weather Service Coastal Warning Displays** illustration for additional information.)

(374) NWS marine weather products are also disseminated to marine users through the broadcast facilities of the Coast Guard, Navy and commercial marine radio stations. Details on these broadcasts including times, frequencies and broadcast content are listed on the NWS internet site, **Marine Product Dissemination Information**, *https://www.weather.gov/marine/nws_dissemination* .

(375) Ships of all nations share equally in the effort to report weather observations. These reports enable meteorologists to create a detailed picture of wind, wave and weather patterns over the open waters that no other data source can provide and upon which marine forecasts are based. The effectiveness and reliability of these forecasts and warnings plus other services to the marine community are strongly linked to the observations received from mariners. There is an especially urgent need for ship observations in the coastal waters, and the NWS asks that these be made and transmitted whenever possible. Many storms originate and intensify in coastal areas. There may be a great difference in both wind direction and speed between the open sea, the offshore waters and on the coast itself.

(376) Information on how ships, commercial fishermen, offshore industries and others in the coastal zone may participate in the marine observation program is available from **National Weather Service Port Meteorological Officers (PMOs)**. PMOs are located in major U.S. port cities where they visit ships in port to assist masters and mates with the weather observation program, provide instruction on the interpretation of weather charts, calibrate barometers and other meteorological instruments and discuss marine weather communications and marine weather requirements affecting the ships' operations. (For further information on the Voluntary Observing Ship Program and PMOs, go to *vos.noaa.gov*.)

(377)

Space Weather Prediction Center (SWPC)

(378) The Space Weather Prediction Center provides real-time monitoring and forecasting of solar and geophysical events that impact satellites, power grids, communications, navigation and many other technological systems. (See Space Weather Prediction Center in Appendix A.)

(379)

National Environmental Satellite, Data, and Information Service (NESDIS)

(380) Among its functions, NESDIS archives, processes and disseminates the non-real-time meteorological and oceanographic data collected by government agencies and private institutions. Marine weather observations are collected from ships at sea on a voluntary basis. About one million observations are received annually at NESDIS's National Climatic Center. They come from vessels representing every maritime nation. These observations, along with land data, are returned to the mariners in the form of climatological summaries and atlases for coastal and ocean areas. They are available in such NOAA publications as the **U.S. Coast Pilot, Mariners Weather Log** and **Local Climatological Data, Annual Summary**. They also appear in the National Geospatial-Intelligence Agency's **Pilot Chart Atlases** and **Sailing Directions Planning Guides**.

(381)

DEPARTMENT OF DEFENSE

(382)

National Geospatial-Intelligence Agency (NGA)

(383) The National Geospatial-Intelligence Agency provides hydrographic, navigational, topographic, and geodetic data, charts, maps and related products and services to the Armed Forces, other Federal Agencies, the Merchant Marine and mariners in general. Publications include Sailing Directions, List of Lights, Distances Between Ports, Radio Navigational Aids, International Code of Signals, American Practical Navigator (Bowditch) and Notice to Mariners. (See NGA Procurement Information in Appendix A.)

(384)

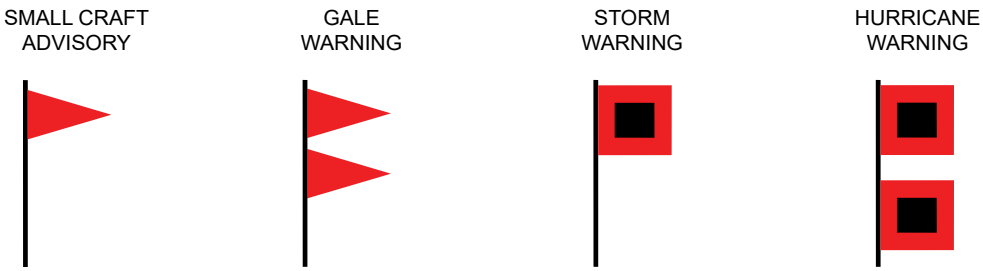
Army Corps of Engineers

(385) The U.S. Army Corps of Engineers has charge of the improvement of the rivers and harbors of the United States and of miscellaneous other civil works, which include the administration of certain Federal laws enacted for the protection and preservation of navigable waters of the United States; the establishment of regulations

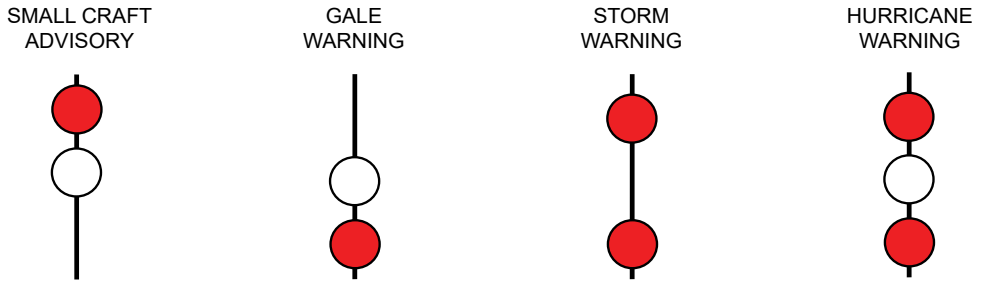
(373)

NATIONAL WEATHER SERVICE COASTAL WARNING DISPLAYS

DAYTIME SIGNALS



NIGHT (LIGHT) SIGNALS



SMALL CRAFT ADVISORY: An advisory issued by coastal and Great Lakes Weather Forecast Offices (WFO) for areas included in the Coastal Waters Forecast or Nearshore Marine Forecast (NSH) products. Thresholds governing the issuance of small craft advisories are specific to geographic areas. A Small Craft Advisory may also be issued when sea or lake ice exists that could be hazardous to small boats. There is no precise definition of a small craft. Any vessel that may be adversely affected by Small Craft Advisory criteria should be considered a small craft. Other considerations include the experience of the vessel operator, and the type, overall size, and sea worthiness of the vessel. There is no legal definition of “small craft”. The Small Craft Advisory is an advisory in Coastal Waters and Nearshore forecasts for sustained winds, frequent gusts, or sea/wave conditions, exceeding defined thresholds specific to geographic areas. A Small Craft Advisory may also be issued when sea or lake ice exists that could be hazardous to small boats.

Eastern (ME to SC, Lake Erie, Lake Ontario) – Sustained winds or frequent gusts ranging between 25 and 33 knots (except 20 to 25 knots, lower threshold area dependent, to 33 knots for harbors, bays, etc.) and/or seas or waves 5 to 7 feet and greater, area dependent.

Central (MN to OH) – Sustained winds or frequent gusts (on the Great Lakes) between 22 and 33 knots inclusive, and/or seas or waves greater than 4 feet.

Southern (GA to TX and Caribbean) – Sustained winds of 20 to 33 knots, and/or forecast seas 7 feet or greater that are expected for more than 2 hours.

Western (WA..CA) - Sustained winds of 21 to 33 knots, potentially in combination with wave heights exceeding 10 feet (or wave steepness values exceeding local thresholds).

Alaska (AK) – Sustained winds or frequent gusts of 23 to 33 knots. A small craft advisory for rough seas may be issued for sea/wave conditions deemed locally significant, based on user needs, and should be no lower than 8 feet.

Hawaii (HI), Samoa – Sustained winds 25 knots or greater and seas 10 feet or greater.

Guam and the Northern Mariana Islands – Sustained winds 22 to 33 knots and/or combined seas of 10 feet or more. “Frequent gusts”are typically long duration conditions (greater than 2 hours).

For a list of NWS Weather Offices by Region, refer to the following website: http://www.nws.noaa.gov/organization.php

GALE WARNING: To indicate winds within the range 34 to 47 knots are forecast for the area.

STORM WARNING: To indicate winds 48 knots and above, no matter how high the speed, are forecast for the area. However, if the winds are associated with a tropical cyclone (hurricane), the STORM WARNING indicates that winds within the range 48-63 knots are forecast.

HURRICANE WARNING: Issued only in connection with a tropical cyclone (hurricane) to indicate that winds 64 knots and above are forecast for the area.

NOTE: A “HURRICANE WATCH” is an announcement issued by the National Weather Service via press and television broadcasts whenever a tropical storm or hurricane becomes a threat to a coastal area. The “Hurricane Watch” announcement is not a warning, rather it indicates that the hurricane is near enough that everyone in the area covered by the “Watch” should listen to their radios for subsequent advisories and be ready to take precautionary action in case hurricane warnings are issued.

NOTE: A SPECIAL MARINE WARNING is issued whenever a severe local storm or strong wind of brief duration is imminent and is not covered by existing warnings or advisories. No visual displays will be used in connection with the Special Marine Warning Bulletin; boaters will be able to receive thesespecial warnings by keeping tuned to a NOAA Weather Radio station or to Coast Guard and commercial radio stations that transmit marine weather information.

for the use, administration, and navigation of navigable waters; the establishment of harbor lines; the removal of sunken vessels obstructing or endangering navigation; and the granting of permits for structures or operations in navigable waters and for discharges and deposits of dredged and fill materials in these waters.

(386) **Restricted areas** in most places are defined and regulations governing them are established by the USACE. The regulations are enforced by the authority designated in the regulations, and the areas are shown on the large-scale charts of the National Ocean Service. Copies of the regulations may be obtained at the District offices of the USACE. The regulations also are included in the appropriate Coast Pilot.

(387) Information concerning the various ports, improvements, channel depths, navigable waters and the condition of the Intracoastal Waterways in the areas under their jurisdiction may be obtained direct from the District Engineer Offices. (See Appendix A for addresses.)

(388) The USACE has general supervision of location, construction and manner of maintenance of all **fishtraps,** weirs, pounds or other fishing structures in the navigable waters of the United States. Where state and/or local controls are sufficient to regulate these structures, including that they do not interfere with navigation, the USACE leaves such regulation to the state or local authority. (See **33 CFR 330** (not carried in this Pilot) for applicable Federal regulations.) Construction permits issued by the Engineers specify the lights and signals required for the safety of navigation.

(389) **Fish havens**, artificial reefs constructed to attract fish, can be established in U.S. coastal waters only as authorized by a USACE permit; the permit specifies the location, extent and depth over these mounds of rubble.

(390)

Naval Observatory

(391) The United States Naval Observatory (USNO) provides a wide range of astronomical data and products and serves as the official source of time for the U.S. Department of Defense and a standard of time for the entire United States. The USNO provides earth orientation products such as the latest 24-hour and 48-hour sets of GPS satellite orbits, the latest determinations and predictions for polar motion and information for GPS users. The USNO also maintains a reference for precise time (USNO Master Clock) and monitors the GPS constellation. For extensive information on the USNO products available, visit: *https://www.cnmoc.usff.navy.mil/usno/* or contact by telephone at 202-762-1467.

(392)

DEPARTMENT OF HEALTH AND HUMAN SERVICES

(393)

Food and Drug Administration (FDA)

(394) Under the provisions of the Control of Communicable Diseases Regulations (**21 CFR 1240**) and Interstate Conveyance Sanitation Regulations (**21 CFR 1250**), vessel companies operating in interstate traffic must obtain potable water for drinking and culinary purposes only at watering points found acceptable to the FDA. Water supplies used in watering point operations must also be inspected to determine compliance with applicable Interstate Quarantine Regulations (**42 CFR 72**). These regulations are based on authority contained in the Public Health Service Act (PL 78–410). Penalties for violation of any regulation prescribed under authority of the Act are provided for under Section 368 (42 USC 271) of the Act.

(395)

Public Health Service

(396) The Public Health Service administers foreign quarantine procedures at U.S. ports of entry.

(397) All vessels arriving in the United States are subject to public health inspection. Vessels subject to routine boarding for quarantine inspection are only those which have had on board during the 15 days preceding the date of expected arrival or during the period since departure (whichever period of time is shorter) the occurrence of any death or ill person among passengers or crew (including those who have disembarked or have been removed). The master of a vessel must report such occurrences immediately by radio to the quarantine station at or nearest the port at which the vessel will arrive.

(398) In addition, the master of a vessel carrying 13 or more passengers must report by radio 24 hours before arrival the number of cases (including zero) of diarrhea in passengers and crew recorded in the ship's medical log during the current cruise. All cases that occur after the 24 hour report must also be reported not less than 4 hours before arrival.

(399) *Ill person* means a person who:

(400) 1. Has a temperature of 100°F (or 38°C) or greater, accompanied by a rash, glandular swelling or jaundice, or which has persisted for more than 48 hours; or

(401) 2. Has diarrhea, defined as the occurrence in a 24 hour period of three or more loose stools or of a greater than normal (for the person) amount of loose stools.

(402) Vessels arriving at ports under control of the United States are subject to sanitary inspection to determine whether measures should be applied to prevent the introduction, transmission or spread of communicable disease.

(403) Specific public health laws, regulations, policies and procedures may be obtained by contacting U.S. Quarantine Stations, U.S. Consulates or the Chief Program Operations, Division of Quarantine, Centers for Disease Control, Atlanta, GA 30333. (See Appendix A for addresses of U.S. Public Health Service Quarantine Stations.)

(404)

DEPARTMENT OF HOMELAND SECURITY

(405)

Citizenship and Immigration Services

(406) The **U.S. Citizenship and Immigration Service** (USCIS) is the federal agency that oversees lawful immigration to the United States. the Service enhances security and improves the efficiency of national immigration services by exclusively focusing on the administration of benefit applications. No person may enter the United States until they have been inspected by an immigration officer. A list of the offices covered by this Coast Pilot is given in Appendix A.

(407)

U.S. Coast Guard

(408) The U.S. Coast Guard has among its duties the enforcement of the laws of the United States on the high seas and in coastal and inland waters of the U.S. and its possessions; enforcement of navigation and neutrality laws and regulations; establishment and enforcement of navigational regulations upon the Inland Waters of the United States, including the establishment of a demarcation line separating the high seas from waters upon which U.S. navigational rules apply; administration of the Oil Pollution Act of 1990, as amended; establishment and administration of vessel anchorages; approval of bridge locations and clearances over navigable waters; administration of the alteration of obstructive bridges; regulation of drawbridge operations; inspection of vessels of the Merchant Marine; admeasurement of vessels; documentation of vessels; preparation and publication of merchant vessel registers; registration of stack insignia; port security; issuance of Merchant Marine licenses and documents; search and rescue operations; investigation of marine casualties and accidents and suspension and revocation proceedings; destruction of derelicts; operation of aids to navigation; maintenance and issuance of Light Lists and Local Notices to Mariners; and operation of ice-breaking facilities.

(409) Issuance of certificates of registry (more commonly referred to as Certificates of Documentation) with endorsements indicating eligibility of vessels that measure at least 5 net tons to engage in various trades for commercial vessels and certain recreational vessels that are numbered either by the Coast Guard or by a state having an approved numbering system (the latter is the most common) and the administration of the various laws pertaining thereto are functions of the Coast Guard and specifically the National Vessel Documentation Center. Owners of vessels may obtain the necessary information from the National Vessel Documentation Center either by mail to the National Vessel Documentation Center, 792 T.J. Jackson Drive, Falling Waters, WV 25419-9502; via toll free number: 800-799-8362; or via online at: *dco.uscg.mil/Our-Organization/Deputy-for-Operations-Policy-and-Capabilities-DCO-D/National-Vessel-Documentation-Center/.*

(410)

U.S. Customs and Border Protection

(411) The U.S. Customs and Border Protection administers certain laws relating to:

(412) – entry and clearance of vessels and permits for certain vessel movements between points in the United States

(413) – prohibitions against coastwise transportation of passengers and merchandise

(414) – salvage

(415) – dredging and towing by foreign vessels

(416) – certain activities of vessels in the fishing trade

(417) – regular and special tonnage taxes on vessels

(418) – landing and delivery of foreign merchandise (including unlading, appraisement, lighterage, drayage, warehousing and shipment in bond)

(419) – collection of customs duties, including duty on imported pleasure boats and yachts and 50% duty on foreign repairs to American vessels engaged in trade

(420) – customs treatment of sea and ship's stores while in port and the baggage of crewmen and passengers

(421) – illegally imported merchandise

(422) – remission of penalties or forfeiture if customs or navigation laws have been violated.

(423) Customs and Border Protection also cooperates with many other Federal agencies in the enforcement of statutes for which they are responsible for. Customs districts and ports of entry are listed in Appendix A.

(424) The Customs and Border Protection office may issue, without charge, a **cruising license**, normally valid for one year, to a yacht of a foreign country that has a reciprocal agreement with the United States. A foreign yacht holding a cruising license is exempt from having to undergo formal entry and clearance procedures such as filing manifests and obtaining permits to proceed as well as from payment of tonnage tax and entry and clearance fees at all but the first port of entry. These vessels must not engage in trade, violate the laws of the United States or visit a vessel not yet inspected by a Customs Agent and does, within 24 hours of arrival at each port or place in the United States, report the fact of arrival to the nearest customhouse. Countries that have reciprocal agreements granting these privileges to U.S. yachts are:

(425)

Countries with U.S. Cruising License Reciprocity	
Argentina	Honduras
Australia	Ireland
Austria	Italy
Bahama Islands	Jamaica
Belguim	Liberia
Bermuda	Marshall Islands
Canada	Netherlands
Denmark	New Zealand
Finland	Norway

France	Sweden
Germany	Switzerland
Great Britain	Turkey
Greece	

(426) Further information concerning cruising licenses may be obtained from the headquarters port for the customs district in which the license is desired or at *cbp.gov*. U.S. yacht owners planning cruises to foreign ports may contact the nearest customs district headquarters as to customs requirements.

(427)

ENVIRONMENTAL PROTECTION AGENCY (EPA)

(428) The U.S. EPA provides coordinated governmental action to ensure the protection of the environment by abating and controlling pollution on a systematic basis. The ocean dumping permit program of the EPA provides that except when authorized by permit, the dumping of any material into the ocean is prohibited by the "Marine Protection, Research, and Sanctuaries Act of 1972, Public Law 92–532," as amended (33 USC 1401 et seq.).

(429) Permits for the **dumping of dredged material** into waters of the United States, including the territorial sea, and into ocean waters are issued by the U.S. Army Corps of Engineers. Permits for the dumping of fill material into waters of the United States, including the territorial sea, are also issued by the U.S. Army Corps of Engineers. Permits for the dumping of other material in the territorial sea and ocean waters are issued by the EPA.

(430) U.S. Army Corps of Engineers regulations relating to the above are contained in **33 CFR 323** and **324**; EPA regulations are in **40 CFR 220** though **228**. (See Disposal Sites, this chapter.)

(431) Persons or organizations who want to file for an application for an ocean dumping permit should write the EPA Regional Office for the region in which the port of departure is located. (See Appendix A for addresses of regional offices and States in the EPA coastal regions.)

(432) The letter should contain the name and address of the applicant, name and address of person or firm, the name and usual location of the conveyance to be used in the transportation and dumping of the material involved, a physical description where appropriate, and the quantity to be dumped and proposed dumping site.

(433) Everyone who writes EPA will be sent information about a final application for a permit as soon as possible. This final application is expected to include questions about the description of the process or activity giving rise to the production of the dumping material, information on past activities of applicant or others with respect to the disposal of the type of material involved, and a description about available alternative means of disposal of the material with explanations about why an alternative is thought by the applicant to be inappropriate.

(434)

FEDERAL COMMUNICATIONS COMMISSION (FCC)

(435) The Federal Communications Commission controls non-government radio communications in the United States, Guam, Puerto Rico and the Virgin Islands. Commission inspectors have authority to board ships to determine whether their radio stations comply with international treaties, Federal laws and Commission regulations. The commission has field offices in the principal U.S. ports. (See Appendix A for addresses.) Information concerning ship radio regulations and service documents may be obtained from the Federal Communications Commission, Washington, DC 20554, or from any of the field offices.

(436)

Measurements and Equivalencies

nautical mile — 1,852 meters / 6,076.12 feet
statute mile — 5,280 feet / 1,609.3 meters / 1.6093 kilometers
cable — 0.1 nautical mile (CN) / 720 feet (US)
fathom — 6 feet / 1.8288 meters
foot — 0.3048 meter
inch — 2.54 centimeters
pound (avoirdupois) — 453.59 gram
kilometer — 1,000 meters
knot — 1.6877 feet per second / 0.5144 meters per second
miles/hour (statute) — 1.466 feet per second / 0.44704 meters per second
acre — 43,560 square feet / 4,046.82 square meters
gram — 0.0022046 pound (avoirdupois) / 0.035274 ounce
meter — 39.37 inches / 3.281 feet / 1.0936 yards
short ton — 2,000 pounds
long ton — 2,240 pounds
metric ton — 2,204.6 pounds
kilogram — 2.2 pounds
liter — 1.0567 quarts
barrel (petroleum) — 42 gallons (US)

Conversion Factors

Linear

inches — muiltiply by 25.40 — millimeters
inches — multiply by 2.540 — centimeters
centimeters — multiply by 0.032808 — feet
feet — multiply by 30.48 — centimeters
feet — multiply by 0.3048 — meters
feet — multiply by 0.00016458 — nautical miles
yard — multiply by 0.9144 — meters
meters — multiply by 3.2808 — feet
meters — multiply by 1.094 — yards
meters — multiply by 0.0005399 — nautical miles
statute miles — multiply by 0.86897 — nautical miles
statute miles — multiply by 1.6093 — kilometers
statute miles — multiply by 1,609.3 — meters
nautical miles — multiply by 1.151 — statute miles

Area

acres — multiply by 4,046.9 — square meters
acres — multiply by 43,560 — square feet
acres — multiply by 0.404685 — hectare
hectare — multiply by 2.471054 — acres
hectare — multiply by 10,000 — square meters
hectare — multiply by 1.07639×10^5 — square feet
square feet — multiply by 0.0929 — square meters
square feet — multiply by 0.00002296 — acres
square meters — multiply by 10.764 — square feet
square meters — multiply by 0.0002471 — acres

Depths

fathoms — multiply by 1.8288 — meters
feet — multiply by 0.3048 — meters
meters — multiply by 0.54681 — fathoms
meters — multiply by 3.2808 — feet

Rate

feet/second — multiply by 0.5925 — knots
feet/second — multiply by 0.6818 — miles/hour
feet/second — multiply by 30.48 — centimeters/second
statute miles/hour — multiply by 0.8689 — knots
statute miles/hour — multiply by 1.467 — feet/second
statute miles/hour — multiply by 0.447 — meters/second
knots — multiply by 1.151 — miles/hour
knots — multiply by 0.5144 — meters/second
knots — multiply by 1.6878 — feet/second
centimeters/second — multiply by 0.01944 — miles/hour
centimeters/second — multiply by 0.02237 — miles/hour
centimeters/second — multiply by 0.032808 — feet/second

Mass

grams — multiply by 0.035275 — ounces
grams — multiply by 0.002205 — pounds
ounces — multiply by 28.349 — grams
pounds — multiply by 0.45359 — kilograms
short tons — multiply by 2,000 — pounds
short tons — multiply by 0.89286 — long tons
short tons — multiply by 0.9072 — metric tons
long tons — multiply by 2,240 — pounds
long tons — multiply by 1.12 — short tons
long tons — multiply by 1.016 — metric tons
metric tons — multiply by 1,000 — kilograms
metric tons — multiply by 0.9842 — long tons
metric tons — multiply by 1.1023 — short tons
metric tons — multiply by 2,204.6 — pounds

Volume

barrels (petroleum) — multiply by 42 — gallons (US)
barrels (petroleum) — multiply by 158.99 — liters
barrels (liquid, US) — multiply by 31.5 — gallons (US)
barrels (liquid, US) — multiply by 26.229 — gallons (British)
barrels (liquid, US) — multiply by 119.24 — liters
gallons (US) — multiply by 0.02381 — barrels (petroleum)
gallons (US) — multiply by 3.7854 — liters
liters — multiply by 0.26417 — gallons (US)

(437)

Tips for BOATING CLEAN AND GREEN

Practice preventative engine maintenance
Keep your engine well tuned and practice preventative engine maintenance by regularly checking hoses and lines for chaffing or deterioration.

Use oil absorbants
Place and secure an oil absorbent under the engine and in the bilge. Avoid using bilge cleaners as they may get discharged overboard. It is illegal to use soap to disperse fuel and oil spills. Report oil and chemical spills by calling the EPA National Response Center at 800–424–8802.

Spill-proof your fueling practices
Use a spill proof system like a portable oil change pump to change your oil. Use oil absorbents when fueling and changing the oil. Do not top-off your fuel tank; leave it 10 percent empty to allow fuel to expand as it warms.

Reduce greywater discharges
Use shore-side facilities for laundry, showers, and dish washing whenever possible. Use only phosphate-free and biodegradable soaps. The legality of discharging greywater into a marina or within three miles off the coast varies from place to place. In some areas, there are local ordinances and codes that allow harbor patrol to issue citations for any discharge that is not "clean and clear." To avoid any potential fines and to protect the aquatic environment, do not discharge greywater overboard.

Dispose of hazardous waste properly
Recycle and properly dispose of absorbents, used oil, oil filters, paint, and batteries at your local household hazardous waste collection site.

Minimize boat cleaning and maintenance conducted on the water
- Use more elbow grease.
- Use products that are water-based, biodegradable, phosphate-free, and labeled as less toxic.
- Check out less toxic cleaning alternatives for all types of uses. Visit http://dbw.parks.ca.gov/?page_id=29184.
- Buy only the amount that you need and use products for spot cleaning only.
- Properly handle and store materials. Dispose of hazardous waste legally and safely.

Reduce discharges from bottom paints
- Consider alternative, non-biocide hull coatings.
- Clean the bottom with a soft, non-abrasive sponge.
- Use hull cleaning companies who use green management practices such as monitoring their divers and using non-abrasive scrubbing agents that do not release paint into the water. For more information visit https://www3.epa.gov/npdes/pubs/vgp_hull_husbandry.pdf.

Stow it, don't throw it
Keep your trash on-board. Recycle plastic, glass, metal, and paper. Avoid excess packaging.

Dump at the pump!
It is illegal to discharge untreated sewage anywhere within the three-mile territorial limit including lakes, rivers, reservoirs or coastal waters. Never discharge treated sewage into "restricted waters" such as a marina, swimming/wading areas, a sanctuary, poorly flushed areas, lakes, reservoirs, or freshwater impoundments and federal No Discharge Zones. Use sewage pumpouts, dump stations, or mobile-pumpout services.

Prevent the spread of aquatic invasive species
Before leaving any body of water, examine your boat and equipment and remove any visible mud, plants, or animals before transporting equipment. Never release plants or animals into a body of water or storm drains unless they came out of that body of water. Use cleaning procedures for anything that contacts the water. Visit https://invasivemusselcollaborative.net/wp-content/uploads/2018/11/NOAA-Decon-Watercraft.pdf.

For hazardous waste recycling or collection centers call 800–CLEAN–UP or visit http://www.earth911.com

Navigation Regulations

(1) This chapter contains extracts from **Code of Federal Regulations** (CFR) that are of importance to mariners in the area covered by this Coast Pilot. Sections of little value to the mariner are sometimes omitted. Omitted sections are signified by the following [...]

(2) Extracts from the following titles are contained in this chapter.

(3)

Title 15: Commerce and Foreign Trade
- Part 922—National Marine Sanctuary Program Regulations

Title 33: Navigation and Navigable Waters
- Part 26—Vessel Bridge-to-Bridge Radiotelephone Regulations
- Part 80—COLREGS Demarcation Lines
- Part 81—72 COLREGS: Implementing Rules
- Part 82—72 COLREGS: Interpretive Rules
- Part 88—Annex V: Pilot Rules
- Part 89—Inland Navigation Rules: Implementing Rules
- Part 90—Inland Rules: Interpretive Rules
- Part 110—Anchorage Regulations
- Part 117—Drawbridge Operation Regulations
- Part 147—Safety Zones
- Part 157—Rules for the Protection of the Marine Environment Relating to Tank Vessels Carrying Oil in Bulk
- Part 160—Ports and Waterways Safety-General
- Part 161—Vessel Traffic Management
- Part 162—Inland Waterways Navigation Regulations
- Part 164—Navigation Safety Regulations (in part)
- Part 165—Regulated Navigation Areas and Limited Access Areas
- Part 166—Shipping Safety Fairways
- Part 167—Offshore Traffic Separation Schemes
- Part 168—Escort Requirements for Certain Tankers
- Part 169—Ship Reporting Systems
- Part 207—Navigation Regulations
- Part 334—Danger Zones and Restricted Area Regulations

Title 40: Protection of Environment
- Part 140—Marine Sanitation Device Standard

Title 46: Shipping
- Part 15—Manning Requirements

Title 50: Wildlife and Fisheries
- Part 224—Endangered Marine and Anadromous Species
- Part 226—Designated Critical Habitat
- Part 404—Papahanaumokuakea Marine National Monument

(4) These regulations can only be amended by the enforcing agency or other authority cited in the regulations. Accordingly, requests for changes to these regulations should be directed to the appropriate agency for action. In those regulations where the enforcing agency is not cited or is unclear, recommendations for changes should be directed to the following Federal agencies for action:

(5) **National Oceanic and Atmospheric Administration**—15 CFR 922; 50 CFR 224 and 404

(6) **United States Coast Guard**—33 CFR 26, 80, 81, 82, 88, 89, 90, 110, 117, 147, 157, 160, 161, 162, 164, 165, 166, 167, 168 and 169; 46 CFR 15

(7) **United States Army Corps of Engineers**—33 CFR 207 and 334

(8) **Environmental Protection Agency**—40 CFR 140

(9)

TITLE 15–COMMERCE AND FOREIGN TRADE

(10)

Part 922–National Marine Sanctuary Program Regulations

(11)

Subpart A–Regulations of General Applicability

(12)

§922.1 Purposes and applicability of regulations.

(13) (a) The purposes of this part are:

(14) (1) To implement title III of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended (16 U.S.C. 1431 et seq., also known as the National Marine Sanctuaries Act (NMSA or Act)), the Florida Keys National Marine Sanctuary and Protection Act (FKNMSPA) (Pub. L. 101–605) and the Hawaiian Islands National Marine Sanctuary Act (sections 2301–2307 of Pub. L. 102–587); and

(15) (2) To implement the designations of the national marine sanctuaries, for which site specific regulations appear in subparts F through T of this part, by regulating activities affecting them, consistent with their respective terms of designation, in order to protect, restore, preserve, manage, and thereby ensure the health, integrity and continued availability of the conservation, recreational, ecological, historical, scientific, educational, cultural, archeological and aesthetic resources and qualities of these areas.

(16) (b) The regulations of this part are binding on any person subject to the jurisdiction of the United States. Designation of a national marine sanctuary beyond the U.S. territorial sea does not constitute any claim to territorial jurisdiction on the part of the United States. The regulations of this part shall be applied in accordance with generally recognized principles of international law, 1 and in accordance with treaties, conventions, and other agreements to which the United States is a party. No

regulation of this part shall apply to a person who is not a citizen, national, or resident alien of the United States, unless in accordance with:

(17) (1) Generally recognized principles of international law;

(18) (2) An agreement between the United States and the foreign state of which the person is a citizen; or

(19) (3) An agreement between the United States and the flag state of the foreign vessel, if the person is a crew member of the vessel.

(20) (c) Unless noted otherwise, the regulations in this subpart and subpart D of this part apply to all national marine sanctuaries immediately upon designation.

(21)

§922.2 Mission, goals, and special policies.

(22) (a) In accordance with the standards set forth in the Act, the mission of the Office of National Marine Sanctuaries (Office) is to identify, designate, protect, restore, and manage areas of the marine environment of special national, and in some cases international, significance due to their conservation, recreational, ecological, historical, scientific, educational, cultural, archeological, or aesthetic resources and qualities.

(23) (b) The goal of the Office is to carry out the mission of the Act in a manner consistent with the purposes and policies of the Act (16 U.S.C. 1431(b)); the Florida Keys National Marine Sanctuary and Protection Act (Pub. L. 101–605) which designated Florida Keys National Marine Sanctuary; the Hawaiian Islands National Marine Sanctuary and Protection Act (Pub. L. 102–587), which designated Hawaiian Islands Humpback Whale National Marine Sanctuary; the Oceans Act of 1992 (Pub. L. 102–587), which designated Stellwagen Bank National Marine Sanctuary; and the National Marine Sanctuaries Preservation Act of 1996 (Pub. L. 104–283), which added Stetson Bank to Flower Garden Banks National Marine Sanctuary.

(24) (c) Management efforts will be coordinated to the extent practicable with other countries managing marine protected areas;

(25) (d) Program regulations, policies, standards, guidelines, and procedures developed pursuant to the Act concerning the identification, evaluation, registration, and treatment of historical resources shall be consistent, to the extent practicable, with the declared national policy for the protection and preservation of these resources as stated in the National Historic Preservation Act of 1966, 54 U.S.C. 300101 et seq., the Archeological and Historical Preservation Act of 1974, 54 U.S.C. 312501 et seq., and the Archeological Resources Protection Act of 1979 (ARPA), 16 U.S.C. 470aa et seq. The same degree of regulatory protection and preservation planning policy extended to historical resources on land shall be extended, to the extent practicable, to historical resources in the marine environment within the boundaries of designated national marine sanctuaries. The management of historical resources under the authority of the Act shall be consistent, to the extent practicable, with the Federal archeological program by consulting the Uniform Regulations, ARPA (43 CFR part 7) and other relevant Federal regulations. The Secretary of the Interior's Standards and Guidelines for Archeology may also be consulted for guidance.

(26)

§922.3 Issuance of regulations for fishing.

(27) If a proposed Sanctuary includes waters within the exclusive economic zone, the Secretary shall notify the appropriate Regional Fishery Management Council(s). The appropriate Council(s) shall have one hundred and eighty (180) days from the date of such notification to make recommendations and, if appropriate, prepare draft fishing regulations for the area within the exclusive economic zone and submit them to the Secretary. In preparing its recommendations and draft regulations, the Council(s) shall use as guidance the national standards of section 301(a) of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1851) to the extent that they are consistent and compatible with the goals and objectives of the proposed Sanctuary designation. Any fishing activities not proposed for regulation under section 304(a)(5) of the NMSA may be listed in the draft Sanctuary designation document as being subject to regulation, without following the procedures specified in section 304(a)(5) of the NMSA. If the Secretary subsequently determines that regulation of fishing is necessary, then NOAA will follow the procedures specified in section 304(a)(5) of the NMSA.

(28)

§922.4 Boundaries.

(29) The boundaries for each of the fifteen National Marine Sanctuaries covered by this part are described in subparts F through T, respectively.

(30)

Subpart J–National Marine Sanctuary of American Samoa

(31)

§922.100 Scope of regulations.

(32) The provisions of this subpart J apply only to the waters of the United States and the Territory of American Samoa that are located within the boundary of the National Marine Sanctuary of American Samoa (Sanctuary). Neither the provisions of this subpart J nor any permit issued under its authority shall be construed to relieve a person from any other requirements imposed by statute or regulation of the Territory of American Samoa or of the United States. In addition, no statute or regulation of the Territory of American Samoa shall be construed to relieve a person from the restrictions, conditions, and requirements contained in this subpart J.

(33)

§922.101 Boundary.

(34) The Sanctuary is comprised of six distinct units, forming a network of marine protected areas around the islands of the Territory of American Samoa. Tables containing the exact coordinates of each point described below can be found in Appendix to Subpart J—National Marine Sanctuary of American Samoa Boundary Coordinates.The total areal estimate of the six units combined is 10,255 nmi2 (13,581 sq. mi.).

(35) (a) Fagatele Bay Unit. The Fagatele Bay unit is a coastal embayment formed by a collapsed volcanic crater on the island of Tutuila, Territory of American Samoa, and includes Fagatele Bay in its entirety. The landward boundary is defined by the mean high high water line of Fagatele Bay until the point at which it intersects the seaward boundary of the Sanctuary as defined by a straight line between Fagatele Point (- 14.36527, - 170.76932) and Steps Point (- 14.37291, - 170.76056) from the point at which it intersects the mean high high water line seaward.

(36) (b) *Fagalua/Fogama'a Unit*. The landward boundary of the Fagalua/Fogama'a Unit is defined by the mean higher high water line of Fagalua/Fogama'a until the point at which it intersects the seaward boundary of the Fagalua/Fogama'a Unit as defined by a straight line between Steps Point (–14.37307, –170.75852) and Sail Rock Point (–14.36534, –170.74119) from the point at which it intersects the mean higher high water line seaward.

(37) (c) *Aunu'u Unit*. The Aunu'u Unit is comprised of two adjacent zones.

(38) (1) *Zone A*. The Aunu'u Unit boundary for Zone A is defined by the coordinates provided in Table 1 and the following textual description. The Zone A boundary extends from Point 1, the northwest corner of the unit, southward to Point 2 along a straight line following the western boundary of the unit, which is aligned with Taugamalama Point on Tutuila. It then extends northeastward in a multi-part line along the deepest seaward edge of Nafanua Bank from Point 2 to Point 3 and then to Point 4, which lies on the southern boundary of Zone B. The boundary then follows a straight line westward towards Point 5 until it intersects the mean higher high water line at the southern tip of Ma'ama'a Cove. The landward boundary of Zone A is defined by the mean higher high water line from this intersection point at the southern tip of Ma'ama'a Cove to the intersection of the mean higher high water line and the straight line between Point 6 and Point 7 at Salevatia Point. From this intersection point at Salevatia Point, the boundary extends straight west to Point 7, which has the exact same coordinates as Point 1.

(39) (2) *Zone B*. The Aunu'u Unit boundary for Zone B is defined by the coordinates provided in Table 2 and the following textual description. The Zone B boundary extends from Point 1, the northeast corner of the unit, southward along a straight line following the eastern boundary of the unit to Point 2, which is on the southern boundary of the unit. The southern boundary then follows a line westward towards Point 3 until it intersects the mean higher high water line at the southern tip of Ma'ama'a Cove Point. The landward boundary of Zone B is defined by the mean higher high water line from this intersection point at the southern tip of Ma'ama'a Cove around the volcanic crater to the intersection of the mean higher high water line and the straight line between Point 4 and Point 5. From here, the boundary extends seaward straight north to Point 5. The northern border, the last straight line, is defined by connecting Point 5 and Point 6, along the northern boundary of the unit, which is aligned with Matuli Point on Tutuila. Point 6 has the exact same coordinates at Point 1.

(40) (d) *Swains Island Unit*. The Swains Island Unit boundary is defined by the coordinates in Table 3 and the following textual description. The seaward boundary of the Swains Island Unit approximates the three nautical mile territorial sea boundary from the mean higher high water line (shoreline) of the island. The seaward boundary begins south of the island at Point 1 and continues initially to the west in sequential order clockwise around the island to Point 33. The landward boundary of the Swains Island Unit is the mean higher high water line and begins on the northern shoreline of the island and follows the shoreline counterclockwise initially to the west until it intersects the line segment between Point 34 and 35. From this intersection the boundary continues offshore to the northwest to Point 35 and then to Point 36 and Point 37. From Point 37 the boundary continues eastnortheast towards Point 38 until it intersects the shoreline. From this intersection the boundary follows the shoreline southeast around the southernmost part of the island and then to the northeast until it intersects the line segment between Point 39 and Point 40. From this intersection the boundary continues offshore to the southeast to Point 40 and then to the northeast to Point 41. From Point 41 the boundary continues to the northwest towards Point 42 until it intersects the shoreline. From this intersection the boundary follows the shoreline initially to the northeast around the island counterclockwise and then to the northwest back to where it began on the northern shoreline.

(41) (e) *Muliāva Unit*. The Muliāva Unit boundary is defined by the coordinates provided in Table 4 and the following textual description. The landward boundary of the Muliāva Unit is the extreme low water line, which adjoins the boundary of the Rose Atoll National Wildlife Refuge. The Muliāva Unit seaward boundary extends from Point 1, the southwest corner of the unit, to Point 2 along a straight line northward following the western boundary of the unit. From Point 2, the line extends in a straight line westward to Point 3. It then extends along a straight line northward to Point 4. From Point 4, the line extends in a straight line eastward to Point 5. From Point 5, the line extends along a straight line northward to Point 6. It then extends along a straight line eastward from Point

6 to Point 7, which is on the eastern boundary of the unit. The boundary then follows a straight line southward until it intersects the line of the southern boundary of the unit at Point 8, the southeastern corner of the unit. The last straight line is defined by connecting Point 8 and Point 9, which has the exact same coordinates as Point 1, along the southern boundary of the unit.

(42) (f) *Ta'u Unit*. The Ta'u Unit boundary is defined by the coordinates provided in Table 5 and the following textual description. The Ta'u Unit boundary extends from Point 1, Vaita Point, along the mean higher high water line southward along the western coast to Point 2, Si'ufa'alele Point. From Point 2, the boundary extends offshore 0.25 miles to Point 3 to become conterminous with the offshore boundary of the National Park of American Samoa. From Point 3 the boundary continues to follow the coastline 0.25 miles offshore until it reaches Point 4, which is directly south of Si'u Point. From Point 4, the boundary extends due south to Point 5. From Point 5, the boundary extends due west to Point 6, forming the southern border of the unit. From Point 6, the boundary extends due north until it reaches Point 7, directly west and one mile offshore from Point 8, which is Point 1, also known as Vaita Point.

(43)

§922.102 Definitions.

(44) In addition to those definitions found at §922.11, the following definitions apply to this subpart:

(45) *Introduced species* means any species (including, but not limited to, any of its biological matter capable of propagation) that is nonnative to the ecosystem(s) protected by the Sanctuary; or any organism into which altered genetic matter, or genetic matter from another species, has been transferred in order that the host organism acquires the genetic traits of the transferred genes.

(46) *Live rock* means any Coral, basalt rock, or other natural structure with any living organisms growing in or on the Coral, basalt rock, or structure.

(47) *Stowed and not available for immediate use* means not readily accessible for immediate use, e.g., by being securely covered and lashed to a deck or bulkhead, tied down, unbaited, unloaded, or partially disassembled (such as spear shafts being kept separate from spear guns).

(48)

§922.103 Prohibited or otherwise regulated activities—Sanctuary-wide.

(49) (a) The following activities are prohibited and thus are unlawful for any person to conduct or to cause to be conducted within the Sanctuary:

(50) (1) Introducing or releasing introduced species from within or into the sanctuary.

(51) (2) Anchoring a vessel.

(52) (3) Deserting a vessel aground, adrift, or at anchor.

(53) (4) Leaving harmful matter on an abandoned or deserted vessel or structure.

(54) (5) Operating a vessel at a speed exceeding three knots when closer than 200 feet (60.96 meters) of another vessel displaying a dive flag.

(55) (6) Operating a vessel in a manner which causes the vessel to strike or otherwise cause damage to Sanctuary resources.

(56) (7) Diving, snorkeling, or conducting diving or snorkeling operations from a vessel not in compliance with applicable U.S. Coast Guard navigation rules governing the display of lights and signals, and not flying in a conspicuous manner the international code flag alpha "A" or the standard red-and-white U.S. "diver down" flag.

(57) (8) Discharging, or depositing from within or into the Sanctuary, any material or other matter, except clean vessel deck wash down, clean vessel engine cooling water, clean vessel generator cooling water, clean bilge water, anchor wash, or vessel engine or generator exhaust.

(58) (9) Discharging or depositing from beyond the boundary of the Sanctuary any material or other matter that subsequently enters the Sanctuary and injures a Sanctuary resource or quality, except those listed in paragraph (a)(8) of this section and §922.105(c).

(59) (10) Sand mining, dredging, filling, dynamiting, or otherwise disturbing or altering the seabed.

(60) (11) Removing, damaging, or tampering with any historical or cultural resource.

(61) (12) Taking any marine mammal, sea turtle, or seabird within or above the Sanctuary, except as authorized by the Marine Mammal Protection Act, as amended, (MMPA), 16 U.S.C. 1361 *et seq.,* Endangered Species Act, as amended, (ESA), 16 U.S.C. 1531 *et seq.,* Migratory Bird Treaty Act, as amended, (MBTA), 16 U.S.C. 703 *et seq.,* or any regulation, as amended, promulgated under the MMPA, ESA, or MBTA.

(62) (13) Using or discharging explosives or weapons of any description. Distress signaling devices, necessary and proper for safe vessel operation, and knives generally used by fishermen and swimmers shall not be considered weapons for purposes of this section.

(63) (14) Marking, defacing, or damaging in any way, or displacing or removing or tampering with any signs, notices, or placards, whether temporary or permanent, or with any monuments, stakes, posts, or other boundary markers related to the Sanctuary.

(64) (15) Abandoning a structure, material, or other matter on or in the submerged lands of the Sanctuary.

(65) (b) The prohibitions in paragraphs (a)(1) through (15) of this section, §922.104, and §922.105 do not apply to any activity necessary for national defense.

(66) (c) The prohibitions in paragraphs (a)(2) through (15) of this section, §922.104, and §922.105 do not apply to any activity necessary to respond to an emergency threatening life, property, or the environment.

(67) (d) The prohibitions in paragraphs (a)(2) through (15) of this section, §922.104, and §922.105 do not apply to any activity necessary for valid law enforcement purposes in the Sanctuary.

(68) (e) The prohibitions in paragraphs (a)(2) through (15) of this section, §§ 922.104, and §922.105 do not apply to any activity conducted under and in accordance with the scope, purpose, terms, and conditions of a National Marine Sanctuary permit issued pursuant to subpart D of this part and § 922.107.

(69)

§922.104 Prohibited or otherwise regulated activities—Sanctuary-Wide except in the Muliava Unit.

(70) (a) The following activities are prohibited and thus are unlawful for any person to conduct or to cause to be conducted within any unit of the Sanctuary except the Muliava Unit:

(71) (1) Gathering, taking, breaking, cutting, damaging, destroying, or possessing any giant clam [*Tridacna spp*.], live coral, bottom formation including live rock and crustose coralline algae.

(72) (2) Possessing or using poisons, electrical charges, explosives, or similar environmentally destructive methods of fishing or harvesting.

(73) (3) Possessing or using spearguns, including such devices known as Hawaiian slings, pole spears, arbalettes, pneumatic and spring-loaded spearguns, bows and arrows, bang sticks, or any similar taking device while utilizing SCUBA equipment.

(74) (4) Possessing or using a seine, trammel, drift gill net, or any type of fixed net.

(75) (5) Disturbing the benthic community by bottom trawling.

(76) (b) There shall be a rebuttable presumption that any items listed in paragraph (a) of this section found in the possession of a person within the Sanctuary have been used, collected, or removed within or from the Sanctuary.

(77)

§922.105 Prohibited or otherwise regulated activities—Unit-specific.

(78) In addition to the prohibitions set forth in §922.103 and §922.104, the following regulations apply to activities conducted within specified Sanctuary units described in the appendix to this subpart.

(79) (a) The following activities are prohibited in the Fagatele Bay Unit:

(80) (1) Harvesting, catching, removing, taking, injuring, destroying, collecting, moving, possessing or causing the loss of any Sanctuary resource, including but not limited to fishing, or attempting any of these activities.

(81) (2) Possessing fishing gear unless such gear is stowed and not available for immediate use.

(82) (b) The following activities are prohibited in the Aunu'u Unit:

(83) (1) In Zone A: Fishing from a vessel without providing notification to the Sanctuary Superintendent or his/her designee in the village of Aunu'u prior to each fishing trip.

(84) (2) In Zone B:

(85) (i) Fishing for bottom-dwelling species or otherwise harvesting, catching, removing, taking, injuring, destroying, collecting, moving, or causing the loss of any bottom-dwelling species, or attempting any of these activities. Surface fishing for pelagic species, including trolling, is allowed.

(86) (ii) Disturbing the benthic community.

(87) (iii) Possessing any Sanctuary resource, except legally harvested fish on board a vessel.

(88) (c) In the Muliava Unit:

(89) (1) The prohibitions in paragraphs (a)(2) through (7) and (a)(9) through (15) of §922.103 do not apply to scientific exploration or research activities conducted by or for the Department of Commerce or the Department of the Interior.

(90) (2) Notwithstanding the prohibition in §922.103(a)(8), the following vessels may discharge treated waste from a U.S. Coast Guard approved Type I, II, or III Marine Sanitation device 12 nautical miles seaward of the Rose Atoll National Wildlife Refuge:

(91) (i) Vessels engaged in scientific exploration or research activities conducted by or for the Department of Commerce or the Department of the Interior; or

(92) (ii) All other vessels engaged in scientific exploration or research activities, if authorized under a permit issued in consultation with the U.S. Fish and Wildlife Service and in accordance with §922.48 and §922.107.

(93)

§922.106 Management and enforcement.

(94) The National Oceanic and Atmospheric Administration (NOAA) has primary responsibility for the management of the Sanctuary pursuant to the Act. The American Samoa Department of Commerce (ASDOC) will assist NOAA in the administration of the Sanctuary, and act as the lead territorial agency, in conformance with the terms of designation, these regulations, and the terms and provisions of any grant or cooperative agreement.

(95)

§922.107 Permit procedures.

(96) (a) Any person in possession of a valid permit issued by the Director, in consultation with the ASDOC, in accordance with this section and subpart D of the part may conduct an activity otherwise prohibited by §§ 922.103, 922.104, and 922.105 in the Sanctuary.

(97) (b) Permit applications shall be addressed to the Director, Office of National Marine Sanctuaries; ATTN: Sanctuary Superintendent, American Samoa National Marine Sanctuary, P.O. Box 4318, Pago Pago, AS 96799.

(98)

Appendix to Subpart J of Part 922—American Samoa National Marine Sanctuary Boundary Coordinates

(99) [Coordinates listed in this Appendix are unprojected (Geographic) and based on the North American Datum of 1983.]

(100) (a) Fagatele Bay

(101) No coordinates are needed in addition to those described in §922.101(a).

(102) (b) Fagalua/Fogama'a

(103) No coordinates are needed in addition to those described in §922.101(b).

(104) (c) Aunu‘u (Zones A, B)

(105) The Aunu‘u Unit is comprised of two adjacent zones, described in §922.101(c), for which the point coordinates are provided in following tables 1 and 2.

(106)

Table 1 – Coordinates for the Aunu‘u Unit, Zone A

Point ID	Latitude	Longitude
1	14.286 S	170.577 W
2	14.304 S	170.577 W
3	14.302 S	170.566 W
4	14.286 S	170.533 W
5	14.286 S	170.546 W
6	14.286 S	170.562 W
7	14.286 S	170.577 W

(107)

Table 2 – Coordinates for the Aunu‘u Unit, Zone B

Point ID	Latitude	Longitude
1	14.270 S	170.496 W
2	14.286 S	170.496 W
3	14.286 S	170.546 W
4	14.280 S	170.550 W
5	14.270 S	170.550 W
6	14.270 S	170.496 W

(108) (d) Swains Island

(109) The Swains Island Unit boundary is defined by the coordinates provided in Table 3 and the textual description in §922.101(d).

(110)

Table 3 – Coordinates for the Swains Island Unit

Point ID	Latitude	Longitude
1	11.11457 S	171.06870 W
2	11.11565 S	171.07980 W
3	11.11422 S	171.09248 W
4	11.11005 S	171.10445 W
5	11.10388 S	171.11445 W
6	11.09533 S	171.12392 W
7	11.08375 S	171.13272 W
8	11.07268 S	171.13775 W
9	11.06112 S	171.14042 W
10	11.04880 S	171.14067 W
11	11.03618 S	171.13800 W
12	11.02673 S	171.13367 W
13	11.01853 S	171.12773 W
14	11.01010 S	171.11828 W
15	11.00402 S	171.10710 W
16	11.00083 S	171.09728 W
17	10.99817 S	171.08305 W
18	10.99783 S	171.06825 W
19	10.99983 S	171.05732 W
20	11.00373 S	171.04790 W
21	11.00955 S	171.03862 W
22	11.01752 S	171.02985 W
23	11.02703 S	171.02290 W
24	11.03763 S	171.01805 W
25	11.04812 S	171.01558 W
26	11.05860 S	171.01527 W
27	11.06860 S	171.01695 W
28	11.07957 S	171.02133 W
29	11.08850 S	171.02727 W
30	11.09637 S	171.03502 W
31	11.10637 S	171.04840 W
32	11.11122 S	171.05753 W
33	11.11457 S	171.06870 W
34	11.05188 S	171.08921 W
35	11.04856 S	171.09269 W
36	11.05487 S	171.09445 W
37	11.06024 S	171.09283 W
38	11.05848 S	171.08824 W
39	11.06369 S	171.07618 W
40	11.06741 S	171.07364 W
41	11.06217 S	171.06622 W
42	11.05836 S	171.06879 W

(111) (e) Muliāva

(112) The Muliāva Unit boundary is defined by the coordinates provided in Table 4 and the textual description in §922.101(e).

(113)

Table 4 – Coordinates for the Muliāva Unit

Point ID	Latitude	Longitude
1	15.387 S	169.012 W
2	14.271 S	169.012 W
3	14.271 S	169.121 W
4	14.150 S	169.121 W
5	14.150 S	169.012 W
6	13.698 S	169.012 W
7	13.698 S	167.283 W
8	15.387 S	167.283 W
9	15.387 S	169.012 W

(114) (f) Ta‘ū Unit

(115) The Ta‘ū Unit boundary is defined by the coordinates provided in Table 5 and the textual description in §922.101(f).

(116)

Table 5 – Coordinates for the Ta‘ū Unit

Point ID	Latitude	Longitude
1	14.24889 S	169.503056 W

Table 5 – Coordinates for the Ta'ū Unit		
Point ID	**Latitude**	**Longitude**
2	14.273056 S	169.488056 W
3	14.277222 S	169.488056 W
4	14.261111 S	169.429167 W
5	14.293889 S	169.429167 W
6	14.293889 S	169.519722 W
7	14.24889 S	169.519722 W
8	14.24889 S	169.503056 W

(117)

Subpart O–Olympic Coast National Marine Sanctuary

(118)

§922.150 Boundary.

(119) (a) The Olympic Coast National Marine Sanctuary (Sanctuary) consists of an area of approximately 2,408 square nautical miles (nmi2) (3,188 sq. mi.) of coastal and ocean waters, and the submerged lands thereunder, off the central and northern coast of the State of Washington.

(120) (b) The Sanctuary boundary extends from Koitlah Point due north to the United States/Canada international boundary. The Sanctuary boundary then follows the U.S./Canada international boundary seaward to the 100 fathom isobath. The seaward boundary of the Sanctuary approximates the 100 fathom isobath in a southerly direction from the U.S./Canada international boundary to a point due west of the mouth of the Copalis River cutting across the heads of Nitnat, Juan de Fuca and Quinault Canyons. The coastal boundary of the Sanctuary is the mean higher high water line when adjacent to Federally managed lands cutting across the mouths of all rivers and streams, except where adjacent to Indian reservations, State and county owned lands; in such case, the coastal boundary is the mean lower low water line. La Push harbor is excluded from the Sanctuary boundary shoreward of the International Collision at Sea regulation (Colreg.) demarcation lines. The boundary coordinates are listed in appendix A to this subpart.

(121)

§922.151 Definitions.

(122) In addition to those definitions found at §922.11, the following definitions apply to this subpart:

(123) *Clean* means not containing detectable levels of harmful matter.

(124) *Cruise ship* means a vessel with 250 or more passenger berths for hire.

(125) *Harmful matter* means any substance, or combination of substances, that because of its quantity, concentration, or physical, chemical, or infectious characteristics may pose a present or potential threat to Sanctuary resources or qualities, including but not limited to: Fishing nets, fishing line, hooks, fuel, oil, and those contaminants (regardless of quantity) listed pursuant to 42 U.S.C. 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act at **40 CFR 302.4**.

(126) *Indian reservation* means a tract of land set aside by the Federal Government for use by a federally recognized American Indian tribe and includes, but is not limited to, the Makah, Quileute, Hoh, and Quinault Reservations.

(127) *Lawful fishing* means fishing authorized by a tribal, State or Federal entity with jurisdiction over the activity.

(128) *Treaty* means a formal agreement between the United States Government and an Indian tribe.

(129)

§922.152 Prohibited or otherwise regulated activities.

(130) (a) Except as specified in paragraphs (b) through (g) of this section, the following activities are prohibited and thus are unlawful for any person to conduct or to cause to be conducted:

(131) (1) Exploring for, developing or producing oil, gas or minerals within the Sanctuary.

(132) (2)(i) Discharging or depositing, from within or into the Sanctuary, other than from a cruise ship, any material or other matter except:

(133) (A) Fish, fish parts, chumming materials or bait used in or resulting from lawful fishing operations in the Sanctuary;

(134) (B) Biodegradable effluent incidental to vessel use and generated by marine sanitation devices approved in accordance with section 312 of the Federal Water Pollution Control Act, as amended, (FWPCA), 33 U.S.C. 1322 *et seq*.;

(135) (C) Water generated by routine vessel operations (*e.g*., cooling water, deck wash down, and graywater as defined by section 312 of the FWPCA) excluding oily wastes from bilge pumping;

(136) (D) Engine exhaust; or

(137) (E) Dredge spoil in connection with beach nourishment projects related to the Quillayute River Navigation Project.

(138) (ii) Discharging or depositing, from beyond the boundary of the Sanctuary, any material or other matter, except those listed in paragraphs (a)(2)(i)(A) through (E) of this section, that subsequently enters the Sanctuary and injures a Sanctuary resource or quality.

(139) (3) Discharging or depositing, from within or into the Sanctuary, any materials or other matter from a cruise ship except clean vessel engine cooling water, clean vessel generator cooling water, clean bilge water, engine exhaust, or anchor wash.

(140) (4) Moving, removing or injuring, or attempting to move, remove or injure, a Sanctuary historical resource. This prohibition does not apply to moving, removing or injury resulting incidentally from lawful fishing operations.

(141) (5) Drilling into, dredging or otherwise altering the seabed of the Sanctuary; or constructing, placing or abandoning any structure, material or other matter on the

submerged lands of the Sanctuary, except as an incidental result of:

(142) (i) Anchoring vessels;

(143) (ii) Lawful fishing operations;

(144) (iii) Installation of navigation aids;

(145) (iv) Harbor maintenance in the areas necessarily associated with the Quillayute River Navigation Project, including dredging of entrance channels and repair, replacement or rehabilitation of breakwaters and jetties, and related beach nourishment;

(146) (v) Construction, repair, replacement or rehabilitation of boat launches, docks or piers, and associated breakwaters and jetties; or

(147) (vi) Beach nourishment projects related to harbor maintenance activities.

(148) (6) Taking any marine mammal, sea turtle or seabird in or above the Sanctuary, except as authorized by the Marine Mammal Protection Act, as amended, (MMPA), 16 U.S.C. 1361 *et seq.*, the Endangered Species Act, as amended, (ESA), 16 U.S.C. 1531 *et seq.*, and the Migratory Bird Treaty Act, as amended, (MBTA), 16 U.S.C. 703 *et seq.*, or pursuant to any Indian treaty with an Indian tribe to which the United States is a party, provided that the Indian treaty right is exercised in accordance with the MMPA, ESA, and MBTA, to the extent that they apply.

(149) (7) Disturbing marine mammals or seabirds by flying motorized aircraft at less than 2,000 feet over the waters within one nautical mile of the Flattery Rocks, Quillayute Needles, or Copalis National Wildlife Refuges or within one nautical mile seaward from the coastal boundary of the Sanctuary, except for activities related to tribal timber operations conducted on reservation lands, or to transport persons or supplies to or from reservation lands as authorized by a governing body of an Indian tribe. Failure to maintain a minimum altitude of 2,000 feet above ground level over any such waters is presumed to disturb marine mammals or seabirds.

(150) (8) Possessing within the Sanctuary (regardless of where taken, moved or removed from) any historical resource, or any marine mammal, sea turtle, or seabird taken in violation of the MMPA, ESA, or MBTA, to the extent that they apply.

(151) (9) Interfering with, obstructing, delaying or preventing an investigation, search, seizure or disposition of seized property in connection with enforcement of the Act or any regulation or permit issued under the Act.

(152) (b) The prohibitions in paragraph (a)(2) through (5), (7), and (8) of this section do not apply to activities necessary to respond to emergencies threatening life, property, or the environment.

(153) (c) The prohibitions in paragraphs (a)(2) through (5), (7), and (8) of this section do not apply to activities necessary for valid law enforcement purposes.

(154) (d)(1) All Department of Defense military activities shall be carried out in a manner that avoids to the maximum extent practicable any adverse impacts on Sanctuary resources and qualities.

(155) (i) Except as provided in paragraph (d)(2) of this section, the prohibitions in paragraphs (a)(2) through (8) of this section do not apply to the following military activities performed by the Department of Defense in W–237A, W–237B, and Military Operating Areas Olympic A and B in the Sanctuary:

(156) (A) Hull integrity tests and other deep water tests;

(157) (B) Live firing of guns, missiles, torpedoes, and chaff;

(158) (C) Activities associated with the Quinault Range including the in-water testing of non-explosive torpedoes; and

(159) (D) Anti-submarine warfare operations.

(160) (ii) New activities may be exempted from the prohibitions in paragraphs (a)(2) through (8) of this section by the Director after consultation between the Director and the Department of Defense. If it is determined that an activity may be carried out such activity shall be carried out in a manner that avoids to the maximum extent practicable any adverse impact on Sanctuary resources and qualities. Civil engineering and other civil works projects conducted by the U.S. Army Corps of Engineers are excluded from the scope of this paragraph (d).

(161) (2) The Department of Defense is prohibited from conducting bombing activities within the Sanctuary.

(162) (3) In the event of threatened or actual destruction of, loss of, or injury to a Sanctuary resource or quality resulting from an untoward incident, including but not limited to spills and groundings caused by the Department of Defense, the Department of Defense shall promptly coordinate with the Director for the purpose of taking appropriate actions to respond to and mitigate the harm and, if possible, restore or replace the Sanctuary resource or quality.

(163) (e) The prohibitions in paragraphs (a)(2) through (8) of this section do not apply to any activity specifically authorized by and conducted under and in accordance with the scope, purpose, terms and conditions of a National Marine Sanctuary permit or an ONMS authorization issued pursuant to subpart D of this part and § 922.153 or a special use permit issued pursuant to subpart D of this part.

(164) (f) Members of a federally recognized Indian tribe may exercise aboriginal and treaty-secured rights, subject to the requirements of other applicable law, without regard to the requirements of this part. The Director may consult with the governing body of a tribe regarding ways the tribe may exercise such rights consistent with the purposes of the Sanctuary.

(165) (g) The prohibitions in paragraphs (a)(2) through (8) of this section do not apply to any activity authorized by any lease, permit, license, or other authorization issued after July 22, 1994, and issued by any Federal, State or local authority of competent jurisdiction, provided that the applicant complies with § 922.49, the Director notifies the applicant and authorizing agency that he or she does not object to issuance of the authorization, and the applicant complies with any terms and conditions the

Director deems necessary to protect Sanctuary resources and qualities. Amendments, renewals and extensions of authorizations in existence on the effective date of designation constitute authorizations issued after the effective date.

(166) (h) Notwithstanding paragraphs (e) and (g) of this section, in no event may the Director issue a National Marine Sanctuary permit or ONMS authorization under subpart D of this part and § 922.153 or a special use permit under section 310 of the Act authorizing, or otherwise approve: The exploration for, development or production of oil, gas or minerals within the Sanctuary; the discharge of primary-treated sewage within the Sanctuary (except by certification, pursuant to § 922.10, of valid authorizations in existence on July 22, 1994 and issued by other authorities of competent jurisdiction); the disposal of dredged material within the Sanctuary other than in connection with beach nourishment projects related to the Quillayute River Navigation Project; or bombing activities within the Sanctuary. Any purported authorizations issued by other authorities after July 22, 1994 for any of these activities within the Sanctuary shall be invalid.

(167)

§922.153 Permit procedures.

(168) (a) A person may conduct an activity prohibited by § 922.152 (a)(2) through (8) if conducted in accordance with the scope, purpose, terms and conditions of a permit or ONMS authorization issued under this section and subpart D of this part.

(169) (b) Applications for such permits or ONMS authorizations should be addressed to the Director, Office of National Marine Sanctuaries; ATTN: Superintendent, Olympic Coast National Marine Sanctuary, 115 E Railroad Ave., Suite 301, Port Angeles, WA 98362.

(170) (c) The Director shall obtain the express written consent of the governing body of an Indian tribe prior to issuing a permit, if the proposed activity involves or affects resources of cultural or historical significance to the tribe.

(171) (d) Removal or attempted removal of any Indian cultural resource or artifact may only occur with the express written consent of the governing body of the tribe or tribes to which such resource or artifact pertains, and certification by the Director that such activities occur in a manner that minimizes damage to the biological and archeological resources. Prior to permitting entry onto a significant cultural site designated by a tribal governing body, the Director shall require the express written consent of the governing body of the tribe or tribes to which such cultural site pertains.

(172) (e) Where the issuance or denial of a permit is requested by the governing body of a Washington Coast treaty tribe, the Director shall consider and protect the interests of the tribe to the fullest extent practicable in keeping with the purposes of the Sanctuary and his or her fiduciary duties to the tribe.

(173)

§922.154 Consultation with the State of Washington, affected Indian tribes, and adjacent county governments.

(174) (a) The Director shall regularly consult with the State of Washington, the governing bodies of tribes with reservations adjacent to the Sanctuary, and adjacent county governments regarding areas of mutual concern, including Sanctuary programs, permitting, activities, development, and threats to Sanctuary resources.

(175) (b) The Director shall, when requested by such governments, enter into a memorandum of understanding regarding such consultations.

(176)

Appendix A to Subpart O of Part 922–Olympic Coast National Marine Sanctuary Boundary Coordinates

(177) [Based on North American Datum of 1983]

(178)

Point ID	Latitude	Longitude
1	47°07'45.0"N.	124°11'02.0"W.
2	47°07'45.0"N.	124°58'12.0"W.
3	47°35'05.0"N.	125°00'00.0"W.
4	47°40'05.0"N.	125°04'44.0"W.
5	47°50'01.0"N.	125°05'42.0"W.
6	47°57'13.0"N.	125°29'13.0"W.
7	48°07'33.0"N.	125°38'20.0"W.
8	48°15'00.0"N.	125°40'54.0"W.
9	48°18'21.2"N.	125°30'02.9"W.
10	48°20'15.2"N.	125°22'52.9"W.
11	48°26'46.2"N.	125°09'16.9"W.
12	48°27'09.2"N.	125°08'29.9"W.
13	48°28'08.2"N.	125°05'51.9"W.
14	48°29'43.2"N.	125°00'10.9"W.
15	48°29'56.2"N.	124°59'19.9"W.
16	48°30'13.2"N.	124°54'56.9"W.
17	48°30'21.2"N.	124°50'25.9"W.
18	48°30'10.2"N.	124°47'17.9"W.
19	48°29'36.4"N.	124°43'38.1"W.
20	48°28'08.0"N.	124°38'13.0"W.
21	48°23'17.0"N.	124°38'13.0"W.

(179)

Subpart Q–Hawai'ian Islands Humpback Whale National Marine Sanctuary

(180)

§922.180 Purpose.

(181) (a) The purpose of the regulations in this subpart is to implement the designation of the Hawai'ian Islands Humpback Whale National Marine Sanctuary by regulating activities affecting the resources of the Sanctuary or any of the qualities, values, or purposes for which the Sanctuary was designated, in order to protect,

preserve, and manage the conservation, ecological, recreational, research, educational, historical, cultural, and aesthetic resources and qualities of the area. The regulations are intended to supplement and complement existing regulatory authorities; to facilitate to the extent compatible with the primary objective of protecting the humpback whale and its habitat, all public and private uses of the Sanctuary, including uses of Hawai'ian natives customarily and traditionally exercised for subsistence, cultural, and religious purposes, as well as education, research, recreation, commercial and military activities; to reduce conflicts between compatible uses; to maintain, restore, and enhance the humpback whale and its habitat; to contribute to the maintenance of natural assemblages of humpback whales for future generations; to provide a place for humpback whales that are dependent on their Hawai'ian Islands wintering habitat for reproductive activities, including breeding, calving, and nursing, and for the long-term survival of their species; and to achieve the other purposes and policies of the HINMSA and NMSA.

(182) (b) These regulations may be modified to fulfill the Secretary's responsibilities for the Sanctuary, including the provision of additional protections for humpback whales and their habitat, if reasonably necessary, and the conservation and management of other marine resources, qualities and ecosystems of the Sanctuary determined to be of national significance. The Secretary shall consult with the Governor of the State of Hawaii on any modification to the regulations contained in this part. For any modification of the regulations contained in this part that would constitute a change in a term of the designation, as contained in the Designation Document for the Sanctuary, the Secretary shall follow the applicable requirements of section 303 and 304 of the NMSA, and sections 2305 and 2306 of the HINMSA.

(183) (c) Section 304(e) of the NMSA requires the Secretary to review management plans and regulations every five years, and make necessary revisions. Upon completion of the five year review of the Sanctuary management plan and regulations, the Secretary will re-propose the Sanctuary management plan and regulations in their entirety with any proposed changes thereto. The Governor of the State of Hawaii will have the opportunity to review the re-proposed management plan and regulations before they take effect and if the Governor certifies any term or terms of such management plan or regulations as unacceptable, the unacceptable term or terms will not take effect in State waters of the Sanctuary.

(184)

§922.181 Boundary.

(185) (a) Except for excluded areas described in paragraph (b) of this section, the Hawai'ian Islands Humpback Whale National Marine Sanctuary encompasses approximately 1,032 square nautical miles (nmi2) (1,366 sq. mi.), and consists of the submerged lands and waters off the coast of the Hawai'ian Islands seaward from the shoreline, cutting across the mouths of rivers and streams:

(186) (1) To the 100-fathom (183 meter) isobath from Kailiu Point eastward to Mokolea Point, Kauai;

(187) (2) To the 100-fathom (183 meter) isobath from Puaena Point eastward to Mahie Point, and from the Kapahulu Groin in Waikiki eastward to Makapuu Point, Oahu;

(188) (3) To the 100-fathom (183 meter) isobath from Cape Halawa, Moloka'i, south and westward to Ilio Point, Moloka'i; southwestward to include Penguin Banks; eastward along the east side of Lanai; to the waters seaward of the three nautical mile limit north of Kahoolawe, to the Hanamanoia Lighthouse on Maui, and northward along the shoreline to Lipoa Point, Maui;

(189) (4) To the deep water area of Pailolo Channel from Cape Halawa, Moloka'i, to Lipoa Point, Maui, and southward;

(190) (5) To the 100-fathom (183 meter) isobath from Upolu Point southward to Keahole Point, Hawaii.

(191) (b) Excluded from the Sanctuary boundary are the following commercial ports and small boat harbors:

(192)

Hawaii (Big Island)

Kawaihae Boat Harbor & Small Boat Basin

Lanai

Kaumalapau Harbor, Manele Harbor

Maui

Lahaina Boat Harbor, Maalaea Boat Harbor

Molokai

Hale o Lono Harbor, Kaunakakai Harbor

Oahu

Kuapa Pond (Hawaii Kai)

(193) (c) The coordinates of the lateral extents of each boundary area within the Sanctuary boundary appear in Appendix A of this subpart Q.

(194)

§922.182 Definitions.

(195) (a) *Acts* means the Hawai'ian Islands National Marine Sanctuary Act (HINMSA; sections 2301-2307 of Public Law 102-587), and the National Marine Sanctuaries Act (NMSA; also known as Title III of the Marine Protection, Research, and Sanctuaries Act (MPRSA), as amended, 16 U.S.C. 1431 *et seq*.).

(196) *Adverse impact* means an impact that independently or cumulatively damages, diminishes, degrades, impairs, destroys, or otherwise harms.

(197) *Alteration of the seabed* means drilling into, dredging, or otherwise altering a natural physical characteristic of the seabed of the Sanctuary; or constructing, placing, or abandoning any structure, material, or other matter on the seabed of the Sanctuary.

(198) *Habitat* means those areas that provide space for individual and population growth and normal behavior of

humpback whales, and include sites used for reproductive activities, including breeding, calving and nursing.

(199) *Military activities* means those military activities conducted by or under the auspices of the Department of Defense and any combined military activities carried out by the Department of Defense and the military forces of a foreign nation.

(200) *Sanctuary* means the Hawai'ian Islands Humpback Whale National Marine Sanctuary.

(201) *Sanctuary resource* means any humpback whale, or the humpback whale's habitat within the Sanctuary.

(202) *Shoreline* means the upper reaches of the wash of the waves, other than storm or seismic waves, at high tide during the season of the year in which the highest wash of the waves occurs, usually evidenced by the edge of vegetation growth, or the upper limit of debris left by the wash of the waves.

(203) *Take or taking a humpback whale* means to harass, harm, pursue, hunt, shoot, wound, kill, capture, collect or injure a humpback whale, or to attempt to engage in any such conduct. The term includes, but is not limited to, any of the following activities: collecting any dead or injured humpback whale, or any part thereof; restraining or detaining any humpback whale, or any part thereof, no matter how temporarily; tagging any humpback whale; operating a vessel or aircraft or doing any other act that results in the disturbing or molesting of any humpback whale.

(204) (b) Other terms appearing in the regulations in this subpart are defined at 15 CFR 922.11, and/or in the Marine Protection, Research, and Sanctuaries Act, as amended, 33 U.S.C. 1401 et seq., and 16 U.S.C. 1431 et seq.

(205)

§922.183 Allowed activities.

(206) (a) All activities except those prohibited by §922.184 may be undertaken in the Sanctuary subject to any emergency regulations promulgated pursuant to §922.185, subject to the interagency cooperation provisions of section 304(d) of the NMSA [16 U.S.C. 1434(d)] and §922.187 of this subpart, and subject to the liability established by section 312 of the NMSA and §922.46. All activities are also subject to all prohibitions, restrictions, and conditions validly imposed by any other Federal, State, or county authority of competent jurisdiction.

(207) (b) Included as activities allowed under the first sentence of paragraph (a) of this §922.183 are all classes of military activities, internal or external to the Sanctuary, that are being or have been conducted before the effective date of these regulations, as identified in the Final Environmental Impact Statement/Management Plan. Paragraphs (a)(1) through (a)(5) of §922.184 do not apply to these classes of activities, nor are these activities subject to further consultation under section 304(d) of the NMSA.

(208) (c) Military activities proposed after the effective date of these regulations are also included as allowed activities under the first sentence of paragraph (a) of this §922.183. Paragraphs (a)(1) through (a)(5) of §922.184 apply to these classes of activities unless–

(209) (1) They are not subject to consultation under section 304(d) of the NMSA and §922.187 of this subpart, or

(210) (2) Upon consultation under section 304(d) of the NMSA and §922.187 of this subpart, NOAA's findings and recommendations include a statement that paragraphs (a)(1) through (5) of §922.184 do not apply to the military activity.

(211) (d) If a military activity described in paragraphs (b) or (c)(2) of this section is modified such that it is likely to destroy, cause the loss of, or injure a Sanctuary resource in a manner significantly greater than was considered in a previous consultation under section 304(d) of the NMSA and §922.187 of this subpart, or if the modified activity is likely to destroy, cause the loss of, or injure any Sanctuary resource not considered in a previous consultation under section 304(d) of the NMSA and §922.187 of this subpart, the modified activity will be treated as a new military activity under paragraph (c) of this section.

(212) (e) If a proposed military activity subject to section 304(d) of the NMSA and §922.187 of this subpart is necessary to respond to an emergency situation and the Secretary of Defense determines in writing that failure to undertake the proposed activity during the period of consultation would impair the national defense, the Secretary of the military department concerned may request the Director that the activity proceed during consultation. If the Director denies such a request, the Secretary of the military department concerned may decide to proceed with the activity. In such case, the Secretary of the military department concerned shall provide the Director with a written statement describing the effects of the activity on Sanctuary resources once the activity is completed.

(213)

§922.184 Prohibited activities.

(214) (a) The following activities are prohibited and thus unlawful for any person to conduct or cause to be conducted.

(215) (1) Approaching, or causing a vessel or other object to approach, within the Sanctuary, by any means, within 100 yards of any humpback whale except as authorized under the Marine Mammal Protection Act, as amended (MMPA), 16 U.S.C. 1361 *et seq.*, and the Endangered Species Act, as amended (ESA), 16 U.S.C. 1531 *et seq.*;

(216) (2) Operating any aircraft above the Sanctuary within 1,000 feet of any humpback whale except as necessary for takeoff or landing from an airport or runaway, or as authorized under the MMPA and the ESA;

(217) (3) Taking any humpback whale in the Sanctuary except as authorized under the MMPA and the ESA;

(218) (4) Possessing within the Sanctuary (regardless of where taken) any living or dead humpback whale or part thereof taken in violation of the MMPA or the ESA;

(219) (5) Discharging or depositing any material or other matter in the Sanctuary; altering the seabed of the Sanctuary; or discharging or depositing any material or other matter outside the Sanctuary if the discharge or deposit subsequently enters and injures a humpback whale or humpback whale habitat, provided that such activity:

(220) (i) Requires a Federal or State permit, license, lease, or other authorization; and

(221) (ii) Is conducted:

(222) (A) Without such permit, license, lease, or other authorization, or

(223) (B) Not in compliance with the terms or conditions of such permit, license, lease, or other authorization.

(224) (6) Interfering with, obstructing, delaying or preventing an investigation, search, seizure or disposition of seized property in connection with enforcement of either of the Acts or any regulations issued under either of the Acts.

(225) (b) The prohibitions in paragraphs (a)(1) through(a)(5) of this §922.184 do not apply to activities necessary to respond to emergencies threatening life, property or the environment; or to activities necessary for valid law enforcement purposes. However, while such activities are not subject to paragraphs (a)(1) through (a)(5) of this §922.184, this paragraph (b) does not exempt the activity from the underlying prohibition or restriction under other applicable laws and regulations (*e.g.*, MMPA, ESA, and CWA).

(226) (c) Any Sanctuary fishery regulations shall not take effect in Hawaii State waters until established by the State Board of Land and Natural Resources.

(227)

§922.185 Emergency Regulations.

(228) Where necessary to prevent or minimize the destruction of, loss of, or injury to a Sanctuary resource, or to minimize the imminent risk of such destruction, loss, or injury, any and all activities are subject to immediate temporary regulation, including prohibition. Before issuance of such regulations the Director shall consult to the extent practicable with any relevant Federal agency and the Governor of the State of Hawaii. Emergency regulations shall not take effect in State waters of the Sanctuary until approved by the Governor of Hawaii.

(229)

§922.186 Penalties; appeals.

(230) (a) Pursuant to section 307 of the NMSA, each violation of either of the Acts, or regulation in this subpart is subject to a civil penalty of not more than $100,000. Each such violation is subject to forfeiture of property or Sanctuary resources seized in accordance with section 307 of the NMSA. Each day of a continuing violation constitutes a separate violation.

(231) (b) Regulations setting forth the procedures governing the administrative proceedings for assessment of civil penalties for enforcement reasons, issuance and use of written warnings, and release or forfeiture of seized property appear at **15 CFR** part **904**.

(232) (c) A person subject to an action taken for enforcement reasons for violation of the regulations in the subpart or either of the Acts may appeal pursuant to the applicable procedures in **15 CFR** part **904**.

(233)

§922.187 Interagency Cooperation.

(234) Under section 304(d) of the NMSA, Federal agency actions internal or external to a national marine sanctuary, including private activities authorized by licenses, leases, or permits, that are likely to destroy, cause the loss of, or injure any sanctuary resource are subject to consultation with the Director. The Federal agency proposing an action shall determine whether the activity is likely to destroy, cause the loss of, or injure a Sanctuary resource. To the extent practicable, consultation procedures under section 304(d) of the NMSA may be consolidated with interagency cooperation procedures required by other statutes, such as the ESA. The Director will attempt to provide coordinated review and analysis of all environmental requirements.

(235)

Appendix A to Subpart Q–Hawai'ian Islands Humpback Whale, National Marine Sanctuary Boundary Description and Coordinates of the Lateral Boundary Closures and Excluded Areas.

(236) Appendix A provides a text and pictorial (see Figures 1-3) description of the Sanctuary boundary with specific lateral closure points and exclusion areas. The lateral extends (bounds) of each boundary area are closed by straight lines defined by at least two points. It may be necessary to extend these lines beyond the defining points to intersect the actual 100 fathom contour or the shoreline. Each point corresponds to a bounds number indicated in Figure 2. Digital files of the Sanctuary boundary (available in three common formats, ESRI Shape File, MapInfo Table and an ASCII Exchange format) are available from the Sanctuary office in Kihei, Maui, at the address listed above or by calling 808–879–2818. These digital geographies are the best available representation of the verbal legal delineation and were derived from: the Hawai'ian shoreline as supplied by State of Hawaii through the Office of Planning GIS Office, the NOAA and State of Hawaii agreed upon lateral boundary and exclusion areas, and the 100 fathom isobath digitized from the following 1:80,000 scale NOAA nautical charts:

(237) 19327–West Coast of Hawaii (9th ED, 4/29/89),

(238) 19347–Channels between Moloka'i, Maui, Lanai, and Kahoolawe (17th ED, 12/13/97),

(239) 19351–Channels between Oahu, Moloka'i, and Lanai (8th ED, 7/01/89),

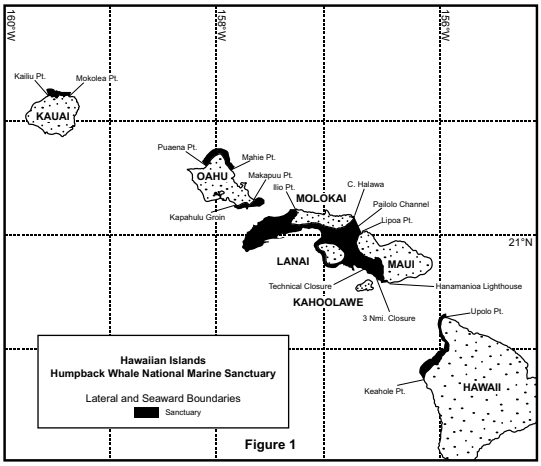
(240) 19357–Island of Oahu (20th ED, 9/21/96), and

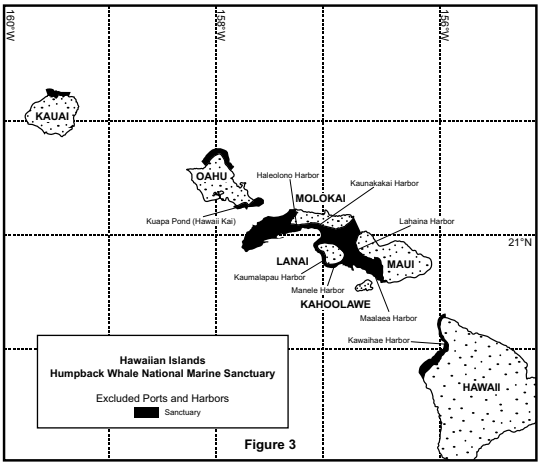
(241) 19381–Island of Kauai (8th ED, 7/17/1993).

(242) For the portion of the Lanai region of the HIHWNMS west of Chart 19351, [157°42.8'W.] the 100 fathom

(246)

Appendix A to Subpart Q–Hawai'ian Islands Humpback Whale, National Marine Sanctuary Boundary Description and Coordinates of the Lateral Boundary Closures and Excluded Areas. **Figures 1 and 3**





contour was derived from the 1:250,999 chart 19340–Hawaii to Oahu (24th ED, 1/09/1993).

(243) All digital geography data have been referenced to WGS84 (NAD83) and have been converted to geographic (latitude and longitude) coordinates.

(244)

Sanctuary Boundary

(245) A. As defined by the specific lateral boundaries in B, and except for excluded areas described in paragraph C of this section, the Hawai'ian Islands Humpback Whale National Marine Sanctuary consists of the submerged lands and waters off the coast of the Hawai'ian Islands seaward from the shoreline, cutting across the mouths of rivers and streams (see Figure 1):

(247) 1. To the 100-fathom (183 meter) isobath from Kailiu Point eastward to Mokolea Point, Kauai;

(248) 2. To the 100-fathom (183 meter) isobath from Puaena Point eastward to Mahie Point, and from the Kapahulu Groin in Waikiki eastward to Makapuu Point, Oahu;

(249) 3. To the 100-fathom (183 meter) isobath from Cape Halawa, Moloka'i, south and westward to Ilio Point, Moloka'i; southwestward to include Penguin Banks; eastward along the east side of Lanai; to the waters seaward of the three nautical mile limit north of Kahoolawe, to the Hanamanoia Lighthouse on Maui, and northward along the shoreline to Lipoa Point, Maui;

(250) 4. To the deep water area of Pailolo Channel from Cape Halawa, Moloka'i, to Lipoa Point, Maui, and southward;

(251) 5. To the 100-fathom (183 meter) isobath from Upolu Point southward to Keahole Point, Hawaii.

(252) B. Lateral Closure Bounds for the Hawai'ian Islands Humpback Whale National Marine Sanctuary Boundary (see Figure 2).

(253) C. Excluded Ports and Harbors Bounds (See Figure 3).

(254)

TITLE 33–NAVIGATION AND NAVIGABLE WATERS

(255)

Part 26–Vessel Bridge-to-Bridge Radiotelephone Regulations

(256)

§26.01 Purpose

(257) (a) The purpose of this part is to implement the provisions of the Vessel Bridge-to-Bridge Radiotelephone Act. This part:

(258) (1) Requires the use of the vessel bridge-to-bridge radiotelephone;

(259) (2) Provides the Coast Guard's interpretation of the meaning of important terms in the Act;

(260) (3) Prescribes the procedures for applying for an exemption from the Act and the regulations issued under the Act and a listing of exemptions.

(261) (b) Nothing in this part relieves any person from the obligation of complying with the rules of the road and the applicable pilot rules.

(262)

§26.02 Definitions.

(263) For the purpose of this part and interpreting the Act:

(264) *Act* means the "Vessel Bridge-to-Bridge Radiotelephone Act", 33 U.S.C. sections 1201–1208;

(265) *Length* is measured from end to end over the deck excluding sheer;

(266) *Power-driven vessel* means any vessel propelled by machinery; and

(267) *Secretary* means the Secretary of the Department in which the Coast Guard is operating;

(268) Territorial sea means all waters as defined in §2.22(a)(1) of this chapter.

(269) *Towing vessel* means any commercial vessel engaged in towing another vessel astern, alongside, or by pushing ahead.

(270) *Vessel Traffic Services (VTS)* means a service implemented under Part 161 of this chapter by the United States Coast Guard designed to improve the safety and efficiency of vessel traffic and to protect the environment. The VTS has the capability to interact with marine traffic and respond to traffic situations developing in the VTS area.

(271) *Vessel Traffic Service Area or VTS Area* means the geographical area encompassing a specific VTS area of service as described in Part 161 of this chapter. This area of service may be subdivided into sectors for the purpose of allocating responsibility to individual Vessel Traffic Centers or to identify different operating requirements.

(272) **Note:** Although regulatory jurisdiction is limited to the navigable waters of the United States, certain vessels will be encouraged or may be required, as a condition of port entry to report beyond this area to facilitate traffic management within the VTS area.

(273)

§26.03 Radiotelephone required.

(274) (a) Unless an exemption is granted under §26.09 and except as provided in paragraph (a)(4) of this section, this part applies to:

(275) (1) Every power-driven vessel of 20 meters or over in length while navigating;

(276) (2) Every vessel of 100 gross tons and upward carrying one or more passengers for hire while navigating;

(277) (3) Every towing vessels of 26 feet or over in length while navigating; and

(278) (4) Every dredge and floating plant engaged in or near a channel or fairway in operations likely to restrict or affect navigation of other vessels except for an unmanned or intermittently manned floating plant under the control of a dredge.

(279) (b) Every vessel, dredge, or floating plant described in paragraph (a) of this section must have a radiotelephone on board capable of operation from its navigational bridge, or in the case of a dredge, from its main control station, and capable of transmitting and receiving on the frequency or frequencies within the 156-162 Mega-Hertz band using the classes of emissions designated by the Federal Communications Commission for the exchange of navigational information.

(280) (c) The radiotelephone required by paragraph (b) of this section must be carried on board the described vessels, dredges, and floating plants upon the navigable waters of the United States.

(281) (d) The radiotelephone required by paragraph (b) of this section must be capable of transmitting and receiving on VHF FM channel 1022 (157.1 MHz).

(282) (e) While transiting any of the following waters, each vessel described in paragraph (a) of this section also must have on board a radiotelephone capable of transmitting and receiving on VHF FM channel 67 (156.375 MHz):

(283) (1) The lower Mississippi River from the territorial sea boundary, and within either the Southwest Pass safety fairway or the South Pass safety fairway specified in **33 CFR 166.200**, to mile 242.4 AHP (Above Head of Passes) near Baton Rouge;

(284) (2) The Mississippi River-Gulf Outlet from the territorial sea boundary, and within the Mississippi River-Gulf outlet Safety Fairway specified in **33 CFR 166.200**, to that channel's junction with the Inner Harbor Navigation Canal; and

(285) (3) The full length of the Inner Harbor Navigation Canal from its junction with the Mississippi River to that canal's entry to Lake Pontchartrain at the New Seabrook vehicular bridge.

(286) (f) In addition to the radiotelephone required by paragraph (b) of this section each vessel described in paragraph (a) of this section while transiting any waters within a Vessel Traffic Service Area, must have on board a radiotelephone capable of transmitting and receiving on the VTS designated frequency in Table 161.12(c) (VTS and VMRS Centers, Call Signs/MMSI, Designated Frequencies, and Monitoring Areas).

(287) **Note:** A single VHF-FM radio capable of scanning or sequential monitoring (often referred to as "dual watch" capability) will not meet the requirements for two radios.

(288)

§26.04 Use of the designated frequency.

(289) (a) No person may use the frequency designated by the Federal Communications Commission under section 8 of the Act, 33 U.S.C. 1207 (a), to transmit any information other than information necessary for the safe navigation of vessels or necessary tests.

(290) (b) Each person who is required to maintain a listening watch under section 5 of the Act shall, when necessary, transmit and confirm, on the designated frequency, the intentions of his vessel and any other information necessary for the safe navigation of vessels.

(291) (c) Nothing in these regulations may be construed as prohibiting the use of the designated frequency to communicate with shore stations to obtain or furnish information necessary for the safe navigation of vessels.

(292) (d) On the navigable waters of the United States, channel 13 (156.65 MHz) is the designated frequency required to be monitored in accordance with §26.05(a) except that in the area prescribed in §26.03(e), channel 67 (156.375 MHz) is the designated frequency.

(293) (e) On those navigable waters of the United States within a VTS area, the designated VTS frequency is an additional designated frequency required to be monitored in accordance with §26.05.

(294)

§26.05 Use of radiotelephone.

(295) Section 5 of the Act states that the radiotelephone required by this Act is for the exclusive use of the master or person in charge of the vessel, or the person designated by the master or person in charge to pilot or direct the movement of the vessel, who shall maintain a listening watch on the designated frequency. Nothing herein shall be interpreted as precluding the use of portable radiotelephone equipment to satisfy the requirements of this act.

(296)

§26.06 Maintenance of radiotelephone; failure of radiotelephone.

(297) Section 6 of the Act states – (a) Whenever radiotelephone capability is required by this Act, a vessel's radiotelephone equipment shall be maintained in effective operating condition. If the radiotelephone equipment carried aboard a vessel ceases to operate, the master shall exercise due diligence to restore it or cause it to be restored to effective operating condition at the earliest practicable time. The failure of a vessel's radiotelephone equipment shall not, in itself, constitute a violation of this Act, nor shall it obligate the master of any vessel to moor or anchor his vessel; however, the loss of radiotelephone capability shall be given consideration in the navigation of the vessel.

(298)

§26.07 Communications.

(299) No person may use the service of, and no person may serve as, a person required to maintain a listening watch under section 5 of the Act, 33 U.S.C. 1204, unless the person can communicate in the English language.

(300)

§26.08 Exemption procedures.

(301) (a) The Commandant has redelegated to the Assistant Commandant for Prevention Policy, U.S. Coast Guard Headquarters, with the reservation that this authority shall not be further redelegated, the authority to grant exemptions from provisions of the Vessel Bridge-to-Bridge Radiotelephone Act and this part.

(302) (b) Any person may petition for an exemption from any provision of the Act or this part;

(303) (c) Each petition must be submitted in writing to Commandant (CG–DCO–D), Attn: Deputy for Operations Policy and Capabilities, U.S. Coast Guard Stop 7318, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7318, and must state:

(304) (1) The provisions of the Act or this part from which an exemption is requested; and

(305) (2) The reasons why marine navigation will not be adversely affected if the exemption is granted and if the exemption relates to a local communication system how that system would fully comply with the intent of the concept of the Act but would not conform in detail if the exemption is granted.

(306)

§26.09 List of exemptions.

(307) (a) All vessels navigating on those waters governed by the navigation rules for Great Lakes and their connecting and tributary waters (33 U.S.C. 241 *et seq.*) are exempt from the requirements of the Vessel Bridge-to-Bridge Radiotelephone Act and this part until May 6, 1975.

(308) (b) Each vessel navigating on the Great Lakes as defined in the Inland Navigation Rules Act of 1980 (33 U.S.C. 2001 et seq.) and to which the Vessel Bridge-to-Bridge Radiotelephone Act (33 U.S.C. 1201-1208) applies is exempt from the requirements in 33 U.S.C. 1203, 1204, and 1205 and the regulations under §§26.03, 26.04, 26.05, 26.06, and 26.07. Each of these vessels and each person to whom 33 U.S.C. 1208(a) applies must comply with Articles VII, X, XI, XII, XIII, XV, and XVI and Technical Regulations 1–9 of "The Agreement Between the United States of America and Canada for Promotion of Safety on the Great Lakes by Means of Radio, 1973."

(309)

Part 80–COLREGS Demarcation Lines

(310)

§80.01 General basis and purpose of demarcation lines.

(311) (a) The regulations in this part establish the lines of demarcation delineating those waters upon which mariners shall comply with the International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS) and those waters upon which mariners shall comply with the Inland Navigation Rules.

(312) (b) The waters inside of the lines are Inland Rules waters. The waters outside the lines are COLREGS waters.

(313) (c) Geographic coordinates expressed in terms of latitude or longitude, or both, are not intended for plotting on maps or charts whose referenced horizontal datum is the North American Datum of 1983 (NAD 83), unless such geographic coordinates are expressly labeled NAD 83. Geographic coordinates without the NAD 83 reference may be plotted on maps or charts referenced to NAD 83 only after application of the appropriate corrections that are published on the particular map or chart being used.

(314)

§80.1305 Chetco River, OR.

(315) A line drawn across the seaward extremities of the Chetco River Entrance Jetties.

(316)

§80.1310 Rogue River, OR.

(317) A line drawn across the seaward extremities of the Rogue River Entrance Jetties.

(318)

§80.1315 Coquille River, OR.

(319) A line drawn across the seaward extremities of the Coquille River Entrance Jetties.

(320)

§80.1320 Coos Bay, OR.

(321) A line drawn across the seaward extremities of the Coos Bay Entrance Jetties.

(322)

§80.1325 Umpqua River, OR.

(323) A line drawn across the seaward extremities of the Umpqua River Entrance Jetties.

(324)

§80.1330 Siuslaw River, OR.

(325) A line drawn across the seaward extremities of the Siuslaw River Entrance Jetties.

(326)

§80.1335 Alsea Bay, OR.

(327) A line drawn from the seaward shoreline on the north of the Alsea Bay Entrance 165° true across the channel entrance.

(328)

§80.1340 Yaquina Bay, OR.

(329) A line drawn across the seaward extremities of the Yaquina Bay Entrance Jetties.

(330)

§80.1345 Depoe Bay, OR.

(331) A line drawn across the Depoe Bay Channel entrance parallel with the general trend of the highwater shoreline.

(332)

§80.1350 Netarts Bay, OR.

(333) A line drawn from the northernmost extremity of the shore on the south side of Netarts Bay north to the opposite shoreline.

(334)

§80.1355 Tillamook Bay, OR.

(335) A line drawn across the seaward extremities of the Tillamook Bay Entrance Jetties.

(336)

§80.1360 Nehalem River, OR.

(337) A line drawn approximately parallel with the general trend of the highwater shoreline across the Nehalem River Entrance.

(338)

§80.1365 Columbia River Entrance, OR./WA.

(339) A line drawn from the seaward extremity of the Columbia River North Jetty (above water) 155° true to the seaward extremity of the Columbia River South Jetty (above water).

(340)

§80.1370 Willapa Bay, WA.

(341) A line drawn from Willapa Bay Light 169.8° true to the westernmost tripod charted 1.6 miles south of Leadbetter Point.

(342)

§80.1375 Grays Harbor, WA.

(343) A line drawn from across the seaward extremities (above water) of the Grays Harbor Entrance Jetties.

(344)

§80.1380 Quillayute River, WA.

(345) A line drawn from the seaward extremity of the Quillayute River Entrance East Jetty to the overhead power cable tower charted on James Island; thence a straight line through Quillayute River Entrance Light 3 to the shoreline.

(346)

§80.1385 Strait of Juan de Fuca.

(347) The 72 COLREGS shall apply on all waters of the Strait of Juan de Fuca.

(348)

§80.1390 Haro Strait and Strait of Georgia.

(349) The 72 COLREGS shall apply on all waters of the Haro Strait and the Strait of Georgia.

(350)

§80.1395 Puget Sound and Adjacent Waters.

(351) The 72 COLREGS shall apply on all waters of Puget Sound and adjacent waters, including Lake Union, Lake Washington, Hood Canal, and all tributaries.

(352)

§80.1410 Hawai'ian Island Exemption from General Rule.

(353) Except as provided elsewhere in this part for Mamala Bay and Kaneohe Bay on Oahu; Port Allen and Nawiliwili Bay on Kauai; Kahului Harbor on Maui; and Kawailae and Hilo Harbors on Hawaii, the 72 COLREGS shall apply on all other bays, harbors, and lagoons of the Hawai'ian Island (including Midway).

(354)

§80.1420 Mamala Bay, Oahu, HI.

(355) A line drawn from 21°17′46.9″N., 158°06′22.2′W. (Barbers Point Light) to 21°15′20.5″N., 157°48′34.3″W. (Diamond Head Light).

(356)

§80.1430 Kaneohe Bay, Oahu, HI.

(357) A line drawn from 21°27′44.1″N., 157°45′48.6″W. (Pyramid Rock Light), across Kaneohe Bay through the center of Mokolii Island to the shoreline.

(358)

§80.1440 Port Allen, Kauai, HI.

(359) A line drawn from 21°53′34.3″N., 159°36′15.6″W. (Puolo Point Light) to 21°53′49.0″N., 159°35′27.2″W. (Hanapepe Breakwater Light 2).

(360)

§80.1450 Nawiliwili Harbor, Kauai, HI.

(361) A line drawn from the seaward extremity of Nawiliwili Harbor Breakwater Light to 21°57′23.8″N., 159°20′52.7″W. (Kukii Point Light).

(362)

§80.1460 Kahului Harbor, Maui, HI.

(363) A line drawn from 20°54′04.1″N., 156°28′26.8″W. (Kahului Entrance Breakwater Light 4), to 20°54′02.3″N., 156°28′17.4″W. (Kahului Entrance Breakwater Light 3).

(364)

§80.1470 Kawaihae Harbor, HI.

(365) A line drawn from 20°02′29.1″N., 155°49′58.2″W. (Kawaihae Light), to the seaward extremity of the Kawaihae South Breakwater.

(366)

§80.1480 Hilo Harbor, HI.

(367) A line drawn from the seaward extremity of the Hilo Breakwater 265° true (as an extension of the seaward side of the breakwater) to the shoreline 0.2 nautical mile north of Alealea Point.

(368)

§80.1490 Apra Harbor, U.S. Territory of Guam.

(369) A line drawn from the westernmost extremity of Orote Island to the westernmost extremity of Glass Breakwater

(370)

§80.1495 U.S. Pacific Island Possessions.

(371) The 72 COLREGS shall apply on the bays, harbors, lagoons, and waters surrounding the U.S. Pacific Island of American Samoa, Baker, Howland, Jarvis, Johnson, Palmyra, Swains and Wake Islands.

(372)

Part 81–72 COLREGS: IMPLEMENTING RULES

(373)

§81.1 Definitions.

(374) As used in this part:

(375) *72 COLREGS* refers to the International Regulations for Preventing Collisions at Sea, 1972, done at London, October 20, 1972, as rectified by the Proces-Verbal of December 1, 1973, as amended.

(376) *A vessel of special construction or purpose* means a vessel designed or modified to perform a special function and whose arrangement is thereby made relatively inflexible.

(377) *Interference with the special function of the vessel* occurs when installation or use of lights, shapes, or sound-signaling appliances under 72 COLREGS prevents or significantly hinders the operation in which the vessel is usually engaged.

(378)

§81.3 General.

(379) Vessels of special construction or purpose which cannot fully comply with the light, shape, and sound signal provisions of 72 COLREGS without interfering with their special function may instead meet alternative requirements. The Chief of the Prevention Division in each Coast Guard District Office makes this determination and requires that alternative compliance be as close as possible with the 72 COLREGS. These regulations set out the procedure by which a vessel may be certified for alternative compliance. The information collection and recordkeeping requirements in §§81.5 and 81.18 have been approved by the Office of Management and Budget under OMB control No. 1625-0019.

(380)

Alternative Compliance

(381)

§81.5 Application for a Certificate of Alternative Compliance.

(382) (a) The owner, builder, operator, or agent of a vessel of special construction or purpose who believes the vessel cannot fully comply with the 72 COLREGS light, shape, or sound signal provisions without interference with its special function may apply for a determination that alternative compliance is justified. The application must be in writing, submitted to the Chief of the Prevention Division of the Coast Guard District in which the vessel is being built or operated, and include the following information:

(383) (1) The name, address, and telephone number of the applicant.

(384) (2) The identification of the vessel by its:

(385) (i) Official number;

(386) (ii) Shipyard hull number;

(387) (iii) Hull identification number; or

(388) (iv) State number, if the vessel does not have an official number or hull identification number.

(389) (3) Vessel name and home port, if known.

(390) (4) A description of the vessel's area of operation.

(391) (5) A description of the provision for which the Certificate of Alternative Compliance is sought, including:

(392) (i) The 72 COLREGS Rule or Annex section number for which the Certificate of Alternative Compliance is sought;

(393) (ii) A description of the special function of the vessel that would be interfered with by full compliance with the provision of that Rule or Annex section; and

(394) (iii) A statement of how full compliance would interfere with the special function of the vessel.

(395) (6) A description of the alternative installation that is in closest possible compliance with the applicable 72 COLREGS Rule or Annex section.

(396) (7) A copy of the vessel's plans or an accurate scale drawing that clearly shows:

(397) (i) The required installation of the equipment under the 72 COLREGS,

(398) (ii) The proposed installation of the equipment for which certification is being sought, and

(399) (iii) Any obstructions that may interfere with the equipment when installed in:

(400) (A) The required location; and

(401) (B) The proposed location.

(402) (b) The Coast Guard may request from the applicant additional information concerning the application.

(403)

§81.9 Certificate of Alternative Compliance: Contents.

(404) The Chief of the Prevention Division issues the Certificate of Alternative Compliance to the vessel based on a determination that it cannot comply fully with 72 COLREGS light, shape, and sound signal provisions without interference with its special function. This Certificate includes—

(405) (a) Identification of the vessel as supplied in the application under §81.5(a)(2);

(406) (b) The provision of the 72 COLREGS for which the Certificate authorizes alternative compliance;

(407) (c) A certification that the vessel is unable to comply fully with the 72 COLREGS lights, shape, and sound signal requirements without interference with its special function;

(408) (d) A statement of why full compliance would interfere with the special function of the vessel;

(409) (e) The required alternative installation;

(410) (f) A statement that the required alternative installation is in the closest possible compliance with the 72 COLREGS without interfering with the special function of the vessel;

(411) (g) The date of issuance;

(412) (h) A statement that the Certificate of Alternative Compliance terminates when the vessel ceases to be usually engaged in the operation for which the certificate is issued.

(413)

§81.17 Certificate of Alternative Compliance: Termination.

(414) The Certificate of Alternative Compliance terminates if the information supplied under §81.5(a) or the Certificate issued under §81.9 is no longer applicable to the vessel.

(415)

§81.18 Notice and record of certification of vessels of special construction or purpose.

(416) (a) In accordance with 33 U.S.C. 1605(c), a notice is published in the Federal Register of the following:

(417) (1) Each Certificate of Alternative Compliance issued under §81.9; and

(418) (2) Each Coast Guard vessel determined by the Commandant to be a vessel of special construction or purpose.

(419) (b) Copies of Certificate of Alternative Compliance and documentation concerning Coast Guard vessels are available for inspection at Marine Transportation Systems Directorate, U.S. Coast Guard Headquarters, (CG-5PW), Stop 7509, 2703 Martin Luther King Avenue SE., Washington, DC 20593-7509.

(420) (c) The owner or operator of a vessel issued a Certificate shall ensure that the vessel does not operate unless the Certificate of Alternative Compliance or a certified copy of that Certificate is on board the vessel and available for inspection by Coast Guard personnel.

(421)

Exemptions

(422)

§81.20 Lights and sound signal appliances.

(423) Each vessel under the 72 COLREGS, except the vessels of the Navy, is exempt from the requirements of the 72 COLREGS to the limitation for the period of time stated in Rule 38 (a), (b), (c), (d), (e), (f), and (g) if:

(424) (a) Her keel is laid or is at a corresponding stage of construction before July 15, 1977; and

(425) (b) She meets the International Regulations for Preventing Collisions at Sea, 1960 (77 Stat. 194, 33 U.S.C. 1051-1094).

(426)

Part 82—72 COLREGS: INTERPRETATIVE RULES

(427)

§82.1 Purpose.

(428) This part contains the interpretative rules concerning the 72 COLREGS that are adopted by the Coast Guard for the guidance of the public.

(429)

§82.3 Pushing vessel and vessel being pushed: Composite unit.

(430) Rule 24(b) of the 72 COLREGS states that when a pushing vessel and a vessel being pushed ahead are rigidly connected in a composite unit, they are regarded as a power-driven vessel and must exhibit the lights under Rule 23. A "composite unit" is interpreted to be a pushing vessel that is rigidly connected by mechanical means to a vessel being pushed so they react to sea and swell as one vessel. "Mechanical means" does not include the following:

(431) (a) Lines.

(432) (b) Hawsers.

(433) (c) Wires.

(434) (d) Chains.

(435)

§82.5 Lights for moored vessels.

(436) For the purposes of Rule 30 of the 72 COLREGS, a *vessel at anchor* includes a barge made fast to one or more mooring buoys or other similar device attached to the sea or river floor. Such a barge may be lighted as a vessel at anchor in accordance with Rule 30, or may be lighted on the corners in accordance with **33 CFR 83.3**0(**h**) through (**l**).

(437)

§82.7 Sidelights for unmanned barges.

(438) An unmanned barge being towed may use the exception of COLREGS Rule 24(h). However, this exception only applies to the vertical sector requirements.

(439)

Part 88—ANNEX V: PILOT RULES

(440)

§88.01 Purpose and applicability.

(441) This part applies to all vessels operating on United States inland waters and to United States vessels operating on the Canadian waters of the Great Lakes to the extent there is no conflict with Canadian law.

(442)

§88.03 Definitions.

(443) The terms used in this part have the same meaning as the terms defined in part 83 of this subchapter.

(444)

§88.05 Law enforcement vessels.

(445) (a) Law enforcement vessels may display a flashing blue light when engaged in direct law enforcement or public safety activities. This light must be located so that it does not interfere with the visibility of the vessel's navigation lights.

(446) (b) The blue light described in this section may be displayed by law enforcement vessels of the United States and the States and their political subdivisions.

(447)

§88.07 Public safety activities.

(448) (a) Vessels engaged in government sanctioned public safety activities, and commercial vessels performing similar functions, may display an alternately flashing red and yellow light signal. This identification light signal must be located so that it does not interfere with the visibility of the vessel's navigation lights. The identification light signal may be used only as an identification signal and conveys no special privilege. Vessels using the identification light signal during public safety activities must abide by the Inland Navigation Rules, and must not presume that the light or the exigency gives them precedence or right of way.

(449) (b) Public safety activities include but are not limited to patrolling marine parades, regattas, or special water celebrations; traffic control; salvage; firefighting; medical assistance; assisting disabled vessels; and search and rescue.

(450)

Part 89—INLAND NAVIGATION RULES: IMPLEMENTING RULES

(451)

Subpart A—Certificate of Alternative Compliance

(452)

§89.1 Definitions.

(453) As used in this subpart:

(454) *Inland Rules* refers to the Inland Navigation Rules contained in the Inland Navigational Rules Act of 1980 (Pub. L. 96-591) and the technical annexes established under that act.

(455) *A vessel of special construction or purpose* means a vessel designed or modified to perform a special function and whose arrangement is thereby made relatively inflexible.

(456) *Interference with the special function of the vessel* occurs when installation or use of lights, shapes, or sound-signaling appliances under the Inland Rules prevents or significantly hinders the operation in which the vessel is usually engaged.

(457)

§89.3 General.

(458) Vessels of special construction or purpose which cannot fully comply with the light, shape, and sound signal provisions of the Inland Rules without interfering with their special function may instead meet alternative requirements. The Chief of the Prevention Division in each Coast Guard District Office makes this determination and requires that alternative compliance be as close as possible with the Inland Rules. These regulations set out the procedure by which a vessel may be certified for alternative compliance. The information collection and recordkeeping requirements in §§89.5 and 89.18 have been approved by the Office of Management and Budget under OMB control No. 1625-0019.

(459)

§89.5 Application for a Certificate of Alternative Compliance.

(460) (a) The owner, builder, operator, or agent of a vessel of special construction or purpose who believes the vessel cannot fully comply with the Inland Rules light, shape, or sound signal provisions without interference with its special function may apply for a determination that alternative compliance is justified. The application must be in writing, submitted to the Chief of the Prevention Division of the Coast Guard District in which the vessel is being built or operated, and include the following information:

(461) (1) The name, address, and telephone number of the applicant.

(462) (2) The identification of the vessel by its:

(463) (i) Official number;

(464) (ii) Shipyard hull number;

(465) (iii) Hull identification number; or

(466) (iv) State number, if the vessel does not have an official number or hull identification number.

(467) (3) Vessel name and home port, if known.

(468) (4) A description of the vessel's area of operation.

(469) (5) A description of the provision for which the Certificate of Alternative Compliance is sought, including:

(470) (i) The Inland Rules Rule or Annex section number for which the Certificate of Alternative Compliance is sought;

(471) (ii) A description of the special function of the vessel that would be interfered with by full compliance with the provision of that Rule or Annex section; and

(472) (iii) A statement of how full compliance would interfere with the special function of the vessel.

(473) (6) A description of the alternative installation that is in closest possible compliance with the applicable Inland Navigation Rules Rule or Annex section.

(474) (7) A copy of the vessel's plans or an accurate scale drawing that clearly shows:

(475) (i) The required installation of the equipment under the Inland Rules,

(476) (ii) The proposed installation of the equipment for which certification is being sought, and

(477) (iii) Any obstructions that may interfere with the equipment when installed in:

(478) (A) The required location; and

(479) (B) The proposed location.

(480) (b) The Coast Guard may request from the applicant additional information concerning the application.

(481)

§89.9 Certificate of Alternative Compliance: Contents.

(482) The Chief of the Prevention Division issues the Certificate of Alternative Compliance to the vessel based on a determination that it cannot comply fully with Inland Rules light, shape, and sound signal provisions without interference with its special function. This Certificate includes:

(483) (a) Identification of the vessel as supplied in the application under §89.5(a)(2);

(484) (b) The provision of the Inland Rules for which the Certificate authorizes alternative compliance;

(485) (c) A certification that the vessel is unable to comply fully with the Inland Rules light, shape, and sound signal requirements without interference with its special function;

(486) (d) A statement of why full compliance would interfere with the special function of the vessel;

(487) (e) The required alternative installation;

(488) (f) A statement that the required alternative installation is in the closest possible compliance with the Inland Rules without interfering with the special function of the vessel;

(489) (g) The date of issuance;

(490) (h) A statement that the Certificate of Alternative Compliance terminates when the vessel ceases to be usually engaged in the operation for which the certificate is issued.

(491)

§89.17 Certificate of Alternative Compliance: Termination.

(492) The Certificate of Alternative Compliance terminates if the information supplied under §89.5(a) or the Certificate issued under §89.9 is no longer applicable to the vessel.

(493)

§89.18 Record of certification of vessels of special construction or purpose.

(494) (a) Copies of Certificates of Alternative Compliance and documentation concerning Coast Guard vessels are available for inspection at the offices of the Marine Transportation Systems Directorate, U.S. Coast Guard Headquarters (CG-5PW), Stop 7509, 2703 Martin Luther King Avenue SE., Washington, DC 20593-7509.

(495) (b) The owner or operator of a vessel issued a Certificate shall ensure that the vessel does not operate unless the Certificate of Alternative Compliance or a certified copy of that Certificate is on board the vessel and available for inspection by Coast Guard personnel.

(496)

Subpart B—Waters Upon Which Certain Inland Navigation Rules Apply

(497)

§89.21 Purpose.

(498) Inland Navigation Rules 9(a)(ii), 14(d), and 15(b) apply to the Great Lakes, and along with 24(i), apply on the "Western Rivers" as defined in Rule 3(1), and to additional specifically designated waters. The purpose of this Subpart is to specify those additional waters upon which Inland Navigation Rules 9(a)(ii), 14(d), 15(b), and 24(i) apply.

(499)

§89.23 Definitions.

(500) As used in this subpart:

(501) *Inland Rules* refers to the Inland Navigation Rules contained in the Inland Navigational Rules Act of 1980 (Pub. L. 96-591, 33 U.S.C. 2001 et. seq.) and the technical annexes established under that Act.

(502)

Part 90—INLAND RULES: INTERPRETATIVE RULES

(503)

§90.1 Purpose.

(504) This part contains the interpretative rules for the Inland Rules. These interpretative rules are intended as a guide to assist the public and promote compliance with the Inland Rules.

(505)

§90.3 Pushing vessel and vessel being pushed: Composite unit.

(506) Rule 24(b) of the Inland Rules states that when a pushing vessel and a vessel being pushed ahead are rigidly connected in a composite unit, they are regarded as a power-driven vessel and must exhibit the lights prescribed in Rule 23. A "composite unit" is interpreted to be the combination of a pushing vessel and a vessel being push ahead that are rigidly connected by mechanical means so they react to sea and swell as one vessel. Mechanical means does not include lines, wires, hawsers, or chains.

(507)

§90.5 Lights for moored vessels.

(508) A *vessel at anchor* includes a vessel made fast to one or more mooring buoys or other similar device attached to the ocean floor. Such vessels may be lighted as a vessel at anchor in accordance with Rule 30, or may be lighted on the corners in accordance with **33 CFR 88.30**(**h**) through (l).

(509)

§90.7 Sidelights for unmanned barges.

(510) An unmanned barge being towed may use the exception of COLREGS Rule 24(h). However, this exception only applies to the vertical sector requirements for sidelights.

(511)

Part 110–Anchorage Regulations

(512)

§110.1 General.

(513) (a) The areas described in subpart A of this part are designated as special anchorage areas for the purposes of rule 30 (**33 CFR 83.30**) and rule 35 (**33 CFR 83.3**5) of the Inland Navigation Rules, **33 CFR** chapter I, subchapter E. Vessels of less than 20 meters in length; and barges, canal boats, scows, or other nondescript craft, are not required to sound signals required by rule 35 of the Inland Navigation Rules. Vessels of less than 20 meters are not required to exhibit anchor lights or shapes required by rule 30 of the Inland Navigation Rules.

(514) (b) The anchorage grounds for vessels described in Subpart B of this part are established, and the rules and regulations in relation thereto adopted, pursuant to the authority contained in section 7 of the act of March 4, 1915, as amended (38 Stat. 1053; 33 U.S.C. 471).

(515) (c) All bearings in the part are referred to true meridian.

(516) (d) Geographic coordinates expressed in terms of latitude or longitude, or both, are not intended for plotting on maps or charts whose referenced horizontal datum is the North American Datum of 1983 (NAD 83), unless such geographic coordinates are expressly labeled NAD 83. Geographic coordinates without the NAD 83 reference may be plotted on maps or charts referenced to NAD 83 only after application of the appropriate corrections that are published on the particular map or chart being used.

(517)

Subpart A–Special Anchorage Areas

(518)

§110.128 Columbia River at Portland, OR.

(519) The waters of the Columbia River between Sand Island and Government Island, bounded on the west by pile dike U.S. 5.75 and a line extending true north from the northerly end of the dike to the south shore of Sand Island and bounded on the east by a line bearing 339°15' true, from a point on Government Island at latitude 45°35'10", longitude 122°32'41", to the southerly shore of Sand Island.

(520)

§110.129 Island of Hawaii, Hawaii.

(521) (a) *Hilo Bay*. The waters of Hilo Bay enclosed by a line beginning at 19°43'55.5"N., 155°03'30"W. thence to 19°44'08"N., 155°04'19"W. thence to 19°43'51"N., 155°04'30"W. thence to 19°44'10"N., 155°05'29"W. thence along the shoreline to the beginning point. (Datum: OHD)

(522)

Hilo Bay (33 CFR 110.129)		
1	19°43'44.5"N	155°03'20.0"W
2	19°43'57.0"N	155°04'09.0"W
3	19°43'40.0"N	155°04'20.0"W
4	19°43'59.0"N	155°05'19.0"W
Note: The coordinates in the table above are referenced to North American Datum of 1983 (NAD83). They are converted from Old Hawaiian Datum (OHD) but are not part of the official text of the Code of Federal Regulations.		

(523) (b) *Kuhio Bay*. The waters of Kuhio Bay enclosed by a line beginning at 19°44'13"N., 155°03'25"W. thence to 19°44'15"N., 155°03'25"W. thence along the shoreline to the beginning point. (Datum: OHD)

(524)

Kuhio Bay (33 CFR 110.129)		
1	19°44'02.0"N	155°03'15.0"W
2	19°44'04.0"N	155°03'15.0"W
Note: The coordinates in the table above are referenced to North American Datum of 1983 (NAD83). They are converted from Old Hawaiian Datum (OHD) but are not part of the official text of the Code of Federal Regulations.		

(525)

§110.129a Island of Kauai, Hawaii

(526) (a) *Nawiliwili Bay*. The waters of Nawiliwili Bay enclosed by a line beginning at 21°57'12.5"N., 159°21'38"W. thence to 21°57'26"N., 159°21'39.5"W. thence along the shoreline to the beginning point. (Datum: OHD)

(527)

Nawiliwili Bay (33 CFR 110.129a)		
1	21°57'01.2"N	159°21'28.0"W
2	21°57'14.7"N	159°21'29.4"W
Note: The coordinates in the table above are referenced to North American Datum of 1983 (NAD83). They are converted from Old Hawaiian Datum (OHD) but are not part of the official text of the Code of Federal Regulations.		

(528) (b) [Reserved]

(529)

§110.129b Island of Oahu, HI. (Datum: OHD)

(530) (a) *Kaneohe Bay* (1). The waters of Kaneohe Bay enclosed by a line beginning at 21°26'28"N., 157°46'00"W. thence to 21°26'00"N., 157°46'14"W. thence to 21°26'20"N., 157°47'24"W. thence to 21°27'00"N., 157°48'25"W. thence to 21°26'46"N.,

157°48'37"W. thence along the shoreline to the beginning point.

(531)

Kaneohe Bay 1 (33 CFR 110.129b)		
1	21°26'16.6"N	157°45'50.1"W
2	21°25'48.6"N	157°46'04.1"W
3	21°26'08.6"N	157°47'14.1"W
4	21°26'48.6"N	157°48'15.1"W
5	21°26'34.6"N	157°48'27.1"W
Note: The coordinates in the table above are referenced to North American Datum of 1983 (NAD83). They are converted from Old Hawaiian Datum (OHD) but are not part of the official text of the Code of Federal Regulations.		

(532) (b) *Kaneohe Bay* (2). The waters of Kaneohe Bay enclosed by a line beginning at 21°27'28"N., 157°49'08"W.; thence to 21°28'10"N., 157°50'03"W.; thence to 21°29'10"N., 157°50'40"W.; thence to 21°30'46"N., 157°50'14"W.; thence along the shoreline to the beginning point.

(533)

Kaneohe Bay 2 (33 CFR 110.129b)		
1	21°27'16.6"N	157°48'58.1"W
2	21°27'58.6"N	157°49'53.1"W
3	21°28'58.6"N	157°50'30.1"W
4	21°30'34.6"N	157°50'04.1"W
Note: The coordinates in the table above are referenced to North American Datum of 1983 (NAD83). They are converted from Old Hawaiian Datum (OHD) but are not part of the official text of the Code of Federal Regulations.		

(534) (c) *Keehi Lagoon*. The waters of Keehi Lagoon bounded by a line connecting the following points:

(535) 21°19'35.0"N., 157°54'06.0"W.

(536) 21°19'37.7"N., 157°53'58.0"W.

(537) 21°19'06.4"N., 157°53'41.9"W.

(538) 21°19'00.8"N., 157°53'44.1"W.

(539) 21°18'59.9"N., 157°53'49.7"W.

(540) 21°19'04.9"N., 157°53'50.0"W. and thence to the point of beginning.

(541)

Keehi Lagoon (33 CFR 110.129b)		
1	21°19'23.6"N	157°53'56.1"W
2	21°19'26.3"N	157°53'48.1"W
3	21°18'55.0"N	157°53'32.0"W
4	21°18'49.4"N	157°53'34.2"W
5	21°18'48.6"N	157°53'39.8"W
6	21°18'53.5"N	157°53'40.1"W
Note: The coordinates in the table above are referenced to North American Datum of 1983 (NAD83). They are converted from Old Hawaiian Datum (OHD) but are not part of the official text of the Code of Federal Regulations.		

(542) (d) *Sans Souci Beach*. The waters of Sans Souci Beach enclosed by a line beginning at 21°15'49"N., 157°49'31"W.; thence to 21°15'49.2"N., 157°49'29"W.; thence to 21°15'56.2"N., 157°49'31"W.; thence to 21°15'56"N., 157°49'33"W.; thence to the beginning point.

(543)

Sans Souci Beach (33 CFR 110.129b)		
1	21°15'37.6"N	157°49'21.1"W
2	21°15'37.8"N	157°49'19.1"W
3	21°15'44.8"N	157°49'21.1"W
4	21°15'44.6"N	157°49'23.1"W
Note: The coordinates in the table above are referenced to North American Datum of 1983 (NAD83). They are converted from Old Hawaiian Datum (OHD) but are not part of the official text of the Code of Federal Regulations.		

(544) (e) *Iroquois Point Lagoon*. The waters of Iroquois Point Lagoon enclosed by a line beginning at 21°19'53"N., 157°58'30"W.; thence to 21°19'56"N., 157°58'31"W.; thence along the shoreline to the beginning point.

(545)

Iroquois Point Lagoon (33 CFR 110.129b)		
1	21°19'41.6"N	157°58'20.1"W
2	21°19'44.6"N	157°58'21.1"W
Note: The coordinates in the table above are referenced to North American Datum of 1983 (NAD83). They are converted from Old Hawaiian Datum (OHD) but are not part of the official text of the Code of Federal Regulations.		

(546) (f) *Hickam AFB Marina* (1) *a*. The waters of Hickam AFB Marina enclosed by a line beginning at 21°19'13"N., 157°57'40"W.; thence to 21°18'45"N., 157°57'40"W.; thence to 21°18'45"N., 157°57'28.5"W.; thence to 21°19'10"N., 157°57'28.5"W.; thence along the shoreline to the beginning point.

(547)

Hickam AFB Marina 1 (33 CFR 110.129b)		
1	21°19'01.6"N	157°57'30.1"W
2	21°18'33.6"N	157°57'30.1"W
3	21°18'33.6"N	157°57'18.6"W
4	21°18'58.6"N	157°57'18.6"W
Note: The coordinates in the table above are referenced to North American Datum of 1983 (NAD83). They are converted from Old Hawaiian Datum (OHD) but are not part of the official text of the Code of Federal Regulations.		

(548) (g) *Hickam AFB Marina* (2). The waters of Hickam AFB Marina enclosed by a line beginning at 21°19'11"N., 157°57'10"W.; thence to 21°18'46.2"N., 157°57'20"W; thence to 21°18'46.2"N., 157°57'05.2"W.; thence along the shoreline to the beginning point.

(549)

Hickam AFB Marina 2 (33 CFR 110.129b)		
1	21°19'00.0"N	157°57'00.1"W
2	21°18'34.8"N	157°57'10.1"W
3	21°18'34.8"N	157°56'55.3"W
Note: The coordinates in the table above are referenced to North American Datum of 1983 (NAD83). They are converted from Old Hawaiian Datum (OHD) but are not part of the official text of the Code of Federal Regulations.		

(550) (h) *Aiea Bay*. The waters of Aiea Bay enclosed by a line beginning at 21°22'20"N., 157°56'30"W.; thence to 21°22'27"N., 157°56'40.5"W; thence to 21°22'30"N., 157°56'40.5"W.; thence to 21°22'37"N., 157°56'22.5"W.; thence to 21°22'37"N., 157°56'19"W.; thence along the shoreline to the beginning point.

(551)

Aiea Bay (33 CFR 110.129b)		
1	21°22'08.6"N	157°56'20.1"W
2	21°22'15.6"N	157°56'30.6"W
3	21°22'18.6"N	157°56'30.6"W
4	21°22'25.6"N	157°56'12.6"W
5	21°22'25.6"N	157°56'09.1"W

Note: The coordinates in the table above are referenced to North American Datum of 1983 (NAD83). They are converted from Old Hawaiian Datum (OHD) but are not part of the official text of the Code of Federal Regulations.

(552)

§110.129c Apra Harbor, Guam. (Datum: WGS 84)

(553) (a) The waters bounded by a line connecting the following points:

(554) 13°27'45.5"N., 144°39'34.8"E.

(555) 13°27'32.0"N., 144°39'36.3"E.; and thence along the shoreline to the point of beginning.

(556) (b) The waters bounded by a line connecting the following points:

(557) 13°26'53.6"N., 144°40'03.8"E.

(558) 13°27'04.0"N., 144°40'04.8"E.

(559) 13°27'04.0"N., 144°40'09.8"E.

(560) 13°27'10.0"N., 144°40'09.8"E.

(561) 13°27'10.0"N., 144°40'23.8"E.

(562) 13°26'51.0"N., 144°40'23.8"E.

(563) 13°26'51.0"N., 144°40'06.0"E.; and thence to the point of beginning.

(564)

Subpart B–Anchorage Grounds

(565)

§110.228 Columbia River, Oregon and Washington.

(566) (a) *Anchorage grounds*—(1) *Astoria North Anchorage*. An area enclosed by a line beginning northeast of Astoria, Oregon, at 46°12'00.79"N., 123°49'55.40"W.; thence continuing easterly to 46°12'02.00"N., 123°49'40.09"W.; thence continuing east-northeasterly to 46°13'14.85"N., 123°46'27.89"W.; thence continuing south-southeasterly to 46°13'00.56"N., 123°46'16.65"W.; thence continuing southwesterly to 46°11'51.79"N., 123°49'18.08"W.; thence continuing west-southwesterly to 46°11'46.27"N, 123°49'43.48"W.; thence continuing west-southwesterly to 46°11'44.98"N, 123°49'49.44"W.; thence continuing westerly to 46°11'44.32"N., 123°49'58.88"W.; thence continuing northeasterly to the point of the beginning.

(567) (2) *Astoria South Anchorage*. An area enclosed by a point beginning east-northeast of Astoria, Oregon, at 46°11'46.95"N., 123°49'13.04"W.; thence continuing northeasterly to 46°13'02.18"N., 123°45'54.55"W.; thence continuing easterly to 46°13'05.90"N., 123°45'41.55"W; thence continuing southeasterly to 46°12'55.16"N., 123°45'34.31"W; thence continuing southwesterly to 46°12'24.32"N., 123°46'34.70"W.; thence continuing west-southwesterly 46°11'37.32"N., 123°49'03.46"W.; thence continuing north-northwesterly to the point of the beginning.

(568) (3) *Longview Anchorage*. An area enclosed by a line beginning southeast of Longview, Washington, at 46°06'28.69"N., 122°57'38.33"W.; thence continuing northwesterly to 46°06'41.71"N., 122°58'01.25"W.; thence continuing westerly to 46°07'22.55"N., 122°59'00.81"W; thence continuing westerly to 46°07'36.21"N., 122°59'19.29"W.; thence continuing southwesterly to 46°07'28.44"N., 122°59'31.18"W.; thence continuing easterly to 46°07'14.77"N., 122°59'12.70"W.; thence continuing easterly to 46°06'42.01"N., 122°58'28.41"W.; thence continuing northeasterly to 46°06'34.27"N., 122°58'14.21"W.; thence continuing northeasterly to 46°06'32.19"N., 122°58'08.77"W.; thence continuing northeasterly to 46°06'22.44"N., 122°57'43.27"W.; thence continuing northeasterly to the point of the beginning.

(569) (4) *Kalama Anchorage*. An area to be enclosed by a line beginning north-northwesterly of Sandy Island at 46°01'20.48"N., 122°52'04.32"W.; thence continuing east-southeasterly to 46°00'57.73"N., 122°51'35.14"W.; thence continuing east-southeasterly to 46°00'53.95"N., 122°51'30.29"W.; thence continuing southeasterly to 46°00'35.10"N., 122°51'15.37"W.; thence continuing south-southeasterly to 45°59'41.48"N., 122°50'52.40"W; thence continuing southwesterly to 45°59'38.65"N., 122°51'05.97"W.; thence continuing north-northwesterly to 46°00'36.82"N., 122°51'30.90"W.; thence continuing west-northwesterly to 46°00'51.32"N., 122°51'45.44"W.; thence continuing west-northwesterly to 46°01'24.38"N., 122°52'21.20"W.; thence continuing northeasterly to the beginning.

(570) (5) *Woodland Anchorage*. An area enclosed by a line beginning northeast of Columbia City, Oregon, at 45°53'55.31"N., 122°48'17.35"W.; thence continuing easterly to 45°53'57.11"N., 122°48'02.16"W.; thence continuing south-southeasterly to 45°53'27.16"N., 122°47'44.28"W.; thence continuing westerly to 45°53'20.16"N., 122°48'02.37"W.; thence continuing northwesterly to 45°53'41.50"N., 122°48'13.53"W.; thence continuing northerly to the point of beginning.

(571) (6) *Henrici Bar Anchorage*. An area enclosed by a line beginning west-southwesterly of Bachelor Slough, Washington, at 45°47'24.68"N., 122°46'49.14"W.; thence continuing east-southeasterly to 45°46'44.95"N., 122°46'13.23W., thence continuing southeasterly to 45°46'25.67"N., 122°46'00.54"W.; thence continuing south-southeasterly to 45°46'02.69"N., 122°45'50.32"W; thence continuing southerly to 45°45'43.66"N., 122°45'45.33"W; thence continuing southerly to 45°45'37.52"N., 122°45'44.99"W; thence continuing

westerly to 45°45'37.29"N., 122°45'53.06"W.; thence continuing north-northwesterly to 45°46'15.94"N., 122°46'10.25"W.; thence continuing west-northwesterly to 45°47'20.20"N., 122°46'59.28"W; thence continuing easterly to the point of beginning.

(572) (7) *Lower Vancouver Anchorage*. An area enclosed by a line beginning north-northeast of Reeder Point at 45°43'39.18"N, 122°45'27.54"W; thence continuing south-southwesterly to 45°41'26.95"N., 122°46'13.83"W.; thence continuing southerly to 45°40'35.72"N, 122°46'09.98"W; thence continuing south-southeasterly to 45°40'23.95"N, 122°46'04.26"W; thence continuing west-southwesterly to 45°40'20.68"N., 122°46'16.07"W.; thence continuing northwesterly to 45°40'32.85"N., 122°46'21.98"W.; thence continuing north-northwesterly to 45°41'01.03"N, 122°46'26.85"W; thence continuing northerly to 45°41'29.07"N., 122°46'26.15"W; thence continuing north-northeasterly to 45°43'41.27"N., 122°45'39.87"W.; thence continuing easterly to the point of the beginning. The Vancouver lower anchorage will then resume slightly further upstream at an area north of Kelly point and will be enclosed by a line starting at 45°40'10.09"N., 122°45'57.53"W.; thence continuing southeasterly to 45°39'42.94"N., 122°45'44.34"W.; thence continuing west-southwesterly to 45°39'40.07"N., 122°45'56.34"W.; thence continuing northwesterly to 45°40'06.75"N., 122°46'09.30"W.; thence continuing east-northeasterly to the point of the beginning.

(573) (8) *Kelly Point Anchorage*. An area enclosed by a line beginning northeast of Kelly Point, Oregon, at 45°39'10.32"N., 122°45'36.45"W.; thence continuing east-southeasterly to 45°39'02.10"N., 122°45'21.67"W.; thence continuing east-southeasterly to 45°38'59.15"N., 122°45'16.38"W.; thence continuing southwesterly to 45°38'51.03"N., 122°45'25.57"W; thence continuing westerly to 45°38'51.54"N., 122°45'26.35"W.; thence continuing northwesterly to 45°39'06.27"N., 122°45'40.50"W.; thence continuing north-northeasterly to the beginning point.

(574) (9) *Upper Vancouver Anchorage*. An area enclosed by a line beginning north-northeast of Hayden Island at 45°38'43.44"N., 122°44'39.50"W.; thence continuing northeasterly to 45°38'26.98"N, 122°43'25.87"W.; thence continuing east-northeasterly to 45°38'17.31"N., 122°42'54.69"W.; thence continuing easterly to 45°38'12.40"N., 122°42'43.93"W.; thence continuing east-southeasterly to 45°37'40.53"N., 122°41'44.08"W.; thence south-southeasterly to 45°37'36.11"N., 122°41'48.86"W.; thence continuing west-southwesterly to 45°37'52.20"N., 122°42'19.50"W.; thence continuing west-southwesterly to 45°38'10.75"N, 122°43'08.89"W.; thence continuing southwesterly to 45°38'18.79"N., 122°43'44.83"W.; thence continuing westerly to 45°38'41.37"N, 122°44'40.44"W.; thence continuing northeasterly to the point of beginning.

(575) (10) *Cottonwood Island Anchorage*. The waters of the Columbia River bounded by a line connecting the following points:

(576) 46°05'56.88"N., 122°56'53.19"W.
(577) 46°05'14.06"N., 122°54'45.71"W.
(578) 46°04'57.12"N., 122°54'12.41"W.
(579) 46°04'37.55"N, 122°53'45.80"W.
(580) 46°04'13.72"N., 122°53'23.66"W.
(581) 46°03'54.94"N., 122°53'11.81"W.
(582) 46°03'34.96"N., 122°53'03.17"W.
(583) 46°03′11.61″N., 122°52′56.29″W.
(584) 46°03′10.94″N., 122°53′10.55″W.
(585) 46°03'32.06"N., 122°53'19.69"W.
(586) 46°03'50.84"N., 122°53'27.81"W.
(587) 46°04'08.10"N., 122°53'38.70"W.
(588) 46°04'29.41"N., 122°53'58.17"W.
(589) 46°04'49.89"N., 122°54'21.57"W.
(590) 46°05'06.95"N., 122°54'50.65"W.
(591) 46°05'49.77"N., 122°56' 58.12"W.

(592) (11) *Prescott Anchorage*. The waters of the Columbia River bounded by a line connecting the following points:

(593) 46°02′47.01″N., 122°52′53.90″W.
(594) 46°02′26.32″N., 122°52′51.89″W.
(595) 46°02′25.92″N., 122°53′00.38″W.
(596) 46°02′46.54″N., 122°53′03.87″W.

(597) (b) Regulations.

(598) (1) All designated anchorages are intended for the primary use of deep-draft vessels over 200 feet in length.

(599) (2) If a vessel under 200 feet in length is anchored in a designated anchorage, the master or person in charge of the vessel shall:

(600) (i) Ensure that the vessel is anchored so as to minimize conflict with large, deep-draft vessels utilizing or seeking to utilize the anchorage; and

(601) (ii) Move the vessel out of the area if requested by the master of a large, deep-draft vessel seeking to enter or depart the area or if directed by the Captain of the Port.

(602) (3) Vessels desiring to anchor in designated anchorages shall contact the pilot office that manages that anchorage to request an appropriate position to anchor. Columbia River Bar Pilots manage Astoria North Anchorage and Astoria South Anchorage. Columbia River Pilots manage all designated anchorages upriver from Astoria.

(603) (4) No vessel may occupy a designated anchorage for more than 30 consecutive days without permission from the Captain of the Port.

(604) (5) No vessel being laid-up or dismantled or undergoing major alterations or repairs may occupy a designated anchorage without permission from the Captain of the Port.

(605) (6) No vessel carrying a Cargo of Particular Hazard listed in § 126.10 of this chapter may occupy a designated anchorage without permission from the Captain of the Port.

(606) (7) No vessel in a condition such that it is likely to sink or otherwise become a hazard to the operation of other vessels shall occupy a designated anchorage except in an emergency and then only for such periods as may be authorized by the Captain of the Port.

(607) (8) Vessels anchoring in Astoria North Anchorage should avoid placing their anchor in the charted cable area.

(608)

§110.230 Anchorages, Captain of the Port Puget Sound Zone, WA.

(609) (a) *Anchorage grounds*. All coordinates are expressed in North American Datum 1983.

(610) (1) *Freshwater Bay Emergency Anchorage*. All waters of Freshwater Bay and adjacent waters shoreward of a line beginning at Observatory Point,

(611) 48°09′03″N, 123°38′12″W; thence 000°T to

(612) 48°09′36″N, 123°38′12″W; thence 090°T to

(613) 48°09′36″N, 123°33′27″W; thence 180°T ending at Angeles Point, 48°09′00″N, 123°33′27″W.

(614) (i) This anchorage may only be assigned to vessels experiencing an emergency that requires anchoring. Vessel emergencies include equipment failures, cargo securing, etc. Vessels requiring a customs inspection will not be allowed to anchor in this area.

(615) (ii) [Reserved.]

(616) (2) *Bellingham Bay Anchorages*—(i) *General Anchorage*. The waters of Bellingham Bay within a circular area with a radius of 2,000 yards, having its center at 48°44′14.39″N, 122°32′26.62″W.

(617) (ii) *Explosives Anchorage*. The waters of Bellingham Bay within a circular area with a radius of 1,000 yards, having its center at 48°42′47.39″N, 122°33′41.62″W.

(618) (3) *Port Townsend Anchorages*. (i) *Fair weather explosives anchorage area*. A circular area having a radius of 300 yards, whose center is at 48°06′25.30″N, 122°43′50.60″W.

(619) (ii) *Foul weather explosives anchorage area*. A circular area having a radius of 300 yards, whose center is at 48°04′04.33″N, 122°44′56.60″W.

(620) (4) *Holmes Harbor General Anchorage*. All waters of Holmes Harbor lying south of a line between 48°05′50″N, 122°31′24″W; thence 311°T to 48°07′03″N, 122°33′31″W.

(621) (5) *Port Gardner General Anchorage*. All waters in a quadrilateral area bounded as follows: Beginning at

(622) 47°58′57″N, 122°14′05″W; thence 302°T to

(623) 47°59′21.5″N, 122°15′02″W; thence 229°T to

(624) 47°58′57″N, 122°15′44″W; thence 122°T to

(625) 47°58′32.5″N, 122°14′47″W; thence 048°T to point of origin.

(626) (6) *Thorndike Bay Emergency Explosives Anchorage*. All waters in a quadrilateral area bounded as follows: Beginning at

(627) 47°47′59″N, 122°43′30″W; thence 270°T to

(628) 47°47′59″N, 122°44′30″W; thence 180°T to

(629) 47°47′30″N, 122°44′30″W; thence 090°T to

(630) 47°47′30″N, 122°43′30″W, thence 000°T to point of origin.

(631) (7) *Elliott Bay Anchorages*—(i) *Smith Cove West General Anchorage*. All waters inside the area beginning at

(632) 47°38′20.44″N, 122°24′48.56″W; thence 207T to

(633) 47°37′51.6″N, 122°25′10.5″W; thence 124°T to

(634) 47°36′56.2″N, 122°23′07″W; thence 000°T to

(635) 47°37′59.5″N, 122°23′07″W; thence northwest along the shoreline to the point of origin.

(636) (ii) *Smith Cove East General Anchorage*. All waters inside the area beginning at

(637) 47°37′36.2″N, 122°22′43″W; thence 180°T to

(638) 47°36′56.2″N, 122°22′43″W; thence 090°T to

(639) 47°36′56.2″N, 122°21′22.5″W, thence northwest along the shoreline to the point of origin.

(640) (iii) *Elliott Bay East General Anchorage*. All waters inside the area beginning at

(641) 47°35′25.8″N, 122°20′45.5″W; thence 000°T to

(642) 47°35′55.85″N, 122°20′45.5″W; thence 270°T to

(643) 47°35′55.85″N, 122°21′30″W; thence 180°T to

(644) 47°35′19.2″N, 122°21′30″W; thence east along the shoreline to the point of origin.

(645) (iv) *Elliott Bay West General Anchorage*. All waters inside the area beginning at

(646) 47°35′30″N, 122°21′41″W, thence 000°T to

(647) 47°35′45.5″N, 122°21′41″W; thence 336°T to

(648) 47°35′55.85″N, 122°21′48.5″W; thence 270°T to

(649) 47°35′55.85″N, 122°23′16.46″W, thence 180°T to Duwamish Head thence southeast following the shoreline to 47°35′30″N, 122°22′54.5″W; thence 090°T to the point of origin.

(650) (8) *Yukon Harbor General Anchorage*. All waters inside the area beginning at

(651) 47°33′54.66″N, 122°31′54.68″W; thence 106°T to

(652) 47°33′23″N, 122°29′05″W; thence 180°T to

(653) 47°32′39.5″N, 122°29′05″W; thence south along the eastern shoreline of Blake Island to

(654) 47°31′48″N, 122°29′21″W; thence 250°T to

(655) 47°31′20.5″N, 122°31′10″W; thence west and north along the Kitsap Peninsula shoreline to the point of origin.

(656) (9) *Cherry Point General Anchorage*. The waters within a circular area with a radius of 1600 yards, having its center at 48°48′29.39″N, 122°46’04.66″W.

(657) (10) *Anacortes General Anchorages*. (i) *Anacortes East (ANE) Anchorage*. The waters within a circular area with a radius of 600 yards, having its center at 48°31′27″N., 122°33′45″W.

(658) (ii) *Anacortes Center (ANC) Anchorage*. The waters within a circular area with a radius of 600 yards, having its center at 48°30′54″N, 122°34′06″W.

(659) (iii) *Anacortes West (ANW) Anchorage*. The waters within a circular area with a radius of 600 yards, having its center at 48°31′09″N, 122°34′55″W.

(660) (11) *Cap Sante Tug and Barge General Anchorage*. The Cap Sante Tug and Barge General Anchorage includes all waters enclosed by a line connecting the following points:

(661) 48°31′16″N, 122°36′00″W, which is approximately the northeast tip of Cap Sante; then southeast to

(662) 48°30′53″N, 122°35′28″W; then west southwest to

(663) 48°30′45″N, 122°35′52″W, approximately the south tip of Cap Sante; then north along the shoreline to the point of origin.

(664) (12) *Hat Island Tug and Barge General Anchorage*. The Hat Island Tug and Barge General Anchorage includes all waters enclosed by a line connecting the following points:

(665) 48°31′19″N, 122°33′04″W, near the west side of Hat Island; then southwest to

(666) 48°30′37″N, 122°33′38″W; then east to

(667) 48°30′37″N, 122°32′00″W; then northwest to the point of origin.

(668) (13) *Commencement Bay General Anchorage*. A quadrilateral area bounded as follows: Beginning at 47°17′36.36″N, 122°26′04.45″W; thence due south to 47°17′18.36″N, 122°26′04.45″W; thence due east to 47°17′18.36″N, 122°25′04.45″W; thence due north to 47°17′32.36″N, 122°25′04.45″W; thence west northwest to the point of origin.

(669) (14) *Non-anchorage area Port Angeles Harbor*. Beginning at a point on the shore at

(670) 48°07′03.83″N, 123°24′20.67″W; thence to

(671) 48°07′38.43″N, 123°24′04.67″W; thence to

(672) 48°07′36.03″N, 123°23′50.67″W; thence to a point on the shoreline at 48°06′56.73″N, 123°24′08.67″W.

(673) (i) No vessel may anchor in this nonanchorage area at any time.

(674) (ii) Dragging, seining, fishing, or other activities which may foul underwater installations within this non-anchorage area are prohibited.

(675) (iii) Vessels may transit this nonanchorage area, but must proceed by the most direct route and without unnecessary delay.

(676) Note to paragraph (a)(14): The city of Port Angeles will mark this area with signs on the shoreline visible (during normal daylight) 1 mile to seaward reading, ''Do not Anchor in This Area.''

(677) (b) *Regulations*. (1) No vessel shall anchor in any general anchorage described in paragraph (a) of this section without prior permission from the Captain of the Port (COTP), or his authorized representative. Vessel Traffic Service Puget Sound is designated as the COTP's authorized representative. All vessels should seek permission at least 48 hours prior to arrival at the anchorage area in order to avoid unnecessary delays.

(678) (i) Except for the Anacortes General Anchorages, a berth in a general anchorage, if available, may be assigned to any vessel by the Captain of the Port or his authorized representative upon application and he may grant revocable permits for the continuous use of the same berth. For the Anacortes General Anchorages, the following hierarchy will be applied for assignment of a berth; tankers conducting lightering operations, then loaded tankers, and then all other vessels.

(679) (ii) Tugs and oil barges using the Cap Sante and Hat Island General Anchorages are exempt from the requirement to obtain the COTP's permission.

(680) (2) Except for the Anacortes General Anchorages, no vessel shall occupy any general anchorage for a period longer than 30 days unless a permit is obtained from the Captain of the Port for that purpose. There is a 10 days maximum stay at the Anacortes East and Anacortes Center general anchorages, and 6 day maximum stay at the Anacortes West general anchorage.

(681) (3) The COTP or his authorized representative may require vessels to depart from the Anacortes General Anchorage before the expiration of the authorized or maximum stay. The COTP or his authorized representative will provide at least 24-hour notice to a vessel required to depart the Anacortes General Anchorage.

(682) (4) No vessel in a condition such that it is likely to sink or otherwise become a menace or obstruction to the navigation or anchorage of other vessels shall occupy any general anchorage except in an emergency and then only for such period as may be permitted by the Captain of the Port.

(683) (5) Within the Anacortes General Anchorages, lightering operations shall only be conducted in the Anacortes West and Anacortes Center anchorages.

(684) (6) Tugs and barges using the Cap Sante and Hat Island Barge General Anchorages are required to ensure their vessels and barges do not project beyond the holding area's boundaries. The tug must be manned, remain in attendance with the barge and maintain a communications guard with VTS on an appropriate VTS VHF radio working frequency, which is currently channel 5A.

(685) (7) No vessel shall anchor in any general anchorage described in paragraph (a) of this section without prior permission from the Captain of the Port, or his authorized representative. No vessel shall occupy any general anchorage for a period longer than 30 days unless a permit is obtained from the Captain of the Port for that purpose. No vessel in a condition such that it is likely to sink or otherwise become a menace or obstruction to the navigation or anchorage of other vessels shall occupy a general anchorage except in an emergency and then only for such period as may be permitted by the Captain of the Port. A berth in a general anchorage, if available, may be assigned to any vessel by the Captain of the Port upon application and he may grant revocable permits for the continuous use of the same berth.

(686) (8) Explosive anchorages are reserved for vessels carrying explosives. All vessels carrying explosives shall be within these areas when anchored.

(687) (9) Whenever any vessel not fitted with mechanical power, anchors in an explosive anchorage, the Captain of the Port may require the attendance of a tug upon such vessel, when, in his judgment, such action is necessary.

(688) (10) Vessels carrying explosives shall comply with the general regulations in paragraph (b)(1) of this section, when applicable.

(689) (11) Every vessel at anchor in an explosives anchorage shall display by day a red flag at least 16 square feet in area at its mast head or at least 10 feet above the upper deck if the vessel has no mast, and by night

a red light in the same position specified for the flag. These signals shall be in addition to day signals and lights required to be shown by all vessels when at anchor.

(690) (12) Every vessel constructed of wood shall, unless there are steel bulwarks or metallic cases or cargo on board, be fitted with radar reflector screens of metal of sufficient size to permit target indication on the radar screen of commercial type radars.

(691) (13) Fishing and navigation by pleasure and commercial craft are prohibited within the area at all times when vessels which are anchored in the area for the purpose of loading or unloading explosives display a red flag by day and a red light by night, unless special permission is granted by the Captain of the Port.

(692) (14) No explosives handling in any explosive anchorage will be undertaken by any vessel unless personnel from the Captain of the Port are on board to supervise the handling of explosives.

(693) (15) No vessel shall remain at anchor in any explosive anchorage unless there is on board such vessel a competent watchman or a tug in attendance.

(694)

§110.235 Pacific Ocean (Mamala Bay), Honolulu Harbor, Hawaii (Datum: NAD 83).

(695) (a) *The anchorage grounds*–(1) *Anchorage A*. The waters bounded by the arc of a circle with a radius of 350 yards with the center located at 21°16'57"N., 157°53'12"W.

(696) (2) *Anchorage B*. The waters bounded by a line connecting the following coordinates:

(697) 21°17'06"N., 157°54'40"W.; to

(698) 21°17'22"N., 157°54'40"W.; to

(699) 21°17'22"N., 157°54'19"W., to

(700) 21°17'06"N., 157°54'19"W., and thence to

(701) 21°17'06"N., 157°54'40"W.

(702) (3) *Anchorage C*. The waters bounded by the arc of a circle with a radius of 450 yards with the center located at 21°17'09"N., 157°54'55"W.

(703) (4) *Anchorage D*. The waters bounded by the arc of a circle with a radius of 450 yards with the center located at 21°17'21"N., 157°55'20"W.

(704) (b) *The regulations*. (1) Anchors must be placed inside the anchorage areas.

(705) (2) The anchorages are general anchorages for commercial vessels. Anchorage A should be used only if Anchorages B, C, and D are full.

(706) (3) No bunkering operations or vessel to vessel transfer of oil in bulk of any kind is permitted within Anchorage A.

(707) (4) Nothing in this section shall be construed as relieving the owner or person in charge of any vessel from complying with the rules of navigation and with safe navigation practice.

(708) (c) Before entering into the anchorage grounds in this section you must first obtain permission from the Captain of the Port Honolulu.

(709)

§110.236 Pacific Ocean Off Barbers Point, Island of Oahu, Hawaii: Offshore pipeline terminal anchorages.

(710) (a) *The anchorage ground*–(1) *Anchorage A*. The waters within an area described as follows: A circle of 1,000 feet radius centered at 21°17'43.6"N., 158°07'36.1"W. (Datum NAD 83)

(711) (2) *Nonanchorage area A*. The waters extending 300 feet on either side of a line bearing 059° from anchorage A to the shoreline at 21°18'10.6"N., 158°06'47.1"W. (Datum NAD 83)

(712) (3) *Anchorage B*. The waters enclosed by a line beginning at

(713) 21°16'20.1"N., 158°04'59.1"W.; thence to

(714) 21°15'52.5"N., 158°05'07.0"W.; thence to

(715) 21°15'59.7"N., 158°05'35.9"W.; thence to

(716) 21°16'27.4"N., 158°05'28.0"W.; thence to the point of beginning. (Datum NAD 83)

(717) (4) *Nonanchorage area B*. The waters extending 300 feet on either side of a line bearing 334.5° from anchorage B to the shoreline at 21°17'39.1"N., 158°06'03.2"W. (Datum NAD 83)

(718) (5) *Anchorage C*. The waters enclosed by a line beginning at

(719) 21°16'46.6"N., 158°04'29.1"W.; thence to

(720) 21°16'46.6"N., 158°04'02.1"W.; thence to

(721) 21°16'32.6"N., 158°04'02.1"W.; thence to

(722) 21°16'32.6"N., 158°04'29.1"W.; thence to the point of beginning. (Datum NAD 83)

(723) (6) *Nonanchorage area C*. The waters extending 300 feet on either side of a line bearing 306° from anchorage C to the shoreline at 21°17'42.6"N., 158°05'57.9"W. (Datum NAD 83)

(724) (7) Anchorage D. The waters enclosed by a line beginning at

(725) 21°17'48.6"N., 158°07'10.1"W.; thence to

(726) 21°17'44.6"N., 158°07'06.1"W.; thence to

(727) 21°17'37.6"N., 158°07'14.1"W.; thence to

(728) 21°17'41.6"N., 158°07'18.1"W.; thence to the point of beginning. (Datum NAD 83)

(729) (b) *The regulations*. (1) No vessels may anchor, moor, or navigate in anchorages A, B, C, or D except:

(730) (i) Vessels using the anchorages and their related pipelines for loading or unloading;

(731) (ii) Commercial tugs, lighters, barges, launches, or other vessels engaged in servicing the anchorage facilities or vessels using them.

(732) (iii) Public vessels of the United States.

(733) (2) When vessels are conducting loading or unloading operations as indicated by the display of a red flag (international code flag B) at the masthead, passing vessels of over 100 gross tons shall not approach within 1,000 yards at a speed in excess of 6 knots.

(734) (3) The owner of any vessel wanting to use an anchorage ground and use of the related pipeline facilities shall notify the Captain of the Port, Honolulu, Hawaii, and the Commanding Officer, U.S. Naval Air Station, Barbers

Point, Hawaii, at least 24 hours in advance of desired occupancy of the anchorage ground by the vessel. Such notification must include the maximum height above the waterline of the uppermost portion of the vessel's mast and a description of the masts' lighting including height of the highest anchor light and any aircraft warning lights to be displayed by the vessel at night.

(735) (4) When, in the opinion of the Captain of the Port, or his authorized representative, oil transfer operations within these anchorages could jeopardize the safety of vessels or facilities in the area, or cause an undue risk of oil pollution, such oil transfer operations shall be immediately terminated until such time as the cognizant Coast Guard officer determines that the danger has subsided.

(736) (5) Nonanchorage areas A, B, and C are established for the protection of submerged pipelines. Except for vessels servicing pipeline facilities, no anchoring, dragging, seining or other potential pipeline fouling activities are permitted within these areas.

(737) (6) Nothing in this section shall be construed as relieving the owner or person in charge of any vessel from complying with the rules of the road and safe navigation practice.

(738) (7) The regulations of this section are enforced by the captain of the port or his duly authorized representative.

(739)

§110.237 Pacific Ocean at Waimea, Hawaii, Naval Anchorage.

(740) (a) *The anchorage grounds*. All the waters within a circle having a radius of 300 yards centered at 21°56'50.7"N., 159°41'22.9"W. (Datum NAD 83).

(741) (b) *The regulation*. Except in an emergency, no vessel except a Naval vessel may anchor or moor in this anchorage without permission of the Captain of the Port, Honolulu, HI.

(742)

§110.238 Apra Harbor, Guam.

(743) (a) *The anchorage grounds (Datum WGS 84).* (1) *General Anchorage*. The waters bounded by a line connecting the following points:

(744) 13°27'32.0"N., 144°39'36.8"E.

(745) 13°27'21.0"N., 144°39'22.8"E.

(746) 13°27'12.5"N., 144°37'25.4"E.

(747) and thence along the shoreline to

(748) 13°27'45.5"N., 144°39'34.8"E.

(749) and thence to the point of beginning.

(750) (2) *Explosives Anchorage 701*. The water in Naval Anchorage A bounded by the arc of a circle with a radius of 350 yards and located at 13°26'54.0"N., 144°37'53.5"E.

(751) (3) *Naval Explosives Anchorage 702*. The waters in the General Anchorage bounded by the arc of a circle with a radius of 350 yards and with the center located at 13°27'29.9"N., 144°38'13.0"E.

(752) (4) *Naval Anchorage A*. The waters bounded by a line connecting the following points:

(753) 13°26'47.3"N., 144°37'42.6"E.

(754) 13°27'02.0"N., 144°37'42.6"E.

(755) 13°27'10.6"N., 144°39'00.8"E.

(756) 13°26'59.6"N., 144°39'00.8"E.

(757) 13°26'59.6"N., 144°39'08.6"E.

(758) 13°26'54.3"N., 144°39'08.6"E.

(759) 13°26'54.3"N., 144°39'24.2"E.

(760) 13°26'42.2"N., 144°39'24.2"E.

(761) 13°26'40.4"N., 144°38'01.8"E.

(762) and thence to the point of beginning.

(763) (5) *Naval Anchorage B.* The waters bounded by a line connecting the following points:

(764) 13°26'43.7"N., 144°39'53.3"E.

(765) 13°26'53.6"N., 144°40'03.8"E.

(766) 13°26'51.0"N., 144°40'06.0"E.

(767) 13°26'41.0"N., 144°39'56.0"E.

(768) and thence along the shoreline to the point of beginning.

(769) (b) *The regulations*–(1) *General Anchorage*. Any vessel may anchor in the General Anchorage except vessels carrying more than 25 tons of high explosives.

(770) (2) *Explosives Anchorage 701*. Vessels carrying more than 25 tons of high explosives must use Anchorage 701, unless otherwise directed by the Captain of the Port.

(771) (3) *Explosives Anchorage 702.* Except Naval vessels using the anchorage as directed by local Naval authorities, no vessel may anchor so that any part of the hull or rigging, or the anchor tackle may extend into Anchorage 702 at any time.

(772) (4) *Naval Anchorages A and B.* (i) Except as provided in paragraph (b)(3)(ii) of this section, non-naval vessels may not anchor within these anchorages or use the mooring buoys therein without permission of the local Naval authorities obtained through the Captain of the Port. (There is a user charge for the use of these mooring buoys.)

(773) (ii) Small craft that are continuously manned and capable of getting underway may anchor within these anchorages during daylight hours without prior approval of the Captain of the Port.

(774) (5) *General regulations*. (i) Vessels may use the Naval mooring buoys in the General Anchorage without charge for a period up to 72 hours if authorized by the Captain of the Port. Vessels so moored shall promptly move at their own expense upon notification from the Captain of the Port.

(775) (ii) Except for vessels not more than 65 feet in length, all vessels shall anchor in an anchorage ground.

(776) (iii) Vessels anchored in an anchorage ground shall place their anchors within the anchorage ground so that no portion of the hull or rigging at any time extends outside the anchorage ground.

(777) (iv) No vessel may anchor in the harbor for more than 30 consecutive days without permission of the Captain of the Port.

(778)

§110.239 Island of Tinian, CNMI.

(779) (a) The anchorage grounds (based on 1944 Saipan Datum):

(780) (1) *Explosives Anchorage A*. A circular area intersecting the shoreline having a radius of 1,900 yards centered at 14°58'57.0"N., 145°35'40.8"E.

(781) (2) *Explosives Anchorage B*. A circular area intersecting the shoreline having radius of 1,900 yards centered at 14°58'15.9"N., 145°35'54.8"E.

(782) (b) The regulations: Explosives Anchorages A and B; with the exception of explosives laden naval vessels at explosives anchorage A and B, no vessel may anchor within these areas without permission of the Captain of the Port. No vessel of more than 500 gross tons displacement may enter these areas except for the purpose of anchoring in accordance with this section.

(783)

Part 117–Drawbridge Operation Regulations

(784)

Subpart A–General Requirements

(785)

§117.1 Purpose.

(786) (a) This part prescribes the general and special drawbridge operating regulations that apply to the drawbridges across the navigable waters of the United States and its territories. The authority to regulate drawbridges across the navigable waters of the United States is vested in the Secretary of Homeland Security.

(787) (b) Subpart A contains the general operation requirements that apply to all drawbridges.

(788) (c) Subpart B contains specific requirements for operation of individual drawbridges. These requirements are in addition to or vary from the general requirements in Subpart A. Specific sections in subpart B that vary from a general requirement in Subpart A supersede the general requirement. All other general requirements in Subpart A, that are not at variance, apply to the drawbridges and removable span bridges listed in Subpart B.

(789)

§117.4 Definitions.

(790) The following definitions apply to this part:

(791) *Appurtenance* means an attachment or accessory extending beyond the hull or superstructure that is not an integral part of the vessel and is not needed for a vessel's piloting, propelling, controlling, or collision avoidance capabilities.

(792) *Automated drawbridge* means a drawbridge that is operated by an automated mechanism, not a drawtender. An automated drawbridge is normally kept in the open to navigation position and closes when the mechanism is activated.

(793) *Deviation* means a District Commander's action authorizing a drawbridge owner to temporarily not comply with the drawbridge opening requirements in this part.

(794) *Drawbridge* means a bridge with an operational span that is intended to be opened for the passage of waterway traffic.

(795) *Drawspan* means the operational span of a drawbridge.

(796) *Lowerable* means a non-structural vessel appurtenance that is or can be made flexible, hinged, collapsible, or telescopic so that it can be mechanically or manually lowered.

(797) *Nonstructural* means that the item is not rigidly fixed to the vessel and can be relocated or altered.

(798) *Not essential to navigation* means that a nonstructural vessel appurtenance, when in the lowered position, would not adversely affect the vessel's piloting, propulsion, control, or collision-avoidance capabilities.

(799) *Public vessel* means a vessel that is owned and operated by the United States Government and is not engaged in commercial service, as defined in 46 U.S.C. 2101.

(800) *Remotely operated drawbridge* means a drawbridge that is operated by remote control from a location away from the drawbridge.

(801) *Removable span bridge* means a bridge that requires the complete removal of a span by means other than machinery installed on the bridge to open the bridge to navigation.

(802) *Untended* means that there is no drawtender at the drawbridge.

(803)

§117.5 When the drawbridge must open.

(804) Except as otherwise authorized or required by this part, drawbridges must open promptly and fully for the passage of vessels when a request or signal to open is given in accordance with this subpart.

(805)

§117.7 General requirements of drawbridge owners.

(806) Except for drawbridges that have been authorized, before January 3, 2007, to remain closed to navigation or as otherwise specified in subpart B, drawbridge owners must:

(807) (a) Provide the necessary drawtender(s) for the safe and prompt opening of the drawbridge.

(808) (b) Maintain the working machinery of the drawbridge in good operating condition.

(809) (c) Cycle the drawspan(s) periodically to ensure operation of the drawbridge.

(810) (d) Ensure that the drawbridge operates in accordance with the requirements of this part.

(811) (e) Any drawbridge allowed to remain closed to navigation prior to January 3, 2007, when necessary, must be returned to operable condition within the designated time set forth by the District Commander and will become subject to the requirements of this part.

(812)

§117.8 Permanent changes to drawbridge operation.

(813) (a) Anyone may submit a written request to the District Commander for a permanent change to a drawbridge operating requirement. The request must include documentation supporting or justifying the requested change.

(814) (b) If after evaluating the request, the District Commander determines that the requested change is not needed, he or she will respond to the request in writing and provide the reasons for denial of the requested change.

(815) (c) If the District Commander decides that a change may be needed, he or she will begin a rulemaking to implement the change.

(816)

§117.9 Delaying opening of a draw.

(817) No person shall unreasonably delay the opening of a draw after the signals required by §117.15 have been given.

(818) **NOTE:** Trains are usually controlled by the block method. That is, the track is divided into blocks or segments of a mile or more in length. When a train is in a block with a drawbridge, the draw may not be able to open until the train has passed out of the block and the yardmaster or other manager has "unlocked" the drawbridge controls. The maximum time permitted for delay is defined in Subpart B for each affected bridge. Land and water traffic should pass over or through the draw as soon as possible in order to prevent unnecessary delays in the opening and closure of the draw.

(819)

§117.11 Unnecessary opening of the draw.

(820) No vessel owner or operator shall –

(821) (a) Signal a drawbridge to open if the vertical clearance is sufficient to allow the vessel, after all lowerable nonstructural vessel appurtenances that are not essential to navigation have been lowered, to safely pass under the drawbridge in the closed position; or

(822) (b) Signal a drawbridge to open for any purpose other than to pass through the drawbridge opening.

(823)

§117.15 Signals.

(824) (a) *General*. (1) The operator of each vessel requesting a drawbridge to open shall signal the drawtender and the drawtender shall acknowledge that signal. The signal shall be repeated until acknowledged in some manner by the drawtender before proceeding.

(825) (2) The signals used to request the opening of the draw and to acknowledge that request shall be sound signals, visual signals, or radiotelephone communications described in this subpart.

(826) (3) Any of the means of signaling described in this subpart sufficient to alert the party being signaled may be used.

(827) (b) *Sound signals*. (1) Sound signals shall be made by whistle, horn, megaphone, hailer, or other device capable of producing the described signals loud enough to be heard by the drawtender.

(828) (2) As used in this section, "prolonged blast" means a blast of four to six seconds duration and "short blast" means a blast of approximately one second duration.

(829) (3) The sound signal to request the opening of a draw is one prolonged blast followed by one short blast sounded not more than three seconds after the prolonged blast. For vessels authorized to be passed through a draw during a scheduled closure period, the sound signal to request the opening of the draw during that period is five short blasts sounded in rapid succession.

(830) (4) When the draw can be opened immediately, the sound signal to acknowledge a request to open the draw is one prolonged blast followed by one short blast sounded not more than 30 seconds after the requesting signal.

(831) (5) When the draw cannot be opened immediately, or is open and shall be closed promptly, the sound signal to acknowledge a request to open the draw is five short blasts sounded in rapid succession not more than 30 seconds after the vessel's opening signal. The signal shall be repeated until acknowledged in some manner by the requesting vessel.

(832) (c) *Visual signals*. (1) The visual signal to request the opening of a draw is–

(833) (i) A white flag raised and lowered vertically; or

(834) (ii) A white, amber, or green light raised and lowered vertically.

(835) (2) When the draw can be opened immediately, the visual signal to acknowledge a request to open the draw, given not more than 30 seconds after the vessel's opening signal, is–

(836) (i) A white flag raised and lowered vertically;

(837) (ii) A white, amber, or green light raised and lowered vertically, or

(838) (iii) A fixed or flashing white, amber, or green light or lights.

(839) (3) When the draw cannot be opened immediately, or is open and must be closed promptly, the visual signal to acknowledge a request to open the draw is–

(840) (i) A red flag or red light swung back and forth horizontally in full sight of the vessel given not more than 30 seconds after the vessel's opening signal; or

(841) (ii) A fixed or flashing red light or lights given not more than 30 seconds after the vessel's opening signal.

(842) (4) The acknowledging signal when the draw cannot open immediately or is open and must be closed promptly shall be repeated until acknowledged in some manner by the requesting vessel.

(843) (d) Radiotelephone communications. (1) Radiotelephones may be used to communicate the same information provided by sound and visual signals.

(844) (2) The vessel and the drawtender shall monitor the frequency used until the vessel has cleared the draw.

(845) (3) When radiotelephone contact cannot be initiated or maintained, sound or visual signals under this section shall be used.

(846)

§117.17 Signaling for contiguous drawbridges.

(847) When a vessel must pass two or more drawbridges close together, the opening signal is given for the first bridge. After acknowledgment from the first bridge that it will promptly open, the opening signal is given for the second bridge, and so on until all bridges that the vessel must pass have been given the opening signal and have acknowledged that they will open promptly.

(848)

§117.19 Signaling when two or more vessels are approaching a drawbridge.

(849) When two or more vessels are approaching the same drawbridge at the same time, or nearly the same time, whether from the same or opposite directions, each vessel shall signal independently for the opening of the draw and the drawtender shall reply in turn to the signal of each vessel. The drawtender need not reply to signals by vessels accumulated at the bridge for passage during a scheduled open period.

(850)

§117.21 Signaling for an opened drawbridge.

(851) When a vessel approaches a drawbridge with the draw in the open position, the vessel shall give the opening signal. If no acknowledgment is received within 30 seconds, the vessel may proceed, with caution, through the open draw.

(852)

§117.23 Installation of radiotelephones.

(853) (a) When the District Commander deems it necessary for reasons of safety of navigation, the District Commander may require the installation and operation of a radiotelephone on or near a drawbridge.

(854) (b) The District Commander gives written notice of the proposed requirement to the bridge owner.

(855) (c) All comments the owner wishes to submit shall be submitted to the District Commander within 30 days of receipt of the notice under paragraph (b) of this section.

(856) (d) If, upon consideration of the comments received, the District Commander determines that a radiotelephone is necessary, the District Commander notifies the bridge owner that a radiotelephone shall be installed and gives a reasonable time, not to exceed six months, to install the radiotelephone and commence operation.

(857)

§117.24 Radiotelephone installation identification.

(858) (a) The Coast Guard authorizes, and the District Commander may require the installation of a sign on drawbridges, on the upstream and downstream sides, indicating that the bridge is equipped with and operates a VHF radiotelephone in accordance with §117.23.

(859) (b) The sign shall give notice of the radiotelephone and its calling and working channels–

(860) (1) In plain language; or

(861) (2) By a sign consisting of the outline of a telephone handset with the long axis placed horizontally and a vertical three-legged lightning slash superimposed over the handset. The slash shall be as long vertically as the handset is wide horizontally and normally not less than 27 inches and no more than 36 inches long. The preferred calling channel should be shown in the lower left quadrant and the preferred working channel should be shown in the lower right quadrant.

(862)

§117.31 Drawbridge operations for emergency vehicles and emergency vessels.

(863) (a) Upon receiving notification that an emergency vehicle is responding to an emergency situation, a drawtender must make all reasonable efforts to have the drawspan closed at the time the emergency vehicle arrives.

(864) (b) When a drawtender receives notice, or a proper signal as provided in §117.15 of this part, the drawtender shall take all reasonable measures to have the draw opened, regardless of the operating schedule of the draw, for passage of the following, provided this opening does not conflict with local emergency management procedures which have been approved by the cognizant Coast Guard Captain of the Port:

(865) (1) Federal, State, and local government vessels used for public safety;

(866) (2) vessels in distress where a delay would endanger life or property;

(867) (3) commercial vessels engaged in rescue or emergency salvage operations; and

(868) (4) vessels seeking shelter from severe weather.

(869)

§117.33 Closure of draw for natural disasters or civil disorders.

(870) Drawbridges need not open for the passage of vessels during periods of natural disasters or civil disorders declared by the appropriate authorities unless otherwise provided for in Subpart B or directed to do so by the District Commander.

(871)

§117.35 Temporary change to a drawbridge operating schedule.

(872) (a) For any temporary change to the operating schedule of a drawbridge, lasting less than or equal to 180 days, the District Commander may issue a deviation approval letter to the bridge owner and publish a "Notice of temporary deviation from regulations" in the **Federal Register**.

(873) (b) If the time period for a temporary change to the operating schedule of a drawbridge will be greater then 180 days, the District Commander will follow appropriate rulemaking procedures and publish a temporary rule in the **Federal Register** prior to the start of the action.

(874) (c) *Request for change*. (1) To temporarily change the drawbridge-operating requirements the bridge owner must submit a written request to the District Commander for approval of the change.

(875) (2) The request must describe the reason for the deviation and the dates and times scheduled for the start and end of the change.

(876) (3) Requests should be submitted as early as possible, preferably 90 days before the start of the action. District Commanders have discretion to accept requests submitted less than 90 days before a needed change if those requests can be processed before the date of the needed change.

(877) (d) *Determination*. The District Commander's determination to allow the schedule change is normally forwarded to the bridge owner within ten working days after receipt of the request. If the request is denied, the reasons for the denial will be set out in the District Commander's decision letter.

(878) (e) The drawbridge must return to its regular operating schedule immediately at the end of the designated time period.

(879) (f) If the authorized deviation period for an event is broken into separate time periods on the same day or on consecutive days, the drawbridge must provide openings for navigation between authorized schedule changes.

(880) (g) The District Commander will also announce the change to the operating schedule in the Local Notice to Mariners and other appropriate local media.

(881)

§117.36 Closure of drawbridge for emergency repair.

(882) (a) When a drawbridge unexpectedly becomes inoperable, or should be immediately rendered inoperable because of mechanical failure or structural defect, the drawbridge owner must notify the District Commander of the closure without delay and give the reason for the emergency closure of the drawbridge and an estimated time when the drawbridge will be returned to operating condition.

(883) (b) The District Commander will notify mariners about the drawbridge status through Broadcast Notices to Mariners, Local Notice to Mariners and any other appropriate local media.

(884) (c) Repair work under this section must be performed with all due speed in order to return the drawbridge to operation as soon as possible.

(885)

§117.39 Authorized closure of drawbridge due to infrequent requests for openings.

(886) (a) When there have been no requests for drawbridge openings for at least two years, a bridge owner may request in writing that the District Commander authorize the drawbridge to remain closed to navigation and to be untended.

(887) (b) The District Commander may:

(888) (1) Authorize the closure of the drawbridge;

(889) (2) Set out any conditions in addition to the requirement in paragraph (d): and

(890) (3) Revoke an authorization and order the drawbridge returned to operation when necessary.

(891) (c) All drawbridges authorized to remain closed to navigation, under this section, must be maintained in operable condition.

(892) (d) Authorization under this section does not:

(893) (1) Authorize physical changes to the drawbridge structure, or

(894) (2) Authorize removal of the operating machinery.

(895) (e) Drawbridges authorized under this section to remain closed to navigation and to be untended are identified in subpart B of this part.

(896)

§117.40 Advance notice for drawbridge opening.

(897) (a) Upon written request by the owner of a drawbridge, the District Commander may authorize a drawbridge to operate under an advance notice for opening. The drawbridge tender, after receiving the advance notice, must open the drawbridge at the requested time and allow for a reasonable delay in arrival of the vessel giving the advance notice.

(898) (b) If the request is approved, a description of the advanced notice for the drawbridge will be added to subpart B of this part.

(899)

§117.41 Maintaining drawbridges in the fully open position.

(900) (a) Drawbridges permanently maintained in the fully open to navigation position may discontinue drawtender service as long as the drawbridge remains fully open to navigation. The drawbridge must remain in the fully open position until drawtender service is restored.

(901) (b) If a drawbridge is normally maintained in the fully open to navigation position, but closes to navigation for the passage of pedestrian, vehicular, rail, or other traffic, the drawbridge must be tended unless:

(902) (1) Special operating requirements are established in subpart B of this part for that drawbridge; or

(903) (2) The drawbridge is remotely operated or automated.

(904)

§117.42 Remotely operated and automated drawbridges.

(905) (a) Upon written request by the owner of a drawbridge, the District Commander may authorize a drawbridge to operate under an automated system or from a remote location.

(906) (b) If the request is approved, a description of the full operation of the remotely operated or automated drawbridge will be added to subpart B of this part.

(907)

§117.47 Clearance gauges.

(908) (a) Clearance gauges are required for drawbridges across navigable waters of the United States discharging into the Atlantic Ocean south of Delaware Bay (including the Lewes and Rehoboth Canal, DE) or into the Gulf of America (including coastal waterways contiguous thereto and tributaries to such waterways and the Lower

Atchafalaya River, LA), except the Mississippi River and its tributaries and outlets.

(909) (b) Except for provisions in this part which specify otherwise for particular drawbridges, clearance gauges shall be designed, installed, and maintained according to the provisions of **33 CFR 118.160** (not carried in this Coast Pilot).

(910) **NOTE:** Clearance gauge requirements, if any, for drawbridges other than those referred to in this section are listed in Subpart B under the appropriate bridge.

(911)

§117.49 Process of violations.

(912) (a) Complaints of alleged violations under this part are submitted to the District Commander of the Coast Guard District in which the drawbridge is located.

(913) (b) Penalties for violations under this part are assessed and collected under Subpart 1.07 of Part 1 of this chapter (not published in this Coast Pilot; see **33 CFR 1.07**).

(914)

Subpart B–Specific Requirements

(915)

§117.51 General.

(916) The drawbridges in this subpart are listed by the state in which they are located and by the waterway they cross. Waterways are arranged alphabetically by state. The drawbridges listed under a waterway are generally arranged in order from the mouth of the waterway moving upstream. The drawbridges on the Atlantic Intracoastal Waterway are listed from north to south and on the Gulf Intracoastal Waterway from east to west.

(917)

§117.55 Posting of requirements.

(918) (a) The owner of each drawbridge under this subpart, other than removable span bridges, must ensure that a sign summarizing the requirements in this subpart applicable to the drawbridge is posted both upstream and downstream of the drawbridge. The requirements to be posted need not include those in Subpart A of this part or §§117.51 through 117.59.

(919) (b) The signs shall be of sufficient size and so located as to be easily read at any time from an approaching vessel.

(920) (c) If advance notice is required to open the draw, the signs shall also state the name, address, and telephone number of the person to be notified.

(921)

§117.59 Special requirements due to hazards.

(922) For the duration of occurrences hazardous to safety or navigation, such as floods, freshets, and damage to the bridge or fender system, the District Commander may require the owner of an operational drawbridge listed in this subpart to have the bridge attended full time and open on signal.

(923)

Idaho

(924)

§117.381 Clearwater River.

(925) The draws of the Camas Prairie railroad bridge, mile 0.6 at Lewiston, shall open on signal if at least three hours notice is given to the Camas Prairie Railroad in Lewiston.

(926)

§117.383 Pend Oreille River.

(927) The draw of the Burlington Northern railroad bridge, mile 111.3 near Sandpoint, need not be opened for the passage of vessels.

(928)

§117.385 Snake River.

(929) The drawspan of the U.S. 12 bridge, mile 140.0, between Lewiston, Idaho, and Clarkston, Washington, operates as follows:

(930) (a) The draw need not open for the passage of vessels except at these hours:

(931) (1) From March 15 through November 15 at 6 a.m., 10 a.m., 3 p.m., 7 p.m., and 9 p.m.

(932) (2) From November 16 through March 14 at 9 a.m., 10 a.m., 2 p.m., and 3 p.m.

(933) (b) Requests for openings shall be given to the Washington State Department of Transportation.

(934) (1) Monday through Thursday of every week, except holidays, the draw shall open if at least two hours notice is given.

(935) (2) Friday through Sunday of every week, except holidays, the draw shall open if notice is given by 5 p.m. of the preceding Wednesday.

(936) (3) The draw shall open on holidays if notice is given by 5 p.m. two workdays, excluding Friday, preceding the holiday.

(937) (4) The draw shall open at any time for the passage of vessels engaged in an emergency.

(938)

Oregon

(939)

§117.861 Blind Slough.

(940) The draws of the Portland and Western railroad bridge, mile 1.1 at Knappa, shall open on signal if at least one hour notice is given. However, the draw shall open promptly on signal from four hours before to four hours after each day's authorized commercial fishing period established by the Columbia River Compact (Washington State Department of Fisheries and the Fish Commission of Oregon) for the Columbia River Fishery below Bonneville Dam.

(941)

§117.865 Clatskanie River.

(942) The draw of the Portland and Western railroad bridge, mile 0.7 at Clatskanie, shall open on signal if at least one hours notice is given. However, the draw shall open promptly on signal from four hours before to four hours after each day's authorized commercial fishing

period established by the Columbia River Compact (Washington State Department of Fisheries and the Fish Commission of Oregon) for the Columbia River Fishery below Bonneville Dam.

(943)

§117.869 Columbia River.

(944) (a) The draws of the Interstate 5 Bridges, mile 106.5, between Portland, OR, and Vancouver, WA, shall open on signal except that the draws need not be opened for the passage of vessels from 6:30 a.m. to 9 a.m. and from 2:30 p.m. to 6 p.m. Monday through Friday except federal holidays.

(945) (b) The draw of the Port of Hood River bridge, mile 169.8 at Hood River, shall open on signal if at least 12 hours notice is given.

(946) (c) The draw of the Burlington Northern Santa Fe railroad bridge, mile 201.2, between Celilo, Oregon, and Wishram, Washington, is automated and is normally maintained in the fully open-to-navigation position.

(947) (1) Lights. All lights required for automated operation shall be visible to marine traffic for a distance of at least 2 miles and shall be displayed at all times, day and night.

(948) (i) When the draw is fully open, a steady green light shall be displayed at the center of the drawspan on both upstream and downstream sides.

(949) (ii) When the draw is not fully open, a steady red light shall be displayed at the center of the drawspan on both upstream and downstream sides.

(950) (iii) When the draw is about to close, flashing yellow lights in the form of a down-pointing arrow shall be displayed at the center of the drawspan on both upstream and downstream sides.

(951) (2) Operation. When a train approaches the bridge, the yellow lights shall start flashing. After an 8-minute delay, the green lights shall change to red, the drawspan shall lower and lock, and the yellow lights shall be extinguished. Red lights shall continue to be displayed until the train has crossed and the drawspan is again in the fully open position. At that time, the red lights shall change to green.

(952) (3) Vessels equipped with radiotelephones may contact Burlington Northern Santa Fe to obtain information on the status of the bridge. Bridge status information also may be obtained by calling the commercial telephone number posted at the drawspan of the bridge.

(953)

§117.871 Coos Bay.

(954) The draw of the Port of Coos Bay railroad bridge, mile 9.0 at North Bend, shall be maintained in the fully open position, except for the crossing of trains or maintenance.

(955)

§117.873 Coos River.

(956) The draw of the Oregon State secondary highway bridge, mile 2.2 near Eastside, shall open on signal if at least 12 hours notice is given.

(957)

§117.875 Coquille River.

(958) The draws of the US 101 highway bridge, mile 3.5 at Bandon, Oregon, need not be opened for the passage of vessels; however, the draws shall be restored to operable condition within 6 months after notification by the District Commander to do so.

(959)

§117.879 Isthmus Slough.

(960) The draw of the Oregon State secondary highway bridge, mile 1.0 at Coos Bay, shall open on signal if at least 24 hours notice is given.

(961)

§117.881 John Day River.

(962) The draw of the Portland and Western railroad bridge, mile 0.0 near Astoria, shall open on signal if at least one hour notice is given. However, the draw shall open promptly on signal from four hours before to four hours after each day's authorized commercial fishing period established by the Columbia River Compact (Washington State Department of Fisheries and the Fish Commission of Oregon) for the Columbia River Fishery below Bonneville Dam.

(963)

§117.887 North Portland Harbor (Oregon Slough).

(964) The draw of the Burlington Northern Santa Fe railroad bridge, mile 3.2 at Portland, shall open on signal if at least one half hours notice is given.

(965)

§117.889 Siuslaw River.

(966) (a) The draw of the US 101 bridge, mile 5.0 at Florence, shall open on signal if at least two hours notice is given.

(967) (b) The draw of the Central Oregon and Pacific railroad bridge, mile 8.0 near Cushman, shall open on signal if at least 24 hours notice is given.

(968)

§117.892 South Slough.

(969) The drawspan for the Oregon State Highway Drawbridge across South Slough at Charleston must open on signal for the passage of vessels, except that between the hours of 7 a.m. and 7 p.m., from June 1 through September 30, the drawspan need be opened only on the hour and half-hour. This exception does not apply to commercial tugs and/or tows or public vessels of the United States.

(970)

§117.893 Umpqua River.

(971) (a) The draw of the US 101 Bridge, mile 11.1, at Reedsport, Oregon, shall open on signal if at least two hours notice is given.

(972) (b) The draw of the Central Oregon and Pacific railroad bridge, mile 11.5 at Reedsport, shall be maintained in the fully open position, except for the crossing of trains or other railroad equipment or for maintenance. During foggy weather when the draw is closed and the channel

is not clear for the passage of vessels, a fog horn with an audible range of one-half mile from the draw shall be sounded. Two clear signals of approximately six seconds duration each, repeated at intervals of 60 seconds from completion of the second signal to commencement of the next signal, shall be sounded and repeated from commencement of closure to full opening of the draw. When the draw is again in the open position, the fog horn shall be stopped, indicating that the channel is clear for the passage of vessels.

(973) (c) The draw of the US 101 bridge across the side channel of the Umpqua River, mile 11.1 near Reedsport, need not be opened for the passage of vessels.

(974)

§117.895 Wallooskee River.

(975) The draw of the Oregon State secondary highway bridge, mile 1.0 near Astoria, shall open on signal if at least 48 hours notice is given.

(976)

§117.897 Willamette River.

(977) (a) The draws of the Union Pacific railroad bridge, mile 119.6 at Albany; and mile 164.3 near Harrisburg, need not open for the passage of vessels. However the draws shall be returned to operable condition within six months after notification by the District Commander to do so.

(978) (b) The draw of the Oregon State highway bridge, mile 132.1 at Corvallis, shall open on signal if at least seven days notice is given. However, the draw need not be opened on Saturdays, Sundays, and Federal Holidays.

(979) (c) The draws of the bridges listed in paragraph (c)(3) of this section shall open on signal if appropriate advance notice is given to the drawtender of the Hawthorne Bridge subject to the following requirements and exceptions:

(980) (1) The draws need not open for the passage of vessels from 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m. every Monday through Friday; except that on New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, and Christmas Day, the draws shall open in accordance with the notice requirements of paragraph (c)(3) below.

(981) (2) During Rose Festival Week or when the water elevation reaches and remains above +12 feet, no advance notice is required to request opening, except during the normal closed periods in (c)(1) above.

(982) (3)(i) Broadway Bridge, mile 11.7, from 8 a.m. to 5 p.m. Monday through Friday, one hour's notice shall be given for draw openings. At all other times, notice of at least two hours in advance is required.

(983) (ii) Steel Bridge (upper deck only), Portland, mile 12.1. From 8 a.m. to 5 p.m. Monday through Friday, one hour's notice shall be given for draw openings. At all other times, two hours notice is required.

(984) (iii) Burnside Bridge, 12.4, from 8 a.m to 5 p.m. Monday through Friday, one hour's notice shall be given for draw openings. At the times, two hours notice is required.

(985) (iv) Morrison Bridge, Portland, mile 12.8, from 8 a.m. to 5 p.m. Monday through Friday, one hour's notice shall be given for draw openings. At all other times, two hours notice is required.

(986) (v) Hawthorne Bridge, Portland, mile 13.1, no advance notice required.

(987)

§117.899 Youngs Bay and Lewis and Clark River.

(988) (a) The draw of the US101 (New Youngs Bay) highway bridge, mile 0.7, across Youngs Bay at Smith Point, shall open on signal for the passage of vessels if at least one half-hour notice is given to the draw tender at the Lewis and Clark River Bridge by marine radio, telephone, or other suitable means from 7 a.m. to 5 p.m. Monday through Friday. During all other times, including weekends from 5 p.m. on Friday until 7 a.m. on Monday, and all Federal holidays except Columbus Day, the draw shall open on signal if at least a two-hour notice is given to the Oregon Department of Transportation (ODOT) by telephone. The opening signal shall be two prolonged blasts followed by one short blast.

(989) (b) The draw of the Oregon State (Old Youngs Bay) highway bridge, mile 2.4, across Youngs Bay foot of Fifth Street, shall open on signal for the passage of vessels if at least one half-hour notice is given to the draw tender at the Lewis and Clark River Bridge by marine radio, telephone, or other suitable means from 7 a.m. to 5 p.m. Monday through Friday. During all other times, including weekends from 5 p.m. on Friday until 7 a.m. on Monday, and all Federal holidays except Columbus Day, the draw shall open on signal if at least a two-hour notice is given to ODOT by telephone. The opening signal shall be two prolonged blasts followed by one short blast.

(990) (c) The draw of the Oregon State (Lewis and Clark River) highway bridge, mile 1.0, across the Lewis and Clark River, shall open on signal for the passage of vessels if at least one half hour notice is given by marine radio, telephone, or other suitable means from 7 a.m. to 5 p.m. Monday through Friday. During all other times, including weekends from 5 p.m. on Friday until 7 a.m. on Monday, and all Federal holidays except Columbus Day, the draw shall open on signal if at least a two-hour notice is given to ODOT by telephone. The opening signal shall be two prolonged blasts followed by four short blasts.

(991)

Washington

(992)

§117.1031 Chehalis River.

(993) The draw of the U.S. 101 highway bridge, mile 0.1, at Aberdeen shall open on signal if at least one-hour notice is given at all times by telephone to the Washington State Department of Transportation.

(994)

§117.1035 Columbia River.

(995) (a) The term drawtender, as used in this section means the operator of the drawspan, whether that person

may be a train crew member, maintenance person, or an officially designated drawtender.

(996) (b) The draw of the semi-automated Union Pacific railroad bridge (Kalan Bridge), mile 323.4, near Kennewick, Washington, is normally maintained in the fully open position with no drawtender in attendance. A radar beacon (RACON) is located at the center of the drawspan. The RACON operates only when the drawspan is fully open, by responding with the Morse letter "K" to X-band radar signals. When necessary to close the drawspan for the passage of a train or for maintenance, a drawtender shall be dispatched to operate the draw from either of the remote control stations located at the ends of the bridge. Operation of the bridge shall be as follows:

(997) (1) The drawtender shall broadcast a radio message over Channel 16-VHF to all vessels in the vicinity that the Kalan Bridge will be closing in two minutes. If after two minutes no response is received, the drawtender shall broadcast a message over Channel 13-VHF that the Kalan Bridge is closing. Both messages shall be broadcast twice.

(998) (2) Prior to activating the closing sequence the drawtender shall visually inspect the waterway for marine traffic approaching the bridge. The closing sequence shall not be activated until after marine traffic has cleared the bridge.

(999) (3) When the closing sequence is activated, the following functions occur automatically: The RACON is deactivated, red strobe lights on the lift towers and on the channel piers start flashing, a downward pointing arrow consisting of amber colored lights is displayed from the center of the drawspan and a recorded message is broadcast over Channel 13-VHF advising that the Kalan Bridge is closed to river traffic. The radio message is repeated every five minutes, the red lights continue to flash and the downward pointing arrow is displayed, until the lift span returns to the up and locked position. At the end of the ten minutes, a horn sounds for 30 seconds, the span begins closing and the centerspan navigation lights turn from green to red. The horn sounds for 30 seconds at 10 minute intervals, until the lift span returns to the up and locked position.

(1000) (4) If for any reason during the closing sequence a danger is posed to marine traffic, the closing sequence shall be stopped and the bridge reopened until the threat of danger has passed.

(1001) (5) If the bridge is to be temporarily closed for maintenance or for purposes other than the passage of a train, the drawtender shall continually monitor Channels 13 and 16 for calls from approaching vessels, and respond to inquiries from vessels about the closure.

(1002) (6) After a train has cleared the bridge, the following functions occur automatically: The drawspan returns to the fully open and locked position, the RACON is reactivated, the arrow display and the red strobe lights are extinguished, the red centerspan navigation lights return to green and a recorded message is broadcast over Channel 13-VHF that the Kalan Bridge is open for marine traffic.

(1003) (7) Bridge status information may be obtained by calling the commercial telephone number posted at the drawspan of the bridge.

(1004) (c) The draw of the Burlington Northern Santa Fe railroad bridge at mile 328.0, between Pasco and Kennewick, shall open on signal from 8 a.m. to 4 p.m. At all other times the draw shall open on signal if at least 2 hour's notice is given through the General Yardmaster, Pasco, Washington.

(1005)

§117.1037 Cowlitz River.

(1006) (a) The draw of the Burlington Northern Santa Fe railroad bridge, mile 1.5, shall operate as follows:

(1007) (1) The draw shall open on signal if at least 24 hours notice is given.

(1008) (2) In the event of an emergency declared by the Cowlitz County Department of Emergency Services, the bridge shall be capable of opening upon two hours notice. Notification of emergencies and requests for openings during emergencies are initiated through the Cowlitz County Department of Emergency Services.

(1009) (3) The operating machinery of the draw shall be maintained in a serviceable condition and the draw shall be opened and closed at intervals frequent enough to make certain that the machinery is in proper order for satisfactory operation.

(1010) (4) During periods of fog or similar periods of reduced visibility, the drawtender, after acknowledging the signal to open, shall toll a bell continuously during the approach and passage of the vessel.

(1011) (b) The draw of the Allen Street Bridge, mile 5.5, need not open for the passage of vessels.

(1012)

§117.1041 Duwamish Waterway.

(1013) (a) The draws of each bridge across the Duwamish Waterway shall open on signal, except as follows:

(1014) (1) From Monday through Friday, except all Federal holidays but Columbus Day, the draws of the First Avenue South Bridges, mile 2.5, need not be opened for the passage of vessels from 6 a.m. to 9 a.m. and 3 p.m. to 6 p.m., except: The draws shall be open at any time for a vessel of 5,000 gross tons and over, a vessel towing a vessel of 5,000 gross tons and over, and a vessel proceeding to pick up for towing a vessel of 5,000 gross tons and over.

(1015) (2) The draw of the South Park Bridge, mile 3.8, need not be opened for the passage of vessels from 6:30 a.m. to 8:30 a.m. and from 3:30 p.m. to 5:30 p.m., Monday through Friday except, Federal holidays, other than Columbus Day.

(1016) (3) Between the hours of 11 p.m. and 7 a.m., Monday through Sunday, the South Park Bridge shall open if at least a 12 hour notice is given by telephone or VHF radio to the drawtender at the South Park Bridge. If emergency responders require a bridge opening between 11 p.m. and

7 a.m., the South Park Bridge shall open within 45 minutes from initial notification to the Fremont Bridge operator. Vessels engaged in sea-trials or dredging activities may request a standby drawtender to open the bridge, on demand, during sea-trials and/or dredging operations, if at least a 24 hour notice is given to the South Park Bridge drawtender.

(1017) (b) The following bridges shall open on the specified signals:

(1018) (1) Burlington Northern Santa Fe railroad bridge, mile 0.4, and Southwest Spokane Street bridge, mile 0.3, one prolonged blast followed quickly by three short blasts.

(1019) (2) Burlington Northern Santa Fe railroad bridge, mile 0.4, one prolonged blast followed quickly by one short blast.

(1020) (3) First Avenue South bridge, mile 2.5, three prolonged blasts.

(1021) (4) South Park highway bridge, mile 3.8, one prolonged blast followed quickly by one short blast and one prolonged blast.

(1022) (c) When fog prevails by day or by night, the drawtender of bridges listed in this section, after giving the acknowledging signal to open, shall toll a bell continuously during the approach and passage of vessels.

(1023)

§117.1045 Hood Canal.

(1024) The draw of the Washington State pontoon highway bridge near Port Gamble operates as follows:

(1025) (a) The draw shall open on signal if at least one hour's notice is given. The draw shall be opened horizontally for 300 feet unless the maximum opening of 600 feet is requested.

(1026) (b) The draw of the Hood Canal Bridge, mile 5.0, need not open for vessel traffic from 3 p.m. to 6:15 p.m. daily from 3 p.m. May 22 to 6:16 p.m. September 30, except for commercial tug and tow vessels and vessels of the U.S. Navy or vessels attending the missions of the U.S. Navy and other public vessels of the United States. At all other times the bridge will operate in accordance with paragraph (a) of this section.

(1027) (c) Telephone requests for bridge openings may be directed as collect calls to the Toll Office at the bridge site. The call may also be made by direct telephone communication through the Seattle Marine Operator, Station KOH, or through other marine wire or radio telephone service.

(1028) (d) During unusual or emergency periods, the authorized representative of the owner of or agency controlling the bridge shall open the draw on a demand basis for specified periods of time, normally not exceeding 48 hours, when requested by the Department of the Navy. While on a demand basis, a drawtender shall be in attendance on the bridge with radio communication equipment in operation.

(1029)

§117.1047 Hoquiam River.

(1030) (a) When fog prevails by day or night, the drawtender of each bridge listed in this section, after giving the acknowledging signal to open, shall toll a bell continuously during the approach and passage of vessels.

(1031) (b) The draw of the Puget Sound and Pacific railroad bridge, mile 0.3 at Hoquiam, shall be maintained in the fully open position except for the passage of trains or for maintenance. When the draw of the bridge is closed and the visibility at the drawtender's station is less than one mile up or down the channel, the drawtender shall sound two long blasts every minute. When the draw is reopened, the drawtender shall sound one long blast followed by one short blast.

(1032) (c) The draw of the Simpson Avenue bridge, mile 0.5 at Hoquiam, shall open on signal if at least a one hour notice is given by telephone to the Washington State Department of Transportation. The opening signal is two prolonged blasts followed by one short blast.

(1033) (d) The draw of the Riverside Avenue Bridge, mile 0.9, Hoquiam, shall open on signal if at least one hour notice is given by telephone to the Washington State Department of Transportation. The opening signal is two prolonged blasts followed by two short blasts.

(1034)

§117.1051 Lake Washington Ship Canal.

(1035) (a) When fog prevails by day or by night, the drawtender of each bridge listed in this section, after giving the acknowledging signal to open, shall toll a bell continuously during the approach and passage of vessels.

(1036) (b) All non-self-propelled vessels, craft, or rafts navigating this waterway for which the opening of any draw is necessary shall be towed by a suitable self-propelled vessel while passing the draw.

(1037) (c) The draw of the Burlington Northern Santa Fe railroad bridge, mile 0.1, shall open on signal.

(1038) (d) The draws of the Ballard Bridge, mile 1.1, Fremont Bridge, mile 2.6, and University Bridge, mile 4.3, shall open on signal, except that:

(1039) (1) The draws need not be opened for a period of up to 10 minutes after receiving an opening request, if needed to pass accumulated vehicular traffic. However, the draws shall open without delay, when requested by vessels engaged in towing operations.

(1040) (2) The draws need not open from 7 a.m. to 9 a.m. and from 4 p.m. to 6 p.m. Monday through Friday, except all Federal holidays but Columbus Day for any vessel of less than 1000 tons, unless the vessel has in tow a vessel of 1000 gross tons or over.

(1041) (3) Between the hours of 11 p.m. and 7 a.m. the draws shall open if at least one hour notice is given by telephone, radiotelephone, or otherwise to the drawtender at the Fremont Avenue Bridge.

(1042) (e) The draw of the Montlake Bridge, mile 5.2 shall open on signal, except that:

(1043) (1) The draw need not open for a period of up to 10 minutes after receiving an opening request, if needed to pass accumulated vehicular traffic. However, the draw shall open without delay, when requested by vessels engaged in towing operations.

(1044) (2) For any vessel or watercraft of less than 1,000 gross tons, unless the vessel has in tow a vessel of 1,000 gross tons or over, from Monday through Friday, except Federal Holidays:

(1045) (i) The draw need not open from 7 a.m. to 9 a.m. and from 3:30 p.m. to 6:30 p.m. from April 30 to September 1 and from 7 a.m. to 10 a.m. and from 3:30 p.m. to 7 p.m. from September 1 to April 30.

(1046) (ii) The draw need open only on the hour and half hour from 12:30 to 3:30 p.m. and from 6 p.m. to 6:30 p.m.

(1047)

§117.1053 Lewis River.

(1048) The draw of the Burlington Northern Santa Fe railroad bridge, 2.0 at Woodland, need not be opened for the passage of vessels.

(1049)

§117.1055 Skagit River.

(1050) The draws of all bridges across the Skagit river need not be opened for the passage of vessels. However, the draws shall be returned to operable condition within one year after notification by the District Commander to do so.

(1051)

§117.1057 Skamokawa Creek.

(1052) The draw of the Washington State highway bridge at Skamokawa need not be opened for the passage of vessels.

(1053)

§117.1058 Snake River.

(1054) (a) The draw of the Burlington Northern Santa Fe railroad bridge across the Snake River at mile 1.5 between Pasco and Burbank is automated and is normally maintained in the fully open to navigation position.

(1055) (b) *Lights.* All lights required for automated operation shall be visible for a distance of at least 2 miles and shall be displayed at all times, day and night.

(1056) (1) When the draw is fully open, a steady green light shall be displayed at the center of the drawspan on both upstream and downstream sides.

(1057) (2) When the draw is not fully open, a steady red light shall be displayed at the center of the drawspan on both upstream and downstream sides.

(1058) (3) When the draw is about to close, flashing yellow lights in the form of a down-pointing arrow shall be displayed at the center of the drawspan on both upstream and downstream sides.

(1059) (4) A similar set of red, green, and yellow lights shall be displayed on a remote lighting panel located near the north end, upstream side, of the Washington State highway bridge at mile 2.2. These lights shall be synchronized with the lights on the railroad bridge and shall be visible to vessels traveling downstream throughout the passage of the channel adjacent to Strawberry Island.

(1060) (c) *Operation*. When a train approaches the bridge, the yellow lights shall start flashing. After an eight-minute delay, the green lights shall change to red, the drawspan shall lower and lock, and the yellow lights shall be extinguished. Red lights shall continue to be displayed until the train has crossed and the drawspan is again in the fully open position. At that time, the red lights shall change green.

(1061) (d) Vessels equipped with radiotelephones may contact Burlington Northern Santa Fe to obtain information on the status of the bridge. Bridge status information also may be obtained by calling the commercial telephone number posted at the drawspan of the bridge.

(1062)

§117.1059 Snohomish River, Steamboat Slough, and Ebey Slough.

(1063) (a) Drawtenders of bridges listed in this section shall acknowledge sound signals as follows:

(1064) (1) When draw can be opened immediately, two prolonged blasts followed by one short blast or three loud and distinct strokes of a bell.

(1065) (2) When draw cannot be opened immediately, or when it is open and must be closed promptly, two prolonged blasts or two loud and distinct strokes of a bell. This signal may also be used by a vessel to countermand its call signal.

(1066) (b) When fog prevails by day or by night, the drawtender of each bridge listed in this section, after giving the acknowledging signal to open, shall toll a bell continuously during the approach and passage of vessels.

(1067) (c) The draws of the twin, SR 529, highway bridges across the Snohomish River, mile 3.6, at Everett shall open on signal if notice is provided at least one hour in advance. Notice for openings shall be given by marine radio, telephone or other means to the drawtender at the twin, SR 529, Highway Bridges across the Snohomish River, mile 3.6. One signal opens both draws. During freshets, a drawtender shall be in constant attendance, and the draws shall open on signal when so ordered by the District Commander.

(1068) (d) The draw of the Burlington Northern Santa Fe railroad bridge across the Snohomish River, mile 15.5, at Snohomish, need not be opened for the passage of vessels.

(1069) (e) The draw of the Burlington Northern Santa Fe railroad bridge across Steamboat Slough, mile 1.0, near Marysville, shall open on signal if at least four hours notice is given. The opening signal is one prolonged blast followed by one short blast and one prolonged blast.

(1070) (f) The draws of the twin SR 529, highway bridges across Steamboat Slough, miles 1.1 and 1.2, near Marysville, shall open on signal if notice is provided at least four hours in advance. Notice for openings shall be given by marine radio or telephone to the drawtender at the twin, SR 529, Highway Bridges across the Snohomish

River, mile 3.6. One signal opens both draws. During freshets, a drawtender shall be in constant attendance, and the draws shall open on signal when so ordered by the District Commander.

(1071) (g) The draw of the Burlington Northern Santa Fe Railroad Bridge across Ebey Slough, mile 1.5, near Marysville, WA, shall open on signal if at least four hours notice is given. The opening signal is one prolonged blast followed by one short blast. During freshets, a draw tender shall be in constant attendance, and the draw shall open on signal when so ordered by the District Commander.

(1072)

§117.1061 Tacoma Harbor.

(1073) (a) When fog prevails by day or night, the drawtender of each bridge listed in this section, after giving the acknowledging signal to open, shall toll a bell continuously during the approach and passage of vessels.

(1074) (b) The draw of the Murray Morgan Bridge, also known as the South 11th Street Bridge, across Thea Foss Waterway, previously known as City Waterway, mile 0.6, at Tacoma, shall open on signal if at least two hours notice is given. However, to obtain a bridge opening between 10 p.m. and 8 a.m. notification must be made to the City of Tacoma by 8 p.m. In emergencies, openings shall be made as soon as possible upon notification to the City of Tacoma.

(1075)

§117.1063 Willapa River South Fork.

(1076) The draw of the Washington State Parks and Recreation Commission bridge across the South Fork Willapa River, mile 0.3, at Raymond, shall open on signal if at least 24 hours notice is given.

(1077)

§117.1065 Wishkah River.

(1078) (a) When fog prevails by day or by night, the drawtender of each bridge listed in this section, after giving the acknowledging signal to open, shall toll a bell continuously during the approach and passage of vessels.

(1079) (b) The draw of the Puget Sound and Pacific railroad bridge, mile 0.1 at Aberdeen, shall be maintained in the fully open position, except for the passage of trains or for maintenance. When the draw of the bridge is closed and the visibility at the drawtender's station is less than one mile up or down the channel, the drawtender shall sound two prolonged blasts every minute. When the draw is reopened, the drawtender shall sound one prolonged blast followed by one short blast.

(1080) (c) The draws of the Heron Street Bridge, mile 0.2, and the Wishkah Street Bridge, mile 0.4, at Aberdeen, shall open on signal if at least one hour notice is given by telephone to the Washington State Department of Transportation. The opening signal for both bridges is one prolonged blast followed by two short blasts.

(1081)

Part 147–Safety Zones

(1082)

§147.1 Purpose of safety zones.

(1083) Safety zones may be established around OCS facilities being constructed, maintained, or operated on the Outer Continental Shelf to promote the safety of life and property on the facilities, their appurtenances and attending vessels, and on the adjacent waters within the safety zones. Regulations adopted for safety zones may extend to the prevention or control of specific activities and access by vessels or persons, and include measures to protect the living resources of the sea from harmful agents. The regulations do not encompass the operating equipment or procedures used in the drilling for and production of oil, gas, or other minerals, or the transportation of oil, gas, or other minerals by pipeline except as they relate to the safety of life and property on OCS facilities and on the waters adjacent to OCS facilities or to the protection of the living resources of the sea within a safety zone from harmful agents.

(1084)

§147.5 Delegation of authority.

(1085) The authority to establish safety zones and to issue and enforce safety zone regulations in accordance with the provisions of this part is delegated to District Commanders

(1086)

§147.10 Establishment of safety zones.

(1087) (a) Whenever it comes to the attention of the District Commander that a safety zone and regulations may be required concerning any OCS facility being constructed, maintained, or operated on the Outer Continental Shelf or its appurtenances and attending vessels, or the adjacent waters, the District Commander may initiate appropriate inquiry to determine whether a safety zone and regulations should be established. In making this determination, the District Commander considers all relevant safety factors, including existing or reasonably foreseeable congestion of vessels, the presence of unusually harmful or hazardous substances, and any obstructions within 500 meters of the OCS facility. If the District Commander determines that the circumstances warrant the establishment of a safety zone and regulations the District Commander takes action as necessary consistent with the provisions of this part.

(1088) (b) For purposes of establishing safety zones under this part, OCS facility includes non-mineral energy resource permanent or temporary structures.

(1089) (c) Except as provided in paragraph (c) of this section, a safety zone and necessary regulations may be established concerning any OCS facility being constructed, maintained or operated on the Outer Continental Shelf, following publication of a notice of proposed rule making in the **FEDERAL REGISTER** and after interested parties have been given the opportunity

to submit comments. A zone and necessary regulations may be in effect during any period when construction equipment and materials are within 500 meters of the construction site until the removal of all portions of the facility.

(1090) (d) A safety zone and necessary regulations may be established without public rule making procedures when the District Commander determined that imminent danger exists with respect to the safety of life and property of an OCS facility constructed, maintained, or operated on the Outer Continental Shelf, its appurtenances and attending vessels or adjacent waters. A safety zone and regulations may be made effective on the date the rule is published in the **FEDERAL REGISTER.** However, if circumstances require, they may be placed into effect immediately, followed promptly by publication in the **FEDERAL REGISTER**. The District Commander may utilize, in addition to broadcast Notices to Mariners, Local Notices to Mariners, and Notices to Mariners, newspapers, and broadcasting stations to disseminate information concerning a safety zone and regulations pertaining thereto. The public may comment concerning the establishment of a safety zone or regulations under this paragraph. A safety zone or regulations may be modified or withdrawn, as appropriate, based on the comments received.

(1091) (e) Geographic coordinates expressed in terms of latitude or longitude, or both, are not intended for plotting on maps or charts whose referenced horizontal datum is the North American Datum of 1983 (NAD 83), unless such geographic coordinates are expressly labeled NAD 83. Geographic coordinates without the NAD 83 reference may be plotted on maps or charts reference to NAD 83 only after application of the appropriate corrections that are published on the particular map or chart being used.

(1092)

§147.15 Extent of safety zones.

(1093) A safety zone establishment under this part may extend to a maximum distance of 500 meters around the OCS facility measured from each point on its outer edge or from its construction site, but may not interfere with the use of recognized sea lanes essential to navigation.

(1094)

§147.20 Definitions.

(1095) Unless otherwise stated, the term "attending vessel" refers to any vessel which is operated by the owner or operator of an OCS facility located in the safety zone, which is used for the purpose of carrying supplies, equipment or personnel to or from the facility, which is engaged in construction, maintenance, alteration, or repair of the facility, or which is used for further exploration, production, transfer or storage of natural resources from the seabed beneath the safety zone.

(1096)

Part 157–Rules for the Protection of the Marine Environment relating to Tank Vessels Carrying Oil in Bulk

(1097)

Subpart A–General

(1098)

§157.01 Applicability.

(1099) (a) Unless otherwise indicated, this part applies to each vessel that carries oil in bulk as cargo and that is:

(1100) (1) Documented under the laws of the United States (a U.S. vessel); or

(1101) (2) Any other vessel that enters or operates in the navigable waters of the United States, or that operates, conducts lightering under 46 U.S.C. 3715, or receives cargo from or transfers cargo to a deepwater port under 33 U.S.C. 1501 et seq., in the United States Exclusive Economic Zone, as defined in 33 U.S.C. 2701(8).

(1102) (b) This part does not apply to a vessel exempted under 46 U.S.C. 2109 or 46 U.S.C. 3702.

(1103)

§157.02 Incorporation by reference: Where can I get a copy of the publications mentioned in this part?

(1104) (a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and **1CFR** part **51**. To enforce any edition other than that specified in this section, the Coast Guard must publish notice of change in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*. Also, it is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7509; telephone 202–372–1375. The material is also available from the sources indicated in this section.

(1105) (b) *International Maritime Organization (IMO)*—4 Albert Embankment, London SE1 7SR, United Kingdom.

(1106) (1) IMCO Assembly Resolution A.393(X), adopted on 14 November 1977, Recommendation on International Performance and Test Specifications For Oily Water Separating Equipment and Oil Content Meters ("A.393(x)"), incorporation by reference approved for §157.12.

(1107) (2) IMO Assembly Resolution A.496(XII), Adopted on 19 November 1981, Agenda Item 11, Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers ("A.496(XII)"), incorporation by reference approved for §157.12.

(1108) (3) IMO Assembly Resolution A.586(14), Adopted on 20 November 1985, Agenda item 12, Revised

Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers ("A.586(14)"), incorporation by reference approved for §157.12.

(1109) (4) IMO Marine Environment Protection Committee Resolution MEPC.13 (19), adopted on 9 December 1983, Guidelines for Plan Approval and Installation Survey of Oil Discharge Monitoring and Control Systems for Oil Tankers and Environmental Testing of Control Sections Thereof ("MEPC.13(19)"), incorporation by reference approved for §157.12.

(1110) (5) IMO Marine Environment Protection Committee Resolution MEPC.108(49), Adopted on 18 July 2003, Revised Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers ("MEPC.108(49)"), incorporation by reference approved for §157.12.

(1111) (6) IMO Assembly Resolution A.601(15), Provision and Display of Manoeuvring Information on Board Ships, Annex sections 1.1, 2.3, 3.1, and 3.2 with appendices, adopted on 19 November 1987 ("A.601(15)"), incorporation by reference approved for §157.450.

(1112) (7) IMO Assembly Resolution A.744(18), Guidelines on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil Tankers, Annex B sections 1.1.3-1.1.4, 1.2-1.3, 2.1, 2.3-2.6, 3-8, and Annexes 1-10 with appendices, adopted 4 November 1993 ("A.744(18)"), incorporation by reference approved for §157.430.

(1113) (8) IMO Assembly Resolution A.751(18), Interim Standards for Ship Manoeuvrability, Annex sections 1.2, 2.3-2.4, 3-4.2, and 5, adopted 4 November 1993 with Explanatory Notes in MSC/Circ. 644 dated 6 June 1994 ("A.751(18)"), incorporation by reference approved for §157.445.

(1114) (9) MARPOL Consolidated Edition 2011, Annex I, Regulations for the prevention of pollution by oil, chapter 4—Requirements for the cargo area of oil tankers, Part A—Construction, Regulation 22, "Pump-room bottom protection," (Annex I, Regulation 22) incorporation by reference approved for §157.14.

(1115) (10) MARPOL Consolidated Edition 2011, Annex I, Regulations for the prevention of pollution by oil, chapter 4—Requirements for the cargo area of oil tankers, Part A—Construction, Regulation 23, "Accidental oil outflow performance," (Annex I, Regulation 23) incorporation by reference approved for §157.20.

(1116) (c) *Oil Companies International Marine Forum (OCIMF)* 27 Queen Anne's Gate, London, SW1H 9BU, England].

(1117) (1) International Safety Guide for Oil Tankers and Terminals, Fourth Edition, chapters 6, 7, and 10, 1996, incorporation by reference approved for §157.435.

(1118) (2) [Reserved]

(1119)

§157.03 Definitions.

(1120) Except as otherwise stated in a subpart:

(1121) *Amidships* means the middle of the length.

(1122) *Animal fat* means a non-petroleum oil, fat, or grease derived from animals and not specifically identified elsewhere in this part.

(1123) *Ballast voyage* means the voyage that a tank vessel engages in after it leaves the port of final cargo discharge.

(1124) *Breadth or B* means the maximum molded breadth of a vessel in meters.

(1125) *Cargo tank length* means the length from the forward bulkhead of the forwardmost cargo tanks, to the after bulkhead of the aftermost cargo tanks.

(1126) *Center tank* means any tank inboard of a longitudinal bulkhead.

(1127) *Clean ballast* means ballast which:

(1128) (1) If discharged from a vessel that is stationary into clean, calm water on a clear day, would not–

(1129) (i) Produce visible traces of oil on the surface of the water or on adjoining shore lines; or

(1130) (ii) Cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shore lines; or

(1131) (2) If verified by an approved oil discharge monitoring and control system, has an oil content that does not exceed 15 p.m.

(1132) *Combination carrier* means a vessel designed to carry oil or solid cargoes in bulk.

(1133) *Crude oil* means any liquid hydrocarbon mixture occurring naturally in the earth, whether or not treated to render it suitable for transportation, and includes crude oil from which certain distillate fractions may have been removed, and crude oil to which certain distillate fractions may have been added.

(1134) *Deadweight or DWT* means the difference in metric tons between the lightweight displacement and the total displacement of a vessel measured in water of specific gravity 1.025 at the load waterline corresponding to the assigned summer freeboard.

(1135) *Dedicated clean ballast tank* means a cargo tank that is allocated solely for the carriage of clean ballast.

(1136) *Domestic trade* means trade between ports or places within the United States, its territories and possessions, either directly or via a foreign port including trade on the navigable rivers, lakes, and inland waters.

(1137) *Double bottom* means watertight protective spaces that do not carry any oil and which separate the bottom of tanks that hold any oil within the cargo tank length from the outer skin of the vessel.

(1138) *Double hull* means watertight protective spaces that do not carry any oil and which separate the sides, bottom, forward end, and aft end of tanks that hold any oil within the cargo tank length from the outer skin of the vessel as prescribed in §157.10d.

(1139) *Doubles sides* means watertight protective spaces that do not carry any oil and which separate the sides of tanks that hold any oil within the cargo tank length from the outer skin of the vessel.

(1140) *Existing vessel* means any vessel that is not a new vessel.

(1141) *Fleeting or assist towing vessel* means any commercial vessel engaged in towing astern, alongside, or pushing ahead, used solely within a limited geographic area, such as a particular barge fleeting area or commercial facility, and used solely for restricted service, such as making up or breaking up larger tows.

(1142) *Foreign trade* means any trade that is not domestic trade.

(1143) *From the nearest land* means from the baseline from which the territorial sea of the United States is established in accordance with international law.

(1144) *Fuel oil* means any oil used as fuel for machinery in the vessel in which it is carried.

(1145) *Inland vessel* means a vessel that is not oceangoing and that does not operate on the Great Lakes.

(1146) *Instantaneous rate of discharge of oil content* means the rate of discharge of oil in liters per hour at any instant, divided by the speed of the vessel in knots at the same instant.

(1147) *Integrated tug barge* means a tug and a tank barge with a mechanical system that allows the connection of the propulsion unit (the tug) to the stern of the cargo carrying unit (the tank barge) so that the two vessels function as a single self-propelled vessel.

(1148) *Large primary structural member* includes any of the following:

(1149) (1) Web frames.

(1150) (2) Girders.

(1151) (3) Webs.

(1152) (4) Main brackets.

(1153) (5) Transverses.

(1154) (6) Stringers.

(1155) (7) Struts in transverse web frames when there are 3 or more struts and the depth of each is more than 1/15 of the total depth of the tank.

(1156) *Length or L* means the distance in meters from the fore side of the stem to the axis of the rudder stock on a waterline at 85 percent of the least molded depth measured from the molded baseline, or 96 percent of the total length on that waterline, whichever is greater. In vessels designed with drag, the waterline is measured parallel to the designed waterline.

(1157) *Lightweight* means the displacement of a vessel in metric tons without cargo, fuel oil, lubricating oil, ballast water, fresh water, and feedwater in tanks, consumable stores, and any persons and their effects.

(1158) *Major conversion* means a conversion of an existing vessel that:

(1159) (1) Substantially alters the dimensions or carrying capacity of the vessel, except a conversion that includes only the installation of segregated ballast tanks, dedicated clean ballast tanks, a crude oil washing system, double sides, a double bottom, or a double hull;

(1160) (2) Changes the type of vessel;

(1161) (3) Substantially prolongs the vessel's service life; or

(1162) (4) Otherwise so changes the vessel that it is essentially a new vessel, as determined by the Commandant (CG–CVC).

(1163) *MARPOL 73/78* means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating to that Convention. A copy of MARPOL 73/78 is available from the International Maritime Organization, 4 Albert Embankment, London, SE1, 7SR, England.

(1164) *New vessel* means:

(1165) (1) A U.S. vessel in domestic trade that:

(1166) (i) Is constructed under a contract awarded after December 31, 1974;

(1167) (ii) In the absence of a building contract, has the keel laid or is at a similar stage of construction after June 30, 1975;

(1168) (iii) Is delivered after December 31, 1977; or

(1169) (iv) Has undergone a major conversion for which:

(1170) (A) The contract is awarded after December 31, 1974;

(1171) (B) In the absence of a contract, conversion is begun after June 30, 1975; or

(1172) (C) Conversion is completed after December 31, 1977; and

(1173) (2) A foreign vessel or a U.S. vessel in foreign trade that;

(1174) (i) Is constructed under a contract awarded after December 31, 1975;

(1175) (ii) In the absence of a building contract, has the keel laid or is at a similar stage of construction after June 30, 1976;

(1176) (iii) Is delivered after December 31, 1979; or

(1177) (iv) Has undergone a major conversion for which:

(1178) (A) The contract is awarded after December 31, 1975;

(1179) (B) In the absence of a contract, conversion is begun after June 30, 1976; or

(1180) (C) Conversion is completed after December 31, 1979.

(1181) *Non-petroleum oil* means oil of any kind that is not petroleum-based. It includes, but is not limited to, animal fat and vegetable oil.

(1182) *Oceangoing* has the same meaning as defined in §151.05 of this chapter.

(1183) *Officer in charge of a navigational watch* means any officer employed or engaged to be responsible for navigating or maneuvering the vessel and for maintaining a continuous vigilant watch during his or her periods of duty and following guidance set out by the master, international or national regulations, and company policies.

(1184) *Oil* means oil of any kind or in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil. This includes liquid hydrocarbons as well as animal and vegetable oils.

(1185) *Oil cargo residue* means any residue of oil cargo whether in solid, semi-solid, emulsified, or liquid form

from cargo tanks and cargo pump room bilges, including but not limited to, drainages, leakages, exhausted oil, muck, clingage, sludge, bottoms, paraffin (wax), and any constituent component of oil. The term "oil cargo residue" is also known as "cargo oil residue."

(1186) *Oil residue* means—

(1187) (1) Oil cargo residue; and

(1188) (2) Other residue of oil whether in solid, semi-solid, emulsified, or liquid form, resulting from drainages, leakages, exhausted oil, and other similar occurrences from machinery spaces.

(1189) *Oil spill response vessel* means a vessel that is exclusively dedicated to operations to prevent or mitigate environmental damage due to an actual or impending accidental oil spill. This includes a vessel that performs routine service as an escort for a tank vessel, but excludes a vessel that engages in any other commercial activity, such as the carriage of any type of cargo.

(1190) *Oil tanker* means a vessel that is constructed or adapted primarily to carry crude oil or products in bulk as cargo. This includes a tank barge, a tankship, and a combination carrier, as well as a vessel that is constructed or adapted primarily to carry noxious liquid substances in bulk as cargo and which also carries crude oil or products in bulk as cargo.

(1191) *Oily mixture* means a mixture, in any form, with any oil content. "Oily mixture" includes, but is not limited to–

(1192) (1) Slops from bilges;

(1193) (2) Slops from oil cargoes (such as cargo tank washings, oily waste, and oily refuse);

(1194) (3) Oil residue; and

(1195) (4) Oily ballast water from cargo or fuel oil tanks, including any oil cargo residue.

(1196) Oily mixture means a mixture with any oil content.

(1197) *Other non-petroleum oil* means an oil of any kind that is not petroleum oil, an animal fat, or a vegetable oil.

(1198) *Permeability of a space* means the ratio of volume within a space that is assumed to be occupied by water to the total volume of that space.

(1199) *Petroleum oil* means petroleum in any form, including but not limited to, crude oil, fuel oil, sludge, oil residue, and refined products.

(1200) *Primary towing vessel* means any vessel engaged in towing astern, alongside, or pushing ahead and includes the tug in an integrated tug barge. It does not include fleeting or assist towing vessels.

(1201) *Product* means any liquid hydrocarbon mixture in any form, except crude oil, petrochemicals, and liquefied gases.

(1202) *Segregated ballast* means the ballast water introduced into a tank that is completely separated from the cargo oil and fuel oil system and that is permanently allocated to the carriage of ballast.

(1203) *Slop tank* means a tank specifically designated for the collection of cargo drainings, washings, and other oily mixtures.

(1204) *Tank* means an enclosed space that is formed by the permanent structure of a vessel, and designed for the carriage of liquid in bulk.

(1205) *Tank barge* means a tank vessel not equipped with a means of self-propulsion.

(1206) *Tank vessel* means a vessel that is constructed or adapted primarily to carry, or that carries, oil or hazardous material in bulk as cargo or cargo residue, and that–

(1207) (1) Is a vessel of the United States;

(1208) (2) Operates on the navigable waters of the United States; or

(1209) (3) Transfers oil or hazardous material in a port or place subject to the jurisdiction of the United States. This does not include an offshore supply vessel, or a fishing vessel or fish tender vessel of not more than 750 gross tons when engaged only in the fishing industry.

(1210) *Tankship* means a tank vessel propelled by mechanical power or sail.

(1211) *Vegetable oil* means a non-petroleum oil or fat not specifically identified elsewhere in this part that is derived from plant seeds, nuts, kernels, or fruits.

(1212) *Wing tank* means a tank that is located adjacent to the side shell plating.

(1213)

§157.04 Authorization of classification societies.

(1214) (a) The Coast Guard may authorize any classification society (CS) to perform certain plan reviews, certifications, and inspections required by this part on vessels classed by that CS except that only U.S. classification societies may be authorized to perform those plan reviews, inspections, and certifications for U.S. vessels.

(1215) (b) If a CS desires authorization to perform the plan reviews, certifications, and inspections required under this part, it must submit to the Commandant (CG-CVC), Attn: Office of Commercial Vessel Compliance, U.S. Coast Guard Stop 7501, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593-7501, evidence from the governments concerned showing that they have authorized the CS to inspect and certify vessels on their behalf under the MARPOL 73/78.

(1216) (c) The Coast Guard notifies the CS in writing whether or not it is accepted as an authorized CS. If authorization is refused, reasons for the refusal are included.

(1217) (d) Acceptance as an authorized CS terminates unless the following are met:

(1218) (1) The authorized CS must have each Coast Guard regulation that is applicable to foreign vessels on the navigable waters of the United States.

(1219) (2) Each issue concerning equivalents to the regulations in this part must be referred to the Coast Guard for determination.

(1220) (3) Copies of any plans, calculations, records of inspections, or other documents relating to any plan review, inspection, or certification performed to meet this part must be made available to the Coast Guard.

(1221) (4) Each document certified under §§157.116(a)(2), 157.118(b)(1)(ii), and 157.216(b)(1)(11) must be marked with the name or seal of the authorized CS.

(1222) (5) A copy of the final documentation that is issued to each vessel that is certified under this part must be referred to the Commandant (CG-CVC), Attn: Office of Commercial Vessel Compliance, U.S. Coast Guard Stop 7501, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593-7501.

(1223)

Subpart B–Design, Equipment, and Installation

(1224)

§157.08 Applicability of Subpart B.

(1225) **NOTE:** An "oil tanker" as defined in §157.03 includes barges as well as self-propelled vessels.

(1226) (a) Sections 157.10d and 157.11(g) apply to each vessel to which this part applies.

(1227) (b) Sections 157.11 (a) through (f), 157.12, 157.15, 157.19(b)(3), 157.33, and 157.37 apply to each vessel to which this part applies that carries 200 cubic meters or more of crude oil or products in bulk as cargo, as well as to each oceangoing oil tanker to which this part applies of 150 gross tons or more. These sections do not apply to a foreign vessel which remains beyond the navigable waters of the United States and does not transfer oil cargo at a port or place subject to the jurisdiction of the United States.

(1228) (c) Section 157.21 applies to each oil tanker to which this part applies of 150 gross tons or more that is oceangoing or that operates on the Great Lakes. This section does not apply to a foreign vessel which remains beyond the navigable waters of the United States and does not transfer oil cargo at a port or place subject to the jurisdiction of the United States.

(1229) (d) Sections in subpart B of **33 CFR** part **157** that are not specified in paragraphs (a) through (c) of this section apply to each oceangoing oil tanker to which this part applies of 150 gross tons or more, unless otherwise indicated in paragraphs (e) through (m) of this section. These sections do not apply to a foreign vessel which remains beyond the navigable waters of the United States and does not transfer oil cargo at a port or place subject to the jurisdiction of the United States.

(1230) (e) Sections 157.11 (a) through (f), 157.12, and 157.15 do not apply to a vessel, except an oil tanker, that carries less than 1,000 cubic meters of crude oil or products in bulk as cargo and which retains oil mixtures on board and discharges them to a reception facility.

(1231) (f) Sections 157.11 (a) through (f), 157.12, 157.13, and 157.15 do not apply to a tank vessel that carries only asphalt, carbon black feedstock, or other products with similar physical properties, such as specific gravity and cohesive and adhesive characteristics, that inhibit effective product/water separation and monitoring.

(1232) (g) Sections 157.11 (a) through (f), 157.12, 157.13, 157.15, and 157.23 do not apply to a tank barge that cannot ballast cargo tanks or wash cargo tanks while underway.

(1233) (h) Sections 157.19 and 157.21 do not apply to a tank barge that is certificated by the Coast Guard for limited short protected coastwise routes if the barge is otherwise constructed and certificated for service exclusively on inland routes.

(1234) (i) Section 157.09(d) does not apply to any:

(1235) (1) U.S. vessel in domestic trade that is constructed under a contract awarded before January 8, 1976;

(1236) (2) U.S. vessel in foreign trade that is constructed under a contract awarded before April 1, 1977; or

(1237) (3) Foreign vessel that is constructed under a contract awarded before April 1, 1977.

(1238) (j) Sections 157.09 and 157.10a do not apply to a new vessel that:

(1239) (1) Is constructed under a building contract awarded after June 1, 1979;

(1240) (2) In the absence of a building contract, has the keel laid or is at a similar stage of construction after January 1, 1980;

(1241) (3) Is delivered after June 1, 1982; or

(1242) (4) Has undergone a major conversion for which:

(1243) (i) The contract is awarded after June 1, 1979;

(1244) (ii) In the absence of a contract, conversion is begun after January 1, 1980; or

(1245) (iii) Conversion is completed after June 1, 1982.

(1246) (k) Sections 157.09(b)(3), 157.10(c)(3), 157.10a(d)(3), and 157.10b(b)(3) do not apply to tank barges.

(1247) (1) Section 157.10b does not apply to tank barges if they do not carry ballast while they are engaged in trade involving the transfer of crude oil from an offshore oil exploitation or production facility on the Outer Continental Shelf of the United States.

(1248) (m) Section 157.12 does not apply to a U.S. vessel that:

(1249) (1) Is granted an exemption under Subpart F of this part; or

(1250) (2) Is engaged solely in voyages that are:

(1251) (i) Between ports or places within the United States, its territories or possessions;

(1252) (ii) Of less than 72 hours in length; and

(1253) (iii) At all times within 50 nautical miles of the nearest land.

(1254) (n) Section 157.10d does not apply to:

(1255) (1) A vessel that operates exclusively beyond the navigable waters of the United States and the United States Exclusive Economic Zone, as defined in 33 U.S.C. 2701(8);

(1256) (2) An oil spill response vessel;

(1257) (3) Before January 1, 2015–

(1258) (i) A vessel unloading oil in bulk as cargo at a deepwater port licensed under the Deepwater Port Act of 1974 (33 U.S.C. 1501 et seq.); or

(1259) (ii) A delivering vessel that is offloading oil in bulk as cargo in lightering activities–

(1260) (A) Within a lightering zone established under 46 U.S.C. 3715(b)(5); and

(1261) (B) More than 60 miles from the territorial sea base line, as defined in **33 CFR 2.20**.

(1262) (4) A vessel documented under 46 U.S.C., chapter 121, that was equipped with a double hull before August 12, 1992;

(1263) (5) A barge of less than 1,500 gross tons as measured under 46 U.S.C., chapter 145, carrying refined petroleum in bulk as cargo in or adjacent to waters of the Bering Sea, Chukchi Sea, and Arctic Ocean and waters tributary thereto and in the waters of the Aleutian Islands and the Alaskan Peninsula west of 155 degrees west longitude; or

(1264) (6) A vessel in the National Defense Reserve Fleet pursuant to 50 App. U.S.C. 1744.

(1265) (o) Section 157.11(h) applies to every oil tanker delivered on or after January 1, 2010, meaning an oil tanker—

(1266) (1) For which the building contract is placed on or after January 1, 2007;

(1267) (2) In the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after July 1, 2007;

(1268) (3) The delivery of which is on or after January 1, 2010; or

(1269) (4) That has undergone a major conversion—

(1270) (i) For which the contract is placed on or after January 1, 2007;

(1271) (ii) In the absence of a contract, the construction work of which is begun on or after July 1, 2007; or

(1272) (iii) That is completed on or after January 1, 2010.

(1273)

§157.10d Double hulls on tank vessels.

(1274) (a) With the exceptions stated in §157.08(n), this section applies to a tank vessel–

(1275) (1) For which the building contract is awarded after June 30, 1990; or

(1276) (2) That is delivered after December 31, 1993;

(1277) (3) That undergoes a major conversion for which;

(1278) (i) The contract is awarded after June 30, 1990; or

(1279) (ii) Conversion is completed after December 31, 1993; or

(1280) (4) That is otherwise required to have a double hull by 46 U.S.C. 3703a(c).

(1281) **NOTE:** 46 U.S.C. 3703a(c) is shown in appendix G to this part.

(1282) (b) Each vessel to which this section applies must be fitted with:

(1283) (1) A double hull in accordance with this section; and

(1284) (2) If §157.10 applies, segregated ballast tanks and a crude oil washing system in accordance with that section.

(1285) (c) Except on a vessel to which §157.10d(d) applies, tanks within the cargo tank length that carry any oil must be protected by double sides and a double bottom as follows:

(1286) (1) Double sides must extend for the full depth of the vessel's side or from the uppermost deck, disregarding a rounded gunwale where fitted, to the top of the double bottom. At any cross section, the molded width of the double side, measured at right angles to the side shell plating, from the side of tanks containing oil to the side shell plating, must not be less than the distance w as shown in Figure 157.10d(c) and specified as follows:

(1287) (i) For a vessel of 5,000 DWT and above: w=[0.5+(DWT/20,000)] meters; or, w=2.0 meters (79 in.), whichever is less, but in no case less than 1.0 meter (39 in.).

(1288) (ii) For a vessel of less than 5,000 DWT: w=[0.4+(2.4)(DWT/20,000)] meters, but in no case less than 0.76 meter (30 in.).

(1289) (iii) For a vessel to which paragraph (a)(4) of this section applies: w=0.76 meter (30 in.), provided that the double side was fitted under a construction or conversion contract awarded prior to June 30, 1990.

(1290) (2) At any cross section, the molded depth of the double bottom, measured at right angles to the bottom shell plating, from the bottom of tanks containing oil to the bottom shell plating, must not be less than the distance h as shown in Figure 157.10d(c) and specified as follows:

(1292) (i) For a vessel of 5,000 DWT and above: h=B/15; or, h=2.0 meters (79 in.), whichever is less, but in no case less than 1.0 meter (39 in.).

(1293) (ii) For a vessel of less than 5,000 DWT: h=B/15, but in no case less than 0.76 meter (30 in.).

(1294) (iii) For a vessel to which paragraph (a)(4) of this section applies: h=B/15; or, h=2.0 meters (79 in.),

(1291)

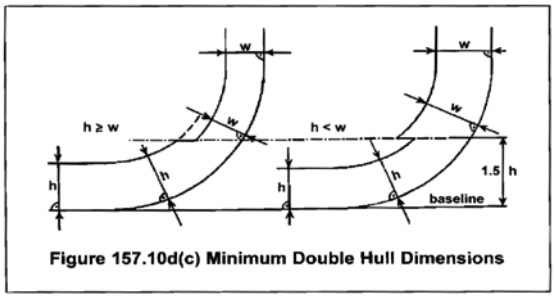


Figure 157.10d(c) Minimum Double Hull Dimensions

whichever is the lesser, but in no case less than 0.76 meter (30 in.), provided that the double bottom was fitted under a construction or conversion contract awarded prior to June 30, 1990.

(1295) (3) For a vessel built under a contract awarded after September 11, 1992, within the turn of the bilge or at cross sections where the turn of the bilge is not clearly defined, tanks containing oil must be located inboard of the outer shell–

(1296) (i) For a vessel of 5,000 DWT and above: At levels up to 1.5h above the base line, not less than the distance h, as shown in Figure 157.10d(c) and specified in paragraph (c)(2) of this section. At levels greater than 1.5h above the base line, not less than the distance w, as shown in Figure 157.10d(c) and specified in paragraph (c)(1) of this section.

(1297) (ii) For a vessel of less than 5,000 DWT: Not less the distance h above the line of the mid-ship flat bottom,

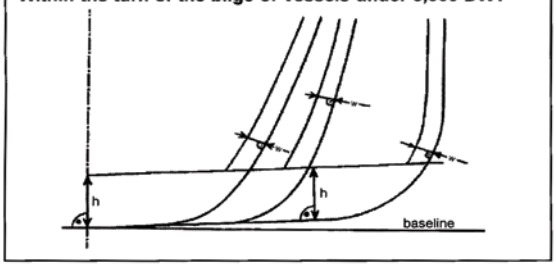
as shown in Figure 157.10d(c)(3)(ii) and specified in Paragraph (c)(2) of this section. At levels greater than h above the line of the mid-ship flat bottom, not less than the distance w, as shown in Figure 157.10d(c)(3)(ii) and specified in paragraph (c)(1) of this section.

(1299) (4) For a vessel to which §157.10(b) applies that is built under a contract awarded after September 11, 1992.

(1300) (i) The aggregate volume of the double sides, double bottom, forepeak tanks, and afterpeak tanks must not be less than the capacity of segregated ballast tanks required under §157.10(b). Segregated ballast tanks that may be provided in addition to those required under §157.10(b) may be located anywhere within the vessel.

(1298)

Figure 157.10d(c)(3)(ii) - Minimum Double Hull Dimensions Within the turn of the bilge of Vessels under 5,000 DWT



(1301) (ii) Double side and double bottom tanks used to meet the requirements of §157.10(b) must be located as uniformly as practicable along the cargo tank length. Large inboard extensions of individual double side and double bottom tanks, which result in a reduction of overall side or bottom protection, must be avoided.

(1302) (d) A vessel of less than 10,000 DWT that is constructed and certificated for service exclusively on inland or limited short protected coastwise routes must be fitted with double sides and a double bottom as follows:

(1303) (1) A minimum of 61 cm. (2 ft.) from the inboard side of the side shell plate, extending the full depth of the side or from the main deck to the top of the double bottom, measured at right angles to the side shell; and

(1304) (2) A minimum of 61 cm. (2 ft.) from the top of the bottom shell plating, along the full breadth of the vessel's bottom, measured at right angles to the bottom shell.

(1305) (3) For a vessel to which paragraph (a)(4) of this section applies, the width of the double sides and the depth of the double bottom may be 38 cm. (15 in.), in lieu of the dimensions specified in paragraphs (d)(1) and (d)(2) of this section, provided that the double side and double bottom tanks were fitted under a construction or conversion contract awarded prior to June 30, 1990.

(1306) (4) For a vessel built under a contract awarded after September 11, 1992, a minimum 46 cm. (18 in.) clearance for passage between framing must be maintained throughout the double sides and double bottom.

(1307) (e) Except as provided in paragraph (e)(3) of this section, a vessel must not carry any oil in any tank extending forward of:

(1308) (1) The collision bulkhead; or

(1309) (2) In the absence of a collision bulkhead, the transverse plane perpendicular to the centerline through a point located:

(1310) (i) The lesser of 10 meters (32.8 ft.) or 5 percent of the vessel length, but in no case less than 1 meter (39 in.), aft of the forwarded perpendicular;

(1311) (ii) On a vessel of less than 10,000 DWT tons that is constructed and certificated for service exclusively on inland or limited short protected coastwise routes, the lesser of 7.62 meters (25 ft.) or 5 percent of the vessel length, but in no case less than 61 cm. (2 ft.), aft of the headlog or stem at the freeboard deck; or

(1312) (iii) On each vessel which operates exclusively as a box or trail barge, 61 cm. (2 ft.) aft of the headlog.

(1313) (3) This paragraph does not apply to independent fuel oil tanks that must be located on or above the main deck within the areas described in paragraphs (e)(1) and (e)(2) of this section to serve adjacent deck equipment that cannot be located further aft. Such tanks must be as small and as far aft as is practicable.

(1314) (f) On each vessel, the cargo tank length must not extend aft to any point closer to the stern than the distance equal to the required width of the double side, as prescribed in §157.10d(c)(1) or §157.10d(d)(1).

(1315)

Subpart G–Interim Measures for Certain Tank Vessels Without Double Hulls Carrying Petroleum Oils

(1316)

§157.400 Purpose and applicability.

(1317) (a) The purpose of this subpart is to establish mandatory safety and operational requirements to reduce environmental damage resulting from petroleum oil spills.

(1318) (b) This subpart applies to each tank vessels specified in §157.01 of this part that–

(1319) (1) Is 5,000 gross tons or more;

(1320) (2) Carries petroleum oil in bulk as cargo or oil cargo residue; and

(1321) (3) Is not equipped with a double hull meeting §157.10d of this part, or an equivalent to the requirements of §157.10d, but required to be equipped with a double hull at a date set forth in 46 U.S.C. 3703a (b)(3) and (c)(3).

(1322)

§157.445 Maneuvering performance capability.

(1323) (a) A tankship owner or operator shall ensure that maneuvering tests in accordance with IMO Resolution A.751(18), sections 1.2, 2.3-2.4, 3-4.2, and 5 (with Explanatory Notes in MSC/Circ. 644) have been conducted by July 29, 1997. Completion of maneuvering performance tests must be shown by–

(1324) (1) For a foreign flag tankship, a letter from the flag administration or an authorized classification society, as described in §157.04 of this part, stating the requirements in paragraph (a) of this section have been met; or

(1325) (2) For a U.S. flag tankship, results from the vessel owner confirming the completion of the tests or a letter

from an authorized classification society, as described in §157.04 of this part, stating the requirements in paragraph (a) of this section have been met.

(1326) (b) If a tankship undergoes a major conversion or alteration affecting the control systems, control surfaces, propulsion system, or other areas which may be expected to alter maneuvering performance, the tankship owner or operator shall ensure that new maneuvering tests are conducted as required by paragraph (a) of this section.

(1327) (c) If a tankship is one of a class of vessels with identical propulsion, steering, hydrodynamic, and other relevant design characteristics, maneuvering performance test results for any tankship in the class may be used to satisfy the requirements of paragraph (a) of this section.

(1328) (d) The tankship owner or operator shall ensure that the performance test results, recorded in the format of Appendix 6 of the Explanatory Notes in MSC/Circ. 644., are prominently displayed in the wheelhouse.

(1329) (e) Prior to entering the port or place of destination and prior to getting underway, the tankship master shall discuss the results of the performance tests with the pilot while reviewing the anticipated transit and the possible impact of the tankship's maneuvering capability on the transit.

(1330)

Part 160–Ports and Waterways Safety-General

(1331)

Subpart A–General

(1332)

§160.1 Purpose.

(1333) (a) This subchapter contains regulations implementing 46 U.S.C. Chapter 700 Ports and Waterways Safety and related statutes.

(1334)

§160.3 Definitions.

(1335) For the purposes of this subchapter:

(1336) *Bulk* means material in any quantity that is shipped, stored, or handled without the benefit of package, label, mark or count and carried in integral or fixed independent tanks.

(1337) *Captain of the Port* means the Coast Guard officer designated by the Commandant to command a Captain of the Port Zone as described in part 3 of this chapter.

(1338) *Commandant* means the Commandant of the United States Coast Guard.

(1339) *Deviation* means any departure from any rule in this subchapter.

(1340) *Director, Vessel Traffic Services* means the Coast Guard officer designated by the Commandant to command a Vessel Traffic Service (VTS) as described in part 161 of this chapter.

(1341) *District Commander* means the Coast Guard officer designated by the Commandant to command a Coast Guard District as described in part 3 of this chapter.

(1342) *ETA* means estimated time of arrival.

(1343) *Length of Tow* means, when towing with a hawser, the length in feet from the stern of the towing vessel to the stern of the last vessel in tow. When pushing ahead or towing alongside, length of tow means the tandem length in feet of the vessels in tow excluding the length of the towing vessel.

(1344) *Person* means an individual, firm, corporation, association, partnership, or governmental entity.

(1345) *State* means each of the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Trust Territories of the Pacific Islands, the Commonwealth of the Northern Marianas Islands, and any other commonwealth, territory, or possession of the United States.

(1346) *Tanker* means a self-propelled tank vessel constructed or adapted primarily to carry oil or hazardous materials in bulk in the cargo spaces.

(1347) *Tank Vessel* means a vessel that is constructed or adapted to carry, or that carries, oil or hazardous material in bulk as cargo or cargo residue.

(1348) *Vehicle* means every type of conveyance capable of being used as a means of transportation on land.

(1349) *Vessel* means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water.

(1350) *Vessel Traffic Services (VTS)* means a service implemented under part 161 of this chapter by the United States Coast Guard designed to improve the safety and efficiency of vessel traffic and to protect the environment. The VTS has the capability to interact with marine traffic and respond to traffic situations developing in the VTS area.

(1351) *Vessel Traffic Service Area or VTS Area* means the geographical area encompassing a specific VTS area of service as described in part 161 of this chapter. This area of service may be subdivided into sectors for the purpose of allocating responsibility to individual Vessel Traffic Centers or to identify different operating requirements.

(1352) **Note:** Although regulatory jurisdiction is limited to the navigable waters of the United States, certain vessels will be encouraged or may be required, as a condition of port entry, to report beyond this area to facilitate traffic management within the VTS area.

(1353) *VTS Special Area* means a waterway within a VTS area in which special operating requirements apply.

(1354)

§160.5 Delegations.

(1355) (a) District Commanders and Captains of the Ports are delegated the authority to establish safety zones.

(1356) (b) Under the provisions of §§6.04-1 and 6.04-6 of this chapter, District Commanders and Captains of the Ports have been delegated authority to establish security zones.

(1357) (c) Under the provisions of §1.05-1 of this chapter, District Commanders have been delegated authority to establish regulated navigation areas.

(1358) (d) Subject to the supervision of the cognizant Captain of the Port and District Commander, Directors, Vessel Traffic Services are delegated authority under **33 CFR 1.01-30** to discharge the duties of the Captain of the Port that involve directing the operation, movement and anchorage of vessels within a Vessel Traffic Service area including management of vessel traffic within anchorages, regulated navigation areas and safety zones, and to enforce Vessel Traffic Service and ports and waterways safety regulations. This authority may be exercised by Vessel Traffic Center personnel. The Vessel Traffic Center may, within the Vessel Traffic Service area, provide information, make recommendations, or to a vessel required under part 161 of this chapter to participate in a Vessel Traffic Service, issue an order, including an order to operate or anchor as directed; require the vessel to comply with orders issued; specify times of entry, movement or departure; restrict operations as necessary for safe operation under the circumstances; or take other action necessary for control of the vessel and the safety of the port or of the marine environment.

(1359)

§160.7 Appeals.

(1360) (a) Any person directly affected by a safety zone or an order or direction issued under this subchapter may request reconsideration by the official who issued it or in whose name it was issued. This request may be made orally or in writing, and the decision of the official receiving the request may be rendered orally or in writing.

(1361) (b) Any person directly affected by the establishment of a safety zone or by an order or direction issued by, or on behalf of, a Captain of the Port may appeal to the District Commander through the Captain of the Port. The appeal must be in writing, except as allowed under paragraph (e) of this section, and shall contain complete supporting documentation and evidence which the appellant wishes to have considered. Upon receipt of the appeal, the District Commander may direct a representative to gather and submit documentation or other evidence which would be necessary or helpful to a resolution of the appeal. A copy of this documentation and evidence is made available to the appellant. The appellant is afforded five working days from the date of receipt to submit rebuttal materials. Following submission of all materials, the District Commander issues a ruling, in writing, on the appeal. Prior to issuing the ruling, the District Commander may, as a matter of discretion, allow oral presentation on the issues.

(1362) (c) Any person directly affected by the establishment of a safety zone or by an order or direction issued by, or on behalf of, a District Commander, or who receives an unfavorable ruling on an appeal taken under paragraph (b) of this section may appeal to the Area Commander through the District Commander. The appeal must be in writing, except as allowed under paragraph (e) of this section, and shall contain complete supporting documentation and evidence which the appellant wishes to have considered. Upon receipt of the appeal, the Area Commander may direct a representative to gather and submit documentation or other evidence which would be necessary or helpful to a resolution of the appeal. A copy of this documentation and evidence is made available to the appellant. The appellant is afforded five working days from the date of receipt to submit rebuttal materials. Following submission of all materials, the Area Commander issues a ruling, in writing, on the appeal. Prior to issuing the ruling, the Area Commander may, as a matter of discretion, allow oral presentation on the issues.

(1363) (d) Any person who receives an unfavorable ruling on an appeal taken under paragraph (c) of this section, may appeal to the Commandant (CG–5P), Attn: Assistant Commandant for Prevention, U.S. Coast Guard Stop 7501, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7501. The appeal must be in writing, except as allowed under paragraph (e) of this section. The Area Commander forwards the appeal, all the documents and evidence which formed the record upon which the order or direction was issued or the ruling under paragraph (c) of this section was made, and any comments which might be relevant, to the Assistant Commandant for Prevention. A copy of this documentation and evidence is made available to the appellant. The appellant is afforded 5 working days from the date of receipt to submit rebuttal materials to the Assistant Commandant for Prevention. The decision of the Assistant Commandant for Prevention is based upon the materials submitted, without oral argument or presentation. The decision of the Assistant Commandant for Prevention is issued in writing and constitutes final agency action.

(1364) (e) If the delay in presenting a written appeal would have significant adverse impact on the appellant, the appeal under paragraphs (b) and (c) of this section may initially be presented orally. If an initial presentation of the appeal is made orally, the appellant must submit the appeal in writing within five days of the oral presentation to the Coast Guard official to whom the presentation was made. The written appeal must contain, at a minimum, the basis for the appeal and a summary of the material presented orally. If requested, the official to whom the appeal is directed may stay the effect of the action while the ruling is being appealed.

(1365)

Subpart B–Control of Vessel and Facility Operations

(1366)

§160.101 Purpose.

(1367) This subpart describes the authority exercised by District Commanders and Captains of the Ports to insure the safety of vessels and waterfront facilities, and the

protection of the navigable waters and the resources therein. The controls described in this subpart are directed to specific situations and hazards.

(1368)

§160.103 Applicability.

(1369) (a) This subpart applies to any–

(1370) (1) Vessel on the navigable waters of the United States, except as provided in paragraphs (b) and (c) of this section;

(1371) (2) Bridge or other structure on or in the navigable waters of the United States; and

(1372) (3) Land structure or shore area immediately adjacent to the navigable waters of the United States.

(1373) (b) This subpart does not apply to any vessel on the Saint Lawrence Seaway.

(1374) (c) Except pursuant to international treaty, convention, or agreement, to which the United States is a party, this subpart does not apply to any foreign vessel that is not destined for, or departing from, a port or place subject to the jurisdiction of the United States and that is in:

(1375) (1) Innocent passage through the territorial sea of the United States;

(1376) (2) Transit through the navigable waters of the United States which form a part of an international strait.

(1377)

§160.105 Compliance with orders.

(1378) Each person who has notice of the terms of an order issued under this subpart must comply with that order.

(1379)

§160.107 Denial of entry.

(1380) Each District Commander or Captain of the Port, subject to recognized principles of international law, may deny entry into the navigable waters of the United States or to any port or place under the jurisdiction of the United States, and within the district or zone of that District Commander or Captain of the Port, to any vessel not in compliance with the provisions of the Port and Tanker Safety Act (46 U.S.C. 700) or the regulations issued thereunder.

(1381)

§160.109 Waterfront facility safety.

(1382) (a) To prevent damage to, or destruction of, any bridge or other structure on or in the navigable waters of the United States, or any land structure or shore area immediately adjacent to those waters, and to protect the navigable waters and the resources therein from harm resulting from vessel or structure damage, destruction, or loss, each District Commander or Captain of the Port may–

(1383) (1) Direct the handling, loading, unloading, storage, stowage, and movement (including the emergency removal, control, and disposition) of explosives or other dangerous articles and substances, including oil or hazardous material as those terms are defined in 46 U.S.C. 2101 on any structure on or in the navigable waters of the United States, or any land structure or shore area immediately adjacent to those waters; and

(1384) (2) Conduct examinations to assure compliance with the safety equipment requirements for structures.

(1385)

§160.111 Special orders applying to vessel operations.

(1386) Each District Commander or Captain of the Port may order a vessel to operate or anchor in the manner directed when–

(1387) (a) The District Commander or Captain of the Port has reasonable cause to believe that the vessel is not in compliance with any regulation, law or treaty;

(1388) (b) The District Commander or Captain of the Port determines that the vessel does not satisfy the conditions for vessel operation and cargo transfers specified in §160.113; or

(1389) (c) The District Commander or Captain of the Port has determined that such order is justified in the interest of safety by reason of weather, visibility, sea conditions, temporary port congestion, other temporary hazardous circumstances, or the condition of the vessel.

(1390)

§160.113 Prohibition of vessel operation and cargo transfers.

(1391) (a) Each District Commander or Captain of the Port may prohibit any vessel, subject to the provisions of chapter 37 of Title 46, U.S. Code, from operating in the navigable waters of the United States, or from transferring cargo or residue in any port or place under the jurisdiction of the United States, and within the district or zone of that District Commander or Captain of the Port, if the District Commander or the Captain of the Port determines that the vessel's history of accidents, pollution incidents, or serious repair problems creates reason to believe that the vessel may be unsafe or pose a threat to the marine environment.

(1392) (b) The authority to issue orders prohibiting operation of the vessels or transfer of cargo or residue under paragraph (a) of this section also applies if the vessel:

(1393) (1) Fails to comply with any applicable regulation;

(1394) (2) Discharges oil or hazardous material in violation of any law or treaty of the United States;

(1395) (3) Does not comply with applicable vessel traffic service requirements;

(1396) (4) While underway, does not have at least one deck officer on the navigation bridge who is capable of communicating in the English language.

(1397) (c) When a vessel has been prohibited from operating in the navigable waters of the United States under paragraphs (a) or (b) of this section, the District Commander or Captain of the Port may allow provisional entry into the navigable waters of the United States, or into any port or place under the jurisdiction of the United States and within the district or zone of that District Commander or Captain of the Port, if the owner

or operator of such vessel proves to the satisfaction of the District Commander or Captain of the Port, that the vessel is not unsafe or does not pose a threat to the marine environment, and that such entry is necessary for the safety of the vessel or the persons on board.

(1398) (d) A vessel which has been prohibited from operating in the navigable waters of the United States, or from transferring cargo or residue in a port or place under the jurisdiction of the United States under the provisions of paragraph (a) or (b)(1), (2) or (3) of this section, may be allowed provisional entry if the owner or operator proves, to the satisfaction of the District Commander or Captain of the Port that has jurisdiction, that the vessel is no longer unsafe or a threat to the environment, and that the condition which gave rise to the prohibition no longer exists.

(1399)

§160.115 Withholding of clearance.

(1400) Each District Commander or Captain of the Port may request the Secretary of the Treasury, or the authorized representative thereof, to withhold or revoke the clearance required by 46 U.S.C. App. 91 of any vessel, the owner or operator of which is subject to any penalties under 46 U.S.C. 70036.

(1401)

Subpart C–Notification of Arrival, Hazardous Conditions, and Certain Dangerous Cargoes

(1402)

§160.201 General.

(1403) This subpart contains requirements and procedures for submitting a notice of arrival (NOA), and a notice of hazardous condition. The sections in this subpart describe:

(1404) (a) Applicability and exemptions from requirements in this subpart;

(1405) (b) Required information in an NOA;

(1406) (c) Required updates to an NOA;

(1407) (d) Methods and times for submission of an NOA, and updates to an NOA;

(1408) (e) How to obtain a waiver; and

(1409) (f) Requirements for submission of the notice of hazardous condition.

(1410) **Note to §160.201.** For notice-of-arrival requirements for the U.S. Outer Continental Shelf, see **33 CFR** part 146.

(1411)

§160.202 Definitions.

(1412) Terms in this subpart that are not defined in this section or in §160.3 have the same meaning as those terms in 46 U.S.C. 2101. As used in this subpart—

(1413) *Agent* means any person, partnership, firm, company or corporation engaged by the owner or charterer of a vessel to act in their behalf in matters concerning the vessel.

(1414) *Barge* means a non-self propelled vessel engaged in commerce.

(1415) *Boundary waters* mean the waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the United States and the Dominion of Canada passes, including all bays, arms, and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, rivers, and waterways, or waters flowing from such lakes, rivers, and waterways, or the waters of rivers flowing across the boundary.

(1416) *Carried in bulk* means a commodity that is loaded or carried on board a vessel without containers or labels and received and handled without mark or count.

(1417) *Certain dangerous cargo (CDC)* includes any of the following:

(1418) (1) Division 1.1 or 1.2 explosives as defined in **49 CFR 173.50**.

(1419) (2) Division 1.5D blasting agents for which a permit is required under **49 CFR 176.415** or, for which a permit is required as a condition of a Research and Special Programs Administration exemption.

(1420) (3) Division 2.3 "poisonous gas", as listed in **49 CFR 172.101** that is also a "material poisonous by inhalation" as defined in **49 CFR 171.8**, and that is in a quantity in excess of 1 metric ton per vessel.

(1421) (4) Division 5.1 oxidizing materials for which a permit is required under **49 CFR 176.415** or for which a permit is required as a condition of a Research and Special Programs Administration exemption.

(1422) (5) A liquid material that has a primary or subsidiary classification of Division 6.1 "poisonous material" as listed 49 CFR 172.101 that is also a "material poisonous by inhalation," as defined in **49 CFR 171.8** and that is in a bulk packaging, or that is in a quantity in excess of 20 metric tons per vessel when not in a bulk packaging.

(1423) (6) Class 7, "highway route controlled quantity" radioactive material or "fissile material, controlled shipment," as defined in **49 CFR 173.403**.

(1424) (7) All bulk liquefied gas cargo carried under **46 CFR 151.50-31** or listed in **46 CFR 154.7** that is flammable and/or toxic and that is not carried as certain dangerous cargo residue (CDC residue).

(1425) (8) The following bulk liquids except when carried as CDC residue:

(1426) (i) Acetone cyanohydrin;

(1427) (ii) Allyl alcohol;

(1428) (iii) Chlorosulfonic acid;

(1429) (iv) Crotonaldehyde;

(1430) (v) Ethylene chlorohydrin;

(1431) (vi) Ethylene dibromide;

(1432) (vii) Methacrylonitrile;

(1433) (viii) Oleum (fuming sulfuric acid); and

(1434) (ix) Propylene oxide, alone or mixed with ethylene oxide.

(1435) (9) The following bulk solids:

(1436) (i) Ammonium nitrate listed as Division 5.1 (oxidizing) material in **49 CFR 172.101** except when carried as CDC residue; and

(1437) (ii) Ammonium nitrate based fertilizer listed as a Division 5.1 (oxidizing) material in **49 CFR 172.101** except when carried as CDC residue.

(1438) *Certain dangerous cargo residue (CDC residue)* includes any of the following:

(1439) (1) Ammonium nitrate in bulk or ammonium nitrate based fertilizer in bulk remaining after all saleable cargo is discharged, not exceeding 1,000 pounds in total and not individually accumulated in quantities exceeding two cubic feet.

(1440) (2) For bulk liquids and liquefied gases, the cargo that remains onboard in a cargo system after discharge that is not accessible through normal transfer procedures, with the exception of the following bulk liquefied gas cargoes carried under **46 CFR 151.50-31** or listed in **46 CFR 154.7**:

(1441) (i) Ammonia, anhydrous;

(1442) (ii) Chlorine;

(1443) (iii) Ethane;

(1444) (iv) Ethylene oxide;

(1445) (v) Methane (LNG);

(1446) (vi) Methyl bromide;

(1447) (vii) Sulfur dioxide; and

(1448) (viii) Vinyl chloride.

(1449) *Charterer* means the person or organization that contracts for the majority of the carrying capacity of a ship for the transportation of cargo to a stated port for a specified period. This includes "time charterers" and "voyage charterers."

(1450) *Crewmember* means all persons carried on board the vessel to provide navigation and maintenance of the vessel, its machinery, systems, and arrangements essential for propulsion and safe navigation or to provide services for other persons on board.

(1451) *Embark* means when a crewmember or a person in addition to the crew joins the vessel.

(1452) *Ferry schedule* means a published document that:

(1453) (1) Identifies locations a ferry travels to and from;

(1454) (2) Lists the times of departures and arrivals; and

(1455) (3) Identifies the portion of the year in which the ferry maintains this schedule.

(1456) *Foreign vessel* means a vessel of foreign registry or operated under the authority of a country except the United States.

(1457) *Great Lakes* means Lakes Superior, Michigan, Huron, Erie, and Ontario, their connecting and tributary waters, the Saint Lawrence River as far as Saint Regis, and adjacent port areas.

(1458) *Gross tons* means the tonnage determined by the tonnage authorities of a vessel's flag state in accordance with the national tonnage rules in force before the entry into force of the International Convention on Tonnage Measurement of Ships, 1969 ("Convention"). For a vessel measured only under Annex I of the Convention, gross tons means that tonnage. For a vessel measured under both systems, the higher gross tonnage is the tonnage used for the purposes of the 300-gross-ton threshold.

(1459) *Hazardous condition* means any condition that may adversely affect the safety of any vessel, bridge, structure, or shore area or the environmental quality of any port, harbor, or navigable waterway of the United States. It may, but need not, involve collision, allision, fire, explosion, grounding, leaking, damage, injury or illness of a person aboard, or manning-shortage.

(1460) *Nationality* means the state (nation) in which a person is a citizen or to which a person owes permanent allegiance.

(1461) *Operating exclusively within a single Captain of the Port zone* refers to vessel movements within the boundaries of a single COTP zone, *e.g.*, from one dock to another, one berth to another, one anchorage to another, or any combination of such transits. Once a vessel has arrived in a port in a COPT zone, it would not be considered as departing from a port or place simply because of its movements within that specific port.

(1462) *Operator* means any person including, but not limited to, an owner, a charterer, or another contractor who conducts, or is responsible for, the operation of a vessel.

(1463) *Persons in addition to crewmembers* mean any person onboard the vessel, including passengers, who are not included on the list of crewmembers.

(1464) *Port or place of departure* means any port or place in which a vessel is anchored or moored.

(1465) *Port or place of destination* means any port or place in which a vessel is bound to anchor or moor.

(1466) *Public vessel* means a vessel that is owned or demise-(bareboat) chartered by the government of the United States, by a State or local government, or by the government of a foreign country and that is not engaged in commercial service.

(1467) *Time charterer* means the party who hires a vessel for a specific amount of time. The owner and his crew manage the vessel, but the charterer selects the ports of destination.

(1468) *Voyage charterer* means the party who hires a vessel for a single voyage. The owner and his crew manage the vessel, but the charterer selects the ports of destination.

(1469)

§160.203 Applicability.

(1470) (a) This subpart applies to the following vessels that are bound for or departing from ports or places within the navigable waters of the United States, as defined in **33 CFR 2.36(a)**, which includes internal waters and the territorial seas of the United States, and any deepwater port as defined in **33CFR 148.5**:

(1471) (1) U.S. vessels in commercial service, and

(1472) (2) All foreign vessels.

(1473) (b) Unless otherwise specified in this subpart, the owner, agent, master, operator, or person in charge of a vessel regulated by this subpart is responsible for compliance with the requirements in this subpart.

(1506)

Table 160.206 – NOA Information Items

Required Information	Vessels neither carrying CDC nor controlling another vessel carrying CDC	Vessels carrying CDC or controlling another vessel carrying CDC
(1) Vessel Information		
(i) Name	X	X
(ii) Name of the registered owner	X	X
(iii) Country of registry	X	X
(iv) Call sign	X	X
(v) International Maritime Organization (IMO) international number or, if vessel does not have an assigned IMO international number, substitute with official number	X	X
(vi) Name of the operator	X	X
(vii) Name of the charterer	X	X
(viii) Name of classification society or recognized organization	X	X
(ix) Maritime Mobile Service Identity (MMSI) number, if applicable	X	X
(x) Whether the vessel is 300 gross tons or less (yes or no)	X	X
(xi) USCG Vessel Response Plan Control Number, if applicable	X	X
(2) Voyage Information		
(i) Names of last five foreign ports or places visited	X	X
(ii) Dates of arrival and departure for last five foreign ports or places visited	X	X
(iii) For the port or place of the United States to be visited, list the names of the receiving facility, the port or place, the city, and the state	X	X
(iv) For the port or place in the United States to be visited, the estimated date and time of arrival	X	X
(v) For the port or place in the United States to be visited, the estimated date and time of departure	X	X
(vi) The location (port or place and country) or position (latitude and longitude or waterway and mile marker) of the vessel at the time of reporting	X	X
(vii) The name and telephone number of a 24-hour point of contact	X	X
(viii) Whether the vessel's voyage time is less than 24 hours (yes or no)	X	X
(ix) Last port or place of departure	X	X
(x) Dates of arrival and departure for last port or place of departure	X	X
(3) Cargo Information		
(i) A general description of cargo, other than CDC, on board the vessel (e.g. grain, container, oil, etc.)	X	X
(ii) Name of each CDC carried, including cargo UN number, if applicable	–	X
(iii) Amount of each CDC carried	–	X
(4) Information for each Crewmember On Board		
(i) Full name	X	X
(ii) Date of birth	X	X
(iii) Nationality	X	X
(iv) Passport* or mariners document number (type of identification and number)	X	X
(v) Position or duties on the vessel	X	X
(vi) Where the crewmembers embarked (list port or place and country)	X	X
(5) Information for each Person On Board in Addition to Crew		
(i) Full name	X	X
(ii) Date of birth	X	X
(iii) Nationality	X	X
(iv) Passport number*	X	X
(v) Where the person embarked (list port or place and country)	X	X
(6) Operational condition of equipment required by 33 CFR part 164 of this chapter (see note to table)	X	X
(7) International Safety Management (ISM) Code Notice		
(i) The date of expiration for the company's Document of Compliance certificate that covers the vessel	X	X
(ii) The date of expiration for the vessel's Safety Management Certificate	X	X
(iii) The name of the Flag Administration, or the recognized organization(s) representing the vessel Flag Administration, that issued those certificates	X	X
(8) International Ship and Port Facility Code (ISPS) Notice		
(i) The date of issuance for the vessel's International Ship Security Certificate (ISSC), if any	X	X
(ii) Whether the ISSC, if any, is an initial Interim ISSC, subsequent and consecutive Interim ISSC, or final ISSC	X	X
(iii) Declaration that the approved ship security plan, if any, is being implemented	X	X
(iv) If a subsequent and consecutive Interim ISSC, the reasons therefore	X	X
(v) The name and 24-hour contact information for the Company Security Officer	X	X
(vi) The name of the Flag Administration, or the recognized security organization(s) representing the vessel Flag Administration that issued the ISSC	X	X

Note to Table 160.206. For items with an asterisk (*), see paragraph (b) of this section. Submitting a response for item 6 indicating that navigation equipment is not operating properly does not serve as notice to the District Commander, Captain of the Port, or Vessel Traffic Center, under 33 CFR 164.53.

(1474) (c) Towing vessels controlling a barge or barges required to submit an NOA under this subpart must submit only one NOA containing the information required for the towing vessel and each barge under its control.

(1475)

§160.204 Exemptions and exceptions.

(1476) (a) Except for reporting notice of hazardous conditions, the following vessels are exempt from requirements in this subpart:

(1477) (1) A passenger or offshore supply vessel when employed in the exploration for or in the removal of oil, gas, or mineral resources on the continental shelf.

(1478) (2) An oil spill response vessel (OSRV) when engaged in actual spill response operations or during spill response exercises.

(1479) (3) After December 31, 2015, a vessel required by **33 CFR 165.830** or **165.921** to report its movements, its cargo, or the cargo in barges it is towing.

(1480) (4) A United States or Canadian vessel engaged in the salving operations of any property wrecked, or rendering aid and assistance to any vessels wrecked, disabled, or in distress, in waters specified in Article II of the 1908 Treaty of Extradition, Wrecking and Salvage (35 Stat. 2035; Treaty Series 502).

(1481) (5) The following vessels neither carrying certain dangerous cargo nor controlling another vessel carrying certain dangerous cargo:

(1482) (i) A foreign vessel 300 gross tons or less not engaged in commercial service.

(1483) (ii) A vessel operating exclusively within a single Captain of the Port zone. Captain of the Port zones are defined in **33 CFR** part **3**.

(1484) (iii) A U.S. towing vessel and a U.S. barge operating solely between ports or places of the contiguous 48 states, Alaska, and the District of Columbia.

(1485) (iv) A public vessel.

(1486) (v) Except for a tank vessel, a U.S. vessel operating solely between ports or places of the United States on the Great Lakes.

(1487) (vi) A U.S. vessel 300 gross tons or less, engaged in commercial service not coming from a foreign port or place.

(1488) (vii) Each ferry on a fixed route that is described in an accurate schedule that is submitted by the ferry operator, along with information in paragraphs (a)(5)(vii)(A) through (J) of this section, to the Captain of the Port for each port or place of destination listed in the schedule at least 24 hours in advance of the first date and time of arrival listed on the schedule. At least 24 hours before the first date and time of arrival listed on the ferry schedule, each ferry operator who submits a schedule under paragraph (a)(5)(vii) of this section must also provide the following information to the Captain of the Port for each port or place of destination listed in the schedule for the ferry, and if the schedule or the following submitted information changes, the ferry operator must submit an updated schedule at least 24 hours in advance of the first date and time of arrival listed on the new schedule and updates on the following items whenever the submitted information is no longer accurate:

(1489) (A) Name of the vessel;

(1490) (B) Country of registry of the vessel;

(1491) (C) Call sign of the vessel;

(1492) (D) International Maritime Organization (IMO) international number or, if the vessel does not have an assigned IMO international number, the official number of the vessel;

(1493) (E) Name of the registered owner of the vessel;

(1494) (F) Name of the operator of the vessel;

(1495) (G) Name of the vessel's classification society or recognized organization, if applicable;

(1496) (H) Each port or place of destination;

(1497) (I) Estimated dates and times of arrivals at and departures from these ports or places; and

(1498) (J) Name and telephone number of a 24-hour point of contact.

(1499) (b) A vessel less than 500 gross tons is not required to submit the International Safety Management (ISM) Code Notice (Entry 7 in Table 160.206 of §160.206).

(1500) (c) A U.S. vessel is not required to submit the International Ship and Port Facility Security (ISPS) Code Notice information (Entry 8 in Table 160.206 of §160.206).

(1501)

§160.205 Notices of arrival.

(1502) The owner, agent, Master, operator, or person in charge of a vessel must submit notices of arrival consistent with the requirements in this subpart.

(1503)

§160.206 Information required in an NOA.

(1504) (a) *Information required*. With the exceptions noted in paragraph (b) of this section, each NOA must contain all of the information items specified in Table 160.206. Vessel owners and operators should protect any personal information they gather in preparing notices for transmittal to the National Vessel Movement Center (NVMC) to prevent unauthorized disclosure of that information.

(1505) (b) *Exceptions*. If a crewmember or person on board other than a crewmember is not required to carry a passport for travel, then passport information required in Table 160.206 by items (4)(iv) and (5)(iv) need not be provided for that person.

(1507)

§160.208 Updates to a submitted NOA.

(1508) (a) Unless otherwise specified in this section, whenever events cause NOA information submitted for a vessel to become inaccurate, or the submitter to realize that data submitted was inaccurate, the owner, agent, Master, operator, or person in charge of that vessel must submit an update within the times required in §160.212.

(1509) (b) Changes in the following information need not be reported:

(1510) (1) Changes in arrival or departure times that are less than six (6) hours;

(1511) (2) Changes in vessel location or position of the vessel at the time of reporting (entry (2)(vi) to Table 160.206); and

(1512) (3) Changes to crewmembers' position or duties on the vessel (entry (4)(vii) to Table 160.206).

(1513) (c) When reporting updates, revise and resubmit the NOA.

(1514)

§160.210 Methods for submitting an NOA.

(1515) (a) *National Vessel Movement Center (NVMC)*. Except as otherwise provided in this paragraph or paragraph (b) of this section, vessels must submit NOA information required by §160.206 to the NVMC using methods currently specified at *www.nvmc.uscg.gov*, which includes submission through the NVMC electronic Notice of Arrival and Departure (eNOAD) World Wide Web site, and XML, which includes the Excel Workbook format. These data may also be submitted using other methods that may be added as future options on *www.nvmc.uscg.gov*. XML spreadsheets may be submitted via email to *enoad@nvmc.uscg.gov*. If a vessel operator must submit an NOA or an update, for a vessel in an area without internet access or when experiencing technical difficulties with an onboard computer, and he or she has no shore-side support available, the vessel operator may fax or phone the submission to the NVMC. Fax at 1–800–547–8724 or 304–264–2684. Workbook available at *www.nvmc.uscg.gov*; or, telephone at 1–800–708–9823 or 304–264–2502.

(1516) (b) *Saint Lawrence Seaway*. Those vessels transiting the Saint Lawrence Seaway inbound, bound for a port or place in the United States, may meet the submission requirements of paragraph (a) of this section by submitting the required information to the Saint Lawrence Seaway Development Corporation and the Saint Lawrence Seaway Management Corporation of Canada using methods specified at *www.nvmc.uscg.gov*.

(1517)

§160.212 When to submit an NOA.

(1518) (a) *Submission of an NOA*. (1) Except as set out in paragraphs (a)(2) and (a)(3) of this section, all vessels must submit NOAs within the times required in paragraph (a)(4) of this section.

(1519) (2) Towing vessels, when in control of a vessel carrying CDC and operating solely between ports or places of the contiguous 48 states, Alaska, and the District of Columbia, must submit an NOA before departure but at least 12 hours before arriving at the port or place of destination.

(1520) (3) U.S. vessels 300 gross tons or less, arriving from a foreign port or place, and whose voyage time is less than 24 hours must submit an NOA at least 60 minutes before departure from the foreign port or place. Also, Canadian vessels 300 gross tons or less, arriving directly from Canada, via boundary waters, to a United States port or place on the Great Lakes, whose voyage time is less than 24 hours must submit an NOA at least 60 minutes before departure from the Canadian port or place.

(1521) (4) Times for submitting NOAs are as follows:

(1522)

If your voyage time is –	Then you must submit an NOA –
(i) 96 hours or more; or	At least 96 hours before arriving at the port or place of destination; or
(ii) Less than 96 hours	Before departure but at least 24 hours before arriving at the port or place of destination.

(1523) (b) *Submission of updates to an NOA*. (1) Except as set out in paragraphs (b)(2) and (b)(3) of this section, vessels must submit updates in NOA information within the times required in paragraph (b)(4) of this section.

(1524) (2) Towing vessels, when in control of a vessel carrying CDC and operating solely between ports or places in the contiguous 48 states, Alaska, and the District of Columbia, must submit changes to an NOA as soon as practicable but at least 6 hours before entering the port or place of destination.

(1525) (3) U.S. vessels 300 gross tons or less, arriving from a foreign port or place, whose voyage time is—

(1526) (i) Less than 24 hours but greater than 6 hours, must submit updates to an NOA as soon as practicable, but at least 6 hours before entering the port or place of destination.

(1527) (ii) Less than or equal to 6 hours, must submit updates to an NOA as soon as practicable, but at least 60 minutes before departure from the foreign port or place.

(1528) (4) Times for submitting updates to NOAs are as follows:

(1529)

If your remaining voyage time is –	Then you must submit updates to an NOA –
(i) 96 hours or more;	As soon as practicable, but at least 24 hours before arriving at the port or place of destination;
(ii) Less than 96 hours but not less than 24 hours; or	As soon as practicable, but at least 24 hours before arriving at the port or place of destination; or
(iii) Less than 24 hours	As soon as practicable, but at least 12 hours before arriving at the port or place of destination.

(1530)

§160.214 Waivers.

(1531) The Captain of the Port may waive, within that Captain of the Port's designated zone, any of the requirements of this subpart for any vessel or class of vessels upon finding that the vessel, route area of operations, conditions of the voyage, or other circumstances are such that application of this subpart is unnecessary or impractical for purposes of safety, environmental protection, or national security.

(1532)

§160.215 Force majeure.

(1533) When a vessel is bound for a port or place of the United States under force majeure, it must comply with the requirements in this section, but not other sections

of this subpart. The vessel must report the following information to the nearest Captain of the Port as soon as practicable:

(1534) (a) The vessel Master's intentions;

(1535) (b) Any hazardous conditions as defined in §160.202; and

(1536) (c) If the vessel is carrying certain dangerous cargo or controlling a vessel carrying certain dangerous cargo, the amount and name of each CDC carried, including cargo UN number if applicable.

(1537)

§160.216 Notice of hazardous conditions.

(1538) (a) Whenever there is a hazardous condition either on board a vessel or caused by a vessel or its operation, the owner, agent, master, operator, or person in charge must immediately notify the nearest Coast Guard Sector Office or Group Office, and in addition submit any report required by **46 CFR 4.05-10**.

(1539) (b) When the hazardous condition involves cargo loss or jettisoning as described in **33 CFR 97.115**, the notification required by paragraph (a) of this section must include—

(1540) (1) What was lost, including a description of cargo, substances involved, and types of packages;

(1541) (2) How many were lost, including the number of packages and quantity of substances they represent;

(1542) (3) When the incident occurred, including the time of the incident or period of time over which the incident occurred;

(1543) (4) Where the incident occurred, including the exact or estimated location of the incident, the route the ship was taking, and the weather (wind and sea) conditions at the time or approximate time of the incident; and

(1544) (5) How the incident occurred, including the circumstances of the incident, the type of securing equipment that was used, and any other material failures that may have contributed to the incident.

(1545)

Part 161–Vessel Traffic Management

(1546)

Subpart A–Vessel Traffic Services

(1547)

§161.1 Purpose and Intent.

(1548) (a) The purpose of this part is to promulgate regulations implementing and enforcing certain sections of 46 U.S.C. Chapter 700 "Ports and Waterways Safety" setting up a national system of Vessel Traffic Services that will enhance navigation, vessel safety, and marine environmental protection and promote safe vessel movement by reducing the potential for collisions, rammings, and groundings, and the loss of lives and property associated with these incidents within VTS areas established hereunder.

(1549) (b) Vessel Traffic Services provide the mariner with information related to the safe navigation of a waterway. This information, coupled with the mariner's compliance with the provisions set forth in this part, enhances the safe routing of vessels through congested waterways or waterways of particular hazard. Under certain circumstances, a VTS may issue directions to control the movement of vessels in order to minimize the risk of collision between vessels, or damage to property or the environment.

(1550) (c) The owner, operator, charterer, master, or person directing the movement of a vessel remains at all times responsible for the manner in which the vessel is operated and maneuvered, and is responsible for the safe navigation of the vessel under all circumstances. Compliance with these rules or with a direction of the VTS is at all times contingent upon the exigencies of safe navigation.

(1551) (d) Nothing in this part is intended to relieve any vessel, owner, operator, charterer, master, or person directing the movement of a vessel from the consequences of any neglect to comply with this part or any other applicable law or regulations (e.g., the International Regulations for Prevention of Collisions at Sea, 1972 (72 COLREGS) or the Inland Navigation Rules) or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

(1552)

§161.2 Definitions.

(1553) For the purposes of this part:

(1554) *Center* means a Vessel Traffic Center or Vessel Movement Center.

(1555) *Cooperative Vessel Traffic Services (CVTS)* means the system of vessel traffic management established and jointly operated by the United States and Canada within adjoining waters. In addition, CVTS facilitates traffic movement and anchorages, avoids jurisdictional disputes, and renders assistance in emergencies in adjoining United States and Canadian waters.

(1556) *Hazardous Vessel Operating Condition* means any condition related to a vessel's ability to safely navigate or maneuver, and includes, but is not limited to:

(1557) (1) The absence or malfunction of vessel operating equipment, such as propulsion machinery, steering gear, radar system, gyrocompass, depth sounding device, automatic radar plotting aid (ARPA), radiotelephone, Automatic Identification System equipment, navigational lighting, sound signaling devices or similar equipment.

(1558) (2) Any condition on board the vessel likely to impair navigation, such as lack of current nautical charts and publications, personnel shortage, or similar condition.

(1559) (3) Vessel characteristics that affect or restrict maneuverability, such as cargo or tow arrangement, trim, loaded condition, underkeel or overhead clearance, speed capabilities, power availability, or similar characteristics, which may affect the positive control or safe handling of the vessel or the tow.

(1560) *Navigable waters* means all navigable waters of the United States including the territorial sea of the United States, extending to 12 nautical miles from United States baselines, as described in Presidential Proclamation No. 5928 of December 27, 1988.

(1561) *Precautionary Area* means a routing measure comprising an area within defined limits where vessels must navigate with particular caution and within which the direction of traffic may be recommended.

(1562) *Towing Vessel* means any commercial vessel engaged in towing another vessel astern, alongside, or by pushing ahead.

(1563) Published means available in a widely-distributed and publicly available medium (e.g., VTS User's Manual, ferry schedule, Notice to Mariners).

(1564) *Vessel Movement Center (VMC)* means the shore-based facility that operates the vessel tracking system for a Vessel Movement Reporting System (VMRS) area or zone within such an area. The VMC does not necessarily have the capability or qualified personnel to interact with marine traffic, nor does it necessarily respond to traffic situations developing in the area, as does a Vessel Traffic Service (VTS).

(1565) *Vessel Movement Reporting System (VMRS)* means a mandatory reporting system used to monitor and track vessel movements. This is accomplished by a vessel providing information under established procedures as set forth in this part in the areas defined in Table 161.12(c) (VTS and VMRS Centers, Call Signs/MMSI, Designated Frequencies, and Monitoring Areas).

(1566) *Vessel Movement Reporting System (VMRS) User* means a vessel, or an owner, operator, charterer, Master, or person directing the movement of a vessel that is required to participate in a VMRS.

(1567) *Vessel Traffic Center (VTC)* means the shore-based facility that operates the vessel traffic service for the Vessel Traffic Service area or zone within such an area.

(1568) *Vessel Traffic Services (VTS)* means a service implemented by the United States Coast Guard designed to improve the safety and efficiency of vessel traffic and to protect the environment. The VTS has the capability to interact with marine traffic and respond to traffic situations developing in the VTS area.

(1569) *Vessel Traffic Service Area or VTS Area* means the geographical area encompassing a specific VTS area of service. This area of service may be subdivided into zones for the purpose of allocating responsibility to individual Vessel Traffic Centers or to identify different operating requirements.

(1570) **Note:** Although regulatory jurisdiction is limited to the navigable waters of the United States, certain vessels will be encouraged or may be required, as a condition of port entry, to report beyond this area to facilitate traffic management within the VTS area.

(1571) *VTS Special Area* means a waterway within a VTS area in which special operating requirements apply.

(1572) *VTS User* means a vessel or an owner, operator, charterer, Master, or person directing the movement of a vessel within a VTS Area that is:

(1573) (1) Subject to the Vessel Bridge-to-Bridge Radiotelephone Act;

(1574) (2) Required to participate in a VMRS; or

(1575) (3) Equipped with a required Coast Guard type-approved Automatic Identification System (AIS).

(1576) *VTS User's Manual* means the manual established and distributed by the VTS to provide the mariner with a description of the services offered and rules in force for that VTS. Additionally, the manual may include chartlets showing the area and zone boundaries, general navigational information about the area, and procedures, radio frequencies, reporting provisions and other information which may assist the mariner while in the VTS area.

(1577)

§161.3 Applicability.

(1578) The provisions of this subpart shall apply to each VTS User and may also apply to any vessel while underway or at anchor on the navigable waters of the United States within a VTS area, to the extent the VTS considers necessary.

(1579)

§161.4 Requirement to carry the rules.

(1580) Each VTS User shall carry on board and maintain for ready reference a copy of these rules.

(1581) **Note 1 to § 161.4:** These rules are contained in the applicable U.S. Coast Pilot, the VTS User's Manual which may be obtained by contacting the appropriate VTS or downloaded from the Coast Guard Navigation Center website (https://www.navcen.uscg.gov).

(1582)

§161.5 Deviations from the rules.

(1583) (a) Requests to deviate from any provision in this part, either for an extended period of time or if anticipated before the start of a transit, must be submitted in writing to the appropriate District Commander. Upon receipt of the written request, the District Commander may authorize a deviation if it is determined that such a deviation provides a level of safety equivalent to that provided by the required measure or is a maneuver considered necessary for safe navigation under the circumstances. An application for an authorized deviation must state the need and fully describe the proposed alternative to the required measure.

(1584) (b) Requests to deviate from any provision in this part due to circumstances that develop during a transit or immediately preceding a transit may be made to the appropriate VTC. Requests to deviate must be made as far in advance as practicable. Upon receipt of the request, the VTC may authorize a deviation if it is determined that, based on vessel handling characteristics, traffic density, radar contacts, environmental conditions and other relevant information, such a deviation provides a level of safety equivalent to that provided by the required

(1628)

TABLE to §161.12(c)-VTS and VMRS Centers, Call Signs/MMSI, Designated Frequencies, and Monitoring Areas

Center MMSI[1] Call Sign	Designated frequency (Channel designation)—purpose[2]	Monitoring Area [3, 4]
Berwick Bay 003669950 *Berwick Traffic*	156.550 MHz (Ch. 11)	The waters south of 29°45'N, west of 91°10'W, north of 29°37'N, and east of 91°18'W.
Buzzards Bay *Buzzards Bay Control*[5]	156.600 MHz (Ch. 12)	The waters east and north of a line drawn from the southern tangent of Sakonnet Point, Rhode Island, in approximate position latitude 41°27.20′ N., longitude 71°11.70′ W., to the Buzzards Bay Entrance Light in approximate position latitude 41°23.8′ N., longitude 71°02.00′ W., and then to the southwestern tangent of Cuttyhunk Island, Massachusetts, at approximate position latitude 41°24.60′ N., longitude 70°57.00′ W., and including all of the Cape Cod Canal to its eastern entrance, except that the area of New Bedford harbor within the confines (north of) the hurricane barrier, and the passages through the Elizabeth Islands, is not considered to be ''Buzzards Bay''.
Houston-Galveston 003669954		The navigable waters north of 29°00.00′ N., west of 94°20.00′ W., south of 29°49.00′ N., and east of 95°20.00′ W.
Houston Traffic	156.550 MHz (Ch. 11) 156.250 MHz (Ch. 5A) —For sailing plans only	The navigable waters north of a line extending due west from the southern most end of Exxon Dock #1 (20°43.37' N, 95°01.27' W.)
Houston Traffic	156.600 MHz (Ch. 12) 156.250 MHz (Ch. 5A) —For sailing plans only	The navigable waters south of a line extending due west from the southern most end of Exxon Dock #1 (29°43.37' N, 95°01.27' W.).
Los Angeles/Long Beach 03660465 *San Pedro Traffic*	156.700 MHz (Ch. 14)	*Vessel Movement Reporting System Area*: The navigable waters within a 25 nautical mile radius of Point Fermin Light (33°42.30' N, 118°17.60' W.).
Louisville 003669732 *Louisville Traffic*	156.650 MHz (Ch. 13)	The waters of the Ohio River between McAlpine Locks (Mile 606) and Twelve Mile Island (Mile 593), only when the McAlpine upper pool gauge is at approximately 13.0 feet or above.
Lower Mississippi River 0036699952 *New Orleans Traffic*	156.550 MHz (Ch. 11)	The navigable waters of the Lower Mississippi River below 29°55.30' N, 89°55.60' W (Saxonholm Light) at 86.0 miles Above Head of Passes (AHP), extending down river to Southwest Pass, and, within a 12 nautical mile radius around 28°54.30' N, 89°25.70' W (Southwest Pass Entrance Light) at 20.1 miles Below Head of Passes.
New Orleans Traffic	156.600 MHz (Ch. 12)	The navigable waters of the Lower Mississippi River bounded on the north by a line drawn perpendicular on the river at 29°55.50′ N., 90°12.77′ W. (Upper Twelve Mile Point) at 109.0 miles AHP and on the south by a line drawn perpendicularly at 29°55.30′ N., 89°55.60′ W. (Saxonholm Light) at 86.0 miles AHP.
New Orleans Traffic	156.250 MHz (Ch. 05A)	The navigable waters of the Lower Mississippi River below 30°38.70′ N., 91°17.50′ W. (Port Hudson Light) at 254.5 miles AHP bounded on the south by a line drawn perpendicular on the river at 29°55.50′ N., 90°12.77′ W. (Upper Twelve Mile Point) at 109.0 miles AHP.
New York 003669951 *New York Traffic*	156.550 MHz (Ch. 11) —For sailing plans only 156.600 MHz (Ch. 12) —For vessels at anchor	The area consists of the navigable waters of the Lower New York Bay bounded on the east by a line drawn from Norton Point to Breezy Point; on the south by a line connecting the entrance buoys at the Ambrose Channel, Swash Channel, and Sandy Hook Channel to Sandy Hook Point; and on the southeast including the waters of Sandy Hook Bay south to a line drawn at latitude 40°25.00′ N.; then west in the Raritan Bay to the Raritan River Railroad Bridge, then north into waters of the Arthur Kill and Newark Bay to the Lehigh Valley Draw Bridge at latitude 40°41.90′ N.; and then east including the waters of the Kill Van Kull and the Upper New York Bay north to a line drawn east-west from the Holland Tunnel ventilator shaft at latitude 40°43.70′ N., longitude 74°01.60′ W., in the Hudson River; and then continuing east including the waters of the East River to the Throgs Neck Bridge, excluding the Harlem River.
New York Traffic	156.700 MHz (Ch. 14)	The navigable waters of the Lower New York Bay west of a line drawn from Norton Point to Breezy Point; and north of a line connecting the entrance buoys of Ambrose Channel, Swash Channel, and Sandy Hook Channel, to Sandy Hook Point; on the southeast including the waters of the Sandy Hook Bay south to a line drawn at latitude 40°25.00′ N.; then west into the waters of Raritan Bay East Reach to a line drawn from Great Kills Light south through Raritan Bay East Reach LGB #14 to Comfort PT, NJ; then north including the waters of the Upper New York Bay south of 40°42.40′ N. (Brooklyn Bridge) and 40°43.70′ N. (Holland Tunnel Ventilator Shaft); west through the KVK into the Arthur Kill north of 40°38.25′ N. (Arthur Kill Railroad Bridge); then north into the waters of the Newark Bay, south of 40°41.95′ N. (Lehigh Valley Draw Bridge).
New York Traffic	156.600 MHz (Ch. 12)	The navigable waters of the Raritan Bay south to a line drawn at latitude 40°26.00′ N.; then west of a line drawn from Great Kills Light south through the Raritan Bay East Reach LGB #14 to Point Comfort, NJ; then west to the Raritan River Railroad Bridge; and north including the waters of the Arthur Kill to 40°28.25′ N. (Arthur Kill Railroad Bridge); including the waters of the East River north of 40°42.40′ N. (Brooklyn Bridge) to the Throgs Neck Bridge, excluding the Harlem River.

(1629)

TABLE to §161.12(c)-VTS and VMRS Centers, Call Signs/MMSI, Designated Frequencies, and Monitoring Areas

Center MMSI[1] Call Sign	Designated frequency (Channel designation)—purpose[2]	Monitoring Area [3, 4]
Port Arthur 003669955 *Port Arthur Traffic*	156.050 MHz (Ch. 01A)	The navigable waters of the Sabine-Neches Canal south of 29°52.70′ N.; Port Arthur Canal; Sabine Pass Channel; Sabine Bank Channel; Sabine Outer Bar Channel; the offshore safety fairway; and the ICW from High Island to its intersection with the Sabine-Neches Canal.
Port Arthur Traffic	156.275 MHz (Ch. 65A)	The navigable waters of the Neches River; Sabine River; and Sabine-Neches Waterway north of 29°52.70′ N.; and the ICW from its intersection with the Sabine River to MM 260.
Port Arthur Traffic	156.675 MHz (Ch. 73)[6]	The navigable waters of the Calcasieu Channel; Calcasieu River Channel; and the ICW from MM 260 to MM 191.
Prince William Sound 003669958 *Valdez Traffic*	156.650 MHz (Ch. 13)	The navigable waters south of 61°05.00′ N., east of 147°20.00′ W., north of 60°00.00′ N., and west of 146°30.00′ W.; and, all navigable waters in Port Valdez.
Puget Sound[7] *Seattle Traffic* 003669957	156.700 MHz (Ch. 14)	The waters of Puget Sound, Hood Canal and adjacent waters south of a line connecting Nodule Point and Bush Point in Admiralty Inlet and south of a line drawn due east from the southernmost tip of Possession Point on Whidbey Island to the shoreline.
Seattle Traffic 003669957	156.250 MHz (Ch. 5A)	The waters of the Salish Sea east of 124°40.00′ W. excluding the waters in the central portion of the Salish Sea north and east of Race Rocks; the navigable waters of the Strait of Georgia east of 122°52.00′ W.; the San Juan Island Archipelago, Rosario Strait, Bellingham Bay; Admiralty Inlet north of a line connecting Nodule Point and Bush Point and all waters east of Whidbey Island north of a line drawn due east from the southernmost tip of Possession Point on Whidbey Island to the shoreline.
Tofino Traffic 003160012	156.725 MHz (Ch. 74)	The waters west of 124°40.00′ W. within 50 nautical miles of the coast of Vancouver Island including the waters north of 48°00.00′ N., and east of 127°00.00′ W.
Victoria Traffic 003160010	156.550 MHz (Ch. 11)	The waters of the Strait of Georgia west of 122°52.00′ W., the navigable waters of the central Salish Sea north and east of Race Rocks, including the Gulf Island Archipelago, Boundary Pass and Haro Strait.
San Francisco 003669956 *San Francisco Traffic*	156.700 MHz (Ch. 14)	The navigable waters of the San Francisco Offshore Precautionary Area, the navigable waters shoreward of the San Francisco Offshore Precautionary Area east of 122°42.00′ W. and north of 37°40.00′ N. extending eastward through the Golden Gate, and the navigable waters of San Francisco Bay and as far east as the port of Stockton on the San Joaquin River, as far north as the port of Sacramento on the Sacramento River.
San Francisco Traffic	156.600 MHz (Ch. 12)	The navigable waters within a 38 nautical mile radius of Mount Tamalpais (37°55.80′ N., 122°34.60′ W.) west of 122°42.00′ W. and south of 37°40.00′ N. and excluding the San Francisco Offshore Precautionary Area.
St. Marys River 003669953 *Soo Traffic*	156.600 MHz (Ch. 12)	The waters of the St. Marys River and lower Whitefish Bay from 45°57.00′ N. (De Tour Reef Light) to the south, to 46°38.70′ N. (Ile Parisienne Light) to the north, except the waters of the St. Marys Falls Canal and to the east along a line from La Pointe to Sims Point, within Potagannissing Bay and Worsley Bay.

Notes:

[1] Maritime Mobile Service Identifier (MMSI) is a unique nine-digit number assigned that identifies ship stations, ship earth stations, coast stations, coast earth stations, and group calls for use by a digital selective calling (DSC) radio, an INMARSAT ship earth station or AIS. AIS requirements are set forth in §§161.21 and 164.46 of this subchapter. The requirements set forth in §161.21 of this subchapter apply in those areas denoted with an MMSI number, except for Louisville and Los Angeles/Long Beach.

[2] In the event of a communication failure, difficulties or other safety factors, the Center may direct or permit a user to monitor and report on any other designated monitoring frequency or the bridge-to-bridge navigational frequency, 156.650 MHz (Channel 13) or 156.375 MHz (Ch. 67), to the extent that doing so provides a level of safety beyond that provided by other means. The bridge-to-bridge navigational frequency, 156.650 MHz (Ch. 13), is used in certain monitoring areas where the level of reporting does not warrant a designated frequency.

[3] All geographic coordinates (latitude and longitude) are expressed in North American Datum of 1983 (NAD 83).

[4] Some monitoring areas extend beyond navigable waters. Although not required, users are strongly encouraged to maintain a listening watch on the designated monitoring frequency in these areas. Otherwise, they are required to maintain watch as stated in 47 CFR 80.148.

[5] In addition to the vessels denoted in Section 161.16 of this chapter, requirements set forth in subpart B of 33 CFR part 161 also apply to any vessel transiting VMRS Buzzards Bay required to carry a bridge-to-bridge radiotelephone by part 26 of this chapter.

[6] Until otherwise directed, full VTS services will not be available in the Calcasieu Channel, Calcasieu River Channel, and the ICW from MM 260 to MM 191. Vessels may contact Port Arthur Traffic on the designated VTS frequency to request advisories, but are not required to monitor the VTS frequency in this zone.

[7] A Cooperative Vessel Traffic Service was established by the United States and Canada within adjoining waters. The appropriate Center administers the rules issued by both nations; however, enforces only its own set of rules within its jurisdiction. Note, the bridge-to-bridge navigational frequency, 156.650 MHz (Ch. 13), is not so designated in Canadian waters, therefore users are encouraged and permitted to make passing arrangements on the designated monitoring frequencies.

measure or is a maneuver considered necessary for safe navigation under the circumstances.

(1585)

§161.6 Preemption.

(1586) The regulations in this part have preemptive impact over State laws or regulations on the same subject matter. The Coast Guard has determined, after considering the factors developed by the Supreme Court in U.S. v. Locke, 529 U.S. 89 (2000), that by enacting 46 U.S.C. Chapter 700 "Ports and Waterways Safety". Congress intended that Coast Guard regulations preempt State laws or regulations regarding vessel traffic services in United States ports and waterways.

(1587)

Services, VTS Measures, and Operating Requirements

(1588)

§161.10 Services.

(1589) To enhance navigation and vessel safety, and to protect the marine environment, a VTS may issue advisories, or respond to vessel requests for information, on reported conditions within the VTS area, such as:

(1590) (a) Hazardous conditions or circumstances;

(1591) (b) Vessel congestion;

(1592) (c) Traffic density;

(1593) (d) Environmental conditions;

(1594) (e) Aids to navigation status;

(1595) (f) Anticipated vessel encounters;

(1596) (g) Another vessel's name, type, position, hazardous vessel operating conditions, if applicable, and intended navigation movements, as reported;

(1597) (h) Temporary measures in effect;

(1598) (i) A description of local harbor operations and conditions, such as ferry routes, dredging, and so forth;

(1599) (j) Anchorage availability; or

(1600) (k) Other information or special circumstances.

(1601)

§161.11 VTS measures.

(1602) (a) A VTS may issue measures or directions to enhance navigation and vessel safety and to protect the marine environment, such as, but not limited to:

(1603) (1) Designating temporary reporting points and procedures;

(1604) (2) Imposing vessel operating requirements; or

(1605) (3) Establishing vessel traffic routing schemes.

(1606) (b) During conditions of vessel congestion, restricted visibility, adverse weather, or other hazardous circumstances, a VTS may control, supervise, or otherwise manage traffic, by specifying times of entry, movement, or departure to, from, or within a VTS area.

(1607)

§161.12 Vessel operating requirements.

(1608) (a) Subject to the exigencies of safe navigation, a VTS User shall comply with all measures established or directions issued by a VTS.

(1609) (b) If, in a specific circumstance, a VTS User is unable to safely comply with a measure or direction issued by the VTS, the VTS User may deviate only to the extent necessary to avoid endangering persons, property or the environment. The deviation shall be reported to the VTS as soon as is practicable.

(1610) (c) When not exchanging communications, a VTS User must maintain a listening watch as required by §26.04(e) of this chapter on the VTS frequency designated in Table 161.12(c) (VTS and VMRS Centers, Call Signs/MMSI, Designated Frequencies, and Monitoring Areas). In addition, the VTS User must respond promptly when hailed and communicate in the English language.

(1611) **Note to §161.12(c):** As stated in **47 CFR 80.148(b)**, a very high frequency watch on Channel 16 (156.800 MHz) is not required on vessels subject to the Vessel Bridge-to-Bridge Radiotelephone Act and participating in a Vessel Traffic Service (VTS) system when the watch is maintained on both the vessel bridge-to-bridge frequency and a designated VTS frequency.

(1612) (d) As soon as practicable, a VTS User shall notify the VTS of any of the following:

(1613) (1) A marine casualty as defined in **46 CFR 4.05-1**;

(1614) (2) Involvement in the ramming of a fixed or floating object;

(1615) (3) A pollution incident as defined in §151.15 of this chapter:

(1616) (4) A defect or discrepancy in an aid to navigation;

(1617) (5) A hazardous condition as defined in §160.202 of this chapter;

(1618) (6) Improper operation of vessel equipment required by Part 164 of this chapter;

(1619) (7) A situation involving hazardous materials for which a report is required by **49 CFR 176.48**; and

(1620) (8) A hazardous vessel operating condition as defined in §161.2.

(1621)

§161.13 VTS Special Area Operating Requirements.

(1622) The following operating requirements apply within a VTS Special Area:

(1623) (a) A VTS User shall, if towing astern, do so with as short a hawser as safety and good seamanship permits.

(1624) (b) A VMRS User shall: (1) Not enter or get underway in the area without prior approval of the VTS;

(1625) (2) Not enter a VTS Special Area if a hazardous vessel operating condition or circumstance exists;

(1626) (3) Not meet, cross, or overtake any other VMRS User in the area without prior approval of the VTS; and

(1627) (4) Before meeting, crossing, or overtaking any other VMRS User in the area, communicate on the designated vessel bridge-to-bridge radiotelephone frequency, intended navigation movements, and any other information necessary in order to make safe passing arrangements. This requirement does not relieve a vessel of any duty prescribed by the International Regulations for Prevention of Collisions at Sea, 1972 (72 COLREGS)

(1642)

TABLE 161.18(a) – The IMO Standard Ship Reporting System

A	ALPHA	Ship	Name, call sign or ship station identity, and flag.
B	BRAVO	Dates and time of events	A 6 digit group giving day of month (first two digits), hours and minutes (last four digits). If other than UTC state time zone used.
C	CHARLIE	Position	A 4 digit group giving latitude in degrees and minutes suffixed with N (north) or S (south) and a 5 digit group giving longitude in degrees and minutes suffixed with E (east) or W (west); or
D	DELTA	Position	True bearing (first 3 digits) and distance (state distance) in nautical miles from a clearly identified landmark (state landmark).
E	ECHO	True course	A 3 digit group.
F	FOXTROT	Speed in knots and tenths of knots	A 3 digit group.
G	GOLF	Port of Departure	Name of last port of call.
H	HOTEL	Date, time and point of entry system	Entry time expressed as in (B) and into the entry position expressed as in (C) or (D).
I	INDIA	Destination and expected time of arrival	Name of port and date time group expressed as in (B).
J	JULIET	Pilot	State whether a deep sea or local pilot is on board.
K	KILO	Date, time and point of exit from system	Exit time expressed as in (B) and exit position expressed as in (C) or (D).
L	LIMA	Route information	Intended track.
M	MIKE	Radio	State in full names of communications stations/frequencies guarded.
N	NOVEMBER	Time of next report	Date time group expressed as in (B).
O	OSCAR	Maximum present static draught in meters	4 digit group giving meters and centimeters.
P	PAPA	Cargo on board	Cargo and brief details of any dangerous cargoes as well as harmful substances and gases that could endanger persons or the environment.
Q	QUEBEC	Defects, damage, deficiencies or limitations	Brief detail of defects, damage, deficiencies or other limitations.
R	ROMEO	Description of pollution or dangerous goods lost	Brief details of type of pollution (oil, chemicals, etc.) or dangerous goods lost overboard; position expressed as in (C) or (D).
S	SIERRA	Weather conditions	Brief details of weather and sea conditions prevailing.
T	TANGO	Ship's representative and/or owner	Details of name and particulars of ship's representative and/or owner for provision of information.
U	UNIFORM	Ship size and type	Details of length, breadth, tonnage, and type, etc., as required.
V	VICTOR	Medical personnel	Doctor, physician's assistant, nurse, no medic.
W	WHISKEY	Total number of persons on board	State number.
X	XRAY	Miscellaneous	Any other information as appropriate. [i.e., a detailed description of a planned operation, which may include: its duration; effective area; any restrictions to navigation; notification procedures for approaching vessels; in addition, for a towing operation: configuration, length of the tow, available horsepower, etc.; for a dredge or floating plant: configuration of pipeline, mooring configuration, number of assist vessels, etc.].

or the Inland Navigation Rules.

(1630)

Subpart B–Vessel Movement Reporting System

(1631)

§161.15 Purpose and Intent.

(1632) (a) A Vessel Movement Reporting System (VMRS) is a system used to monitor and track vessel movements within a VTS or VMRS area. This is accomplished by requiring that vessels provide information under established procedures as set forth in this part, or as directed by the Center.

(1633) (b) To avoid imposing an undue reporting burden or unduly congesting radiotelephone frequencies, reports shall be limited to information which is essential to achieve the objectives of the VMRS. These reports are consolidated into three reports (sailing plan, position, and final).

(1634)

§161.16 Applicability.

(1635) Unless otherwise stated, the provisions of this subpart apply to the following vessels and VMRS Users:

(1636) (a) Every power-driven vessel of 40 meters (approximately 131 feet) or more in length, while navigating;

(1637) (b) Every towing vessel of 8 meters (approximately 26 feet) or more in length, while navigating; or

(1638) (c) Every vessel certificated to carry 50 or more passengers for hire, when engaged in trade.

(1639)

§161.17 [Removed and Reserved]

(1640)

§161.18 Reporting requirements.

(1641) (a) A Center may: (1) Direct a vessel to provide any of the information set forth in Table 161.18(a) (IMO Standard Ship Reporting System);

(1643) (2) Establish other means of reporting for those vessels unable to report on the designated frequency; or

(1644) (3) Require reports from a vessel in sufficient time to allow advance vessel traffic planning.

(1645) (b) All reports required by this part shall be made as soon as is practicable on the frequency designated in Table 161.12(c) (VTS and VMRS Centers, Call Signs/MMSI, Designated Frequencies, and Monitoring Areas).

(1646) (c) When not exchanging communications, a VMRS User must maintain a listening watch as described in §26.04(e) of this chapter on the frequency designated in Table 161.12(c) (VTS and VMRS Centers, Call Signs/MMSI, Designated Frequencies, and Monitoring Areas). In addition, the VMRS User must respond promptly when hailed and communicate in the English language.

(1647) **Note:** As stated in 47 CFR 80.148(b), a VHF watch on Channel 16 (156.800 MHz) is not required on vessels subject to the Vessel Bridge-to-Bridge Radiotelephone Act and participating in a Vessel Traffic Service (VTS) system when the watch is maintained on both the vessel bridge-to-bridge frequency and a designated VTS frequency.

(1648) (d) A vessel must report:

(1649) (1) Any significant deviation from its Sailing Plan, as defined in §161.19, or from previously reported information; or

(1650) (2) Any intention to deviate from a VTS issued measure or vessel traffic routing system.

(1651) (e) When reports required by this part include time information, such information shall be given using the local time zone in effect and the 24-hour military clock system.

(1652)

§161.19 Sailing Plan (SP).

(1653) Unless otherwise stated, at least 15 minutes before navigating a VTS area, a vessel must report the:

(1654) (a) Vessel name and type;

(1655) (b) Position;

(1656) (c) Destination and ETA;

(1657) (d) Intended route;

(1658) (e) Time and point of entry; and

(1659) (f) Dangerous cargo on board or in its tow, as defined in §160.202 of this subchapter.

(1660)

§161.20 Position Report (PR).

(1661) A vessel must report its name and position:

(1662) (a) Upon point of entry into a VMRS area;

(1663) (b) At designated reporting points as set forth in Subpart C; or

(1664) (c) When directed by the Center.

(1665)

§161.21 Automated reporting.

(1666) (a) Unless otherwise directed, vessels equipped with an Automatic Identification System (AIS) are required to make continuous, all stations, AIS broadcasts, in lieu of voice Position Reports, to those Centers denoted in Table 161.12(c) of this part.

(1667) (b) Should an AIS become non-operational, while or prior to navigating a VMRS area, it should be restored to operating condition as soon as possible, and, until restored a vessel must:

(1668) (1) Notify the Center;

(1669) (2) Make voice radio Position Reports at designated reporting points as required by §161.20(b) of this part; and

(1670) (3) Make any other reports as directed by the Center.

(1671)

§161.22 Final Report (FR).

(1672) A vessel must report its name and position:

(1673) (a) On arrival at its destination; or

(1674) (b) When leaving a VTS area.

(1675)

§161.23 Reporting exemptions.

(1676) (a) Unless otherwise directed, the following vessels are exempted from providing Position and Final Reports due to the nature of their operation:

(1677) (1) Vessels on a published schedule and route;

(1678) (2) Vessels operating within an area of a radius of three nautical miles or less; or

(1679) (3) Vessels escorting another vessel or assisting another vessel in maneuvering procedures.

(1680) (b) A vessel described in paragraph (a) of this section must:

(1681) (1) Provide a Sailing Plan at least 5 minutes but not more than 15 minutes before navigating within the VMRS area; and

(1682) (2) If it departs from its promulgated schedule by more than 15 minutes or changes its limited operating area, make the established VMRS reports, or report as directed.

(1683)

Subpart C–Vessel Traffic Service and Vessel Movement Reporting System Areas and Reporting Points

(1684) **Note:** All geographic coordinates contained in part 161 (latitude and longitude) are expressed in North American Datum of 1983 (NAD 83).

(1685)

§161.50 Vessel Traffic Service San Francisco.

(1686) The VTS area consists of all the navigable waters of San Francisco Bay Region south of the Mare Island Causeway Bridge and the Petaluma River Entrance Channel Daybeacon 19 and Petaluma River Entrance Channel Light 20 and north of the Dunbarton Bridge; its seaward approaches within a 38 nautical mile radius of Mount Tamalpais (37°55.8'N., 122°34.6'W.); and its navigable tributaries as far east as the port of Stockton on the San Joaquin River, as far north as the port of Sacramento on the Sacramento River.

(1687)

§161.55 Vessel Traffic Service Puget Sound and the

Cooperative Vessel Traffic Service for the Juan de Fuca Region.

(1688) The Vessel Traffic Service Puget Sound area consists of the U.S. navigable waters of the Salish Sea from a line drawn from the Washington State coastline at 48°23.133′N., 124°43.616′W. on Cape Flattery to the Cape Flattery Light at 48°23.5′N., 124°44.2′W. on Tatoosh Island, due west to the U.S. Territorial Sea Boundary; thence northward along the U.S. Territorial Sea Boundary to its intersection with the U.S./Canada International Boundary; thence east along the U.S./Canada International Boundary to 49°00.1′N., 122°45.3′W. (International Boundary Range C Rear Light).

(1689) (a) Vessel Traffic Service Puget Sound participates in a U.S./Canadian Cooperative Vessel Traffic Service (CVTS) to jointly manage vessel traffic in the Juan de Fuca Region. The CVTS for the Juan de Fuca Region consists of all navigable waters of the Salish Sea, bounded on the northwest by 48°35.749′N.; and on the southwest by 48°23.5′N.; and on the west by the rhumb line joining 48°35.749′N., 124°47.5′W. with 48°23.5′N., 124°48.616′W.; and on the northeast by a line drawn along 49°N. from Vancouver Island to Semiahmoo Bay; and on the southeast, by a line drawn from McCurdy Point on the Quimper Peninsula to Point Partridge on Whidbey Island. Canadian and United States Vessel Traffic Centers (Prince Rupert, B.C., Canada; Vancouver, B.C., Canada; and Seattle, WA) manage traffic within the CVTS area irrespective of the International Boundary.

(1690) (b) VTS Special Area: The Eastern San Juan Island Archipelago VTS Special Area consists of all waters of the eastern San Juan Island Archipelago including: Rosario Strait bounded to the south by 48°26.40′N. (the center of the Precautionary Area "RB") extending from Lopez Island to Fidalgo Island, and to the north by 48°40.57′N. (the center of the Precautionary Area "C") extending from Orcas Island to Lummi Island; Guemes Channel; Bellingham Channel; Padilla Bay and southern Bellingham Bay (Samish Bay) south of 48°38.42′N.

(1691) **Note:** The center of precautionary area "RB" is not marked by a buoy. All precautionary areas are depicted on National Oceanic and Atmospheric Administration (NOAA) nautical charts.

(1692) (c) Additional VTS Special Area Operating Requirements. The following additional requirements are applicable in the Eastern San Juan Island Archipelago VTS Special Area:

(1693) (1) A vessel engaged in towing shall not impede the passage of a vessel of 40,000 dead weight tons or more.

(1694) (2) A vessel of less than 40,000 dead weight tons is exempt from the provision set forth in §161.13(b)(1) of this part.

(1695) (3) A vessel of less than 100 meters in length is exempt from the provisions set forth in **§ 161.13(b)**(3) of this part.

(1696) (4) Approval will not be granted for:

(1697) (i) A vessel of 100 meters or more in length to meet or overtake a vessel of 40,000 dead weight tons or more;

(1698) (ii) A vessel of 40,000 dead weight tons or more to meet or overtake a vessel of 100 meters or more in length;

(1699) (iii) A vessel of 100 meters or more in length to cross or operate within 2,000 yards (except when crossing astern) of a vessel of 40,000 deadweight tons or more; or

(1700) (iv) A vessel of 40,000 dead weight tons or more to cross or operate within 2,000 yards (except when crossing astern) of a vessel of 100 meters or more in length.

(1701) (d) Reporting Point. Inbound vessels in the Strait of Juan de Fuca upon crossing 124°W.

(1702)

Part 162–Inland Waterways Navigation Regulations

(1703)

§162.1 General.

(1704) Geographic coordinates expressed in terms of latitude or longitude, or both, are not intended for plotting on maps or charts whose referenced horizontal datum is the North American Datum of 1983 (NAD 83), unless such geographic coordinates are expressly labeled NAD 83. Geographic coordinates without the NAD 83 reference may be plotted on maps or charts referenced to NAD 83 only after application of the appropriate corrections that are published on the particular map or chart being used.

(1705)

§162.5 Definitions.

(1706) The following definitions apply to this part:

(1707) *Merchant mariner credential or MMC* means the credential issued by the Coast Guard under **46 CFR** part **10**. It combines the individual merchant mariner's document, license, and certificate of registry enumerated in 46 U.S.C. subtitle II part E as well as the STCW endorsement into a single credential that serves as the mariner's qualification document, certificate of identification, and certificate of service.

(1708)

§162.225 Columbia and Willamette Rivers, Washington and Oregon; administration and navigation.

(1709) (a) *Supervision*. The District Commander, Thirteenth Coast Guard District, has certain administrative supervision over the Columbia and Willamette Rivers, and is charged with the enforcement under his direction of emergency regulations to govern navigation of these streams.

(1710) (b) *Speed*. During very high water stages (usually 25 feet or more on the Vancouver, Washington, gage) when lives, floating plant or major shore installations are endangered, the District Commander shall have authority to prescribe such temporary speed regulations as he may deem necessary for the public safety. During critical periods of freshets under 25 feet on the Vancouver, Washington, gage when construction is in progress, rehabilitation, or other unusual emergency makes a major shore installation susceptible to loss or major damage from wave action, the District Commander shall have

authority to prescribe for a particular limited reach of the river as appropriate such temporary speed regulations as he may deem necessary to protect the integrity of such structure. All speed regulations prescribed by the District Commander shall be obeyed for the duration of the emergency and shall be terminated at the earliest practicable time that improved stream conditions permit.

(1711)

§162.230 Columbia River, WA.

(1712) (a) *Grand Coulee Dam discharge channel; restricted area*–(1) *The area*. That portion of the Columbia River between Grand Coulee Dam (situated at river mile 596.6) and river mile 593.7.

(1713) (2) *The regulations*. (i) No vessel shall enter or navigate within the area without permission from the enforcing agency.

(1714) (ii) The regulation in this section shall be enforced by the Chief, Power Field Division, Columbia Basin Project, U.S. Department of the Interior, Coulee Dam, Washington.

(1715)

§162.235 Puget Sound Area, WA.

(1716) (a) *Waterway connecting Port Townsend and Oak Bay; use, administration, and navigation*—(1) *Works to which regulations apply*. The "canal grounds" when used in this Paragraph shall mean that area between the south end of the jetties in Oak Bay and the northerly end of the dredge channel approximately 400 yards northwest of Port Townsend Canal Light. The "canal" is the water lying between these limits and the banks containing the same.

(1717) (2) *Speed. The* speed limit within the canal grounds shall not exceed five miles per hour.

(1718) (3) *Signals*. All boats desiring to use the canal shall give one long and one short whistle. Southbound boats shall sound the signal within 600 yards of Port Townsend Canal Light. Northbound boats shall sound this signal at least 500 feet south from the end of the jetties in Oak Bay. If no other boat answers the signal the first boat shall have the right of way through the canal. Any approaching boat that is in the canal shall answer by giving the same signal and the first boat shall not enter the canal until the second boat shall have passed through the canal. In the case of boats going in the same direction the boat which is in the canal shall not answer the signal of the boat desiring to enter.

(1719) (4) *Passing*. Steamers shall not under any circumstances attempt to pass each other in the canal, either when going in the same or opposite directions.

(1720) (5) *Anchoring*. No steamers or boats shall anchor or tie up within the canal grounds unless they are well over on the tide flats to the west of the dredged channel, and off the right of way belonging to the United States.

(1721) (6) *Tows.* No tow shall enter or pass through the canal with a towline more than 200 feet in length.

(1722) (7) *Delaying traffic*. No person shall cause or permit any vessel or boat of which he is in charge, or on which he is employed, to obstruct the canal in any way or delay in passing through it.

(1723) (b) *West Waterway, Seattle Harbor; navigation*. (1) The movement of vessels of 250 gross tons or over and all vessels with tows of any kind through the narrow section of West Waterway between the bend at Fisher's Flour Mill dock and the bend at the junction of East Waterway with Duwamish Waterway, and through the draws of the City of Seattle and Northern Pacific Railway Company bridges crossing this narrow section, shall be governed by red and green traffic signal lights mounted on the north and south sides of the west tower of the City Light power crossing at West Spokane Street.

(1724) (2) Two green lights, one vertically above the other, displayed ahead of a vessel, shall indicate that the waterway is clear. Two red lights, one vertically above the other, displayed ahead of a vessel, shall indicate that the waterway is not clear.

(1725) (3) A vessel approaching the narrow section and drawbridges from either end of the waterway shall give one long blast of a whistle and shall not enter the narrow section until green lights are displayed.

(1726) (4) One vessel may follow another vessel in either direction, but the channel shall not be kept open in the same direction for an unreasonable time if a vessel is waiting at the other end.

(1727) (5) Tugs, launches, and small craft shall keep close to one side of the channel when vessels or boats with tows are passing.

(1728) (6) All craft shall proceed with caution. The display of a green light is not a guarantee that the channel is clear of traffic, and neither the United States nor the City of Seattle will be responsible for any damage to vessels or other property which may be chargeable to mistakes in the operation of the signal lights or to their failure to operate.

(1729) **NOTE:** The U.S. Army Corps of Engineers also has regulations dealing with this section in **33 CFR 207**.

(1730)

§162.270 Restricted areas in vicinity of Maritime Administration Reserve Fleets.

(1731) (a) The regulations in this section shall govern the use and navigation of waters in the vicinity of the following National Defense Reserve Fleets of the Maritime Administration, Department of Transportation.

(1732) (1) James River Reserve Fleet, Fort Eustis, Virginia.

(1733) (2) Beaumont Reserve Fleet, Neches River near Beaumont, Texas.

(1734) (3) Suisun Bay Reserve Fleet near Benicia, California.

(1735) (b) No vessels or other watercraft, except those owned or controlled by the United States Government, shall cruise or anchor between Reserve Fleet units within 500 feet of the end vessels in each Reserve Fleet unit, or within 500 feet of the extreme units of the fleets, unless specific permission to do so has first been granted in each case by the enforcing agency.

(1736) (c) The regulations in this section shall be enforced by the respective Fleet Superintendents and such agencies as they may designate.

(1737)

Part 164–Navigation Safety Regulations (in part)

(1738)

§164.01 Applicability.

(1739) (a) This part (except as specifically limited by this section) applies to each self-propelled vessel of 1600 or more gross tons (except as provided in paragraph (c) and (d) of this section, or for foreign vessels described in §164.02) when it is operating in the navigable waters of the United States except the St. Lawrence Seaway.

(1740) (b) Sections 164.70 through 164.82 of this part apply to each towing vessel of 12 meters (39.4 feet) or more in length operating in the navigable waters of the United States other than the St. Lawrence Seaway; except that a towing vessel is exempt from the requirements of §164.72 if it is–

(1741) (1) Used solely within a limited geographic area, such as a fleeting-area for barges or a commercial facility, and used solely for restricted service, such as making up or breaking up larger tows;

(1742) (2) Used solely for assistance towing as defined by **46 CFR 10.103**;

(1743) (3) Used solely for pollution response; or

(1744) (4) Any other vessel exempted by the Captain of the Port (COTP). The COTP, upon written request, may, in writing, exempt a vessel from §164.72 for a specified route if he or she decides that exempting it would not allow its unsafe navigation under anticipated conditions.

(1745) (c) Provisions of §164.11(a)(2) and (c), 164.30, 164.33, and 164.46 do not apply to warships or other vessels owned, leased, or operated by the United States Government and used only in government noncommercial service when these vessels are equipped with electronic navigation systems that have met the applicable agency regulations regarding navigation safety.

(1746) (d) Provisions of §164.46 apply to some self-propelled vessels of less 1600 gross tonnage.

(1747)

§164.02 Applicability exception for foreign vessels.

(1748) (a) Except for §164.46(c), none of the requirements of this part apply to foreign vessels that:

(1749) (1) Are not destined for, or departing from, a port or place subject to the jurisdiction of the United States; and

(1750) (2) Are in:

(1751) (i) Innocent passage through the territorial sea of the United States; or

(1752) (ii) Transit through navigable waters of the United States which form a part of an international strait.

(1753)

§164.03 Incorporation by reference.

(1754) (a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and **1 CFR** part **51**. To enforce any edition other than that specified in this section, the Coast Guard must publish notice of the change in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the National Archives and Records Administration (NARA). For more information on the availability of this material at NARA, call 202–741–6030, or go to: *www.archives.gov/federal-register/cfr/ibr-locations.html*. Also, it is available for inspection at the Commandant (CG-NAV), U.S. Coast Guard Stop 7418, Attn: Office of Navigation Systems, 2703 Martin Luther King Jr. Ave. SE., Washington, DC 20593-7418, telephone 202–372–1565, and is available from the sources listed below.

(1755) (b) American Petroleum Institute (API), 1220 L Street NW., Washington, DC 20005-4070, 202–682–8000, *www.api.org*:

(1756) (1) API Specification 9A, Specification for Wire Rope, Section 3, Properties and Tests for Wire and Wire Rope, May 28, 1984, IBR approved for §164.74.

(1757) (2) [Reserved]

(1758) (c) ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, 610–832–9585, *www.astm.org*:

(1759) (1) ASTM D4268-93, Standard Test Method for Testing Fiber Rope, IBR approved for §164.74.

(1760) (2) [Reserved]

(1761) (d) Cordage Institute, 350 Lincoln Street, Hingham, MA 02043.

(1762) (1) CIA-3, Standard Test Methods for Fiber Rope Including Standard Terminations, Revised, June 1980, IBR approved for §164.74.

(1763) (2) [Reserved]

(1764) (e) International Maritime Organization (IMO), 4 Albert Embankment, London SE1 7SR, United Kingdom, *www.imo.org*:

(1765) (1) IMO Resolution A342(IX), Recommendation on Performance Standards for Automatic Pilots, November 12, 1975, IBR approved for §164.13.

(1766) (2) IMO Resolution A.917(22), Guidelines for the Onboard Operational Use of Shipborne Automatic Identification System (AIS), January 25, 2002, IBR approved for §164.46.

(1767) (3) SN/Circ.227, Guidelines for the Installation of a Shipborne Automatic Identification System (AIS), January 6, 2003, IBR approved for §164.46.

(1768) (4) SN/Circ.244, Guidance on the Use of the UN/LOCODE in the Destination Field in AIS Messages, December 15, 2004, IBR approved for §164.46.

(1769) (5) SN/Circ.245, Amendments to the Guidelines for the Installation of a Shipborne Automatic Identification System (AIS)(SN/Circ.227), December 15, 2004, IBR approved for §164.46.

(1770) (6) SOLAS, International Convention for the Safety of Life at Sea, 1974, and 1988 Protocol relating thereto, 2000 Amendments, effective January and July 2002, (SOLAS 2000 Amendments), IBR approved for §164.46.

(1771) (7) Conference resolution 1, Adoption of amendments to the Annex to the International Convention for the Safety of Life at Sea, 1974, and amendments to chapter V of SOLAS 1974, adopted on December 12, 2002, IBR approved for §164.46.

(1772) (8) SN.1/Circ.289, Guidance on the Use of AIS Application-Specific Messages, June 2, 2010, IBR approved for §164.46.

(1773) (f) National Marine Electronics Association (NMEA), 7 Riggs Avenue, Severna Park, MD 21146, 800–808–6632, *www.nmea.org*:

(1774) (1) NMEA 0400, Installation Standard for Marine Electronic Equipment used on Moderate-Sized Vessels, Version 3.10, February 2012, IBR approved for §164.46.

(1775) (2) [Reserved]

(1776) (g) Radio Technical Commission for Maritime Services *(RTCM)*, 1611 N. Kent St., Suite 605, Arlington, VA 22209, 703–527–2000, *www.rtcm.org*:

(1777) (1) RTCM Paper 12-78/DO-100, Minimum Performance Standards, Loran C Receiving Equipment, 1977, IBR approved for §164.41.

(1778) (2) RTCM Paper 71-95/SC112-STD, RTCM Recommended Standards for Marine Radar Equipment Installed on Ships of Less Than 300 Tons Gross Tonnage, Version 1.1, October 10, 1995, IBR approved for §164.72.

(1779) (3) RTCM Paper 191-93/SC112-X, RTCM Recommended Standards for Maritime Radar Equipment Installed on Ships of 300 Tons Gross Tonnage and Upwards, Version 1.2, December 20, 1993, IBR approved for **§164.72**.

(1780) (h) International Electrotechnical Commission (IEC), 3, rue de Varembe, Geneva, Switzerland, +41 22 919 02 11, *http://www.iec.ch/*. Email: info@iec.ch.

(1781) (1) IEC 62065 (IEC 62065 2002–03), Maritime navigation and radiocommunication equipment and systems—Track control systems—Operational and performance requirements, methods of testing and required test results, First Edition, dated 2002, IBR approved for **§ 164.13(d)**.

(1782) (2) IEC 62065 (IEC 62065 2014–02), Maritime navigation and radiocommunication equipment and systems—Track control systems—Operational and performance requirements, methods of testing and required test results, Edition 2.0, dated 2014, IBR approved for **§ 164.13(d)**.

(1783)

§164.11 Navigation underway: General.

(1784) The owner, master, or person in charge of each vessel underway shall ensure that:

(1785) (a) The wheelhouse is constantly manned by persons who:

(1786) (1) Direct and control the movement of the vessel; and

(1787) (2) Fix the vessel's position;

(1788) (b) Each person performing a duty described in paragraph (a) of this section is competent to perform that duty;

(1789) (c) The position of the vessel at each fix is plotted on a chart of the area and the person directing the movement of the vessel is informed of the vessel's position;

(1790) (d) Electronic and other navigational equipment, external fixed aids to navigation, geographic reference points, and hydrographic contours are used when fixing the vessel's position;

(1791) (e) Buoys alone are not used to fix the vessel's position;

(1792) **Note:** Buoys are aids to navigation placed in approximate positions to alert the mariner to hazards to navigation or to indicate the orientation of a channel. Buoys may not maintain an exact position because strong or varying currents, heavy seas, ice, and collisions with vessels can move or sink them or set them adrift. Although buoys may corroborate a position fixed by other means, buoys cannot be used to fix a position: however, if no other aids are available, buoys alone may be used to establish an estimated position.

(1793) (f) The danger of each closing visual or each closing radar contact is evaluated and the person directing the movement of the vessel knows the evaluation;

(1794) (g) Rudder orders are executed as given;

(1795) (h) Engine speed and direction orders are executed as given;

(1796) (i) Magnetic variation and deviation and gyrocompass errors are known and correctly applied by the person directing the movement of the vessel;

(1797) (j) A person whom he has determined is competent to steer the vessel is in the wheelhouse at all times (See also 46 U.S.C. 8702(d), which requires an able seaman at the wheel on U.S. vessels of 100 gross tons or more in narrow or crowded waters during low visibility);

(1798) (k) If a pilot other than a member of the vessel's crew is employed, the pilot is informed of the draft, maneuvering characteristics, and peculiarities of the vessel and of any abnormal circumstances on the vessel that may affect its safe navigation.

(1799) (1) Current velocity and direction for the area to be transited are known by the person directing the movement of the vessel;

(1800) (m) Predicted set and drift are known by the person directing movement of the vessel;

(1801) (n) Tidal state for the area to be transited is known by the person directing movement of the vessel;

(1802) (o) The vessel's anchors are ready for letting go;

(1803) (p) The person directing the movement of the vessel sets the vessel's speed with consideration for–

(1804) (1) The prevailing visibility and weather conditions;

(1805) (2) The proximity of the vessel to fixed shore and marine structures;

(1806) (3) The tendency of the vessel underway to squat and suffer impairment of maneuverability when there is small underkeel clearance;

(1807) (4) The comparative proportions of the vessel and the channel;

(1808) (5) The density of marine traffic;

(1809) (6) The damage that might be caused by the vessel's wake;

(1810) (7) The strength and direction of the current; and

(1811) (8) Any local vessel speed limit;

(1812) (q) The tests required by §164.25 are made and recorded in the vessel's log; and

(1813) (r) The equipment required by this part is maintained in operable condition.

(1814) (s) Upon entering U.S. waters, the steering wheel or lever on the navigating bridge is operated to determine if the steering equipment is operating properly under manual control, unless the vessel has been steered under manual control from the navigating bridge within the preceding 2 hours, except when operating on the Great Lakes and their connecting and tributary waters.

(1815) (t) At least two of the steering-gear power units on the vessel are in operation when such units are capable of simultaneous operation, except when the vessel is sailing on the Great Lakes and their connecting and tributary waters, and except as required by paragraph (u) of this section.

(1816) (u) On each passenger vessel meeting the requirements of the International Convention for the Safety of Life at Sea, 1960 (SOLAS 60) and on each cargo vessel meeting the requirements of SOLAS 74 as amended in 1981, the number of steering-gear power units necessary to move the rudder from 35° on either side to 30° on the other in not more than 28 seconds must be in simultaneous operation.

(1817)

§164.13 Navigation underway: tankers.

(1818) (a) As used in this section, "tanker" means a self-propelled tank vessel, including integrated tug barge combinations, constructed or adapted primarily to carry oil or hazardous material in bulk in the cargo spaces and inspected and certificated as a tanker.

(1819) (b) Each tanker must have an engineering watch capable of monitoring the propulsion system, communicating with the bridge, and implementing manual control measures immediately when necessary. The watch must be physically present in the machinery spaces or in the main control space and must consist of at least an engineer with an appropriately endorsed license or merchant mariner credential.

(1820) (c) Each tanker must navigate with at least two deck officers with an appropriately endoresed license or merchant mariner credential on watch on the bridge, one of whom may be a pilot. In waters where a pilot is required, the second officer, must be an individual holding an appropriately endorsed license or merchant mariner credential and assigned to the vessel as master, mate, or officer in charge of a navigational watch, who is separate and distinct from the pilot.

(1821) (d) This paragraph (d) has preemptive effect over State or local regulation within the same field. A tanker may navigate using a heading or track control system only if:

(1822) (1) The tanker is at least one-half nautical mile (1,012 yards) beyond the territorial sea baseline, as defined in **33 CFR 2.20**;

(1823) (i) Not within waters specified in **33 CFR part 110** (anchorages), or; (ii) Not within waters specified as precautionary areas in **33 CFR part 167**, and;

(1824) (2) There is a person, competent to steer the vessel, present to assume manual control of the steering station at all times including, but not limited to, the conditions listed in **46 CFR 35.20–45(a)** through **(c)**; and

(1825) (3) The system meets the heading or track control specifications of either IEC 62065 (2002–03) or IEC 62065 (2014–02) (incorporated by reference, see **§ 164.03**).

(1826)

§164.15 Navigation bridge visibility.

(1827) (a) The arrangement of cargo, cargo gear, and trim of all vessels entering or departing from U.S. ports must be such that the field of vision from the navigation bridge conforms as closely as possible to the following requirements:

(1828) (1) From the conning position, the view of the sea surface must not be obscured by more than the lesser of two ship lengths or 500 meters (1640 feet) from dead ahead to 10 degrees on either side of the vessel. Within this arc of visibility any blind sector caused by cargo, cargo gear, or other permanent obstruction must not exceed 5 degrees.

(1829) (2) From the conning position, the horizontal field of vision must extend over an arc from at least 22.5 degrees abaft the beam on one side of the vessel, through dead ahead, to at least 22.5 degrees abaft the beam on the other side of the vessel. Blind sectors forward of the beam caused by cargo, cargo gear, or other permanent obstruction must not exceed 10 degrees each, nor total more than 20 degrees, including any blind sector within the arc of visibility described in paragraph (a)(1) of this section.

(1830) (3) From each bridge wing, the field of vision must extend over an arc from at least 45 degrees on the opposite bow, through dead ahead, to at least dead astern.

(1831) (4) From the main steering position, the field of vision must extend over an arc from dead ahead to at least 60 degrees on either side of the vessel.

(1832) (b) Clear view must be provided through at least two front windows at all times regardless of weather condition.

(1833)

§164.19 Requirements for vessels at anchor.

(1834) The master or person in charge of each vessel that is anchored shall ensure that–

(1835) (a) A proper anchor watch is maintained;

(1836) (b) Procedures are followed to detect a dragging anchor; and

(1837) (c) Whenever weather, tide, or current conditions are likely to cause the vessel's anchor to drag, action is taken to ensure the safety of the vessel, structures, and other vessels, such as being ready to veer chain, let go a second anchor, or get underway using the vessel's own propulsion or tug assistance.

(1838)

§164.25 Tests before entering or getting underway.

(1839) (a) Except as provided in paragraphs (b) and (c) of this section no person may cause a vessel to enter into or get underway on the navigable waters of the United States unless no more than 12 hours before entering or getting underway, the following equipment has been tested:

(1840) (1) Primary and secondary steering gear. The test procedure includes a visual inspection of the steering gear and its connecting linkage, and where applicable, the operation of the following:

(1841) (i) Each remote steering gear control system.

(1842) (ii) Each steering position located on the navigating bridge.

(1843) (iii) The main steering gear from the alternative power supply, if installed.

(1844) (iv) Each rudder angle indicator in relation to the actual position of the rudder.

(1845) (v) Each remote steering gear control system power failure alarm.

(1846) (vi) Each remote steering gear power unit failure alarm.

(1847) (vii) The full movement of the rudder to the required capabilities of the steering gear.

(1848) (2) All internal vessel control communications and vessel control alarms.

(1849) (3) Standby or emergency generator, for as long as necessary to show proper functioning, including steady state temperature and pressure readings.

(1850) (4) Storage batteries for emergency lighting and power systems in vessel control and propulsion machinery spaces.

(1851) (5) Main propulsion machinery, ahead and astern.

(1852) (b) Vessels navigating on the Great Lakes and their connecting and tributary waters, having once completed the test requirements of this subpart, are considered to remain in compliance until arriving at the next port of call on the Great Lakes.

(1853) (c) Vessels entering the Great Lakes from the St. Lawrence Seaway are considered to be in compliance with this sub-part if the required tests are conducted preparatory to or during the passage of the St. Lawrence Seaway or within one hour of passing Wolfe Island.

(1854) (d) No vessel may enter, or be operated on the navigable waters of the United States unless the emergency steering drill described below has been conducted within 48 hours prior to entry and logged in the vessel logbook, unless the drill is conducted and logged on a regular basis at least once every three months. This drill must include at a minimum the following:

(1855) (1) Operation of the main steering gear from within the steering gear compartment.

(1856) (2) Operation of the means of communications between the navigating bridge and the steering compartment.

(1857) (3) Operation of the alternative power supply for the steering gear if the vessel is so equipped.

(1858)

§164.30 Charts, publications, and equipment: General.

(1859) No person may operate or cause the operation of a vessel unless the vessel has the marine charts, publications, and equipment as required by §§164.33 through 164.41 of this part.

(1860)

§164.33 Charts and publications.

(1861) (a) Each vessel must have the following:

(1862) (1) Marine charts of the area to be transited, published by the National Ocean Service, U.S. Army Corps of Engineers, or a river authority that–

(1863) (i) Are of a large enough scale and have enough detail to make safe navigation of the area possible; and

(1864) (ii) Are currently corrected.

(1865) (2) For the area to be transited, a currently corrected copy of, or applicable currently corrected extract from, each of the following publications:

(1866) (i) U.S. Coast Pilot.

(1867) (ii) Coast Guard Light List.

(1868) (3) For the area to be transited, the current edition of, or applicable current extract from:

(1869) (i) Tide tables published by private entities using data provided by the National Ocean Service.

(1870) (ii) Tidal current tables published by private entities using data provided by the National Ocean Service, or river current publication issued by a river authority.

(1871) (b) As an alternative to the requirements for paragraph (a) of this section, a marine chart or publication, or applicable extract, published by a foreign government may be substituted for a U.S. chart and publication required by this section. The chart must be of large enough scale and have enough detail to make safe navigation of the area possible, and must be currently corrected. The publication, or applicable extract, must singly or in combination contain similar information to the U.S. Government publication to make safe navigation of the area possible. The publication, or applicable extract must be currently corrected, with the exceptions of tide and tidal current tables, which must be the current editions.

(1872) (c) As used in this section, "currently corrected" means corrected with changes contained in all Notices to Mariners published by the National Geospatial-Intelligence Agency, or an equivalent foreign government publication, reasonably available to the vessel, and that is applicable to the vessel's transit.

(1873)

§164.35 Equipment: All vessels.

(1874) Each vessel must have the following:

(1875) (a) A marine radar system for surface navigation.

(1876) (b) An illuminated magnetic steering compass, mounted in a binnacle, that can be read at the vessel's main steering stand.

(1877) (c) A current magnetic compass deviation table or graph or compass comparison record for the steering compass, in the wheelhouse.

(1878) (d) A gyrocompass.

(1879) (e) An illuminated repeater for the gyrocompass required by paragraph (d) of this section that is at the main steering stand, unless that gyrocompass is illuminated and is at the main steering stand.

(1880) (f) An illuminated rudder angle indicator in the wheelhouse.

(1881) (g) The following maneuvering information prominently displayed on a fact sheet in the wheelhouse:

(1882) (1) A turning circle diagram to port and starboard that shows the time and distance and advance and transfer required to alter course 90 degrees with maximum rudder angle and constant power settings, for either full or half speeds, or for full and slow speeds. For vessels whose turning circles are essentially the same for both directions, a diagram showing a turning circle in one direction, with a note on the diagram stating that turns to port and starboard are essentially the same, may be substituted.

(1883) (2) The time and distance to stop the vessel from either full and half speeds, or from full and slow speeds, while maintaining approximately the initial heading with minimum application of rudder.

(1884) (3) For each vessel with a fixed propeller, a table of shaft revolutions per minute for a representative range of speeds.

(1885) (4) For each vessel with a controllable pitch propeller, a table of control settings for a representative range of speeds.

(1886) (5) For each vessel that is fitted with an auxiliary device to assist in maneuvering, such as a bow thruster, a table of vessel speeds at which the auxiliary device is effective in maneuvering the vessel.

(1887) (6) The maneuvering information for the normal load and normal ballast condition for–

(1888) (i) Calm weather-wind 10 knots or less, calm sea;

(1889) (ii) No current;

(1890) (iii) Deep water conditions-water depth twice the vessel's draft or greater; and

(1891) (iv) Clean hull.

(1892) (7) At the bottom of the fact sheet, the following statement:

(1893)

WARNING

The response of the (name of the vessel) may be different from that listed above if any of the following conditions, upon which the maneuvering information is based, are varied:
(1) Calm weather—wind 10 knots or less, calm sea;
(2) No current;
(3) Water depth twice the vessel's draft or greater;
(4) Clean hull; and
(5) Intermediate drafts or unusual trim.

(1894) (h) An echo depth sounding device.

(1895) (i) A device that can continuously record the depth readings of the vessel's echo depth sounding device, except when operating on the Great Lakes and their connecting and tributary waters.

(1896) (j) Equipment on the bridge for plotting relative motion.

(1897) (k) Simple operating instructions with a block diagram, showing the changeover procedures for remote steering gear control systems and steering gear power units, permanently displayed on the navigating bridge and in the steering gear compartment.

(1898) (l) An indicator readable from the centerline conning position showing the rate of revolution of each propeller, except when operating on the Great Lakes and their connecting and tributary waters.

(1899) (m) If fitted with controllable pitch propellers, an indicator readable from the centerline conning position showing the pitch and operational mode of such propellers, except when operating on the Great Lakes and their connecting and tributary waters.

(1900) (n) If fitted with lateral thrust propellers, an indicator readable from the centerline conning position showing the direction and amount of thrust of such propellers, except when operating on the Great Lakes and their connecting and tributary waters.

(1901) (o) A telephone or other means of communication for relaying headings to the emergency steering station. Also, each vessel of 500 gross tons and over and constructed on or after June 9, 1995 must be provided with arrangements for supplying visual compass-readings to the emergency steering station.

(1902)

§164.37 Equipment: Vessels of 10,000 gross tons or more.

(1903) (a) Each vessel of 10,000 gross tons or more must have, in addition to the radar system under §164.35(a), a second marine radar system that operates independently of the first.

(1904) **NOTE:** Independent operation means two completely separate systems, from separate branch power supply circuits or distribution panels to antennas, so that failure of any component of one system will not render the other system inoperative.

(1905) (b) On each tanker of 10,000 gross tons or more that is subject to 46 U.S.C. 3708, the dual radar system required by this part must have a short range capability and a long range capability; and each radar must have true north features consisting of a display that is stabilized in azimuth.

(1906)

§164.38 Automatic radar plotting aids (ARPA). (See 33 CFR 164.)

(1907)

§164.39 Steering gear; Foreign tankers.

(1908) (a) This section applies to each foreign tanker of 10,000 gross tons or more, except a public vessel, that–

(1909) (1) Transfers oil at a port or place subject to the jurisdiction of the United States; or

(1910) (2) Otherwise enters or operates in the navigable waters of the United States, except a vessel described by §164.02 of this part.

(1911) (b) *Definitions*. The terms used in this section are as follows:

(1912) *Constructed* means the same as in chapter II-1, Regulations 1.1.2 and 1.1.3.1, of SOLAS 74.

(1913) *Existing tanker* means a tanker–

(1914) (1) For which the building contract is placed on or after June 1, 1979;

(1915) (2) In the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after January 1, 1980;

(1916) (3) The delivery of which occurs on or after June 1, 1982; or

(1917) (4) That has undergone a major conversion contracted for on or after June 1, 1979; or construction of which was begun on or after January 1, 1980, or completed on or after June 1, 1982.

(1918) *Public vessel, oil hazardous materials*, and *foreign vessel* mean the same as in 46 U.S.C. 2101.

(1919) *SOLAS 74* means the International Convention for the Safety of Life at Sea, 1974, as amended.

(1920) *Tanker* means a self-propelled vessel defined as a tanker by 46 U.S.C. 2101(38) or as a tank vessel by 46 U.S.C. 2101(39).

(1921) (c) Each tanker constructed on or after September 1, 1984, must meet the applicable requirements of chapter II-1, Regulations 29 and 30, of SOLAS 74.

(1922) (d) Each tanker constructed before September 1, 1984, must meet the requirements of chapter II-1, Regulation 29.19, of SOLAS 74.

(1923) (e) Each tanker of 40,000 gross tons or more, constructed before September 1, 1984, that does not meet the single-failure criterion of chapter II-1, Regulation 29.16, of SOLAS 74, must meet the requirements of chapter II-1, Regulation 29.20, of SOLAS 74.

(1924) (f) Each tanker constructed before September 1, 1984, must meet the applicable requirements of chapter II-1, Regulations 29.14 and 29.15, of SOLAS 74.

(1925)

§164.40 Devices to indicate speed and distance.

(1926) (a) Each vessel required to be fitted with an Automatic Radar Plotting Aid (ARPA) under §164.38 of this part must be fitted with a device to indicate speed and distance of the vessel either through the water or over the ground.

(1927) (b) The device must meet the following specifications:

(1928) (1) The display must be easily readable on the bridge by day or night.

(1929) (2) Errors in the indicated speed, when the vessel is operating free from shallow water effect, and from the effects of wind, current, and tide, should not exceed 5 percent of the speed of the vessel, or 0.5 knot, whichever is greater.

(1930) (3) Errors in the indicated distance run, when the vessel is operating free from shallow water effect, and from the effects of wind, current, and tide, should not exceed 5 percent of the distance run of the vessel in one hour or 0.5 nautical mile in each hour, whichever is greater.

(1931)

§164.41 Electronic position fixing devices.

(1932) (a) Each vessel calling at a port in the continental United States, including Alaska south of Cape Prince of Wales, except each vessel owned or bareboat chartered and operated by the United States, or by a state or its political subdivision, or by a foreign nation, and not engaged in commerce, must have a satellite navigation receiver with—

(1933) (1) Automatic acquisition of satellite signals after initial operator settings have been entered; and

(1934) (2) Position updates derived from satellite information during each usable satellite pass.

(1935) (b) A system that is found by the Commandant to meet the intent of the statements of availability, coverage, and accuracy for the U.S. Coastal Confluence Zone (CCZ) contained in the U.S. "Federal Radionavigation Plan" (Report No. DOD-NO 4650.4-P, I or No. DOT-TSC-RSPA-80-16, I). A person desiring a finding by the Commandant under this subparagraph must submit a written application describing the device to the Commandant (CG-DCO-D), Attn: Deputy for Operations Policy and Capabilities, U.S. Coast Guard Stop 7318, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593-7318. After reviewing the application, the Commandant may request additional information to establish whether or not the device meets the intent of the Federal Radionavigation Plan. Note: The Federal Radionavigation Plan is available from the National Technical Information Service, Springfield, Va. 22161, with the following Government Accession Numbers:

(1936) Vol 1, ADA 116468

(1937) Vol 2, ADA 116469

(1938) Vol 3, ADA 116470

(1939) Vol 4, ADA 116471

(1940)

§164.42 Rate of turn indicator.

(1941) Each vessel of 100,000 gross tons or more constructed on or after September 1, 1984, shall be fitted with a rate of turn indicator.

(1942)

§164.43 [Removed]

(1943)

§164.46 Automatic Identification System.

(1944) (a) *Definitions*. As used in this section—*Automatic Identification Systems or AIS* means a maritime navigation safety communications system standardized by the International Telecommunication Union (ITU), adopted by the International Maritime Organization (IMO), that—

(1945) (1) Provides vessel information, including the vessel's identity, type, position, course, speed, navigational status and other safety-related information automatically to appropriately equipped shore stations, other ships, and aircraft;

(1946) (2) Receives automatically such information from similarly fitted ships, monitors and tracks ships; and

(1947) (3) Exchanges data with shore-based facilities.

(1948) *Gross tonnage* means tonnage as defined under the International Convention on Tonnage Measurement of Ships, 1969.

(1949) *International voyage* means a voyage from a country to which the present International Convention for the Safety of Life at Sea applies to a port outside such country, or conversely.

(1950) *Properly installed, operational* means an Automatic Identification System (AIS) that is installed and operated using the guidelines set forth by the International Maritime Organization (IMO) Resolution A.917(22) and Safety of Navigation Circulars (SN/Circ.) 227, 244, 245, and SN.1/Circ.289; or National Marine Electronics Association (NMEA) Installation Standard 0400-3.10 in lieu of SN/Circ.227 and 245 (incorporated by reference, see §164.03).

(1951) (b) *AIS carriage*—(1) *AIS Class A device*. The following vessels must have on board a properly installed, operational Coast Guard type-approved AIS Class A device:

(1952) (i) A self-propelled vessel of 65 feet or more in length, engaged in commercial service.

(1953) (ii) A towing vessel of 26 feet or more in length and more than 600 horsepower, engaged in commercial service.

(1954) (iii) A self-propelled vessel that is certificated to carry more than 150 passengers.

(1955) (iv) A self-propelled vessel engaged in dredging operations in or near a commercial channel or shipping fairway in a manner likely to restrict or affect navigation of other vessels.

(1956) (v) A self-propelled vessel engaged in the movement of—

(1957) (A) Certain dangerous cargo as defined in subpart C of part 160 of this chapter, or

(1958) (B) Flammable or combustible liquid cargo in bulk that is listed in **46 CFR 30.25-1**, Table 30.25-1.

(1959) (2) *AIS Class B device*. Use of a Coast Guard type-approved AIS Class B device in lieu of an AIS Class A device is permissible on the following vessels if they are not subject to pilotage by other than the vessel Master or crew:

(1960) (i) Fishing industry vessels;

(1961) (ii) Vessels identified in paragraph (b)(1)(i) of this section that are certificated to carry less than 150 passengers and that—

(1962) (A) Do not operate in a Vessel Traffic Service (VTS) or Vessel Movement Reporting System (VMRS) area defined in Table 161.12(c) of §161.12 of this chapter, and

(1963) (B) Do not operate at speeds in excess of 14 knots; and

(1964) (iii) Vessels identified in paragraph (b)(1)(iv) of this section engaged in dredging operations.

(1965) *Note to paragraph (b)*: Under 33 U.S.C. 1223(b)(3) and **33 CFR 160.111**, a Coast Guard Captain of the Port (COTP) may restrict the operation of a vessel if he or she determines that by reason of weather, visibility, sea conditions, port congestion, other hazardous circumstances, or the condition of such vessel, the restriction is justified in the interest of safety. In certain circumstances, if a COTP is concerned that the operation of a vessel not subject to §164.46 would be unsafe, the COTP may determine that voluntary installation of AIS by the operator would mitigate that concern. Fishing industry vessels include fishing vessels, fish processing vessels, and fish tender vessels as defined in 46 U.S.C. 2101.

(1966) (c) *SOLAS provisions*. The following self-propelled vessels must comply with International Convention for Safety of Life at Sea (SOLAS), as amended, chapter V, regulation 19.2.1.6 (Positioning System), 19.2.4 (AIS Class A), and 19.2.3.5 (Transmitting Heading Device) or 19.2.5.1 (Gyro Compass) as applicable (Incorporated by reference, see §164.03):

(1967) (1) A vessel of 300 gross tonnage or more, on an international voyage.

(1968) (2) A vessel of 150 gross tonnage or more, when carrying more than 12 passengers on an international voyage.

(1969) (d) *Operations*. The requirements in this paragraph are applicable to any vessel equipped with AIS.

(1970) (1) Use of AIS does not relieve the vessel of the requirements to sound whistle signals or display lights or shapes in accordance with the International Regulations for Preventing Collisions at Sea,1972 (72 COLREGS), 28 U.S.T. 3459, T.I.A.S. 8587, or Inland Navigation Rules, **33 CFR** part **83**; nor of the radio requirements of the Vessel Bridge-to-Bridge Radiotelephone Act, 33 U.S.C. 1201-1208, part 26 of this chapter, and **47 CFR** part **80**.

(1971) (2) AIS must be maintained in effective operating condition, which includes—

(1972) (i) The ability to reinitialize the AIS, which requires access to and knowledge of the AIS power source and password;

(1973) (ii) The ability to access AIS information from the primary conning position of the vessel;

(1974) (iii) The accurate broadcast of a properly assigned Maritime Mobile Service Identity (MMSI) number;

(1975) (iv) The accurate input and upkeep of all AIS data fields and system updates; and

(1976) (v) For those vessels denoted in paragraph (b) of this section, the continual operation of AIS and its associated devices (*e.g.*, positioning system, gyro, converters, displays) at all times while the vessel is underway or at anchor, and, if moored, at least 15 minutes prior to getting underway; except when its operation would compromise the safety or security of the vessel or a security incident is imminent. The AIS should be returned to continuous operation as soon as the compromise has been mitigated or the security incident has passed. The time and reason for the silent period should be recorded in the ship's official log and reported to the nearest Captain of the Port or Vessel Traffic Center (VTC).

(1977) (3) AIS safety-related text messaging must be conducted in English and solely to exchange or communicate pertinent navigation safety information (analogous to a SECURITE broadcast). Although not prohibited, AIS text messaging should not be relied upon as the primary means for broadcasting distress (MAYDAY) or urgent (PAN PAN) communications. (**47 CFR 80.1109**, Distress, urgency, and safety communications).

(1978) (4) AIS application-specific messaging (ASM) is permissible, but is limited to applications adopted by the International Maritime Organization (such as IMO SN.1/Circ.289) or those denoted in the International Association of Marine Aids to Navigation and Lighthouse Authorities' (IALA) ASM Collection for use in the United States or Canada, and to no more than one ASM per minute.

(1979) *Note 1 to § 164.46(d)*: The Coast Guard has developed the "USCG AIS Encoding Guidance" to help ensure consistent and accurate data encoding (input) by AIS users. This Guide is available at our "AIS Frequently Asked Questions" (FAQ #2) World Wide Web page at *www.navcen.uscg.gov/ais-frequently-asked-questions#2*. Although of great benefit, the interfacing or installation of other external devices or displays (*e.g.*, transmitting heading device, gyro, rate of turn indicator, electronic charting systems, and radar), is not currently required except as denoted in §164.46(c). Most application-specific messages require interfacing to an external system that is capable of their portrayal, such as equipment certified to meet Radio Technical Commission for Maritime Services (RTCM) electronic chart system (ECS) standard 10900 series.

(1980) (e) *Watchkeeping*. AIS is primarily intended for use by the Master or person in charge of the vessel, or by the person designated by the Master or person in charge to pilot or direct the movement of the vessel, who must maintain a periodic watch for AIS information.

(1981) (f) *Portable AIS.* The use of a portable AIS is permissible only to the extent that electromagnetic interference does not affect the proper function of existing navigation and communication equipment on board and such that only one AIS device may be transmitting on board a vessel at any one time.

(1982) (g) *AIS Pilot Plug*. The AIS Pilot Plug on any vessel subject to pilotage by other than the vessel Master or crew must be readily available and easily accessible from the primary conning position of the vessel and permanently affixed (not an extension cord) and adjacent (within 3 feet) to a 120-volt 50/60 Hz AC power receptacle (NEMA 5-15).

(1983) (h) *Exceptions*. The following vessels may seek up to a 5-year deviation from the AIS requirements of this section by requesting a deviation under §164.55.

(1984) (1) Vessels that operate solely within a very confined area (*e.g.*, less than a 1 nautical-mile radius, shipyard, or barge fleeting facility);

(1985) (2) Vessels that conduct only short voyages (less than 1 nautical mile) on a fixed schedule (*e.g.*, a bank-to-bank river ferry service or a tender vessel);

(1986) (3) Vessels that are not likely to encounter other AIS-equipped vessels;

(1987) (4) Vessels whose design or construction makes it impracticable to operate an AIS device (*e.g.*, those that lack electrical power, have an exposed or open cabin, or are submersible); or

(1988) (5) Vessels denoted in paragraph (b)(2) that seek a deviation from requirements in paragraphs (d)(2)(ii) and (e) of this section because their AIS Class B device lacks a display.

(1989) (i) *Prohibition*. Except for maritime support stations (see **47 CFR 80.5**) licensed by the Federal Communications Commission (FCC), broadcasts from AIS Class A or B devices on aircraft, non-self propelled vessels or from land are prohibited.

(1990) (j) *Implementation date*. Those vessels identified in paragraphs (b) and (c) of this section that were not previously subject to AIS carriage must install AIS no later than March 1, 2016.

(1991)

§164.51 Deviations from rules: Emergency.

(1992) Except for the requirements of §164.53(b), in an emergency, any person may deviate from any rule in this part to the extent necessary to avoid endangering persons, property, or the environment.

(1993)

§164.53 Deviations from rules and reporting: Non-operating equipment.

(1994) (a) If during a voyage any equipment required by this part stops operating properly, the person directing the movement of the vessel may continue to the next port of call, subject to the directions of the District Commander or the Captain of the Port, as provided by **33 CFR 160**.

(1995) (b) If the vessel's automatic identification system (AIS), radar, radio navigation receivers, gyrocompass, echo depth sounding device, or primary steering gear stops operating properly, the person directing the movement of the vessel must report or cause to be reported that it is not operating properly to the nearest Captain of the

Port, District Commander, or, if participating in a Vessel Traffic Service, to the Vessel Traffic Center, as soon as possible.

(1996)

§164.55 Deviations from rules: Continuing operation or period of time.

(1997) The Captain of the Port, upon written application, may authorize a deviation from any rule in this part if he determines that the deviation does not impair the safe navigation of the vessel under anticipated conditions and will not result in a violation of the rules for preventing collisions at sea. The authorization may be issued for vessels operating in the waters under the jurisdiction of the Captain of the Port for any continuing operation or period of time the Captain of the Port specifies.

(1998)

§164.61 Marine casualty reporting and record retention.

(1999) When a vessel is involved in a marine casualty as defined in **46 CFR 4.03-1**, the master or person in charge of the vessel shall:

(2000) (a) Ensure compliance with 46 CFR 4.05, "Notice of Marine Casualty and Voyage Records," and

(2001) (b) Ensure that the voyage records required by **46 CFR 4.05-15** are retained for:

(2002) (1) 30 days after the casualty if the vessel remains in the navigable waters of the United States; or

(2003) (2) 30 days after the return of the vessel to a United States port if the vessel departs the navigable waters of the United States within 30 days after the marine casualty.

(2004)

§164.70 Definitions.

(2005) For purposes of §§164.72 through 164.82, the term–

(2006) *Current edition* means the most recent published version of a publication, chart, or map required by §164.72.

(2007) *Currently corrected edition* means a current or previous edition of a publication required by §164.72, corrected with changes that come from Notice to Mariners (NTMs) or Notices to Navigation reasonably available and that apply to the vessel's transit. Hand-annotated river maps from U.S. Army Corps of Engineers (USACE) are currently corrected editions if issued within the previous 5 years.

(2008) *Great Lakes* means the Great Lakes and their connecting and tributary waters including the Calumet River as far as the Thomas J. O'Brien Lock and Controlling Works (between miles 326 and 327), the Chicago River as far as the east side of the Ashland Avenue Bridge (between miles 321 and 322), and the Saint Lawrence River as far east as the lower exit of Saint Lambert Lock.

(2009) *Merchant mariner credential or MMC* means the credential issued by the Coast Guard under **46 CFR** part **10**. It combines the individual merchant mariner's document, license, and certificate of registry enumerated in 46 U.S.C. subtitle II part E as well as the STCW endorsement into a single credential that serves as the mariner's qualification document, certificate of identification, and certificate of service.

(2010) *Swing-meter* means an electronic or electric device that indicates that rate of turn of the vessel on board which it is installed.

(2011) *Towing vessel* means a commercial vessel engaged in or intending to engage in pulling, pushing or hauling alongside, or any combination of pulling, pushing, or hauling alongside.

(2012) *Western Rivers* means the Mississippi River, its tributaries, South Pass, and Southwest Pass, to the navigational-demarcation lines dividing the high seas from harbors, rivers, and other inland waters of the United States, and the Port Allen-Morgan City Alternative Route, and that part of the Atchafalaya River above its junction with the Port Allen-Morgan City Alternative Route including the Old River and the Red River and those waters specified by §§89.25 and 89.27 of this chapter, and such other, similar waters as are designated by the COTP.

(2013)

§164.72 Navigational-safety equipment, charts or maps, and publications required on towing vessels.

(2014) (a) Except as provided by §164.01(b), each towing vessel must be equipped with the following navigational-safety equipment:

(2015) (1) *Marine Radar.* By August 2, 1997, a marine radar that meets the following applicable requirements:

(2016) (i) For a vessel of less than 300 tons gross tonnage that engages in towing on navigable waters of the U.S., including Western Rivers, the radar must meet–

(2017) (A) The requirements of the Federal Communications Commission (FCC) specified by **47 CFR** part **80**; and

(2018) (B) RTCM Standard for Marine Radar Equipment Installed on Ships of Less Than 300 Tons Gross Tonnage, RTCM Paper-71-95/SC112-STD, Version 1.1, display Category II and stabilization Category Bravo.

(2019) (ii) For a vessel of less than 300 tons gross tonnage that engages in towing seaward of navigable waters of the U.S. or more than three nautical miles from shore on the Great Lakes, the radar must meet–

(2020) (A) The requirements of the FCC specified by **47 CFR** part **80**; and

(2021) (B) RTCM Standard for Marine Radar Equipment Installed on Ships of Less Than 300 Tons Gross Tonnage, RTCM Paper 71-95/SC112-STD, Version 1.1, display Category I and stabilization Category Alpha.

(2022) (iii) For a vessel of 300 tons gross tonnage or more that engages in towing on navigable waters of the U.S., including Western rivers, the radar must meet–

(2023) (A) The requirements of the Federal Communications Commission (FCC) specified by **47 CFR** part **80**; and

(2024) (B) RTCM Recommended Standards for Marine Radar Equipment Installed on Ships of 300 Tons Gross Tonnage and Upwards, RTCM Paper 191–93/SC112–X, Version 1.2 except the requirements for azimuth stabilization in paragraph 3.10.

(2055)

TABLE 164.72 – Equipment, Charts or Maps, and Publications of Towing Vessels for 12 Meters or More in Length

	Western Rivers	U.S. Navigable Waters (other than Western Rivers)	Waters seaward of Navigable Waters and 3 NM or more from shore on the Great Lakes
Marine Radar: Towing Vessels of less than 300 GT	RTCM Paper 71-95/SC112-STD Version 1.1 Display Category II[1] Stabilization Category BRAVO	RTCM Paper 71-95/SC112-STD Version 1.1 Display Category II[1] Stabilization Category BRAVO	RTCM Paper 71-95/SC112-STD Version 1.1 Display Category I[2] Stabilization Category ALPHA
Towing Vessels of 300 GT or more	RTCM Paper 191-93/SC112-X Version 1.2 (except the Azimuth stabilization requirement in paragraph 3.10)[1]	RTCM Paper 191-93/SC112-X Version 1.2 (except the Azimuth stabilization requirement in paragraph 3.10)[1]	RTCM Paper 191-93/SC112-X Version 1.2[1]
Searchlight	X	X	X
VHF-FM Radio	X	X	X
Magnetic Compass	X[3]	X	X
Swing Meter	X[3]		
Echo Depth-sounding Device		X	X
Electronic Position Fixing Device			X
Charts or Maps	(1) Large enough scale (2) Current edition or currently corrected edition	(1) Large enough scale (2) Current edition or currently corrected edition	(1) Large enough scale (2) Currently corrected edition
General Publications	(1) U.S. Coast Guard Light List (2) Notices to Navigation or Local Notices to Mariners (3) River-current Tables	(1) U.S. Coast Guard Light List (2) Local Notices to Mariners (3) Tidal-current Tables (4) Tide Tables (5) U.S. Coast Pilot	(1) U.S. Coast Guard Light List (2) Local Notices to Mariners (3) Tidal-current Tables (4) Tide Tables (5) U.S. Coast Pilot

Notes:
[1] Towing vessels with existing radar must meet this requirement by August 2, 1998.
[2] Towing vessels with existing radar must meet this requirement by August 2, 1998 but do not need to meet the display and stabilization requirements until August 2, 2001.
[3] A towing vessel may carry either a swing-meter or a magnetic compass.

(2025) (iv) For a vessel of 300 tons gross tonnage or more that engages in towing seaward of navigable waters of the U.S. or more than three nautical miles from shore on the Great Lakes, the radar must meet–

(2026) (A) The requirements of the FCC specified by **47 CFR** Part **80**; and

(2027) (B) RTCM Recommended Standards for Marine Radar Equipment Installed on Ships of 300 Tons Gross Tonnage and Upwards, RTCM Paper 191–93/SC112–X, Version 1.2.

(2028) (v) A towing vessel with an existing radar must meet the applicable requirements of paragraphs (a)(1)(i) through (iv) of this section by August 2, 1998; except that a towing vessel with an existing radar must meet the display and stabilization requirements of paragraph (a)(1)(ii)(B) of this section by August 2, 2001.

(2029) (2) *Searchlight*. A searchlight, directable from the vessel's main steering station and capable of illuminating objects at a distance of at least two times the length of the tow.

(2030) (3) *VHF-FM Radio*. An installation or multiple installations of VHF-FM radios as prescribed by part 26 of this chapter and **47 CFR** part **80**, to maintain a continuous listening watch on the designated calling channel, VHF-FM Channel 13 (except on portions of the Lower Mississippi River, where VHF-FM Channel 67 is the designated calling channel), and to separately monitor the International Distress and Calling Channel, VHF-FM Channel 16, except when transmitting or receiving traffic on other VHF-FM channels or when participating in a Vessel Traffic Service (VTS) or monitoring a channel of a VTS. (Each U.S. towing vessel of 26 feet (about 8 meters) or more in length, except a public vessel, must hold a ship-radio-station license for radio transmitters (including radar and EPIRBs), and each operator must hold a restricted operator's license or higher. To get an application for either license, call (800) 418-FORM or (202) 418-FORM, or write to the FCC; Wireless Bureau, Licensing Division; 1270 Fairfield Road; Gettysburg, PA 17325-7245.)

(2031) (4) *Magnetic Compass*. Either–

(2032) (i) An illuminated swing-meter or an illuminated card-type magnetic steering compass readable from the vessel's main steering station, if the vessel engages in towing exclusively on Western Rivers; or

(2033) (ii) An illuminated card-type magnetic steering compass readable from the vessel's main steering station.

(2034) (5) *Echo Depth-Sounding Device*. By August 2, 2001, an echo depth-sounding device readable from the vessel's main steering station, unless the vessel engages in towing exclusively on Western Rivers.

(2035) (6) *Electronic Position-Fixing Device*. An electronic position-fixing device, satellite navigational system such as the Global Positioning System (GPS) as required by

§164.41, if the vessel engages in towing seaward of navigable waters of the U.S. or more than three nautical miles from shore on the Great Lakes.

(2036) (b) Each towing vessel must carry on board and maintain the following:

(2037) (1) *Charts or maps*. Marine charts or maps of the areas to be transited, published by the National Ocean Service (NOS), the ACOE, or a river authority that satisfy the following requirements.

(2038) (i) The charts or maps must be of a large enough scale and have enough detail to make safe navigation of the areas possible.

(2039) (ii) The charts or maps must be either–

(2040) (A) Current editions or currently corrected editions, if the vessel engages in towing exclusively on navigable waters of the U.S., including Western Rivers; or

(2041) (B) Currently corrected editions, if the vessel engages in towing seaward of navigable waters of the U.S. or more than three nautical miles from shore on the Great Lakes.

(2042) (iii) The charts or maps may be, instead of charts or maps required by paragraphs (b)(1) (i) and (ii) of this section, currently corrected marine charts or maps, or applicable extracts, published by a foreign government. These charts or maps, or applicable extracts, must contain information similar to that on the charts or maps required by paragraphs (b)(1) (i) and (ii) of the section, be of large enough scale, and have enough detail to make safe navigation of the areas possible, and must be currently corrected.

(2043) (2) *General publications*. A currently corrected edition of, or an applicable currently corrected extract from, each of the following publications for the area to be transited:

(2044) (i) If the vessel is engaged in towing exclusively on Western Rivers–

(2045) (A) U.S. Coast Guard Light List;

(2046) (B) Applicable Notices to Navigation published by the ACOE, or Local Notices to Marines (LNMs) published by the Coast Guard, for the area to be transited, when available; and

(2047) (C) Tidal-current tables published by private entities using data provided by the NOS, or river-current tables published by a river authority;

(2048) (ii) if the vessel is engaged other than in towing exclusively on Western Rivers–

(2049) (A) Coast Guard Light List;

(2050) (B) Notices to Mariners published by the National Geospatial-Intelligence Agency, or LNMs published by the Coast Guard;

(2051) (C) Tidal-current tables published by private entities using data provided by the NOS, or river-current tables published by a river authority;

(2052) (D) Tide tables published by private entities using data provided by the NOS; and

(2053) (E) U.S. Coast Pilot.

(2054) (c) Table 164.72, following, summarizes the navigational-safety equipment, charts or maps, and publications required for towing vessels of 12 meters or more in length engaged in towing:

(2056)

§164.74 Towline and terminal gear for towing astern.

(2057) (a) *Towline*. The owner, master, or operator of each vessel towing astern shall ensure that the strength of each towline is adequate for its intended service, considering at least the following factors:

(2058) (1) The size and material of each towline must be–

(2059) (i) Appropriate for the horsepower or bollard pull of the vessel;

(2060) (ii) Appropriate for the static loads and dynamic loads expected during the intended service;

(2061) (iii) Appropriate for the sea conditions expected during the intended service;

(2062) (iv) Appropriate for exposure to the marine environment and to any chemicals used or carried on board the vessel;

(2063) (v) Appropriate for the temperatures of normal stowage and service on board the vessel;

(2064) (vi) Compatible with associated navigational-safety equipment; and

(2065) (vii) Appropriate for the likelihood of mechanical damage.

(2066) (2) Each towline as rigged must be–

(2067) (i) Free of knots;

(2068) (ii) Spliced with a thimble, or have a poured socket at its end; and

(2069) (iii) Free of wire clips except for temporary repair, for which the towline must have a thimble and either five wire clips or as many wire clips as the manufacturer specifies for the nominal diameter and construction of the towline, whichever is more.

(2070) (3) The condition of each towline must be monitored through the–

(2071) (i) Keeping on board the towing vessel or in company files of a record of the towline's initial minimum breaking strength as determined by the manufacturer, by a classification ("class") society authorized in §157.04 of this chapter, or by a tensile test that meets API Specifications 9A, Specification for Wire Rope, Section 3; ASTM D 4268 (incorporated by reference, see §164.03), Standard Test Method for Testing Fiber Ropes; or Cordage Institute CIA 3, Standard Test Methods for Fiber Rope Including Standard Terminations;

(2072) (ii) If the towline is purchased from another owner, master, or operator of a vessel with the intent to use it as a towline or if it is retested for any reason, keeping on board the towing vessel or in company files of a record of each retest of the towline's minimum breaking strength as determined by a class society authorized in §157.04 of this chapter or by a tensile test that meets API Specification 9A, Section 3; ASTM D 4268 (incorporated by reference, see §164.03); or Cordage Institute CIA 3, Standard Test Methods;

(2073) (iii) Conducting visual inspections of the towline in accordance with the manufacturer's recommendations, or at least monthly, and whenever the serviceability of the towline is in doubt (the inspections being conducted by the owner, master, or operator, or by a person on whom the owner, master, or operator confers the responsibility to take corrective measures appropriate for the use of the towline);

(2074) (iv) Evaluating the serviceability of the whole towline or any part of the towline, and removing the whole or part from service either as recommended by the manufacturer or a class society authorized in §157.04 of this chapter or in accordance with a replacement schedule developed by the owner, master, or operator that accounts for at least the–

(2075) (A) Nautical miles on, or time in service of, the towline;

(2076) (B) Operating conditions experienced by the towline;

(2077) (C) History of loading of the towline;

(2078) (D) Surface condition, including corrosion and discoloration, of the towline;

(2079) (E) Amount of visible damage to the towline;

(2080) (F) Amount of material deterioration indicated by measurements of diameter and, if applicable, measurements of lay extension of the towline; and

(2081) (G) Point at which a tensile test proves the minimum breaking strength of the towline inadequate by the standards of paragraph (a)(1) of this section, if necessary; and

(2082) (v) Keeping on board the towing vessel or in company files of a record of the material condition of the towline when inspected under paragraphs (a)(3)(iii) and (iv) of this section. Once this record lapses for three months or more, except when a vessel is laid up or out of service or has not deployed its towline, the owner, master, or operator shall retest the towline or remove it from service.

(2083) (b) *Terminal gear*. The owner, master, or operator of each vessel towing astern shall ensure that the gear used to control, protect, and connect each towline meets the following criteria:

(2084) (1) The material and size of the terminal gear are appropriate for the strength and anticipated loading of the towline and for the environment;

(2085) (2) Each connection is secured by at least one nut with at least one cotter pin or other means of preventing its failure;

(2086) (3) The lead of the towline is appropriate to prevent sharp bends in the towline from fairlead blocks, chocks, or tackle;

(2087) (4) There is provided a method, whether mechanical or non-mechanical, that does not endanger operating personnel but that easily releases the towline;

(2088) (5) The towline is protected from abrasion or chafing by chafing gear, lagging, or other means;

(2089) (6) Except on board a vessel towing in ice on Western Rivers or one using a towline of synthetic or natural fiber, there is fitted a winch that evenly spools and tightly winds the towline; and

(2090) (7) If a winch is fitted, there is attached to the main drum a brake that has holding power appropriate for the horsepower or bollard pull of the vessel and can be operated without power to the winch.

(2091)

§164.76 Towline and terminal gear for towing alongside and pushing ahead.

(2092) The owner, master, or operator of each vessel towing alongside or pushing ahead shall ensure the face wires, spring lines, and push gear used–

(2093) (a) Are appropriate for the vessel's horsepower;

(2094) (b) Are appropriate for the arrangement of the tow;

(2095) (c) Are frequently inspected; and

(2096) (d) Remain serviceable.

(2097)

§164.78 Navigation under way: Towing vessels.

(2098) (a) The owner, master, or operator of each vessel towing shall ensure that each person directing and controlling the movement of the vessel–

(2099) (1) Understands the arrangement of the tow and the effects of maneuvering on the vessel towing and on the vessel, barge, or object being towed;

(2100) (2) Can fix the position of the vessel using installed navigational equipment, aids to navigation, geographic reference-points, and hydrographic contours;

(2101) (3) Does not fix the position of the vessel using buoys alone (Buoys are aids to navigation placed in approximate positions either to alert mariners to hazards to navigation or to indicate the orientation of a channel. They may not maintain exact charted positions, because strong or varying currents, heavy seas, ice and collisions with vessels can move or sink them or set them adrift. Although they may corroborate a position fixed by other means, they cannot fix a position; however, if no other aids are available, buoys alone may establish an estimated position.);

(2102) (4) Evaluates the danger of each closing visual or radar contact;

(2103) (5) Knows and applies the variation and deviation, where a magnetic compass is fitted and where charts or maps have enough detail to enable this type of correction;

(2104) (6) Knows the speed and direction of the current, and the set, drift, and tidal state for the area to be transited;

(2105) (7) Proceeds at a safe speed taking into account the weather, visibility, density of traffic, draft of tow, possibility of wake damage, speed and direction of the current, and local speed-limits; and

(2106) (8) Monitors the voyage plan required by §164.80.

(2107) (b) The owner, master, or operator of each vessel towing shall ensure that the tests and inspections required by §164.80 are conducted and that the results are entered in the log or other record carried on board.

(2108)

§164.80 Tests inspections, and voyage planning.

(2109) (a) The owner, master, or operator of each towing vessel of less than 1,600 GT shall ensure that the following tests and inspections of gear occur before the vessel embarks on a voyage of more than 24 hours or when each new master or operator assumes command:

(2110) (1) *Steering-systems*. A test of the steering-gear-control system; a test of the main steering gear from the alternative power supply, if installed; a verification of the rudder-angle indicator relative to the actual position of the rudder; and a visual inspection of the steering gear and its linkage.

(2111) (2) *Navigational equipment*. A test of all installed navigational equipment.

(2112) (3) *Communications*. Operation of all internal vessel control communications and vessel-control alarms, if installed.

(2113) (4) *Lights*. Operation of all navigational lights and all searchlights.

(2114) (5) *Terminal gear*. Visual inspection of tackle; of connections of bridle and towing pendant, if applicable; of chafing gear; and the winch brake, if installed.

(2115) (6) *Propulsion systems*. Visual inspection of the spaces for main propulsion machinery, of machinery, and of devices for monitoring machinery.

(2116) (b) The owner, master, or operator of each towing vessel of 1,600 GT or more shall ensure that the following tests of equipment occur at the frequency required by §164.25 and that the following inspections of gear occur before the vessel embarks on a voyage of more than 24 hours or when each new master or operator assumes command:

(2117) (1) *Navigational equipment*. Tests of onboard equipment as required by §164.25.

(2118) (2) *Terminal gear*. Visual inspection of tackle; of connections of bridle and towing pendant, if applicable; of chafing gear; and of the winch brake, if installed.

(2119) (c)(1) The voyage-planning requirements outlined in this section do not apply to you if your towing vessel is–

(2120) (i) Used solely for any of the following services or any combination of these services–

(2121) (A) Within a limited geographic area, such as fleeting-area for barges or a commercial facility, and used for restricted service, such as making up or breaking up larger tows:

(2122) (B) For harbor assist;

(2123) (C) For assistance towing as defined by **46 CFR 10.103**;

(2124) (D) For response to emergency or pollution;

(2125) (ii) A public vessel that is both owned, or demise chartered, and operated by the United States Government or by a government of a foreign country; and that is not engaged in commercial service;

(2126) (iii) A foreign vessel engaged in innocent passage; or

(2127) (iv) Exempted by the Captain of the Port (COTP).

(2128) (2) If you think your towing vessel should be exempt from these voyage planning requirements for a specified route, you should submit a written request to the appropriate COTP. The COTP will provide you with a written response granting or denying your request.

(2129) (3) If any part of a towing vessel's intended voyage is seaward of the baseline (i.e. the shoreward boundary) of the territorial sea of the U.S.,then the owner, master, or operator of the vessel, employed to tow a barge or barges, must ensure that the voyage with the barge or barges is planned, taking into account all pertinent information before the vessel embarks on the voyage. The master must check the planned route for proximity to hazards before the voyage begins. During a voyage, if a decision is made to deviate substantially from the planned route, then the master or mate must plan the new route before deviating from the planned route. The voyage plan must follow company policy and consider the following (related requirements noted in parentheses):

(2130) (i) Applicable information from nautical charts and publication (also see paragraph (b) of section 164.72), including Coast Pilot, Coast Guard Light List, and Coast Guard Local Notice to Mariners for the port of departures, all ports of call, and the destination;

(2131) (ii) Current and forecast weather, including visibility, wind, and sea state for the port of departure, all ports of call, and the destination (also see paragraphs (a)(7) of section 164.78 and (b) of section 164.82);

(2132) (iii) Data on tides and currents for the port of departure, all ports of call, and the destination, and the river staged and forecast, if appropriate;

(2133) (iv) Forward and after drafts of the barge or barges and under-keel and vertical clearances (air-gaps) for all bridges, ports, and berthing areas;

(2134) (v) Pre-departure checklists;

(2135) (vi) Calculated speed and estimated time of arrival at proposed waypoints;

(2136) (vii) Communication contacts at any Vessel Traffic Services, bridges, and facilities, and any port specific requirements for VHF radio;

(2137) (viii) Any master's or operator's standings orders detailing closest points of approach, special conditions, and critical maneuvers; and

(2138) (ix) Whether the towing vessel has sufficient power to control the tow under all foreseeable circumstances.

(2139)

§164.82 Maintenance, failure, and reporting.

(2140) (a) *Maintenance*. The owner, master, or operator or each towing vessel shall maintain operative the navigational-safety equipment required by §164.72.

(2141) (b) *Failure*. If any of the navigational-safety equipment required by §164.72 fails during a voyage, the owner, master, or operator of the towing vessel shall exercise due diligence to repair it at the earliest practicable time. He or she shall enter its failure in the log or other record carried on board. The failure of equipment, in itself, does not constitute a violation of this

rule; nor does it constitute unseaworthiness; nor does it obligate an owner, master, or operator to moor or anchor the vessel. However, the owner, master, or operator shall consider the state of the equipment-along with such factors as weather, visibility, traffic, and the dictates of good seamanship-in deciding whether it is safe for the vessel to proceed.

(2142) (c) *Reporting*. The owner, master, or operator of each towing vessel whose equipment is inoperative or otherwise impaired while the vessel is operating within a Vessel Traffic Service (VTS) Area shall report the fact as required by **33 CFR Table 161.18 (a) Row Q**.

(2143) (1) Any absence or malfunction of vessel-operating equipment for navigational safety, such as propulsion machinery, steering gear, radar, gyrocompass, echo depth-sounding or other sounding device, automatic dependent surveillance equipment, or navigational lighting;

(2144) (2) Any condition on board the vessel likely to impair navigation, such as shortage of personnel or lack of current nautical charts or maps, or publications; and

(2145) (3) Any characteristics of the vessel that affect or restrict the maneuverability of the vessel, such as arrangement of cargo, trim, loaded condition, under-keel clearance, and speed.)

(2146) (d) *Deviation and authorization*. The owner, master, or operator of each towing vessel unable to repair within 96 hours an inoperative marine radar required by §164.72(a) shall so notify the Captain of the Port (COTP) and shall seek from the COTP both a deviation from the requirements of this section and an authorization for continued operation in the area to be transited. Failure of redundant navigational-safety equipment, including but not limited to failure of one of two installed radars, where each satisfies §164.72(a), does not necessitate either a deviation or an authorization.

(2147) (1) The initial notice and request for a deviation and an authorization may be spoken, but the request must also be written. The written request must explain why immediate repair is impracticable, and state when and by whom the repair will be made.

(2148) (2) The COTP, upon receiving even a spoken request, may grant a deviation and an authorization from any of the provisions of §§164.70 through 164.82 for a specified time if he or she decides that they would not impair the safe navigation of the vessel under anticipated conditions.

(2149)

Part 165–Regulated Navigation Areas and Limited Access Areas

(2150)

Subpart A–General

(2151)

§165.1 Purpose of part.

(2152) The purpose of this part is to–

(2153) (a) Prescribe procedures for establishing different types of limited or controlled access areas and regulated navigation areas;

(2154) (b) Prescribe general regulations for different types of limited or controlled access areas and regulated navigation areas;

(2155) (c) Prescribe specific requirements for established areas; and

(2156) (d) List specific areas and their boundaries.

(2157)

§165.3 Definitions.

(2158) The following definitions apply to this part:

(2159) *Credential* means any or all of the following:

(2160) (1) Merchant mariner's document.

(2161) (2) Merchant mariner's license.

(2162) (3) STCW endorsement.

(2163) (4) Certificate of registry.

(2164) (5) Merchant mariner credential.

(2165) *Merchant mariner credential or MMC* means the credential issued by the Coast Guard under **46 CFR** part **10**. It combines the individual merchant mariner's document, license, and certificate of registry enumerated in 46 U.S.C. subtitle II part E as well as the STCW endorsement into a single credential that serves as the mariner's qualification document, certificate of identification, and certificate of service.

(2166)

§165.5 Establishment procedures.

(2167) (a) A safety zone, security zone, or regulated navigation area may be established on the initiative of any authorized Coast Guard official authorized to issue such an order in accordance with **33 CFR 1.05-1.**

(2168) (b) Any person may request that a safety zone, security zone, or regulated navigation area be established. Except as provided in Paragraph (c) of this section, each request must be submitted in writing to either the Captain of the Port or District Commander having jurisdiction over the location as described in **33 CFR 3**, and include the following:

(2169) (1) The name of the person submitting the request;

(2170) (2) The location and boundaries of the safety zone, security zone, or regulated navigation area;

(2171) (3) The date, time, and duration that the safety zone, security zone, or regulated navigation area should be established;

(2172) (4) A description of the activities planned for the safety zone, security zone, or regulated navigation area;

(2173) (5) The nature of the restrictions or conditions desired; and

(2174) (6) The reason why the safety zone, security zone, or regulated navigation area is necessary.

(2175) (c) Safety Zones and Security Zones. If, for good cause, the request for a safety zone or security zone is made less than 5 working days before the zone is to be established, the request may be made orally, but it must be followed by a written request within 24 hours.

(2176) (Requests for safety zones, security zones, and regulated navigation areas are approved by the Office of Management and Budget under control number 1625-0020)

(2177)

§165.7 Notification.

(2178) (a) The establishment of these limited access areas and regulated navigation areas is considered rulemaking. The procedures used to notify persons of the establishment of these areas vary depending upon the circumstances and emergency conditions. Notification may be made by marine broadcasts, local notice to mariners, local news media, distribution in leaflet form, and on-scene oral notice, as well as publication in the Federal Register.

(2179) (b) Notification normally contains the physical boundaries of the area, the reasons for the rule, its estimated duration, and the method of obtaining authorization to enter the area, if applicable, and special navigational rules, if applicable.

(2180)

§165.8 Geographic coordinates.

(2181) Geographic coordinates expressed in terms of latitude or longitude, or both, are not intended for plotting on maps or charts whose referenced horizontal datum is the North American Datum of 1983 (NAD 83), unless such geographic coordinates are expressly labeled NAD 83. Geographic coordinates without the NAD 83 reference may be plotted on maps or charts referenced to NAD 83 only after application of the appropriate corrections that are published on the particular map or chart being used.

(2182)

§165.9 Geographic application of limited and controlled access areas and regulated navigation areas.

(2183) (a) *General*. The geographic application of the limited and controlled access areas and regulated navigation areas in this part are determined based on the statutory authority under which each is created.

(2184) (b) *Safety zones and regulated navigation areas*. These zones and areas are created under the authority of 46 U.S.C. 70001–70041. Safety zones established under 46 U.S.C. 70116 and regulated navigation areas may be established in waters subject to the jurisdiction of the United States as defined in §2.38 of this chapter, including the territorial sea to a seaward limit of 12 nautical miles from the baseline.

(2185) (c) *Security zones*. These zones have two sources of authority–46 U.S.C. chapter 700, and the Act of June 15, 1917, as emended by both the Magnuson Act of August 9, 1950 (“Magnuson Act”), 46 U.S.C. 70051–54, and sec. 104 the Maritime Transportation Security Act of 2002 (Pub. L. 107-295, 116 Stat. 2064). Security zones established under either 46 U.S.C. 70116 or 46 U.S.C. 70051 may be established in waters subject to the jurisdiction of the United States as defined in §2.38 of this chapter, including the territorial sea to a seaward limit of 12 nautical miles from the baseline.

(2186) (d) *Naval vessel protection zones*. These zones are issued under the authority of 14 U.S.C. 503 and 527 and may be established in waters subject to the jurisdiction of the United States as defined in §2.38 of this chapter, including the territorial sea to a seaward limit of 12 nautical miles from the baseline.

(2187)

Subpart B–Regulated Navigation Areas

(2188)

§165.10 Regulated navigation area.

(2189) A regulated navigation area is a water area within a defined boundary for which regulations for vessels navigating within the area have been established under this part.

(2190)

§165.11 Vessel operating requirements (regulations).

(2191) Each District Commander may control vessel traffic in an area which is determined to have hazardous conditions, by issuing regulations:

(2192) (a) Specifying times of vessel entry, movement, or departure to, from, within, or through ports, harbors, or other waters;

(2193) (b) Establishing vessel size, speed, draft limitations, and operating conditions; and

(2194) (c) Restricting vessel operation, in a hazardous area or under hazardous conditions, to vessels which have particular operating characteristics or capabilities which are considered necessary for safe operation under the circumstances.

(2195)

§165.13 General regulations.

(2196) (a) The master of a vessel in a regulated navigation area shall operate the vessel in accordance with the regulations contained in Subpart F.

(2197) (b) No person may cause or authorize the operation of a vessel in a regulated navigation area contrary to the regulations in this part.

(2198)

Subpart C–Safety Zones

(2199)

§165.20 Safety zones.

(2200) A Safety Zone is a water area, shore area, or water and shore area to which, for safety or environmental purposes, access is limited to authorized persons, vehicles, or vessels. It may be stationary and described by fixed limits or it may be described as a zone around a vessel in motion.

(2201)

§165.23 General regulations.

(2202) Unless otherwise provided in this part:

(2203) (a) No person may enter a safety zone unless authorized by the COTP or the District Commander.

(2204) (b) No person may bring or cause to be brought into a safety zone any vehicle, vessel, or object unless authorized by the COTP or the District Commander.

(2205) (c) No person may remain in a safety zone or allow any vehicle, vessel, or object to remain in a safety zone unless authorized by the COTP or the District Commander; and

(2206) (d) Each person in a safety zone who has notice of a lawful order or direction shall obey the order or direction of the COTP or District Commander issued to carry out the purposes of this subpart.

(2207)

Subpart D–Security Zones

(2208)

§165.30 Security Zones.

(2209) (a) A security zone is an area of land, water, or land and water which is so designated by the Captain of the Port or District Commander for such time as is necessary to prevent damage or injury to any vessel or waterfront facility, to safeguard ports, harbors, territories, or waters of the United States or to secure the observance of the rights and obligations of the United States.

(2210) (b) The purpose of a security zone is to safeguard from destruction, loss, or injury from sabotage or other subversive acts, accidents, or other causes of a similar nature:

(2211) (1) Vessels,

(2212) (2) Harbors,

(2213) (3) Ports and

(2214) (4) Waterfront facilities:

(2215) in the United States and all territory and water, continental or insular, that is subject to the jurisdiction of the United States.

(2216)

§165.33 General regulations.

(2217) Unless otherwise provided in the special regulations in Subpart F of this part:

(2218) (a) No person or vessel may enter or remain in a security zone without the permission of the Captain of the Port;

(2219) (b) Each person and vessel in a security zone shall obey any direction or order of the Captain of the Port;

(2220) (c) The Captain of the Port may take possession and control of any vessel in the security zone;

(2221) (d) The Captain of the Port may remove any person, vessel, article, or thing from a security zone;

(2222) (e) No person may board, or take or place any article or thing on board, any vessel in a security zone without the permission of the Captain of the Port; and

(2223) (f) No person may take or place any article or thing upon any waterfront facility in a security zone without the permission of the Captain of the Port.

(2224)

Subpart E–Restricted Waterfront Areas

(2225)

§165.40 Restricted waterfront areas.

(2226) The Commandant, may direct the COTP to prevent access to waterfront facilities, and port and harbor areas, including vessels and harbor craft therein. This section may apply to persons who do not possess the credentials outlined in §125.09 of this chapter when certain shipping activities are conducted that are outlined in §125.15 of this chapter.

(2227)

Subpart F–Specific Regulated Navigation Areas and Limited Access Areas

(2228)

§165.1301 Puget Sound and Adjacent Waters in Northwestern Washington–Regulated Navigation Area.

(2229) The following is a regulated navigation area–All of the following northwestern Washington waters under the jurisdiction of the Captain of the Port, Puget Sound: Puget Sound, Hood Canal, Possession Sound, Elliott Bay, Commencement Bay, the San Juan Archipelago, Rosario Strait, Guemes Channel, Bellingham Bay, U.S. waters of the Strait of the Strait of Juan de Fuca, Haro Strait, Boundary Pass, and Georgia Strait, and all lesser bays and harbors adjacent to the above.

(2230) (a) Definitions as used in this section:

(2231) (1) *Vessels engaged in fishing* are as identified in the definition found in Rule 3 of the International Regulations for Prevention of Collisions at Sea, 1972, (72 COLREGS), found in Appendix A, part 81 of this chapter.

(2232) (2) *Hazardous levels of vessel traffic congestion* are as defined at the time by Puget Sound Vessel Traffic Service.

(2233) (b) Nothing in this section shall be construed as relieving any party from their responsibility to comply with applicable rules set forth in the 72 COLREGS.

(2234) (c) General Regulations: The provisions of this paragraph apply at all times.

(2235) (1) Vessels engaged in fishing or other operations–that are distinct from vessels following a TSS or a connecting precautionary area east of New Dungeness and which are not required by the Bridge to Bridge Radiotelephone Regulations to maintain a listening watch, are highly encouraged to maintain a listening watch on the Puget Sound Vessel Traffic Service (PSVTS) VHF-FM radio frequency for the area in which the vessel is operating. A safe alternative to the radio listening watch is to stay clear of the TSS and connecting precautionary area.

(2236) (2) Vessels engaged in gill net fishing at any time between sunset and sunrise in any of the waters defining the regulated navigation area of this section shall, in

addition to the navigation lights and shapes required by Part 81 of this title (72 COLREGS), display at the end of the net most distant from the vessel on all-round (32-point) white light visible for a minimum of two nautical miles and displayed from at least three feet above the surface of the water.

(2237) (3) Vessels engaged in fishing, including gillnet and purse seine fishing, are prohibited in the following Prohibited Fishing Area: The Hood Canal Bridge, to include the waters within a one-half nautical mile radius of the center of the main ship channel draw span during the immediate approach and transit of the draw by public vessels of the United States.

(2238) (4) East of New Dungeness, vessels engaged in fishing in a traffic lane or connecting precautionary area shall tend nets or other gear placed in the water so as to facilitate the movement of the vessel or gear from the traffic lane or precautionary area upon the approach of a vessel following the TSS.

(2239) (d) Congested Regulations: The provisions under this paragraph apply only when imposed in specific locations by Puget Sound Vessel Traffic Service. They are intended to enhance vessel traffic safety during periods and in locations where hazardous levels of vessel traffic congestion are deemed to exist by Puget Sound Vessel Traffic Service. Operations potentially creating vessel traffic congestion include, but are not limited to, vessels engaged in fishing, including gillnet, or purse seine, recreational fishing derbies, regattas, or permitted marine events.

(2240) (1) Vessels engaged in fishing or other operations—that are distinct from vessels following a Traffic Separation Scheme (TSS) or a connecting precautionary area east of New Dungeness, may not remain in, nor their gear remain in, a traffic lane or a connecting precautionary area east of New Dungeness when a vessel following a TSS approaches. Such vessels not following a TSS or a connecting precautionary area shall draw in their gear, maneuver, or otherwise clear these areas so that their action is complete at least fifteen minutes before the arrival of a vessel following the TSS. Vessels which are required by this paragraph to remain clear of a connecting precautionary area east of New Dungeness or a traffic lane must also remain clear of the adjacent separation zone when in a TSS east of New Dungeness.

(2241) (2) A vessel following the TSS may not exceed a speed of 11 knots through the water.

(2242) (3) Vessels engaged in fishing, including gillnet and purse seine fishing, are prohibited in the following Prohibited Fishing Area: Edmonds/Kingston ferry crossing lanes, to include the waters within one-quarter nautical mile on either side of a straight line connecting the Edmonds and Kingston ferry landings during the hours that the ferry is operating.

(2243) (e) Authorization to deviate from this section.

(2244) (1) Commander, Thirteenth Coast Guard District may, upon written request, issue an authorization to deviate from this section if the proposed deviation provides a level of safety equivalent to or beyond that provided by the required procedure. An application for authorization must state the need for the deviation and describe the proposed alternative operation.

(2245) (2) PSVTS may, upon verbal request, authorize a deviation from this section for a voyage, or part of a voyage, if the proposed deviation provides a level of safety equivalent to or beyond that provided by the required procedure. The deviation request must be made well in advance to allow the requesting vessel and the Vessel Traffic Center (VTC) sufficient time to assess the safety of the proposed deviation. Discussions between the requesting vessel and the VTC should include, but are not limited to, information on vessel handling characteristics, traffic density, radar contracts and environmental conditions.

(2246) (3) In an emergency, the master, pilot, or person directing the movement of the vessel following the TSS may deviate from this section to the extent necessary to avoid endangering persons, property, or the environment, and shall report the deviation to the VTC as soon as possible.

(2247)

§165.1302 Bangor Naval Submarine Base, Bangor, WA.

(2248) (a) *Location*. The following is a security zone: The waters of the Hood Canal encompassed by a line commencing on the east shore of Hood Canal at

(2249) 47°43'17"N., 122°44'44"W., thence to

(2250) 47°43'32"N., 122°44'40"W.; thence to

(2251) 47°43'50"N., 122°44'40"W.; thence to

(2252) 47°44'24"N., 122°44'22"W.; thence to

(2253) 47°45'47"N., 122°43'22"W.; thence to

(2254) 47°46'23"N., 122°42'42"W.; thence to

(2255) 47°46'23"N., 122°42'20"W.; thence to

(2256) 47°46'20"N., 122°42'12"W.; thence southerly along the shoreline to the point of beginning.

(2257) (b) *Security zone anchorage*. The following is a security zone anchorage: Area No. 2. Waters of Hood Canal within a circle of 1,000 yards diameter centered on a point located at

(2258) 47°46'26"N., 122°42'49"W.

(2259) (c) *Special Regulations*. (1) Section 165.33 paragraphs, (a), (e), and (f) do not apply to the following vessels or individuals on board those vessels:

(2260) (i) Public vessels of the United States, other than United States Naval vessels.

(2261) (ii) Vessels that are performing work at Naval Submarine Base Bangor pursuant to a contract with the United States Navy which requires their presence in the security zone.

(2262) (iii) Any other vessels or class of vessels mutually agreed upon in advance by the Captain of the Port and Commanding Officer, Naval Submarine Base Bangor. Vessels operating in the security zone under this exemption must have previously obtained a copy of a certificate of exemption permitting their operation in the security zone

from the Security Office, Naval Submarine Base Bangor. This written exemption shall state the date(s) on which it is effective and may contain any further restrictions on vessel operations within the security zone as have been previously agreed upon by the Captain of the Port and Commanding Officer, Naval Submarine Base Bangor. The certificate of exemption shall be maintained on board the exempted vessel so long as such vessel is operating in the security zone.

(2263) (2) Any vessel authorized to enter or remain in the security zone may anchor in the security zone anchorage.

(2264) (3) Other vessels desiring access to this zone shall secure permission from the Captain of the Port through the Security Office of the Naval Submarine Base Bangor. The request shall be forwarded in a timely manner to the Captain of the Port by the appropriate Navy official.

(2265) (d) *Enforcement.* The U.S. Coast Guard may be assisted in the patrol and monitoring of this security zone by the U.S. Navy.

(2266)

§165.1303 Puget Sound and adjacent waters, Washington—regulated navigation areas.

(2267) (a) The following is a regulated navigation area: the waters of the United States east of a line extending from Discovery Island Light to New Dungeness Light and all points in the Puget Sound area north and south of these lights.

(2268) (b) *Regulations*. (1) Tank vessel navigation restrictions: Tank vessels larger than 125,000 deadweight tons bound for a port or place in the United States may not operate in the regulated navigation area.

(2269) (2) Commander, Thirteenth Coast Guard District may, upon written request, issue an authorization to deviate from paragraph (b)(1) of this section if it is determined that such deviation provides an adequate level of safety. Any application for authorization must state the need and fully describe the proposed procedure.

(2270) (c) *Precautionary Area Regulations*. (1) A vessel in a precautionary area which is depicted on National Oceanic and Atmospheric Administration (NOAA) nautical charts, except precautionary "RB" (a circular area of 2,500 yards radius centered at 48°26'24"N., 122°45'12"W.), must keep the center of the precautionary area to port.

(2271) **Note:** The center of precautionary area "RB" is not marked by a buoy.

(2272) (2) The Puget Sound Vessel Traffic Service (PSVTS) may, upon verbal request, authorize a onetime deviation from paragraph (c)(1) of this section for a voyage, or part of a voyage, if the proposed deviation provides a level of safety equivalent to or beyond that provided by the required procedure. The deviation request must be made well in advance to allow the requesting vessel and the Vessel Traffic Center (VTC) sufficient time to assess the safety of the proposed deviation. Discussions between the requesting vessel and the VTC should include, but are not limited to, information on the vessel handling characteristics, traffic density, radar contacts, and environmental conditions.

(2273) (3) In an emergency, the master, pilot, or person directing the movement of the vessel may deviate from paragraph (c)(1) of this section to the extent necessary to avoid endangering persons, property, or the environment, and shall report the deviation to the VTC as soon as possible.

(2274)

§165.1309 Eagle Harbor, Bainbridge Island, WA.

(2275) (a) *Regulated area*. A regulated navigation area is established on that portion of Eagle Harbor bounded by a line beginning at:

(2276) 47°36'56"N., 122°30'36"W.; thence to

(2277) 47°37'11"N., 122°30'36"W.; thence to

(2278) 47°37'25"N., 122°30'17"W.; thence to

(2279) 47°37'24"N., 122°30'02"W.; thence to

(2280) 47°37'16"N., 122°29'55"W.; thence to

(2281) 47°37'03"N., 122°30'02"W.; thence returning along the shoreline to point of origin. [Datum NAD 1983].

(2282) (b) *Regulations*. All vessels and persons are prohibited from anchoring, dredging, laying cable, dragging, seining, bottom fishing, conducting salvage operations, or any other activity which could potentially disturb the seabed in the designated area. Vessels may otherwise transit or navigate within this area without reservation.

(2283) (c) *Waiver*. The Captain of the Port, Puget Sound, upon advice from the U.S. EPA Project Manager and the Washington State Department of Natural Resources, may, upon written request, authorize a waiver from this section if it is determined that the proposed operation supports USEPA remedial objectives, or can be performed in a manner that ensures the integrity of the sediment cap. A written request must describe the intended operation, state the need, and describe the proposed precautionary measures. Requests should be submitted in triplicate, to facilitate review by U.S. EPA, Coast Guard, and Washington State Agencies. USEPA managed remedial design, remedial action, habitat mitigation, or monitoring activities associated with the Wyckoff/Eagle Harbor Superfund Site are excluded from the waiver requirement. USEPA is required, however, to alert the Coast Guard in advance concerning any of the above mentioned activities that may, or will, take place in the Regulated Area.

(2284)

§165.1310 Strait of Juan de Fuca and Adjacent Coastal Waters of Northwest Washington; Makah Whale Hunting—Regulated Navigation Area.

(2285) (a) The following area is a Regulated Navigation Area (RNA): From 48°02.25'N., 124°42.1'W. northward along the mainland shoreline of Washington State to Cape Flattery and thence eastward along the mainland shoreline of Washington State to

(2286) 48°22'N., 124°34'W.; thence due north to

(2287) 48°24.55'N., 124°34'W.; thence northwesterly to

(2288) 48°27.1'N., 124°41.7'W.; thence due west to

(2289) 48°27.1'N., 124°45.5'W.; thence southwesterly to
(2290) 48°20.55'N., 124°51.05'W., thence west-southwest to
(2291) 48°18.0'N., 124°59.0'W., thence due south to
(2292) 48°02.25'N., 124°59.0'W.; thence due east back to the shoreline of Washington at
(2293) 48°02.25'N., 124°42.1'W. Datum: NAD 1983.
(2294) (b) During a whale hunt, while the international numeral pennant five (5) is flown by a Makah whale hunt vessel, the following area within the RNA is a Moving Exclusion Zone: The column of water from the surface to the seabed with a radius of 500 yards centered on the Makah whale hunt vessel displaying international numeral pennant five (5). This Moving Exclusionary Zone is activated only when surface visibility exceeds one nautical mile, between sunrise and sunset, and the Makah whale hunt vessel displays the international numeral pennant five (5). The Moving Exclusionary Zone is deactivated upon sunset, visibility is reduced to less than one nautical mile, or when the Makah hunt vessel strikes international numeral pennant five (5).
(2295) (c) Unless otherwise authorized by the Commander, Thirteenth Coast Guard District or his or her representative, no person or vessel may enter the active Moving Exclusionary Zone except for:
(2296) (1) Authorized Makah whale hunt vessel actively engaged in hunting operations under direction to the master of the Makah vessel flying international numeral pennant five (5), and
(2297) (2) A single authorized media pool vessel operating in accordance with paragraph (f) of this section.
(2298) (d) The international numeral pennant five (5) is only authorized to be displayed from one Makah whale hunt vessel during actual whale hunt operations. No other vessels may display this pennant within the RNA at any time. Whale hunt operations commence when a whale hunt vessel is underway and its master intends to have a whale killed during the voyage. Whale hunt operations cease once this intent is abandoned, a whale is landed, or when the international numeral pennant five (5) is struck.
(2299) (e) The Makah Tribe shall make SECURITE Broadcasts beginning one hour before the commencement of a hunt and every half hour thereafter until hunting activities are concluded. This broadcast shall be made on channel 16 VHF-FM and state:
(2300) A whale hunt is proceeding today within the Regulated Navigation Area established for Makah whaling activities. The (name of vessel) is a (color and description of vessel) and will be flying international numeral pennant five (5) while engaged in whaling operations. This pennant is yellow and blue in color. Mariners are required by federal regulations to stay 500 yards away from (name of vessel), and are strongly urged to remain even further away from whale hunt activities as an additional safety measure.
(2301) (f)(1) Credentialed members of the media interested in entering the Moving Exclusionary Zone may request permission to operate a single media vessel in the Moving Exclusionary Zone by telephoning Coast Guard Public Affairs, as soon as practicable at (206) 220–7237 during normal working hours, and (206) 220–7001 after hours. Coast Guard preauthorization is required prior to entry into the Moving Exclusionary Zone by a single media pool vessel.
(2302) (2) The media pool vessel must be a U.S. documented vessel. The media pool vessel must be under command at all times within the Moving Exclusionary Zone by a master holding a license or merchant mariner credential issued in the U.S. to carry passenger for hire. All expenses, liabilities and risks associated with operation of the media pool vessel lie with members of the pool and the pool vessel owners and operators.
(2303) (3) The master of the media pool vessel shall maneuver to avoid positioning the pool vessel between whales and hunt vessel(s), out of the line of fire, at a prudent distance and location relative to whale hunt operations, and in a manner that avoids hindering the hunt or path of the whale in any way.
(2304) (4) Although permitted to maneuver within the Moving Exclusionary Zone, personnel aboard the media pool vessel are still required to follow safety and law enforcement related instructions of Coast Guard personnel.
(2305)

§165.1311 Olympic View Resource Area, Tacoma, WA.

(2306) (a) *Regulated area.* A regulated navigation area is established on that portion of Commencement Bay bounded by a line beginning at:
(2307) 47°15'40.20"N., 122°26'09.28"W; thence to
(2308) 47°15'42.21"N., 122°26'10.65"W.; thence to
(2309) 47°15'41.85"N., 122°26'11.80"W.; thence to
(2310) 47°15'45.58"N., 122°26'14.35" W.; thence to
(2311) 47°15'53.06"N., 122°26'06.61"W.; thence to
(2312) 47°15'46.74"N., 122°26'02.50"W.; thence returning along the shoreline to the point of origin. [Datum NAD 1983].
(2313) (b) *Regulations*. All vessels and persons are prohibited from anchoring, dredging, laying cable, dragging, seining, bottom fishing, conducting salvage operations, or any other activity which could potentially disturb the seabed in the designated area. Vessels may otherwise transit or navigate within this area without reservation.
(2314) (c) *Waiver*. The Captain of the Port, Puget Sound, upon advice from the United States Environmental Protection Agency (USEPA) Project Manager and the Washington State Department of Natural Resources, may, upon written request, authorize a waiver from this section if it is determined that the proposed operation supports USEPA remedial objectives, or can be performed in a manner that ensures the integrity of the sediment cap. A written request must describe the intended operation, state the need, and describe the proposed precautionary measures. Requests shall be submitted in triplicate,

to facilitate review by USEPA, Coast Guard, and Washington State Agencies. USEPA managed remedial design, remedial action, habitat mitigation, or monitoring activities associated with the Olympic View Resource Area Superfund Site are excluded from the waiver requirement. USEPA is required, however, to alert the Coast Guard in advance concerning any of the above-mentioned activities that may, or will, take place in the Regulated Area.

(2315)

§165.1313 Security Zone Regulations, Tank Ship Protection, Puget Sound and adjacent waters, Washington.

(2316) (a) *Notice of enforcement or suspension of enforcement*. The tank ship security zone established by this section will be enforced only upon notice by the Captain of the Port Puget Sound. Captain of the Port Puget Sound will cause notice of the enforcement of the tank ship security zone to be made by all appropriate means to effect the widest publicity among the affected segments of the public including publication in the **Federal Register** as practicable, in accordance with **33 CFR 165.7**(**a**). Such means of notification may also include but are not limited to, Broadcast Notice to Mariners or Local Notice to Mariners. The Captain of the Port Puget Sound will issue a Broadcast Notice to Mariners and Local Notice to Mariners notifying the public when enforcement of the tank ship security zone is suspended.

(2317) (b) The following definitions apply to this section:

(2318) (1) *Federal Law Enforcement Officer* means any employee or agent of the United States government who has the authority to carry firearms and make warrantless arrests and whose duties involve the enforcement of criminal laws of the United States.

(2319) (2) *Navigable waters of the United States* means those waters defined as such in **33 CFR** part **2**.

(2320) (3) *Navigation Rules* means the Navigation Rules, International-Inland.

(2321) (4) *Official patrol* means those persons designated by the Captain of the Port to monitor a tank ship security zone, permit entry into the zone, give legally enforceable orders to persons or vessels with in the zone and take other actions authorized by the Captain of the Port. Persons authorized in paragraph (k) to enforce this section are designated as the official patrol.

(2322) (5) *Public vessel* means vessels owned, chartered, or operated by the United States, or by a State or political subdivision thereof.

(2323) (6) Tank ship security zone is a regulated area of water, established by this section, surrounding tank ships for a 500-yard radius that is necessary to provide for the security of these vessels.

(2324) (7) *Tank ship* means a self-propelled tank vessel that is constructed or adapted primarily to carry oil or hazardous material in bulk as cargo or cargo residue in the cargo spaces. The definition of tank ship does not include tank barges.

(2325) (8) *Washington Law Enforcement Officer* means any General Authority Washington Peace Officer, Limited Authority Washington Peace Officer, or Specially Commissioned Washington Peace Officer as defined in Revised Code of Washington section 10.93.020.

(2326) (c) *Security zone:* There is established a tank ship security zone extending for a 500-yard radius around all tank ships located in the navigable waters of the United States in Puget Sound, WA, east of 123 degrees, 30 minutes West Longitude. [Datum: NAD 1983]

(2327) (d) *Compliance:* The tank ship security zone established by this section remains in effect around tank ships at all times, whether the tank ship is underway, anchored, or moored. Upon notice of enforcement by the Captain of the Port Puget Sound, the Coast Guard will enforce the tank ship security zone in accordance with rules set out in this section. Upon notice of suspension of enforcement by the Captain of the Port Puget Sound, all persons and vessels are authorized to enter, transit, and exit the tank ship security zone, consistent with the Navigation Rules.

(2328) (e) The Navigation Rules shall apply at all times within a tank ship security zone.

(2329) (f) When within a tank ship security zone all vessels shall operate at the minimum speed necessary to maintain a safe course and shall proceed as directed by the on-scene official patrol or tank ship master. No vessel or person is allowed within 100 yards of a tank ship, unless authorized by the on-scene official patrol or tank ship master.

(2330) (g) To request authorization to operate within 100 yards of a tank ship, contact the on-scene official patrol or tank ship master on VHF–FM channel 16 or 13.

(2331) (h) When conditions permit, the on-scene official patrol or tank ship master should:

(2332) (1) Permit vessels constrained by their navigational draft or restricted in their ability to maneuver to pass within 100 yards of a tank ship in order to ensure a safe passage in accordance with the Navigation Rules;

(2333) (2) Permit commercial vessels anchored in a designated anchorage area to remain at anchor when within 100 yards of a passing tank ship; and

(2334) (3) Permit vessels that must transit via a navigable channel or waterway to pass within 100 yards of a moored or anchored tank ship with minimal delay consistent with security.

(2335) (i) *Exemption*. Public vessels as defined in paragraph (b) of this section are exempt from complying with paragraphs (c), (d), (f), (g), (h), (j), and (k) of this section.

(2336) (j) *Exception*. **33 CFR** Part **161** promulgates Vessel Traffic Service regulations. Measures or directions issued by Vessel Traffic Service Puget Sound pursuant to **33 CFR** Part **161** shall take precedence over the regulations in this section.

(2337) (k) *Enforcement*. Any Coast Guard commissioned, warrant or petty officer may enforce the rules in this section. In the navigable waters of the United States to which this section applies, when immediate action

is required and representatives of the Coast Guard are not present or not present in sufficient force to provide effective enforcement of this section in the vicinity of a tank ship, any Federal Law Enforcement Officer or Washington Law Enforcement Officer may enforce the rules contained in this section pursuant to **33 CFR§6.04–11**. In addition, the Captain of the Port may be assisted by other federal, state or local agencies in enforcing this section.

(2338)

§165.1317 Security and Safety Zone; Large Passenger Vessel Protection, Puget Sound and adjacent waters, Washington.

(2339) (a) *Notice of enforcement or suspension of enforcement*. The large passenger vessel security and safety zone established by this section will be enforced only upon notice by the Captain of the Port Puget Sound. Captain of the Port Puget Sound will cause notice of the enforcement of the large passenger vessel security and safety zone to be made by all appropriate means to effect the widest publicity among the affected segments of the public including publication in the **Federal Register** as practicable, in accordance with **33 CFR 165.7(a)**. Such means of notification may also include but are not limited to, Broadcast Notice to Mariners or Local Notice to Mariners. The Captain of the Port Puget Sound will issue a Broadcast Notice to Mariners and Local Notice to Mariners notifying the public when enforcement of the large passenger vessel security and safety zone is suspended.

(2340) (b) *Definitions*. The following definitions apply to this section:

(2341) *Federal Law Enforcement Officer* means any employee or agent of the United States government who has the authority to carry firearms and make warrantless arrests and whose duties involve the enforcement of criminal laws of the United States.

(2342) *Large Passenger Vessel* means any cruise ship over 100 feet in length carrying passengers for hire, and any auto ferries and passenger ferries over 100 feet in length carrying passengers for hire such as the Washington State Ferries, M/V COHO and Alaskan Marine Highway Ferries. Large Passenger Vessel does not include vessels inspected and certificated under **46 CFR**, chapter **I**, subchapter **T** such as excursion vessels, sight seeing vessels, dinner cruise vessels, and whale watching vessels.

(2343) *Large Passenger Vessel Security and Safety Zone* is a regulated area of water established by this section, surrounding large passenger vessels for a 500-yard radius to provide for the security and safety of these vessels.

(2344) *Navigable waters of the United States* means those waters defined as such in **33 CFR** part **2**.

(2345) *Navigation Rules* means the Navigation Rules, International–Inland.

(2346) *Official Patrol* means those persons designated by the Captain of the Port to monitor a large passenger vessel security and safety zone, permit entry into the zone, give legally enforceable orders to persons or vessels within the zone and take other actions authorized by the Captain of the Port. Persons authorized in paragraph (l) to enforce this section are designated as the Official Patrol.

(2347) *Public vessel* means vessels owned, chartered, or operated by the United States, or by a State or political subdivision thereof.

(2348) *Washington Law Enforcement Officer* means any General Authority Washington Peace Officer, Limited Authority Washington Peace Officer, or Specially Commissioned Washington Peace Officer as defined in Revised Code of Washington section 10.93.020.

(2349) (c) *Security and safety zone*. There is established a large passenger vessel security and safety zone extending for a 500-yard radius around all large passenger vessels located in the navigable waters of the United States in Puget Sound, WA, east of 123°30' West Longitude. [Datum: NAD 1983].

(2350) (d) *Compliance.* The large passenger vessel security and safety zone established by this section remains in effect around large passenger vessels at all times, whether the large passenger vessel is underway, anchored, or moored. Upon notice of enforcement by the Captain of the Port Puget Sound, the Coast Guard will enforce the large passenger vessel security and safety zone in accordance with rules set out in this section. Upon notice of suspension of enforcement by the Captain of the Port Puget Sound, all persons and vessels are authorized to enter, transit, and exit the large passenger vessel security and safety zone, consistent with the Navigation Rules.

(2351) (e) The Navigation Rules shall apply at all times within a large passenger vessel security and safety zone.

(2352) (f) When within a large passenger vessel security and safety zone all vessels must operate at the minimum speed necessary to maintain a safe course and must proceed as directed by the on-scene official patrol or large passenger vessel master. No vessel or person is allowed within 100 yards of a large passenger vessel that is underway or at anchor, unless authorized by the on-scene official patrol or large passenger vessel master. No vessel or person is allowed within 25 yards of a large passenger vessel that is moored.

(2353) (g) To request authorization to operate within 100 yards of a large passenger vessel that is underway or at anchor, contact the on-scene official patrol or large passenger vessel master on VHF-FM channel 16 or 13.

(2354) (h) When conditions permit, the on-scene official patrol or large passenger vessel master should:

(2355) (1) Permit vessels constrained by their navigational draft or restricted in their ability to maneuver to pass within 100 yards of a large passenger vessel in order to ensure a safe passage in accordance with the Navigation Rules; and

(2356) (2) Permit vessels that must transit via a navigable channel or waterway to pass within 100 yards of an anchored large passenger vessel or within 25 yards of

a moored large passenger vessel with minimal delay consistent with security.

(2357) (i) When a large passenger vessel approaches within 100 yards of any vessel that is moored or anchored, the stationary vessel must stay moored or anchored while it remains within the large passenger vessel's security and safety zone unless it is either ordered by, or given permission by the Captain of the Port Puget Sound, his designated representative or the on-scene official patrol to do otherwise.

(2358) (j) *Exemption.* Public vessels as defined in paragraph (b) of this section are exempt from complying with paragraphs (c), (d), (f), (g), (h), and (i), of this section.

(2359) (k) *Exception*. **33 CFR** part **161** contains Vessel Traffic Service regulations. When measures or directions issued by Vessel Traffic Service Puget Sound pursuant to **33 CFR** part **16**1 also apply, the measures or directions govern rather than the regulations in this section.

(2360) (l) *Enforcement*. Any Coast Guard commissioned, warrant or petty officer may enforce the rules in this section. In the navigable waters of the United States to which this section applies, when immediate action is required and representatives of the Coast Guard are not present or not present in sufficient force to provide effective enforcement of this section in the vicinity of a large passenger vessel, any Federal Law Enforcement Officer or Washington Law Enforcement Officer may enforce the rules contained in this section pursuant to **33 CFR 6.04-11**. In addition, the Captain of the Port may be assisted by other federal, state or local agencies in enforcing this section.

(2361) (m) *Waiver.* The Captain of the Port Puget Sound may waive any of the requirements of this section for any vessel or class of vessels upon finding that a vessel or class of vessels, operational conditions or other circumstances are such that application of this section is unnecessary or impractical for the purpose of port security, safety or environmental safety.

(2362)

§165.1318 Security and Safety Zone Regulations, Large Passenger Vessel Protection, Captain of the Port Columbia River Zone.

(2363) (a) *Notice of enforcement or suspension of enforcement*. The large passenger vessel security and safety zone established by this section will be enforced only upon notice by the Captain of the Port Columbia River. Captain of the Port Columbia River will cause notice of the enforcement of the large passenger vessel security and safety zone to be made by all appropriate means to effect the widest publicity among the affected segments of the public including publication in the Federal Register as practicable, in accordance with **33 CFR 165.7**(**a**). Such means of notification may also include but are not limited to, Broadcast Notice to Mariners or Local Notice to Mariners. The Captain of the Port Columbia River will issue a Broadcast Notice to Mariners and Local Notice to Mariners notifying the public when enforcement of the large passenger vessel security and safety zone is suspended.

(2364) (b) *Definitions.* As used in this section-

(2365) *Federal Law Enforcement Officer* means any employee or agent of the United States government who has the authority to carry firearms and make warrantless arrests and whose duties involve the enforcement of criminal laws of the United States.

(2366) *Large Passenger vessel* means any vessel over 100 feet in length (33 meters) carrying passengers for hire including, but not limited to, cruise ships, auto ferries, passenger ferries, and excursion vessels.

(2367) *Large passenger vessel security and safety zone* is a regulated area of water, established by this section, surrounding large passenger vessels for a 500 yard radius that is necessary to provide for the security and safety of these vessels.

(2368) *Navigable waters of the United States* means those waters defined as such in 33 CFR part 2.

(2369) *Navigation Rules* means the Navigation Rules, International-Inland.

(2370) *Official Patrol* means those persons designated by the Captain by the Port to monitor a large passenger vessel security and safety zone, permit entry into the zone, give legally enforceable orders to persons or vessels with in the zone and take other actions authorized by the Captain of the Port. Persons authorized as Federal Law Enforcement Officers to enforce this section are designated as the Official Patrol.

(2371) *Oregon Law Enforcement Officer* means any Oregon Peace Officer as defined in Oregon Revised Statutes section 161.015.

(2372) *Public vessel* means vessels owned, chartered, or operated by the United States, or by a State or political subdivision thereof.

(2373) *Washington Law Enforcement Officer* means any General Authority Washington Peace Officer, Limited Authority Washington Peace Officer, or Specially Commissioned Washington Peace Officer as defined in Revised Code of Washington section 10.93.020.

(2374) (c) *Security and safety zone*. There is established a large passenger vessel security and safety zone extending for a 500 yard radius around all large passenger vessels in the navigable waters of the United States, in Portland, OR at the Columbia River Bar "C" buoy and extending eastward on the Columbia River to Kennewick, WA and upriver through Lewiston, ID on the Snake River.

(2375) (d) *Compliance*. The large passenger vessel security and safety zone established by this section remains in effect around large passenger vessels at all times, whether the large passenger vessel is underway, anchored, or moored. Upon notice of enforcement by the Captain of the Port Columbia River, the Coast Guard will enforce the large passenger vessel security and safety zone in accordance with rules set out in this section. Upon notice of suspension of enforcement by the Captain of the Port Columbia River, all persons and vessels are authorized to

enter, transit, and exit the large passenger vessel security and safety zone, consistent with the Navigation Rules.

(2376) (e) *Navigation Rules*. The Navigation Rules shall apply at all times within a large passenger vessel security and safety zone.

(2377) (f) *Restrictions based on distance from large passenger vessel*. When within a large passenger security and safety zone, all vessels shall operate at the minimum speed necessary to maintain a safe course and shall proceed as directed by the on-scene official patrol or large passenger vessel master. No vessel or person is allowed within 100 yards of a large passenger vessel that is underway or at anchor, unless authorized by the on-scene official patrol or large passenger vessel master.

(2378) (g) *Requesting authorization to operate within 100 yards of large passenger vessel.* To request authorization to operate with 100 yards of a large passenger vessel that is underway or at anchor, contact the on-scene official patrol or large passenger vessel master on VHF-FM channel 16 or 13.

(2379) (h) *Maneuver-restricted vessels*. When conditions permit, the on-scene official patrol or large passenger vessel master should:

(2380) (1) Permit vessels constrained by their navigational draft or restricted in their ability to maneuver to pass within 100 yards of a large passenger vessel in order to ensure a safe passage in accordance with the Navigation Rules; and

(2381) (2) Permit commercial vessels anchored in a designated anchorage area to remain at anchor with 100 yards of a passing large passenger vessel; and

(2382) (3) Permit vessels that must transit via a navigable channel or waterway to pass within 100 yards of an anchored large passenger vessel.

(2383) (i) *Stationary vessels*. When a large passenger vessel approaches within 100 yards of any vessel that is moored or anchored, the stationary vessel must stay moored or anchored while it remains with in the large passenger vessel's security and safety zone unless it is either ordered by, or given permission by the Captain of the Port Columbia River, his designated representative or the on-scene official patrol to do otherwise.

(2384) (j) *Exemption.* Public vessels as defined in paragraph (b) of this section are exempt from complying with paragraphs (c), (d), (f), (g), (h), and (i), of this section.

(2385) (k) *Enforcement.* Any Coast Guard commissioned, warrant or petty officer may enforce the rules in this section. In the navigable waters of the United States to which this section applies, when immediate action is required and representatives of the Coast Guard are not present or not present in sufficient force to provide effective enforcement of this section in the vicinity of a large passenger vessel, any Federal Law Enforcement Officer, Oregon Law Enforcement Officer or Washington Law Enforcement Officer may enforce the rules contained in this section pursuant to **33 CFR 6.04-11**. In addition, the Captain of the Port may be assisted by other federal, state or local agencies in enforcing this section.

(2386) (l) *Waiver*. The Captain of the Port Columbia River may waive any of the requirements of this section for any vessel or class of vessels upon finding that a vessel or class of vessels, operational conditions or other circumstances are such that application of this section is unnecessary or impractical for the purpose of port security, safety or environmental safety.

(2387)

§165.1321 Security Zone; Protection of Military Cargo, Captain of the Port Zone Puget Sound, WA.

(2388) (a) *Notice of enforcement or suspension of enforcement*. The Captain of the Port Puget Sound will enforce the security zones established by this section only upon notice. Captain of the Port Puget Sound will cause notice of the enforcement of these security zone to be made by all appropriate means to effect the widest publicity among the affected segments of the public including publication in the Federal Register as practicable, in accordance with **33 CFR 165.7**(**a**). Such means of notification may also include but are not limited to, Broadcast Notice to Mariners or Local Notice to Mariners. The Captain of the Port Puget Sound will issue a Broadcast Notice to Mariners and Local Notice to Mariners notifying the public when enforcement of these security zones is suspended.

(2389) (b) *Definitions*. The following definitions apply to this section:

(2390) *Designated Representative* means those persons designated by the Captain of the Port to monitor these security zones, permit entry into these zones, give legally enforceable orders to persons or vessels with in these zones and take other actions authorized by the Captain of the Port. Persons authorized in paragraph (g) to enforce this section and Vessel Traffic Service Puget Sound (VTS) are Designated Representatives.

(2391) *Federal Law Enforcement Officer* means any employee or agent of the United States government who has the authority to carry firearms and make warrantless arrests and whose duties involve the enforcement of criminal laws of the United States.

(2392) *Navigable waters of the United States* means those waters defined as such in **33 CFR** Part **2**.

(2393) *Public vessel* means vessels owned, chartered, operated by the United States, or by a State or political subdivision thereof.

(2394) *Washington Law Enforcement Officer* means any General Authority Washington Peace Officer, Limited Authority Washington Peace Officer, or Specially Commissioned Washington Peace Officer as defined in Revised Code of Washington section 10.93.020.

(2395) (c) *Security zone*. The following areas are security zones:

(2396) (1) *Blair Waterway Security Zone:* The Security Zone in the Blair Waterway, Commencement Bay, WA, includes all waters enclosed by a line connecting the following points: 47°16'57"N., 122°24'39"W., which is approximately the beginning of Pier No. 23 (also known

as the Army pier); then northwesterly to 47°17'05"N., 122°24'52"W., which is the end of the Pier No. 23 (Army pier); then southwesterly to 47°16'42"N., 122°25'18"W., which is the approximate location of a private buoy on the end of the sewage outfall; then southeasterly to 47°16'33"N., 122°25'04"W., which is approximately the northwestern end of Pier 5; then northeasterly to the northwestern end of Pier No. 1; then southeasterly along the shoreline of the Blair Waterway to the Blair Waterway turning basin; then along the shoreline around the Blair Waterway turning basin; then northwesterly along the shoreline of the Blair Waterway to approximate position 47°16'49"N., 122°24'52"W.; then northeasterly along the shoreline to the point of origin [Datum: NAD 1983].

(2397) (2) *Sitcum Waterway Security Zone:* The Security Zone in the Sitcum Waterway, Commencement Bay, WA, includes all waters enclosed by a line connecting the following points: 47°16'33"N., 122°25'04"W., which is approximately the northwestern end of Pier No. 5; then northwesterly to 47°16'42"N., 122°25'18"W., which is the approximate location of a private buoy on the end of the sewage outfall; then southwesterly to 47°16'23"N., 122°25'36"W.; then southeasterly to 47°16'10"N., 122°25'27"W., which is the northwestern corner of Pier No. 2; then extending northeasterly to 47°16'13"N., 122°25'13"W.; then extending southeasterly along the shoreline of the Sitcum Waterway; then northeasterly along the shoreline at the terminus of the Sitcum Waterway and then northwesterly along the shoreline of the Sitcum Waterway; then northeasterly along the shoreline of Pier No. 5 to the point of origin [Datum: NAD 1983]

(2398) (3) *Budd Inlet Security Zone:* The Security Zone in Budd Inlet, West Bay, Olympia WA includes all waters enclosed by a line connecting the following points: 47°03'12"N., 122°54'21"W., which is approximately the northwestern end of the fence line enclosing Berth 1 at Port of Olympia; then northerly to 47°03'15"N., 122°54'21"W., which is the approximate 300 feet north along the shoreline; then westerly to 47°03'15"N., 122°54'26"W., then southerly to 47°03'06"N., 122°54'26"W.; then southeasterly to 47°03'03"N., 122°54'20"W., which is approximately the end of the T-shaped pier; then north to 47°03'04"N., 122°54'19.5"W., which is approximately the southwestern corner of Berth 1; then northerly along the shoreline to the point of origin.[Datum NAD 1983]

(2399) (d) *Obtaining permission to enter, move within, or exit the security zones*. All vessels must obtain permission from the COTP or a Designated Representative to enter, move within, or exit the security zones established in this section when these security zones are enforced. Vessels 20 meters or greater in length should seek permission from the COTP or a Designated Representative at least 4 hours in advance. Vessels less than 20 meters in length should seek permission at least 1 hour in advance. VTS Puget Sound may be reached on VHF channel 14.

(2400) (e) *Compliance*. Upon notice of enforcement by the Captain of the Port Puget Sound, the Coast Guard will enforce these security zones in accordance with rules set out in this section. Upon notice of suspension of enforcement by the Captain of the Port Puget Sound, all persons and vessels are authorized to enter, transit, and exit these security zones.

(2401) (f) *Regulations*. Under the general regulations in **33 CFR** part **165** subpart **D**, this section applies to any vessel or person in the navigable waters of the United States to which this section applies. No person or vessel may enter the security zones established in this section unless authorized by the Captain of the Port or his designated representatives. Vessels and persons granted permission to enter the security zone shall obey all lawful orders or directions of the Captain of the Port or his designated representatives. All vessels shall operate at the minimum speed necessary to maintain a safe course.

(2402) (g) *Enforcement.* Any Coast Guard commissioned, warrant or petty officer may enforce the rules in this section. In the navigable waters of the United States to which this section applies, when immediate action is required and representatives of the Coast Guard are not present or not present in sufficient force to provide effective enforcement of this section, any Federal Law Enforcement Officer or Washington Law Enforcement Officer may enforce the rules contained in this section pursuant to **33 CFR 6.04-11**. In addition, the Captain of the Port may be assisted by other federal, state or local agencies in enforcing this section pursuant to **33 CFR 6.04-11**.

(2403) (h) *Exemption.* Public vessels as defined in paragraph (b) of this section are exempt from the requirements in this section.

(2404) (i) *Waiver.* For any vessel, the Captain of the Port Puget Sound may waive any of the requirements of this section, upon finding that operational conditions or other circumstances are such that application of this section is unnecessary or impractical for the purpose of port security, safety or environmental safety.

(2405)

§165.1322 Regulated Navigation Area: Willamette River Portland, Captain of the Port Columbia River Zone.

(2406) (a) *Location*. The following is a regulated navigation area (RNA): All waters of the Willamette River encompassed by a line commencing at

(2407) 45°34'47"N., 122°45'28"W. along the shoreline to

(2408) 45°34'47"N., 122°45'30"W., thence to

(2409) 45°34'47"N., 122°45'30"W., thence to

(2410) 45°34'48"N., 122°45'30"W., thence to

(2411) 45°34'48"N., 122°45'30"W., thence to

(2412) 45°34'48"N., 122°45'28"W., thence to

(2413) 45°34'47"N., 122°45'28"W. and back to the point of origin. All coordinates reference 1983 North American Datum (NAD 83).

(2414) (b) *Regulations*. (1) Motoring, anchoring, dragging, dredging, or trawling are prohibited in the regulated area.

(2415) (2) All vessels transiting or accessing the regulated area shall do so at a no wake speed or at the minimum speed to maintain steerage.

(2416)

§165.1323 Regulated Navigation Area: Willamette River Captain of the Port Columbia River Zone.

(2417) (a) *Location.* The following is a regulated navigation area (RNA): All waters of the Willamette River encompassed by a line commencing at

(2418) 45°34'33"N., 122°44'17"W to

(2419) 45°34'32"N., 122°44'18"W., thence to

(2420) 45°34'35"N., 122°44'24"W., thence to

(2421) 45°34'35"N., 122°44'27"W., thence to

(2422) 45°34'35"N., 122°44'36"W., thence to

(2423) 45°34'35"N., 122°44'37"W., thence to

(2424) 45°34'38"N., 122°44'42"W. to

(2425) 45°34'39"N., 122°44'43"W., thence to

(2426) 45°34'44"N., 122°44'51"W., thence to

(2427) 45°34'45"N., 122°44'53"W., thence to

(2428) 45°34'47"N., 122°44'51"W., thence to

(2429) 45°34'45"N., 122°44'46"W. to

(2430) 45°34'45"N., 122°44'45"W., thence to

(2431) 45°34'47"N., 122°44'43"W., thence to

(2432) 45°34'46"N., 122°44'42"W., thence to

(2433) 45°34'48"N., 122°44'40"W. thence to

(2434) 45°34'48"N., 122°44'38"W. and along the shoreline to

(2435) 45°34'46"N., 122°44'39"W and back to the point of origin. All coordinates reference 1983 North American Datum (NAD 83).

(2436) (b) *Regulations*. (1) Anchoring, spudding, dredging, laying cable, dragging, trawling, conducting salvage operations, operating commercial vessels of any size, and operating recreational vessels greater than 30 feet in length are prohibited in the regulated area.

(2437) (2) All vessels transiting or accessing the regulated area shall do so at no wake speed or at the minimum speed necessary to maintain steerage.

(2438)

§165.1324 Safety and Security Zone; Cruise Ship Protection, Elliot Bay and Pier 91, Seattle, WA.

(2439) (a) *Safety and Security Zones*. (1) The following area is a safety and security zone: All waters within the following points: a rectangle, starting at

(2440) 47°37'53"N., 122°23'07"W., thence south to position

(2441) 47°37'06"N., 122°23'07"W., thence east to position

(2442) 47°37'06"N., 122°22'43"W., thence north to position

(2443) 47°37'58"N., 122°22'43"W. This zone will be enforced only during the arrival and departure of Large Passenger Cruise Vessels at Pier 91, Seattle, Washington.

(2444) (2) The following area is a safety and security zone: All waters within 100 yards of Pier 91, Seattle, Washington, at approximate position 47°37'35"N., 122°23'00"W. This zone will be enforced only when a Large Passenger Cruise Vessel is moored at Pier 91.

(2445) (b) *Regulations*. In accordance with the general regulations in **33 CFR** Part **165**, Subpart **D**, no person or vessel may enter or remain in either Safety and Security Zone except for vessels authorized by the Captain of the Port or Designated Representatives.

(2446) (c) *Definitions*. The following definitions apply to this section;

(2447) *Facility Security Officer* means the person designated as responsible for the development, implementation, revision and maintenance of the facility security plan and for liaison with the COTP and Company and Vessel Security Officers.

(2448) *Large Passenger Cruise Vessel* means any cruise ship over 100 feet in length carrying passengers for hire. Large Passenger Cruise Vessel does not include vessels inspected and certificated under **46 CFR**, chapter **I**, subchapter T such as excursion vessels, sight seeing vessels, dinner cruise vessels, and whale watching vessels.

(2449) *Official Patrol* means those persons designated by the Captain of the Port to monitor a Large Passenger Cruise Vessel security and safety zone, permit entry into the zone, give legally enforceable orders to persons or vessels within the zone and take other actions authorized by the Captain of the Port. Persons authorized in paragraph (e) to enforce this section are designated as the Official Patrol.

(2450) (d) *Authorization*. To request authorization to operate within 100 yards of a Large Passenger Cruise Vessel that is moored at Pier 91, contact the onscene Official Patrol on VHF-FM channel 16 or 13 or the Facility Security Officer at 206–728–3688.

(2451) (e) *Enforcement*. Any Coast Guard commissioned warrant or petty officer may enforce the rules in this section. In the navigable waters of the United States to which this section applies, when immediate action is required and representatives of the Coast Guard are not present or not present in sufficient force to provide effective enforcement of this section in the vicinity of a Large Passenger Cruise Vessel, any Federal or Washington Law Enforcement Officer may enforce the rules contained in this section pursuant to **33 CFR 6.04-11**. In addition, the Captain of the Port may be assisted by other Federal, state or local agencies in enforcing this section.

(2452) (f) *Waiver.* The Captain of the Port Puget Sound may waive any of the requirements of this section for any vessel or class of vessels upon finding that a vessel or class of vessels, operational conditions or other circumstances are such that application of this section is unnecessary or impractical for the purpose of port security, safety or environmental safety.

(2453)

§165.1325 Regulated Navigation Areas; Bars Along the Coasts of Oregon and Washington

(2454) (a) *Regulated navigation areas*. Each of the following areas is a regulated navigation area:

(2455) (1) *Quillayute River Entrance, WA:* From the west end of James Island

(2456) 47°54'23"N., 124°39'05"W. southward to buoy No. 2 at
(2457) 47°53'42"N., 124°38'42"W. eastward to the shoreline at
(2458) 47°53'42"N., 124°37'51"W., thence northward along the shoreline to
(2459) 47°54'29"N., 124°38'20"W. thence northward to
(2460) 47°54'36"N., 124°38'22"W. thence westward to the beginning.
(2461) (2) *Grays Harbor Entrance, WA*. From a point on the shoreline at
(2462) 46°59'00"N., 124°10'10"W. westward to
(2463) 46°59'00"N., 124°15'30"W. thence southward to
(2464) 46°51'00"N., 124°15'30"W. thence eastward to a point on the shoreline at
(2465) 46°51'00"N., 124°06'40"W. thence northward along the shoreline to a point at the south jetty
(2466) 46°54'20"N., 124°08'07"W. thence eastward to
(2467) 46°54'10"N., 124°05'00"W. thence northward to
(2468) 46°55'00"N., 124°03'30"W. thence northwestward to Damon Point at
(2469) 46°56'50"N., 124°06'30"W. thence westward along the north shoreline of the harbor to the north jetty at
(2470) 46°55'40"N., 124°10'27"W. thence northward along the shoreline to the beginning.
(2471) (3) *Willapa Bay, WA:* From a point on the shoreline at
(2472) 46°46'00"N., 124°05'40"W. westward to
(2473) 46°44'00"N., 124°10'45"W. thence eastward to a point on the shoreline at
(2474) 46°35'00"N., 124°03'45"W. thence northward along the shoreline around the north end of Leadbetter Point thence southward along the east shoreline of Leadbetter Point to
(2475) 46°36'00"N., 124°02'15"W. thence eastward to
(2476) 46°36'00"N., 124°00'00"W. thence northward to Toke point at
(2477) 46°42'15"N., 123°58'00"W. thence westward along the north shoreline of the harbor and northward along the seaward shoreline to the beginning.
(2478) (4) *Columbia River Bar, WA-OR:* From a point on the shoreline at
(2479) 46°18'00"N., 124°04'39"W. thence westward to
(2480) 46°18'00"N., 124°09'30"W. thence southward to
(2481) 46°12'00"N., 124°09'30"W. thence eastward to a point on the shoreline at
(2482) 46°12'00"N., 123°59'33"W. thence eastward to Tansy Point Range Front Light at
(2483) 46°11'16"N., 123°55'05"W.; thence northward to Chinook Point at
(2484) 46°15'08"N., 123°55'25"W. thence northwestward to the north end of Sand Island at
(2485) 46°17'29"N., 124°01'25"W. thence southwestward to a point on the north shoreline of the harbor at
(2486) 46°16'25"N., 124°02'28"W. thence northwestward and southwestward along the north shoreline of the harbor and northward along the seaward shoreline to the beginning.
(2487) (5) *Nehalem River Bar, OR:* From a point on the shoreline
(2488) 45°41'25"N., 123°56'16"W. thence westward
(2489) 45°41'25"N., 123°59'00"W. thence southward to
(2490) 45°37'25"N., 123°59'00"W. thence eastward to a point on the shoreline at
(2491) 45°37'25"N., 123°56'38"W. thence northward along the shoreline to the north end of the south jetty at
(2492) 45°39'40"N., 123°55'45"W. thence westward to a point on the shoreline at
(2493) 45°39'45"N., 123°56'19"W. thence northward along the shoreline to the beginning.
(2494) (6) *Tillamook Bay Bar, OR:* From a point on the shoreline at
(2495) 45°35'15"N., 123°57'05"W. thence westward
(2496) 45°35'15"N., 124°00'00"W. thence southward to
(2497) 45°30'00"N., 124°00'00"W. thence eastward to a point on the shoreline at
(2498) 45°30'00"N., 123°57'40"W. thence northward along the shoreline to the north end of Kincheloe Point at
(2499) 45°33'30"N., 123°56'05"W. thence northward to a point on the north shoreline of the harbor at
(2500) 45°33'40"N., 123°55'59"W. thence westward along the north shoreline of the harbor then northward along the seaward shoreline to the beginning.
(2501) (7) *Netarts Bay Bar, OR:* From a point on the shoreline at
(2502) 45°28'05"N. thence westward to
(2503) 45°28'05"N., 124°00'00"W. thence southward to
(2504) 45°24'00"N., 124°00'00"W. thence eastward to a point on the shoreline at
(2505) 45°24'00"N., 123°57'45"W. thence northward along the shoreline to
(2506) 45°26'03"N., 123°57'15"W. thence eastward to a point on the north shoreline of the harbor at
(2507) 45°26'00"N., 123°56'57"W. thence northward along the shoreline to the beginning.
(2508) (8) *Siletz Bay Bar, OR:* From a point on the shoreline at
(2509) 44°56'32"N., 124°01'29"W. thence westward to
(2510) 44°56'32"N., 124°03'00"W. thence southward to
(2511) 44°54'40"N., 124°03'15"W. thence eastward to a point on the shoreline at
(2512) 44°54'40"N., 124°01'55"W. thence northward along the shoreline to
(2513) 44°55'35"N., 124°01'25"W. thence northward to a point on the north shoreline of the harbor at
(2514) 44°55'45"N., 124°01'20"W. thence westward and northward along the shoreline to the beginning.
(2515) (9) *Depoe Bay Bar, OR:* From a point on the shoreline at
(2516) 44°49'15"N., 124°04'00"W. thence westward to
(2517) 44°49'15"N., 124°04'35"W. thence southward to
(2518) 44°47'55"N., 124°04'55"W. thence eastward to a point on the shoreline at
(2519) 44°47'53"N., 124°04'25"W. thence northward along the shoreline and eastward along the south bank of the entrance channel to the highway bridge thence northward

to the north bank at the bridge thence westward along the north bank of the entrance channel and northward along the seaward shoreline to the beginning.

(2520) (10) *Yaquina Bay Bar, OR:* From a point on the shoreline at

(2521) 44°38'11"N., 124°03'47"W. thence westward to

(2522) 44°38'11"N., 124°05'55"W. thence southward to

(2523) 44°35'15"N., 124°06'05"W. thence eastward to a point on the shoreline at

(2524) 44°35'15"N., 124°04'02"W. thence northward along the shoreline and eastward along the south bank of the entrance channel to the highway bridge thence northward to the north bank of the entrance channel at the bridge thence westward along the north bank of the entrance channel and northward along the seaway shoreline to the beginning.

(2525) (11) *Siuslaw River Bar, OR:* From a point on the shoreline at

(2526) 44°02'00"N., 124°08'00"W. thence westward to

(2527) 44°02'00"N., 124°09'30"W. thence southward to

(2528) 44°00'00"N., 124°09'30"W. thence eastward to a point on the shoreline at

(2529) 44°00'00"N., 124°08'12"W. thence northward along the shoreline and southward along the west bank of the entrance channel to

(2530) 44°00'35"N., 124°07'48"W. thence southeastward to a point on the east bank of the entrance channel at

(2531) 44°00'20"N., 124°07'31"W. thence northward along the east bank of the entrance channel and northward along the seaward shoreline to the beginning.

(2532) (12) *Umpqua River Bar, OR:* From a point on the shoreline at

(2533) 43°41'20"N., 124°11'58"W. thence westward to

(2534) 43°41'20"N., 124°13'32"W. thence southward to

(2535) 43°38'35"N., 124°14'25"W. thence eastward to a point on the shoreline at

(2536) 43°38'35"N., 124°12'35"W. thence northward along the shoreline to Light "6" located on the jetty at

(2537) 43°40'11"N., 124°11'56"W. thence northward to a point on the north bank of the entrance channel at

(2538) 43°40'33"N., 124°11'56"W. thence southwestward along the north bank of the entrance channel thence northward along the seaward shoreline to the beginning.

(2539) (13) *Coos Bay Bar, OR:* From a point on the shoreline at

(2540) 43°22'15"N., 124°19'34"W. thence westward to

(2541) 43°22'20"N., 124°22'28"W. thence southwestward to

(2542) 43°21'00"N., 124°23'35"W. thence southeastward to a point on the shoreline at

(2543) 43°20'25"N., 124°22'28"W. thence northward along the shoreline and eastward along the south shore of the entrance channel to a point on the shoreline at

(2544) 43°20'52"N., 124°19'12"W. thence eastward to a point on the east shoreline of the harbor at

(2545) 43°21'00"N., 124°18'50"W. thence northward to a point on the west shoreline of the harbor at

(2546) 43°21'45"N., 124°19'10"W. thence south and west along the west shoreline of the harbor thence northward along the seaward shoreline to the beginning.

(2547) (14) *Coquille River Bar, OR:* From a point on the shoreline at

(2548) 43°08'25"N., 124°25'04"W. thence southwestward to

(2549) 43°07'50"N., 124°27'05"W. thence southwestward to

(2550) 43°07'03"N., 124°28'25"W. thence eastward to a point on the shoreline at

(2551) 43°06'00"N., 124°25'55"W. thence northward along the shoreline and eastward along the south shoreline of the channel entrance to

(2552) 43°07'17"N., 124°25'00"W. thence northward to the east end of the north jetty at

(2553) 43°07'24"N., 124°24'59"W. thence westward along the north shoreline of the entrance channel and northward along the seaward shoreline to the beginning.

(2554) (15) *Rogue River Bar, OR:* From a point on the shoreline at

(2555) 42°26'25"N., 124°26'03"W. thence westward to

(2556) 42°26'10"N., 124°27'05"W. thence southward to

(2557) 42°24'15"N., 124°27'05"W. thence eastward to a point on the shoreline at

(2558) 42°24'15"N., 124°25'30"W. thence northward along the shoreline and eastward along the south shoreline of the entrance channel to the highway bridge thence northward across the inner harbor jetty to a point on the north shoreline of the entrance channel at the highway bridge thence westward along the north shoreline of the entrance channel thence northward along the seaward shoreline to the beginning.

(2559) (16) *Chetco River Bar, OR:* From a point on the shoreline at

(2560) 42°02'35"N., 124°17'20"W. thence southeastward to

(2561) 42°01'45"N., 124°16'30"W. thence northwestward to a point on the shoreline at

(2562) 42°02'10"N., 124°15'35"W. thence northwestward along the shoreline thence northward along the east shoreline of the channel entrance to

(2563) 42°02'47"N., 124°16'03"W. thence northward along the west face of the inner jetty and east shoreline of the channel entrance to the highway bridge thence westward to the west shoreline of the channel at the highway bridge thence southward along the west shoreline of the channel thence westward along the seaward shoreline to the beginning.

(2564) (b) *Definitions*. For the purposes of this section:

(2565) (1) *Bar closure* means that the operation of any vessel within a regulated navigation area established in paragraph (a) of this section has been prohibited by the Coast Guard.

(2566) (2) *Bar crossing plan (also known as a Go/No-Go plan)* means a plan developed by local industry professionals, in coordination with the Coast Guard, for a bar within a regulated navigation area established in paragraph (a) of this section and adopted by the master or

operator of a small passenger vessel to guide his vessel's operations on and in the vicinity of that bar.

(2567) (3) *Bar restriction* means that operation of a recreational or uninspected passenger vessel within a regulated navigation area established in paragraph (a) of this section has been prohibited by the Coast Guard.

(2568) (4) *Commercial fishing industry vessel* means a fishing vessel, fish tender vessel, or a fish processing vessel.

(2569) (5) *Designated representative* means any Coast Guard commissioned, warrant, or petty officer that has been authorized by the Captain of the Port to act on his behalf.

(2570) (6) *Fish processing vessel* means a vessel that commercially prepares fish or fish products other than by gutting, decapitating, gilling, skinning, shucking, icing, freezing, or brine chilling.

(2571) (7) *Fish tender vessel* means a vessel that commercially supplies, stores, refrigerates, or transports fish, fish products, or materials directly related to fishing or the preparation of fish to or from a fishing, fish processing, or fish tender vessel or a fish processing facility.

(2572) (8) *Fishing vessel* means a vessel that commercially engages in the catching, taking, or harvesting of fish or an activity that can reasonably be expected to result in the catching, taking, or harvesting of fish.

(2573) (9) *Readily accessible* means equipment that is taken out of stowage and is available within the same space as any person for immediate use during an emergency.

(2574) (10) *Recreational vessel* is any vessel manufactured or used primarily for non-commercial use or leased, rented, or chartered to another for the latter's non-commercial use. It does not include a vessel engaged in carrying paying passengers.

(2575) (11) *Small passenger vessel* means a vessel inspected under **46 CFR** subchapter **T** or **46 CFR** subchapter **K**.

(2576) (12) *Uninspected passenger vessel* means an uninspected vessel–

(2577) (i) Of at least 100 gross tons;

(2578) (A) Carrying not more than 12 passengers, including at least one passenger-for-hire; or

(2579) (B) That is chartered with the crew provided or specified by the owner or the owner's representative and carrying not more than 12 passengers; or

(2580) (ii) Of less than 100 gross tons;

(2581) (A) Carrying not more than six passengers, including at least one passenger-for-hire; or

(2582) (B) That is chartered with the crew provided or specified by the owner or the owner's representative and carrying not more than six passengers.

(2583) (13) *Unsafe condition* exists when the wave height within a regulated navigation area identified in paragraph (a) of this section is equal to or greater than the maximum wave height determined by the formula L/10 + F = W where:

(2584) L = Overall length of a vessel measured in feet in a straight horizontal line along and parallel with the centerline between the intersections of this line with the vertical planes of the stem and stern profiles excluding deckhouses and equipment.

(2585) F = The minimum freeboard when measured in feet from the lowest point along the upper strake edge to the surface of the water.

(2586) W = Maximum wave height in feet to the nearest highest whole number.

(2587) (c) *Regulations*–(1) (i) *Bar restriction*. Passage across the bars located in the regulated navigation areas established in paragraph (a) of this section will be restricted for recreational and uninspected passenger vessels as determined by the Captain of the Port (COTP) or his designated representative. In making this determination, the COTP or his designated representative will determine whether an unsafe condition exists for such vessels as defined in paragraph (b) of this section. Additionally, the COTP or his designated representative will use their professional maritime experience and knowledge of local environmental conditions in making their determination. Factors that will be considered include, but are not limited to: size and type of vessel, sea state, winds, wave period, and tidal currents. When a bar is restricted, the operation of recreational and uninspected passenger vessels in the regulated navigation area established in paragraph (a) of this section in which the restricted bar is located is prohibited unless specifically authorized by the COTP or his designated representative.

(2588) (ii) *Bar closure*. The bars located in the regulated navigation areas established in paragraph (a) of this section will be closed to all vessels whenever environmental conditions exceed the operational limitations of the relevant Coast Guard search and rescue resources as determined by the COTP. When a bar is closed, the operation of any vessel in the regulated navigation area established in paragraph (a) of this section in which the closed bar is located is prohibited unless specifically authorized by the COTP or his designated representative. For bars having deep draft vessel access, the COTP will consult with the local pilots association, when practicable, prior to closing the affected bar.

(2589) (iii) The Coast Guard will notify the public of bar restrictions and bar closures via a Broadcast Notice to Mariners on VHF-FM Channel 16 and 22A.

(2590) (2) *Safety Requirements for Recreational Vessels*. The operator of any recreational vessel operating in a regulated navigation area established in paragraph (a) of this section shall ensure that whenever their vessel is being towed or escorted across a bar by the Coast Guard all persons located in any unenclosed areas of their vessel are wearing lifejackets and that lifejackets are readily accessible for/to all persons located in any enclosed areas of their vessel.

(2591) (3) *Safety Requirements for Uninspected Passenger Vessels (UPV).*

(2592) (i) The master or operator of any uninspected passenger vessel operating in a regulated navigation area established in paragraph (a) of this section shall

ensure that all persons located in any unenclosed areas of their vessel are wearing lifejackets and that lifejackets are readily accessible for/to all persons located in any enclosed areas of their vessel:

(2593) (A) When crossing the bar and a bar restriction exists for recreational vessels of the same length or

(2594) (B) Whenever their vessel is being towed or escorted across the bar by the Coast Guard.

(2595) (ii) The master or operator of any uninspected passenger vessel operating in a regulated navigation area established in paragraph (a) of this section during the conditions described in paragraph (c)(3)(i)(A) of this section shall contact the Coast Guard on VHF-FM Channel 16 or 22A prior to crossing the bar between sunset and sunrise.

(2596) (4) *Safety Requirements for Small Passenger Vessels (SPV).*

(2597) (i) The master or operator of any small passenger vessel operating in a regulated navigation area established in paragraph (a) of this section shall ensure that all persons located in any unenclosed areas of their vessel are wearing lifejackets and that lifejackets are readily accessible for/to all persons located in any enclosed areas of their vessel:

(2598) (A) When crossing the bar and a bar restriction exists for recreational vessels or uninspected passenger vessels of the same length or

(2599) (B) Whenever their vessel is being towed or escorted across the bar by the Coast Guard.

(2600) (ii) Small passenger vessels with bar crossing plans that have been reviewed by and accepted by the Officer in Charge, Marine Inspection (OCMI) are exempt from the safety requirements provided in paragraph(c)(4)(i) of this section during the conditions described in paragraph (c)(4)(i)(A) of this section so long as when crossing the bar the master or operator ensures that all persons on their vessel wear lifejackets in accordance with their bar crossing plan. If the vessel's bar crossing plan does not specify the conditions when the persons on their vessel must wear lifejackets, however, then the master or operator must comply with the safety requirements provided in paragraph (c)(4)(i) of this section in their entirety.

(2601) (iii) The master or operator of any small passenger vessel operating in a regulated navigation area established in paragraph (a) of this section during the conditions described in paragraph (c)(4)(i)(A) of this section shall contact the Coast Guard on VHF-FM Channel 16 or 22A prior to crossing the bar between sunset and sunrise.

(2602) (5) *Safety Requirements for Commercial Fishing Vessels (CFV).* (i) The master or operator of any commercial fishing vessel operating in a regulated navigation area established in paragraph (a) of this section shall ensure that all persons located in any unenclosed areas of their vessel are wearing lifejackets or immersion suits and that lifejackets or immersion suits are readily accessible for/to all persons located in any enclosed spaces of their vessel:

(2603) (A) When crossing the bar and a bar restriction exists for recreational vessels or uninspected passenger vessels of the same length or

(2604) (B) Whenever their vessel is being towed or escorted across the bar by the Coast Guard.

(2605) (ii) The master or operator of any commercial fishing vessel operating in a regulated navigation area established in paragraph (a) of this section during the conditions described in paragraph (c)(5)(i)(A) of this section shall contact the Coast Guard on VHF-FM Channel 16 or 22A prior to crossing the bar between sunset and sunrise

(2606) (6) All persons and vessels within the regulated navigation areas established in paragraph (a) of this section must comply with the orders of Coast Guard personnel. Coast Guard personnel include commissioned, warrant, and petty officers of the United States Coast Guard.

(2607)

§165.1326 Regulated Navigation Areas; Port of Portland Terminal 4, Willamette River, Portland, OR.

(2608) (a) *Regulated navigation areas.* Each of the following areas is a regulated navigation area:

(2609) (1) All waters of the Willamette River in the head of the Port of Portland's Terminal 4 Slip 3, encompassed by a line commencing at

(2610) 45°36'01.861"N., 122°46'20.995"W.; thence to

(2611) 45°36'01.455"N., 122°46'20.887"W.; thence to

(2612) 45°36'00.993"N., 122°46'20.714"W.; thence to

(2613) 45°36'00.725"N., 122°46'20.923"W.; thence to

(2614) 45°36'00.731"N., 122°46'21.262"W.; thence to

(2615) 45°36'00.712"N., 122°46'21.823"W.; thence to

(2616) 45°36'01.230"N., 122°46'22.048"W.; thence to

(2617) 45°36'01.651"N., 122°46'22.168"W.; thence to

(2618) 45°36'01.684"N., 122°46'22.372"W.; thence to

(2619) 45°36'01.873"N., 122°46'22.303"W.; thence to

(2620) 45°36'02.065"N., 122°46'21.799"W.; thence to

(2621) 45°36'01.989"N., 122°46'21.574"W.; thence to

(2622) 45°36'01.675"N., 122°46'21.483"W.; thence to

(2623) 45°36'01.795"N., 122°46'21.442"W.; thence to

(2624) 45°36'01.861"N., 122°46'20.995"W.

(2625) (2) All waters of the Willamette River in Wheeler Bay between Slip 1 and Slip 3 in the Port of Portland's Terminal 4, encompassed by a line commencing at

(2626) 45°36'10.634"N., 122°46'39.056"W.; thence to

(2627) 45°36'10.269"N., 122°46'37.140"W.; thence to

(2628) 45°36'10.027"N., 122°46'36.050"W.; thence to

(2629) 45°36'09.722"N., 122°46'34.181"W.; thence to

(2630) 45°36'09.425"N., 122°46'33.118"W.; thence to

(2631) 45°36'08.960"N., 122°46'32.150"W.; thence to

(2632) 45°36'08.653"N., 122°46'31.681"W.; thence to

(2633) 45°36'08.191"N., 122°46'31.341"W.; thence to

(2634) 45°36'07.886"N., 122°46'31.269"W.; thence to

(2635) 45°36'07.517"N., 122°46'31.038"W.; thence to

(2636) 45°36'07.235"N., 122°46'31.066"W.; thence to

(2637) 45°36'07.040"N., 122°46'30.941"W.; thence to

(2638) 45°36'06.697"N., 122°46'30.987"W.; thence to

(2639) 45°36'06.509"N., 122°46'31.251"W.; thence to

(2640) 45°36'06.201"N., 122°46'31.517"W.; thence to

(2641) 45°36'06.081"N., 122°46'01.812"W.; thence to
(2642) 45°36'06.550"N., 122°46'32.124"W.; thence to
(2643) 45°36'06.970"N., 122°46'31.895"W.; thence to
(2644) 45°36'07.172"N., 122°46'31.868"W.; thence to
(2645) 45°36'07.883"N., 122°46'32.316"W.; thence to
(2646) 45°36'08.370"N., 122°46'32.927"W.; thence to
(2647) 45°36'08.775"N., 122°46'33.888"W.; thence to
(2648) 45°36'09.121"N., 122°46'35.337"W.; thence to
(2649) 45°36'09.230"N., 122°46'36.166"W.; thence to
(2650) 45°36'09.442"N., 122°46'37.759"W.; thence to
(2651) 45°36'09.865"N., 122°46'39.511"W.; thence to
(2652) 45°36'10.421"N., 122°46'39.469"W.; thence to
(2653) 45°36'10.634"N., 122°46'39.056"W.

(2654) (b) *Regulations*. All vessels are prohibited from anchoring, dragging, dredging, or trawling in the regulated navigation areas established in paragraph (a) of this section.

(2655)

§165.1327 Security Zone; Escorted U.S. Navy Submarines in Sector Seattle Captain of the Port.

(2656) (a) *Location*. The following area is a security zone: All waters within 1,000 yards of any U.S. Navy submarine that is operating in the Sector Puget Sound Captain of the Port Zone, as defined in **33 CFR** Section **3.65-10**, and that is being escorted by the Coast Guard.

(2657) (b) *Regulations*. In accordance with the general regulations in **33 CFR** Section **165**, Subpart **D**, no person or vessel may enter or remain in the security zone created by paragraph (a) of this section unless authorized by the Coast Guard patrol commander. The Coast Guard patrol commander will coordinate with Vessel Traffic System users on a case-by-case basis to make appropriate passing arrangements under the circumstances. **33 CFR** Section **165**, Subpart **D**, contains additional provisions applicable to the security zone created in paragraph (a) of this section.

(2658) (c) *Notification*. The Coast Guard security escort will attempt, when necessary and practicable, to notify any persons or vessels inside or in the vicinity of the security zone created in paragraph (a) of this section of its existence via VHF Channel 16 and/or any other means reasonably available.

(2659)

§165.1328 Regulated Navigation Area; U.S. Navy Submarines, Hood Canal, WA.

(2660) (a) *Location*. The following area is a regulated navigation area (RNA): All waters of the Hood Canal in the State of Washington whenever any U.S. Navy submarine is operating in the Hood Canal and is being escorted by the Coast Guard. For purposes of this section, "Hood Canal" means all waters of Hood Canal, including Dabob Bay, located between two lines with the first line connecting positions 47°37'54"N., 122°57'06"W. and 47°37'54"N., 122°52'54"W. and the second line connecting positions 48°00'42"N., 122°41'00"W. and 47°56'24"N., 122°36'54"W.

(2661) (b) *Regulations*. All persons and vessels located within the RNA created by paragraph (a) of this section shall follow all lawful orders and/or directions given to them by Coast Guard security escort personnel. **33 CFR** Section **165**, Subpart **B**, contains additional provisions applicable to the RNA created in paragraph (a) of this section.

(2662) (c) *Notification*. The Coast Guard security escort will attempt, when necessary and practicable, to notify any persons or vessels in the RNA created in paragraph (a) of this section of its existence via VHF Channel 16 and/or any other means reasonably available.

(2663)

§165.1329 Regulated Navigation Area; Thea Foss and Wheeler-Osgood Waterways EPA Superfund Cleanup Site, Commencement Bay, Tacoma, WA.

(2664) (a) *Regulated Areas*. The following areas are regulated navigation areas:

(2665) (1) All waters of the Thea Foss Waterway bounded by a line connecting the following points:
(2666) 47°15'43.49"N., 122°26'23.29"W.
(2667) 47°15'44.59"N., 122°26'19.89"W.
(2668) 47°15'39.01"N., 122°26'15.99"W.
(2669) 47°15'37.91"N., 122°26'19.39"W. [Datum: NAD 1983].

(2670) (2) All waters of the Thea Foss Waterway bounded by a line connecting the following points:
(2671) 47°15'22.74"N., 122°25'57.15"W.
(2672) 47°15'22.52"N., 122°26'00.18"W.
(2673) 47°15'18.05"N., 122°25'59.48"W.
(2674) 47°15'18.26"N., 122°25'56.45"W. [Datum: NAD 1983].

(2675) (3) All waters of the Thea Foss and Wheeler-Osgood Waterways south of a line bounded by connecting the following points:
(2676) 47°15'13.94"N., 122°26'05.56"W.
(2677) 47°15'15.01"N., 122°25'55.14"W. [Datum: NAD 1983].

(2678) (4) All waters of the Middle Waterway south of a line connecting a point of the shore at 47°15′51" N., 122°25′53" W.; thence southwest to 47°15′48.6858" N., 122°26′02.2374" W.; thence south to 47°15′46.7316" N., 122°26′01.1214" W. [Datum: NAD 1983].

(2679) (b) *Regulations*. (1) All vessels and persons are prohibited from activities that would disturb the seabed, such as anchoring, dragging, spudding, or other activities that involve disrupting the integrity of the sediment caps installed in the designated regulated navigation area, pursuant to the remediation efforts of the U.S. Environmental Protection Agency (EPA) and others in the Thea Foss, Middle Waterway, and Wheeler-Osgood Waterways EPA superfund cleanup site. Vessels may otherwise transit or navigate within this area without reservation.

(2680) (2) The prohibition described in paragraph (b)(1) of this section does not apply to vessels or persons engaged in activities associated with remediation efforts in the Thea Foss, Middle Waterway, or Wheeler-Osgood Waterways superfund sites, provided that the Captain of

the Port, Puget Sound (COTP), is given advance notice of those activities by the EPA.

(2681) (c) *Waiver*. Upon written request stating the need and proposed conditions of the waiver, and any proposed precautionary measures, the COTP may authorize a waiver from this section if the COTP determines that the activity for which the waiver is sought can take place without undue risk to the remediation efforts described in paragraph (b)(1) of this section. The COTP will consult with EPA in making this determination when necessary and practicable.

(2682)

§165.1334 Security Zone; U.S. Coast Guard Base Seattle, Pier 36, Elliot Bay, Seattle, WA.

(2683) (a) *Location:* The following area is a security zone: All waters in Elliot Bay east of a line from

(2684) 47°35'26.67"N., 122°20'34.84"W. to

(2685) 47°35'23.69"N., 122°20'34.77"W. at Pier 36, Elliot Bay, Seattle, WA

(2686) (b) *Regulations:* Under **33 CFR** part **165**, subpart **D**, no vessel may enter, transit, moor, or anchor within this security zone located at Pier 36, Elliot Bay, WA, except for vessel authorized by the Captain of the Port Puget Sound or Designated Representative.

(2687) (c) *Authorization:* To request authorization to operate within this security zone, contact United States Coast Guard Sector Puget Sound Joint Harbor Operations Center at 206–217–6001.

(2688)

§ 165.1333 Security Zones, Seattle's Seafair Fleet Week moving vessels, Puget Sound, WA.

(2689) (a) *Location*. The following areas are security zones: All navigable waters within 500 yards of each designated participating vessel in the Parade of Ships while each such vessel is in the Sector Puget Sound Captain of the Port (COTP) zone, as defined in **33 CFR 3.65–10**, during a time specified in paragraph (e) of this section. The Coast Guard will publish a notice in the **Federal Register** each year before the start of the Seattle Seafair Fleet Week to identify the designated participating vessels for that year. Should information in the notice change after publication, as it may for operational reasons, the Coast Guard will use actual notice to enforce security zones around participating vessels not in the published notice. The Coast Guard will also provide this information in the Local Notice to Mariners.

(2690) (b) Definitions. For purposes of this section—

(2691) Designated participating vessel means a military vessel participating in the Seattle Seafair Fleet Week that has been designated by the Sector Puget Sound COTP in accordance with this section.

(2692) Designated representative means any Coast Guard commissioned, warrant, or petty officer who has been designated by the COTP to implement or enforce this section.

(2693) Seattle Seafair Fleet Week means an annual event involving a parade of U.S. Navy, U.S. Coast Guard, and foreign military ships in Seattle's Elliott Bay waterfront and tours of those ships while docked at Port of Seattle facilities.

(2694) (c) Regulations. Under 33 CFR Part 165, Subpart D, no person or vessel may enter or remain in the security zones described in paragraph (a) of this section without the permission of the COTP or a designated representative. The COTP has granted general permission for vessels to enter the outer 400 yards of the security zones as long as those vessels within the outer 400 yards of the security zones operate at the minimum speed necessary to maintain course unless required to maintain speed by the navigation rules. The COTP may be assisted by other federal, state or local agencies with the enforcement of the security zones.

(2695) (d) Authorization. All vessel operators who desire to enter the inner 100 yards of the security zones or transit the outer 400 yards at greater than minimum speed necessary to maintain course must obtain permission from the COTP or a Designated Representative by contacting the on-scene Coast Guard patrol craft on VHF 13 or Ch 16. Requests must include the reason why movement within this area is necessary. Vessel operators granted permission to enter the security zones will be escorted by the on-scene Coast Guard patrol craft until they are outside of the security zones.

(2696) (e) *Annual enforcement period*. The security zones described in paragraph (a) of this section will be enforced during Seattle Seafair Fleet Week each year for a period of up to 1 week. The Seattle Seafair Fleet Week will occur annually sometime between July 25 and August 14. The annual notice published in the **Federal Register** identifying the designated participating vessels will contain the dates and times that this section will be enforced. The Coast Guard will issue a Broadcast Notice to Mariners before the start of the Seattle Seafair Fleet Week to identify the designated participating vessels for that year. In addition, members of the public may contact the Sector Puget Sound COTP at (206) 217–6002 for a list of participating vessels.

(2697)

§165.1335 Security Zone; Vessels Carrying Hazardous Cargo, Sector Columbia River Captain of the Port Zone.

(2698) (a) *Location.* The following area is a security zone: All waters within 500 yards. In all directions, of any vessel carrying hazardous cargo, as determined by the Captain of the Port (COTP) Columbia River, while such a vessel is located in the Sector Columbia River COTP Zone as defined in **33 CFR 3.65-15** and the COTP Columbia River determines that a security zone is necessary and enforcement of the security zone is practicable.

(2699) (b) *Regulations*. (1) In accordance with the general regulations in **33 CFR** part **165**, Subpart **D**, no person or vessel may enter or remain in a security zone created by this section without the permission of the COTP Columbia River or his/her designated representative.

Designated representatives are Coast Guard personnel authorized by the COTP Columbia River to grant persons or vessels permission to enter or remain in a security zone created by this section. Subpart D of **33 CFR** part **165** contains additional provisions applicable to a security zone created by this section.

(2700) (2) To request permission to enter a security zone created by this section, contact Coast Guard Sector Columbia River at telephone number 503–861–6212 or via VHF channel 16 (156.8 MHz) or VHF channel 1022 (157.1 MHz).

(2701) (c) *Notification*. When a security zone is created by this section, one or more Coast Guard vessels will be present to enforce the security zone and the COTP Columbia River will issue a local broadcast notice to mariners.

(2702)

§165.1336 Regulated Navigation Area; Pacific Sound Resources and Lockheed Shipyard Superfund Sites, Elliott Bay, Seattle, WA.

(2703) (a) *Regulated Areas*. The following areas are regulated navigation areas:

(2704) (1) All waters inside an area beginning at a point on the shore at

(2705) 47°35'02.7"N, 122°22'23.00"W; thence north to

(2706) 47°35'26.00"N, 122°22'23.00"W; thence east to

(2707) 47°35'26.00"N, 122°21'52.50"W; thence south to

(2708) 47°35'10.80"N, 122°21'52.50"W; thence southwest to a point on the shoreline at

(2709) 47°35'05.9"N, 122°21'58.00"W. [Datum: NAD 1983].

(2710) (2) All waters inside an area beginning at

(2711) 47°34'52.16"N, 122°21'27.11"W; thence to

(2712) 47°34' 53.46"N, 122°21'30.42"W; thence to

(2713) 47°34'37.92"N, 122°21'30.51"W; thence to

(2714) 47°34'37.92"N, 122°21'27.65"W. [Datum: NAD 1983].

(2715) (b) *Regulations*. (1) All vessels and persons are prohibited from activities that would disturb the seabed, such as anchoring, dragging, trawling, spudding, or other activities that involve disrupting the integrity of the sediment caps installed in the designated regulated navigation area, pursuant to the remediation efforts of the U.S. Environmental Protection Agency (EPA) and others in the Pacific Sound Resources and Lockheed Shipyard EPA superfund sites. Vessels may otherwise transit or navigate within this area without reservation.

(2716) (2) The prohibition described in paragraph (b)(1) of this section does not apply to vessels or persons engaged in activities associated with remediation efforts in the superfund sites, provided that the Captain of the Port, Puget Sound (COTP), is given advance notice of those activities by the EPA.

(2717) (3) Nothing in this section is intended to conflict with treaty fishing rights of the Muckleshoot and Suquamish tribes, and they are not restricted from any type of fishing in the described area.

(2718) (c) *Waivers*. Upon written request stating the need and proposed conditions of the waiver, and any proposed precautionary measures, the COTP may authorize a waiver from this section if the COTP determines that the activity for which the waiver is sought can take place without undue risk to the remediation efforts described in paragraph (b)(1) of this section. The COTP will consult with EPA in making this determination when necessary and practicable.

(2719)

§165.1337 Regulated Navigation Area, Zidell Waterfront Property, Willamette River, OR.

(2720) (a) *Regulated Navigation Area*. The following area is a regulated navigation area: All waters within the area bounded by the following points:

(2721) 45°29'55.12"N, 122°40'02.19"W; thence to

(2722) 45°29'55.14"N, 122°39'59.36"W; thence to

(2723) 45°29'56.30"N, 122°39'59.09"W; thence to

(2724) 45°29'57.51"N, 122°39'59.64"W; thence to

(2725) 45°29'58.72"N, 122°39'59.64"W; thence to

(2726) 45°30'00.52"N, 122°39'59.94"W; thence to

(2727) 45°30'01.95"N, 122°40'00.46"W; thence to

(2728) 45°30'03.44"N, 122°40'00.78"W; thence to

(2729) 45°30'04.87"N, 122°40'00.95"W; thence to

(2730) 45°30'07.33"N, 122°40'01.80"W; thence to

(2731) 45°30'08.11"N, 122°40'02.69"W; thence to

(2732) 45°30'08.83"N, 122°40'03.81"W; thence to

(2733) 45°30'13.06"N, 122°40'05.39"W; thence to

(2734) 45°30'15.30"N, 122°40'06.93"W; thence to

(2735) 45°30'17.78"N, 122°40'08.16"W; thence to

(2736) 45°30'20.53"N, 122°40'09.07"W; thence to

(2737) 45°30'20.90"N, 122°40'11.52"W; thence to

(2738) 45°30'24.04"N, 122°40'12.53"W; thence to

(2739) 45°30'23.79"N, 122°40'14.87"W; thence continuing along the shoreline to

(2740) 45°29'55.12"N, 122°40'02.19"W;

(2741) Geographically the regulated navigation area covers all waters adjacent to the Zidell Waterfront Property on the Willamette River extending from the west bank of the river out 200 to 400 feet into the river depending on the exact location between approximate river mile 14.2 near the Ross Island Bridge and approximate river mile 13.5 near the Marquam Bridge.

(2742) (b) *Regulations*. All vessels are prohibited from anchoring, dragging, dredging, or trawling in the regulated navigation area established by this section. See **33 CFR** part **165**, subpart **B**, for additional information and requirements.

(2743)

§165.1338 Regulated Navigation Area; Slip 4 Early Action Area Superfund Site, Lower Duwamish Waterway, Seattle, WA.

(2744) (a) *Regulated Areas*. The following areas are regulated navigation areas: All waters within the northern portion of Slip 4 bounded by the shoreline and the southern boundary of the Early Action Area defined as the line beginning at a point on the shore at 47°32′08.47″N,

122°19′12.00″W; thence southeast to a point on the shoreline at 47°32′07.02″N, 122°19′09.23″W (Datum: NAD 1983/ 91).

(2745) (b) *Regulations*. (1) All vessels and persons are prohibited from grounding, anchoring, dragging, trawling, spudding, or otherwise contacting the riverbed within the designated regulated navigation area. Vessels may otherwise transit or navigate within this area in accordance with the Navigation Rules.

(2746) (2) The prohibition described in paragraph (b)(1) of this section does not apply to vessels or persons engaged in activities associated with remediation efforts in the superfund sites, provided that the Captain of the Port, Puget Sound (COTP), is given advance notice of those activities by the Environmental Protection Agency.

(2747) (3) The prohibition described in paragraph (b)(1) of this section does not apply to vessels or person engaged in fishing activities pursuant to fishing rights held by treaty with the United States.

(2748) (c) *Waivers*. Upon written request stating the need and proposed conditions of the waiver, and any proposed precautionary measures, the COTP may authorize a waiver from this section if the COTP determines that the activity for which the waiver is sought can take place without undue risk to the remediation efforts described in paragraph (b)(1) of this section. The COTP will consult with EPA in making this determination when necessary and practicable.

(2749)

§165.1339 Safety Zone; Coast Guard Exercise Area, Hood Canal, Washington.

(2750) (a) *Location*. The following area is a safety zone: All waters encompassed within 500 yards of any vessel that is involved in a Coast Guard training exercise while such vessel is transiting Hood Canal, WA between Foul Weather Bluff and the entrance to Dabob Bay. Vessels involved will be various sizes and can be identified as those flying the Coast Guard Ensign.

(2751) (b) *Regulations*. In accordance with the general regulations in **33 CFR** Part **165**, Subpart **C**, no person may enter or remain in the safety zone created in this rule unless authorized by the Captain of the Port or a Designated Representative. See **33 CFR** Part **165**, Subpart **C**, for additional information and requirements. Vessel operators wishing to enter the zone during the enforcement period must request permission for entry by contacting the on-scene patrol commander on VHF channel 13 or 16, or the Sector Puget Sound Joint Harbor Operations Center at 206–217–6001.

(2752) (c) *Definition*. Training exercises are defined as full scale exercises that are significant in nature and involve multiple units and vessels. This safety zone will not be utilized by operations and training which is conducted daily or is routine in nature.

(2753) (d) *Enforcement period*. The safety zone described in paragraph (a) of this section would be enforced by the Captain of the Port only upon notice. Notice of enforcement by the Captain of the Port will be provided 45 days prior to execution of the exercise by all appropriate means, in accordance with **33 CFR 165.7**(**a**). Such means will include publication in the **Federal Register**, and may also include Broadcast Notice to Mariners, Local Notice to Mariners, or both.

(2754)

§165.1340 Safety Zone; Vigor Industrial Drydock Movement, West Duwamish Waterway; Seattle, WA.

(2755) (a) *Location*. The following area is a safety zone: All waters of the West Duwamish Waterway in Seattle, WA encompassed within the area created by connecting the following points: 47°35′04″N., 122°21′30″W. thence westerly to 47°35′04″N., 122°21′50″W. thence northerly to 47°35′19″N., 122°21′50″W. thence easterly to 47°35′19″N., 122°21′30″W. thence southerly to 47°35′04″N., 122°21′30″W.

(2756) (b) *Regulations*. (1) In accordance with the general regulations in subpart C of this part, when a notice of enforcement has been issued, no person may enter or remain in the safety zone created by this section unless authorized by the Captain of the Port or a Designated Representative. See subpart C of this part for additional safety zone information and requirements. Vessel operators wishing to enter the zone during the enforcement period must request permission for entry by contacting the Joint Harbor Operation Center at 206–217–6001 or the Vessel Traffic Service Puget Sound on VHF channel 14.

(2757) (2) In order to reach an agreeable timeframe that avoids impacts to treaty fishing activities, the Coast Guard will communicate with the Muckleshoot Tribe and Vigor Industrial once it receives notification from Vigor Industrial concerning drydock movements that require the enforcement of the safety zone. If agreement is not reached, the Coast Guard, as a federal trustee, will conduct consultation with the Muckleshoot Tribe to ensure Vigor movements will avoid Treaty impacts.

(2758) (c) *Enforcement periods*. The safety zone described in paragraph (a) of this section will be enforced by the Captain of the Port only upon notice. Notice of enforcement by the Captain of the Port will be provided prior to execution of the drydock movement by all appropriate means, in accordance with §165.7(a). Such means will include issuance of a notice of enforcement to be published in the Federal Register, Local Notice to Mariners, and Special Marine Information Broadcast.

(2759)

§165.1341 Regulated Navigation Area; Lake Washington, Seattle, WA.

(2760) (a) *Location.* The following area is a regulated navigation area: All waters of Lake Washington south of the Interstate 90 Floating West Bound Bridge and north of the points between Bailey Peninsula at 47°33′14.4”N., 122°14′47.3”W. and Mercer Island at 47°33′24.5”N., 122°13′52.5”W.

(2761) (b) *Definitions.* As used in this section, designated representative means a Coast Guard Patrol Commander, including a Coast Guard coxswain, petty officer, or other officer operating a Coast Guard vessel and a Federal, State, and local officer designated by or assisting the Captain of the Port Puget Sound (COTP) in the enforcement of the regulated navigation zone.

(2762) (c) *Regulations.* All vessels and persons transiting the regulated navigation area described in paragraph (a) of this section must proceed at a speed which creates minimum wake, 7 miles per hour or less, unless a higher minimum speed is necessary to maintain bare steerageway.

(2763) (d) *Enforcement periods.* This section will be enforced annually immediately before and after Seafair events which usually occurs during the last week in July and the first two weeks of August. The event will be one week or less in duration and the specific dates and times of the enforcement periods will be published in a notice of enforcement in the **Federal Register**.

(2764) **§ 165.1343 Regulated navigation area; NW Natural PGM Site, Willamette River, Portland, OR.**

(2765) (a) *Location.* The following area is a regulated navigation area (RNA): All navigable waters of the Willamette River adjacent to the NW Natural Portland Gas Manufacturing (PGM) site, encompassed by a line connecting the following points beginning at 45°31′33.8″ N, 122°40′11.6″ W; thence to 45°31′33.9″ N, 122°40′11.2″ W; thence to 45°31′32.7″ N, 122°40′10.7″ W; thence to 45°31′32.9″ N, 122°40′09.4″ W; thence to 45°31′32.2″ N, 122°40′08.8″ W; thence to 45°31′32.2″ N, 122°40′07.9″ W; thence to 45°31′31.4″ N, 122°40′07.6″ W; thence to 45°31′30.9″ N, 122°40′10.7″ W; and along the shoreline back to the beginning point. These coordinates are based on North American Datum 83 (NAD 83). Geographically this location starts on the west bank of the Willamette River at approximately river mile 12.2, 100 yards south of the Steel Bridge.

(2766) (b) *Regulations*. In addition to the general RNA regulations in § 165.13, the following regulations apply to the RNA described in paragraph (a) of this section.

(2767) (1) Sediment disturbance activities including dredging, spudding, and vessel anchoring require advance consultation with the Oregon Department of Environmental Quality and obtain prior approval from the Coast Guard Captain of the Port Sector Columbia River (COTP) to prevent exposure of buried contamination and/ or damage to the remedial cap. Contact Oregon DEQ at 503–229–5245, or alternatively, call 811 prior to any sediment disturbance activity. Any work within 10 feet of the seawall is prohibited unless there is advance consultation and approval by the City of Portland, DEQ and the COTP. All vessels and persons are prohibited from anchoring, dredging, laying cable, dragging, seining, bottom fishing, conducting salvage operations, or any other activity which could potentially disturb the riverbed in the designated area. Vessels may otherwise transit or navigate within this area.

(2768) (2) The regulations described in paragraph (b)(1) of this section do not apply to vessels or persons engaged in activities associated with remediation efforts in the NW Natural PGM Site, provided that the COTP is given advance notice of those activities by Oregon DEQ.

(2769) (c) *Contact information*. If you observe violations of the regulations in this section, you may notify the COTP by email, at *D13-SMBMSUPortlandWWM@uscg.mil*.

(2770) **§165.1344 Regulated Navigation Area; Commencement Bay Nearshore/Tideflat Superfund Site, Commencement Bay, Tacoma, WA.**

(2771) (a) *Regulated Areas*. The following area is a regulated navigation area (RNA): All waters within Dune Park downward to the Point Ruston Historic Ferry dock on Commencement Bay, WA, encompassed by a line connecting the following points beginning at 47°18′12.0″N, 122°30′26.0″W onshore, thence 240 feet to position 47°18′13.0″N 122°30′22.0″W offshore, thence 2,900 feet to position 47°17′52.0″N, 122°29′53.0″W offshore, thence 500 feet to position 47°17′49.0″N 122°29′59.0″W onshore. These coordinates are based on World Geodetic System (WGS 84).

(2772) (b) *Regulations*. In addition to the general RNA regulations in §165.13, the following regulations apply to the RNA described in paragraph (a) of this section.

(2773) (1) Prohibited activities include those that would disturb the seabed, such as anchoring, dragging, trawling, spudding, or other activities that involve disrupting the integrity of the sediment caps installed in the designated regulated navigation area, pursuant to the remediation efforts of the U.S. Environmental Protection Agency (EPA) and other participants in the EPA Superfund Cleanup Site. Vessels may otherwise transit or navigate within this area without reservation.

(2774) (2) The prohibition described in this section does not apply to vessels or persons engaged in activities associated with remediation efforts in the Middle Waterway Superfund Sites, provided that the Captain of the Port (COTP) Puget Sound is given advance notice of those activities by the EPA.

(2775)

§ 165.1401 Apra Harbor, Guam - safety zones.

(2776) (a) *Location*. (1) The following is designated Safety Zone A: The waters of Apra Outer Harbor encompassed within an arc of 1,000 yards radius centered at the center of Naval Wharf Kilo, located at 13 degrees 26′44.5″ N and 144 degrees 37′50.7″ E. (Based on World Geodetic System 1984 Datum).

(2777) (2) The following is designated Safety Zone B: The waters of Apra Outer Harbor encompassed within an arc of 1,400 yards radius centered at the center of Naval Wharf Kilo, located at 13 degrees 26′44.5″ N and 144 degrees 37′50.7″ E. (Based on World Geodetic System 1984 Datum).

(2778) (b) *Special regulations*. (1) Safety Zone A, described in paragraph (a) of this section, will only be enforced when Naval Wharf Kilo, or a vessel berthed at Naval

Wharf Kilo, is displaying a red (BRAVO) flag by day or a red light by night, accompanied by a "SAFETY ZONE A" sign.

(2779) (2) Safety Zone B, described in paragraph (a) of this section, will only be enforced when Naval Wharf Kilo, or a vessel berthed at Naval Wharf Kilo, is displaying a red (BRAVO) flag by day or a red light by night, accompanied by a "SAFETY ZONE B" sign.

(2780) (3) Under general regulations in § 165.23, entry into the zones described in paragraph (a) of this section is prohibited unless authorized by the Captain of the Port, U.S. Coast Guard Forces Micronesia/Sector Guam.

(2781)

§ 165.1402 Safety Zone; Navy Underwater Detonation (UNDET) Exercises, GU.

(2782) (a) Location. The following areas, within the U.S. Coast Guard Micronesia/Sector Guam Captain of the Port (COTP) Zone (See 33 CFR 3.70–15), from the surface of the water to the ocean floor, are safety zones:

(2783) (1) *Apra Outer Harbor, Guam*. All waters above and below the surface bounded by a circle with a 700 yard radius centered at 13 degrees 27 minutes 42 seconds North Latitude and 144 degrees 38 minutes 30 seconds East Longitude, (NAD 1983).

(2784) (2) *Piti, Guam*. All waters above and below the surface bounded by a circle with a 700 yard radius centered at 13 degrees 29 minutes 03 seconds North Latitude and 144 degrees 40 minutes 03 seconds East Longitude, (NAD 1983).

(2785) (b) *Enforcement periods*. This section will be enforced for designated periods of time, many of which are of short duration, on days requested by the Navy for purpose of UNDET exercises.

(2786) (c) *Regulations*. The general regulations governing safety zones contained in § 165.23 apply. With the exception of exercise participants, no vessels may enter or transit safety zones in paragraph (a)(1) of this section and no persons in the water may enter or transit the safety zone in paragraph (a)(2) of this section unless authorized by the COTP or a designated representative thereof.

(2787) (d) *Enforcement*. Any Coast Guard commissioned, warrant, or petty officer, and any other COTP representative permitted by law, may enforce these safety zones.

(2788)

§165.1403 Security Zones; Tinian, Commonwealth of the Northern Mariana Islands.

(2789) (a) *Location*. The following areas are security zones:

(2790) (1) The waters of the Pacific Ocean off Tinian between

(2791) 14°59'04.9"N., 145°34'58.6"E to

(2792) 14°59'20.1"N., 145°35'41.5"E to

(2793) 14°59'09.8"N., 145°36'02.1"E to

(2794) 14°57'49.3"N., 145°36'28.7"E to

(2795) 14°57'29.1"N., 145°35'31.1"E and back to

(2796) 14°59'04.9"N., 145°34'58.6"E. This zone will be enforced when one, or more, of the Maritime Preposition Ships is in the zone or moored at Mooring A located at

(2797) 14°58'57.0"N., 145°35'40.8"E or Mooring B located at

(2798) 14°58'15.9"N., 145°35'54.8"E

(2799) (2) Additionally, a 50-yard security zone in all directions around Moorings A and B will be enforced when no vessels are moored thereto but mooring balls are anchored and on station.

(2800) **Note to §165.1403(a):** All positions of latitude and longitude are from International Spheroid, Astro Pier 1944 (Saipan) Datum (NOAA Chart 81071).

(2801) (b) *Regulations*. (1) In accordance with general regulations in §165.33 of this part, entry into this security zone is prohibited unless authorized by the Captain of the Port.

(2802)

§165.1404 Apra Harbor, Guam—Security Zone.

(2803) (a) The following is designated as Security Zone C–The waters of Apra Outer Harbor, Guam surrounding Naval Mooring Buoy No. 702 (Located at 13°27'30.1"N. and 144°38'12.9"E. Based on World Geodetic System 1984 Datum) and the Maritime Propositioning ships moored thereto. The security zone will extend 100 yards in all directions around the vessel and its mooring. Additionally, a 50 yard security zone will remain in effect in all directions around buoy No. 702 when no vessel is moored thereto.

(2804) (b) In accordance with the general regulations in §165.33 of this part, entry into Security Zone C is prohibited unless authorized by the Captain of the Port, U.S. Coast Guard Forces Micronesia/ Sector Guam.

(2805)

§165.1405 Regulated Navigation Areas and Security Zones: Designated Escorted Vessels–Philippine Sea and Apra Harbor Guam, and Tanapag Harbor, Saipan, Commonwealth of the Northern Mariana Islands (CNMI).

(2806) (a) *Regulated navigation area*. The following areas, designated by coordinates referencing World Geodetic Datum (1984), are regulated navigation areas (RNAs).

(2807) (1) *Philippine Sea, Guam*–All waters from the surface to the bottom of the Philippine Sea, Guam, encompassed by lines connecting the following points, beginning at

(2808) 13°27'10"N., 144°35'05"E., thence easterly to

(2809) 13°27'17"N., 144°37'27"E., thence south westerly to

(2810) 13°26'52"N., 144°37'05"E., thence westerly to

(2811) 13°26'37"N., 144°35'05"E., thence due north back to point of origin.

(2812) (2) *Apra Outer Harbor, Guam*–All waters from surface to bottom of Apra Outer Harbor, Guam, shoreward of the COLREGS Demarcation line as described in **33 CFR** part **80**.

(2813) (3) *Tanapag Harbor, Saipan*–The waters from surface to bottom of Tanapag Harbor, Saipan (CNMI), encompassed by lines connecting the following points, beginning at

(2814) 15°12'10"N., 145°40'28"E., thence north easterly to

(2815) 15°14'08"N., 145°42'00"E., thence due east to
(2816) 15°14'08"N., 145°44'02"E., thence south easterly to
(2817) 15°13'54"N., 144°44'20"E., thence south westerly along the shoreline to
(2818) 15°13'11"N., 145°43'01"E., thence south westerly to
(2819) 15°12'10"N., 145°40'28"E.

(2820) (b) *Security zones*. A 100-yard radius security zone is established around, and is centered on, each escorted vessel within the regulated navigation areas in paragraph (a) of this section. A security zone is activated when an escorted vessel enters an RNA and remains active until the escorted vessel leaves the RNA. This is a moving security zone when the escorted vessel is in transit and becomes a fixed zone when the escorted vessel is anchored or moored. A security zone will not extend beyond the boundary of the RNA in this section.

(2821) (c) *Definitions*. As used in this section:

(2822) (1) *Designated representative* means any Coast Guard commissioned, warrant, or petty officer that has been authorized to act on behalf of the COTP.

(2823) (2) *Escorted Vessel* means any vessel operating in the RNA deemed by the COTP to be in need of escort protection for security reasons or under other circumstances. A designated representative aboard a Coast Guard cutter or patrol boat will accompany vessels deemed in need of escort protection into the RNA.

(2824) (3) *Navigation rules* mean international and inland navigation rules in **33 CFR** chapter **I**, subchapters D and E.

(2825) (4) *Vessel* means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, except U.S. Coast Guard or U.S. naval vessels.

(2826) (d) *Regulations.* (1) No person or vessel may enter into the security zones under this section unless authorized by the COTP U.S. Coast Guard Micronesia/Sector Guam or a designated representative.

(2827) (2) A vessel in the RNA established under paragraph (a) of this section operating within 500 yards of an escorted vessel must proceed at a minimum speed necessary to maintain a safe course, unless required to maintain speed by the navigation rules.

(2828) (3) When an escorted vessel in the RNA approaches within 100 yards of a vessel that is moored, or anchored in a designated anchorage area, the stationary vessel must stay moored or anchored while it remains within the escorted vessel's security zone unless it is either ordered by, or given permission from the COTP U.S. Coast Guard Micronesia/Sector Guam or a designated representative to do otherwise.

(2829) (4) The COTP will inform the public of the existence or status of the security zones around escorted vessels in the RNA periodically by Broadcast Notice to Mariners.

(2830) (5) Persons or vessels that must enter a security zone or exceed speed limits established in this section may contact the COTP at command center telephone number (671) 339–6100 or on VHF channel 16 (156.8 Mhz) to request permission.

(2831) (6) All persons and vessels within 500 yards of an escorted vessel in the RNA must comply with the orders of the COTP U.S. Coast Guard Forces Micronesia/Sector Guam or his designated representatives.

(2832) (e) *Authority.* In addition to 46 U.S.C. 70034 and 46 U.S.C. 70051, the authority for this section includes 46 U.S.C. 70116.

(2833)

§165.1406 Safety Zone: Pacific Missile Range Facility (PMRF), Barking Sands, Island of Kauai, HI.

(2834) (a) *Location*. The following area is established as a safety zone during launch operations at PMRF, Kauai, Hawaii: The waters bounded by the following coordinates:
(2835) (22°01.2'N., 159°47.3'W.),
(2836) (22°01.2'N., 159°50.7'W.),
(2837) (22°06.3'N., 159°50.7'W.),
(2838) (22°06.3'N, 159°44.8'W.).

(2839) (b) *Activation*. The above safety zone will be activated during launch operations at PMRF, Kauai, Hawaii. The Coast Guard will provide notice that the safety zone will be activated through published and broadcast local notice to mariners prior to scheduled launch dates.

(2840) (c) *Regulation*. The area described in Paragraph (a) of this section will be closed to all vessels and persons, except those vessels and persons authorized by the Commander, Fourteenth Coast Guard District, or the Captain of the Port (COTP) Honolulu, Hawaii, whenever Strategic Target System (STARS) vehicles are to be launched by the United States Government from the PMRF, Barking Sands, Kauai, Hawaii.

(2841) (d) The general regulations governing safety zones contained in **33 CFR 165.23** apply.

(2842)

§165.1407 Security Zones; Oahu, HI.

(2843) (a) *Location*. The following areas, from the surface of the water to the ocean floor, are security zones that are activated and enforced subject to the provisions of paragraphs (c) and (d). All coordinates below are expressed in degrees, minutes, and tenths or hundredths of minutes.

(2844) (1) *Honolulu Harbor*. All waters of Honolulu Harbor and Honolulu entrance channel commencing at a line between Honolulu Harbor Entrance Channel Lighted Buoys 1 and 2, to a line between Kalihi Channel Lights 14 and 15 west of Sand Island Bridge.

(2845) (2) *Honolulu Harbor Anchorages B, C, and D*. All waters extending 100 yards in all directions from each vessel in excess of 300 gross tons anchored in Honolulu Harbor Anchorage B, C, or D, as defined in **33 CFR 110.235**(**a**).

(2846) (3) *Kalihi Channel and Keehi Lagoon, Oahu*. All waters of Kalihi Channel and Keehi Lagoon beginning at Kalihi Channel Entrance Lighted Buoy 1 and continuing along the general trend of Kalihi Channel to Light 13, thence continuing on a bearing of 332.5°T to shore, thence east and south along the general trend of the

shoreline to Light 15, thence southeast to Light 14, thence southeast along the general trend of the shoreline of Sand Island, to the southwest tip of Sand Island at 21°18.0'N., 157°53.05'W., thence southwest on a bearing of 233°T to Kalihi Channel Entrance Lighted Buoy 1.

(2847) (4) *Honolulu International Airport*— (i) *Honolulu International Airport, North Section*. All waters surrounding Honolulu International Airport from 21°18.25'N., 157°55.58'W., thence south to 21°18.0'N., 157°55.58'W., thence east to the western edge of Kalihi Channel, thence north along the western edge of the channel to Light 13, thence northwest at a bearing of 332.5°T to shore.

(2848) (ii) *Honolulu International Airport, South Section*. All waters near Honolulu International Airport from

(2849) 21°18.0'N.; 157°55.58'W., thence south to

(2850) 21°16.5'N.; 157°55.58'W., thence east to

(2851) 21°16.5'N.; 157°54.0'W. (the extension of the western edge of Kalihi Channel), thence north along the western edge of the channel to Kalihi Channel buoy "5", thence west to

(2852) 21°18.0'N.; 157°55.58'W.

(2853) (5) *Barbers Point Offshore Moorings*. All waters around the Tesoro Single Point and the Chevron Conventional Buoy Moorings beginning at

(2854) 21°16.43'N.; 158°06.03'W., thence northeast to

(2855) 21°17.35'N.; 158°3.95'W., thence southeast to

(2856) 21°16.47'N.; 158°03.5'W., thence southwest to

(2857) 21°15.53'N.; 158°05.56'W., thence north to the beginning point.

(2858) (6) *Barbers Point Harbor, Oahu*. All waters contained within the Barbers Point Harbor, Oahu, enclosed by a line drawn between Harbor Entrance Channel Light 6 and the jetty point daybeacon at 21°19.5'N.; 158°07.26'W.

(2859) (7) *Kahe Point, Oahu*. All waters adjacent to the Hawaiian Electric Company power plant at Kahe Point within 500 yards of 21°21.30'N., 158°07.7'W. (lighted tower)

(2860) (b) *Definitions*. As used in this section, MARSEC Level 2 or Maritime Security Level 2 means, as defined in **33 CFR 101.105**, the level for which appropriate additional protective security measures shall be maintained for a period of time as a result of heightened risk of a transportation security incident.

(2861) (c) *Regulations*. (1) Under **33 CFR 165.33**, entry into the security zones described in this section is prohibited unless authorized by the Coast Guard Captain of the Port, Honolulu or his or her designated representatives.

(2862) (2) Persons desiring to transit the areas of the security zones may contact the Captain of the Port at Command Center telephone number (808) 842–2600 and (808) 842–2601, fax (808) 842–2624 or on VHF channel 16 (156.8 MHz) to seek permission to transit the area. Written requests may be submitted to the Captain of Port, U.S. Coast Guard Sector Honolulu, Sand Island Access Road, Honolulu, HI 96819, or faxed to (808) 842–2622. If permission is granted, all persons and vessels must comply with the instructions of the Captain of the Port or his or her designated representatives. For all seaplane traffic entering or transiting the security zones, a seaplane's compliance with all Federal Aviation Administration regulations (**14 CFR** parts **91** and **99**) regarding flight-plan approval is deemed adequate permission to transit the waterway security zones described in this section.

(2863) (d) *Notice of enforcement or suspension of enforcement of security zones*.

(2864) (1) The security zones described in paragraphs (a)(3) (Kalihi Channel and Keehi Lagoon, Oahu), (a)(4)(i) (Honolulu International Airport, North Section), (a)(4)(ii) (Honolulu International Airport, South Section), (a)(6) (Barbers Point Harbor, Oahu), and (a)(7) (Kahe Point, Oahu) of this section, will be enforced only upon the occurrence of one of the following events–

(2865) (i) Whenever the Maritime Security (MARSEC) level, as defined in **33 CFR** part **101**, is raised to 2 or higher; or

(2866) (ii) Whenever the Captain of the Port, after considering all available facts, determines that there is a heightened risk of a transportation security incident or other serious maritime incident, including but not limited to any incident that may cause a significant loss of life, environmental damage, transportation system disruption, or economic disruption in a particular area.

(2867) (2) A notice will be published in the **Federal Register** reporting when events in paragraph (d)(1)(i) or (d)(1)(ii) have occurred.

(2868) (3) The Captain of the Port of Honolulu will cause notice of the enforcement of the security zones listed in paragraph (d)(1) of this section and notice of suspension of enforcement to be made by appropriate means to affect the widest publicity, including the use of broadcast notice to mariners and publication in the local notice to mariners.

(2869) (e) *Informational notices*. The Captain of the Port will cause notice of the presence of the security zones established in paragraph (a)(2) of this section, Honolulu Harbor Anchorages B, C, and D, to be made by appropriate means to affect the widest publicity, including the use of broadcast notice to mariners and publication in the local notice to mariners.

(2870) (f) *Enforcement.* Any Coast Guard commissioned, warrant, or petty officer, and any other Captain of the Port representative permitted by law, may enforce the rules in this section.

(2871) (g) *Waiver*. The Captain of the Port, Honolulu may waive any of the requirements of this section for any vessel or class of vessels upon his or her determination that application of this section is unnecessary or impractical for the purpose of port and maritime security.

(2872) (h) *Penalties*. Vessels or persons violating this section are subject to the penalties set forth in 33 U.S.C. 1232 and 50 U.S.C. 192.

(2873)

§165.1408 Security Zones; Maui, HI.

(2874) (a) *Location*. The following areas, from the surface of the water to the ocean floor, are security zones that

are activated and enforced subject to the provisions in paragraph (c):

(2875) (1) *Kahului Harbor, Maui*. All waters extending 100 yards in all directions from each large passenger vessel in Kahului Harbor, Maui, HI or within 3 nautical miles seaward of the Kahului Harbor COLREGS DEMARCATION (See **33 CFR 80.1460**). This is a moving security zone when the LPV is in transit and becomes a fixed zone when the LPV is anchored, position-keeping, or moored.

(2876) (2) *Lahaina, Maui*. All waters extending 100 yards in all directions from each large passenger vessel in Lahaina, Maui, whenever the LPV is within 3 nautical miles of Lahaina Light (LLNR 28460). The security zone around each LPV is activated and enforced whether the LPV is underway, moored, position-keeping, or anchored, and will continue in effect until such time as the LPV departs Lahaina and the 3-mile enforcement area.

(2877) (b) *Definitions*. As used in this section, *large passenger vessel* or *LPV* means a cruise ship more than 300 feet in length that carries passengers for hire, and any passenger ferry more than 300 feet in length that carries passengers for hire.

(2878) (c) *Regulations*. (1) Under **33 CFR 165.33**, entry into the security zones created by this section is prohibited unless authorized by the Coast Guard Captain of the Port, Honolulu or his or her designated representatives. When authorized passage through a large passenger vessel security zone, all vessels must operate at the minimum speed necessary to maintain a safe course and must proceed as directed by the Captain of the Port or his or her designated representatives. No person is allowed within 100 yards of an LPV that is underway, moored, position-keeping, or at anchor, unless authorized by the Captain of the Port or his or her designated representative.

(2879) (2) When conditions permit, the Captain of the Port, or his or her designated representative, may permit vessels that are at anchor, restricted in their ability to maneuver, or constrained by draft to remain within an LPV security zone in order to ensure navigational safety.

(2880) (3) Persons desiring to transit the areas of the security zones in this section may contact the Captain of the Port at Command Center telephone number (808) 842-2600 or on VHF channel 16 (156.8 MHz) to seek permission to transit the area. Written requests may be submitted to the Captain of Port, U.S. Coast Guard Sector Honolulu, Sand Island Access Road, Honolulu, HI 96819, or faxed to (808) 842–2622. If permission is granted, all persons and vessels must comply with the instructions of the Captain of the Port or his or her designated representatives. For all seaplane traffic entering or transiting the security zones, compliance with all Federal Aviation Administration regulations (**14 CFR** parts **91** and **99**) regarding flight-plan approval is deemed adequate permission to transit the waterway security zones described in this section.

(2881) (d) *Enforcement*. Any Coast Guard commissioned, warrant, or petty officer, and any other Captain of the Port representative permitted by law, may enforce the rules in this section.

(2882) (e) *Waiver*. The Captain of the Port, Honolulu may waive any of the requirements of this section for any vessel or class of vessels upon his or her determination that application of this section is unnecessary or impractical for the purpose of port and maritime security.

(2883) (f) *Penalties*. Vessels or persons violating this section are subject to the penalties set forth in 46 U.S.C. 70036 and 46 U.S.C. 70052.

(2884)

§165.1409 Security Zones; Hawaii, HI.

(2885) (a) *Location*. The following areas, from the surface of the water to the ocean floor, are security zones that are activated and enforced subject to the provisions in paragraph (c);

(2886) (1) *Hilo Harbor, Hawaii*. All waters extending 100 yards in all directions from each large passenger vessel in Hilo Harbor, Hawaii, HI or within 3 nautical miles seaward of the Hilo Harbor COLREGS DEMARCATION (See **33 CFR 80.1480**). This is a moving security zone when the LPV is in transit and becomes a fixed zone when the LPV is anchored, position-keeping, or moored.

(2887) (2) *Kailua-Kona, Hawaii*. All waters extending 100 yards in all directions from each large passenger vessel in Kailua-Kona, Hawaii, whenever the LPV is within 3 nautical miles of Kukailimoku point. The 100-yard security zone around each LPV is activated and enforced whether the LPV is underway, moored, position-keeping, or anchored and will continue in effect until such time as the LPV departs Kailua-Kona and the 3-mile enforcement area.

(2888) (3) *Kawaihae Harbor, Hawaii*. All waters extending 100 yards in all directions from each large passenger vessel in Kawaihae Harbor, Hawaii, or within 3 nautical miles seaward of the Kawaihae Harbor COLREGS DEMARCATION (See **33 CFR 80.1470**). The 100-yard security zone around each LPV is activated and enforced whether the LPV is underway, moored, position-keeping, or anchored.

(2889) (b) *Definitions.* As used in this section, large passenger vessel or LPV means a cruise ship more than 300 feet in length that carries passengers for hire, and any passenger ferry more than 300 feet in length that carries passengers for hire.

(2890) (c) *Regulations*. (1) Under **33 CFR 165.33**, entry into the security zones created by this section is prohibited unless authorized by the Coast Guard Captain of the Port, Honolulu or his or her designated representative. When authorized passage through a large passenger vessel security zone, all vessels must operate at the minimum speed necessary to maintain a safe course and must proceed as directed by the Captain of the Port or his or her designated representatives. No person is allowed within 100 yards of a large passenger vessel that is underway, moored, position-keeping, or at anchor, unless authorized

by the Captain of the Port or his or her designated representatives.

(2891) (2) When conditions permit, the Captain of the Port, or his or her designated representatives, may permit vessels that are at anchor, restricted in their ability to maneuver, or constrained by draft to remain within an LPV security zone in order to ensure navigational safety.

(2892) (3) Persons desiring to transit the areas of the security zones in this section may contact the Captain of the Port at Command Center telephone number (808) 842–2600 or on VHF channel 16 (156.8 MHz) to seek permission to transit the area. Written requests may be submitted to the Captain of Port, U.S. Coast Guard Sector Honolulu, Sand Island Access Road, Honolulu, HI 96819, or faxed to (808) 842–2622. If permission is granted, all persons and vessels must comply with the instructions of the Captain of the Port or his or her designated representatives. For all seaplane traffic entering or transiting the security zones, compliance with all Federal Aviation Administration regulations (**14 CFR** parts **91** and **99**) regarding flight-plan approval is deemed adequate permission to transit the waterway security zones described in this section.

(2893) (d) *Enforcement*. Any Coast Guard commissioned, warrant, or petty officer, and any other Captain of the Port representative permitted by law, may enforce the rules in this section.

(2894) (e) *Waiver.* The Captain of the Port, Honolulu may waive any of the requirements of this section for any vessel or class of vessels upon his or her determination that application of this section is unnecessary or impractical for the purpose of port and maritime security.

(2895) (f) *Penalties*. Vessels or persons violating this section are subject to the penalties set forth in 33 U.S.C. 1232 and 50 U.S.C. 192.

(2896)

§165.1410 Security Zones; Kauai, HI.

(2897) (a) *Location*. The following areas, from the surface of the water to the ocean floor, are security zones that are activated and enforced subject to the provisions in paragraph (c);

(2898) (1) *Nawiliwili Harbor, Lihue, Kauai*. All waters extending 100 yards in all directions from each large passenger vessel in Nawiliwili Harbor, Kauai, HI or within 3 nautical miles seaward of the Nawiliwili Harbor COLREGS DEMARCATION (See **33 CFR 80.1480**). This is a moving security zone when the LPV is in transit and becomes a fixed zone when the LPV is anchored, position-keeping, or moored.

(2899) (2) *Port Allen, Kauai*. All waters extending 100 yards in all directions from each large passenger vessel in Port Allen, Kauai, HI or within 3 nautical miles seaward of the Port Allen COLREGS DEMARCATION (See **33 CFR 80.1440**). This is a moving security zone when the LPV is in transit and becomes a fixed zone when the LPV is anchored, position-keeping, or moored.

(2900) (b) *Definitions.* As used in this section, large passenger vessel or LPV means a cruise ship more than 300 feet in length that carries passengers for hire, and any passenger ferry more than 300 feet in length that carries passengers for hire.

(2901) (c) *Regulations*. (1) Under **33 CFR 165.33**, entry into the security zones created by this section is prohibited unless authorized by the Coast Guard Captain of the Port, Honolulu or his or her designated representative. When authorized passage through an LPV security zone, all vessels must operate at the minimum speed necessary to maintain a safe course and must proceed as directed by the Captain of the Port or his or her designated representative. No person is allowed within 100 yards of a large passenger vessel that is underway, moored, position-keeping, or at anchor, unless authorized by the Captain of the Port or his or her designated representative.

(2902) (2) When conditions permit, the Captain of the Port, or his or her designated representative, may permit vessels that are at anchor, restricted in their ability to maneuver, or constrained by draft to remain within an LPV security zone in order to ensure navigational safety.

(2903) (3) Persons desiring to transit the areas of the security zones may contact the Captain of the Port at Command Center telephone number (808) 842–2600 or on VHF channel 16 (156.8 MHz) to seek permission to transit the area. Written requests may be submitted to the Captain of Port, U.S. Coast Guard Sector Honolulu, Sand Island Access Road, Honolulu, HI 96819, or faxed to (808) 842–2622. If permission is granted, all persons and vessels must comply with the instructions of the Captain of the Port or his or her designated representatives. For all seaplane traffic entering or transiting the security zones, compliance with all Federal Aviation Administration regulations (**14 CFR** parts **91** and **99**) regarding flight-plan approval is deemed adequate permission to transit the waterway security zones described in this section.

(2904) (d) *Enforcement.* Any Coast Guard commissioned, warrant, or petty officer, and any other Captain of the Port representative permitted by law, may enforce the rules in this section.

(2905) (e) *Waiver.* The Captain of the Port, Honolulu may waive any of the requirements of this section for any vessel or class of vessels upon his or her determination that application of this section is unnecessary or impractical for the purpose of port and maritime security.

(2906) (f) *Penalties*. Vessels or persons violating this section are subject to the penalties set forth in 33 U.S.C. 1232 and 50 U.S.C. 192.

(2907)

§165.1411 Security zone; waters surrounding U.S. Forces vessel SBX-1, Hawaii.

(2908) (a) *Location*. The following area, in U.S. navigable waters within the Honolulu Captain of the Port Zone (see **33 CFR 3.70–10**), from the surface of the water to the ocean floor, is a security zone: All waters extending 500 yards in all directions from U.S. Forces vessel SBX–1. The security zone moves with the SBX–1 while it is in

transit and becomes fixed when the SBX–1 is anchored, position-keeping, or moored.

(2909) (b) *Regulations*. The general regulations governing security zones contained in **33 CFR 165.33** apply. Entry into, transit through, or anchoring within this zone while it is activated, and thus subject to enforcement, is prohibited unless authorized by the Captain of the Port or a designated representative thereof.

(2910) (c) *Suspension of enforcement*. The Coast Guard will suspend enforcement of the security zone described in this section whenever the SBX–1 is within the Honolulu Defensive Sea Area (see 6 FR 6675).

(2911) (d) *Information notice*. The Captain of the Port of Honolulu will cause notice of the enforcement of the security zone described in this section to be made by broadcast notice to mariners. The SBX–1 is easy to recognize because it contains a large white object shaped like an egg supported by a platform that is larger than a football field. The platform in turn is supported by six pillars similar to those on large oil-drilling platforms.

(2912) (e) *Authority to enforce*. Any Coast Guard commissioned, warrant, or petty officer, and any other Captain of the Port representative permitted by law, may enforce the security zone described in this section.

(2913) (f) *Waiver*. The Captain of the Port may waive any of the requirements of this rule for any person, vessel, or class of vessel upon finding that application of the security zone is unnecessary or impractical for the purpose of maritime security.

(2914) (g) *Penalties*. Vessels or persons violating this rule are subject to the penalties set forth in 33 U.S.C. 1232 and 50 U.S.C. 192.

(2915)

§165.1412 Security Zone; Escorted U.S. Navy Submarines in Sector Honolulu Captain of the Port Zone.

(2916) (a) *Location*. The following area is a security zone: all waters, from the surface to the ocean floor, within 1,000 yards of any U.S. Navy submarine that is (1) operating in the Sector Honolulu Captain of the Port Zone, as defined in **33 CFR 3.70-10**, and that (2) is being escorted by the U.S. Coast Guard.

(2917) (b) *Regulations*. In accordance with the general regulations in **33 CFR 165**, Subpart **D**, no person or vessel may enter or remain in the security zone created by paragraph (a) of this section unless authorized by the Coast Guard patrol commander. The Coast Guard patrol commander may be contacted via VHF Channel 16 or other means reasonably available. **33 CFR** part **165.30** and **165.33** contain additional provisions applicable to the security zone created in paragraph (a) of this section.

(2918) (c) *Effective period*. This rule is effective from 6:00 a.m. on June 12, 2010 Hawaiian Standard Time (HST).

(2919) (d) *Notification*. The Coast Guard security escort will attempt, when necessary and practicable, to notify any persons or vessels inside or in the vicinity of the security one created in paragraph (a) of this section of the zone's existence via VHF Channel 16 or other means reasonably available.

(2920) (e) *Penalties*. Vessels or persons violating this rule are subject to the penalties set forth in 33 U.S.C. 1232 and 50 U.S.C. 192.

(2921)

§165.1413 Regulated navigation area; Southern Oahu Tsunami Evacuation; Honolulu, Hawaii.

(2922) (a) *Location*. The following area is a regulated navigation area (RNA): All waters of the Pacific Ocean south of the southern side of Oahu, HI extending from the surface of the water to the ocean floor, and is bound by a line connecting the following points: 21°17′14″N, 157°55′34″W; 21°13′30″N, 157°55′34″W; 21°13′30″N, 157°48′20″W; 21°14′14″N, 157°48′20″W thence westward along the 50-fathom line to the beginning point. These coordinates are based upon the National Oceanic and Atmospheric Administration Coast Survey, Pacific Ocean, Oahu, Hawaii, chart 19357.

(2923) (b) *Regulations*. You may contact the Coast Guard on VHF Channel 16 (156.800 MHz) or at telephone number 808–842–2600, to obtain clarification on RNA transits and locations. Operations permitting, the Coast Guard plans to provide on-scene direction using Coast Guard patrol boats and assets. During the enforcement period persons and vessels wishing to remain inside the RNA must abide by the following stipulations:

(2924) (1) No person or vessel may enter into an exclusionary area 3.7 nautical miles long by 1 nautical mile wide, centered lengthwise and along a line running seaward at 208 degrees southwest of Honolulu Harbor Front Range Light, except to transit to or from the staging areas or other areas outside the zone. Loitering or lingering in the exclusionary zone is prohibited.

(2925) (2) The Western Recreational Vessel Staging area is bound by the following points: 21°17′14″N, 157°55′34″W; 21°13′30″N, 157°55′34″W; 21°13′30″N, 157°55′17″W; 21°16′46″N, 157°53′23″W and then along the 50-fathom line to the beginning point. This staging area is intended for recreational vessels departing from and returning to the Keehi Lagoon area.

(2926) (3) The Commercial Vessel Staging Area is bound by a line connecting the following points: 21°16′48″N, 157°52′10″W; 21°13′30″N, 157°54′05″W; 21°13′30″N, 157°51′36″W; 21°15′55″N, 157°50′58″W and then along the 50-fathom line to the beginning point. This staging area is intended for use by all commercial vessels intended to remain in the RNA during a tsunami treat.

(2927) (4) The Eastern Recreational Vessel Staging Area is bound by the following points: 21°15′55″N, 157°50′58″W; 21°13′30″N, 157°51′36″W; 21°13′30″N, 157°48′20″W; 21°14′14″N, 157°48′20″ W and then along the 50-fathom line to the beginning point. The Commercial Vessel Staging Area borders this staging area's western edge. The dividing line between the Commercial Vessel Staging Area and the Eastern Recreational Vessel Staging Area can be determined visually. The private dayboards

located in the Ala Wai Small Boat Harbor and the La Ronde Rotating Restaurant roof top restaurant form a natural range that mariners can use in daylight hours to gauge the eastern boundary of the Commercial Vessel Staging Area and the western boundary of the Eastern Recreational Vessel Staging Area. This eastern recreational staging area is intended for use by recreational vessels departing from and returning to the Ala Wai Small Boat harbor and Kewalo Basin.

(2928) (5) Located between the Western Recreational Vessel Staging Area and the Commercial Vessel Staging Area is an Exclusion Area. This area is bound by the following points: 21°16′46″N, 157°53′23″W; 21°13′30″N, 157°55′17″W; 21°13′30″N, 157°54′05″W; 21°16′48″N, 157°52′10″W and then along the 50-fathom line to the beginning point.

(2929) (6) All vessels staging in the RNA must be seaward of the 50-fathom (300 foot) line.

(2930) (c) *Enforcement period*. Paragraph (b) of this section will be enforced when a tsunami warning has been issued for the Hawaiian Islands by the Pacific Tsunami Warning Center. The COTP will notify the public of any enforcement, suspension of enforcement, or termination of enforcement through appropriate means to ensure the widest publicity, including the use of broadcast notice to mariners, notices of enforcement and press releases.

(2931) (d) *Penalties*. Vessels or persons violating this rule are subject to the penalties set forth in 33 U.S.C. 1232.

(2932)

§165.1415 Safety Zone; Pacific Ocean, Kilauea Lava Flow Ocean Entry on Southeast Side of Island of Hawaii, HI.

(2933) (a) *Location*. The safety zone area is located within the Captain of the Port (COTP) Honolulu Zone (See **33 CFR 3.70–10**) and encompasses all primary areas from the surface of the water to the ocean floor at the Kilauea active lava flow entry into the Pacific Ocean on the southeast side of the Island of Hawaii, HI. The entry point of the lava may change based on flow. The safety zone encompasses all waters extending 300 meters (984 feet) in all directions around entry points of lava flow into the ocean associated with the Kilauea active lava flow.

(2934) (b) *Definitions*. As used in this section, designated representative means any Coast Guard commissioned, warrant, or petty officer who has been authorized by the COTP Honolulu to assist in enforcing the safety zone described in paragraph (a) of this section.

(2935) (c) *Regulations*. The general regulations governing safety zones contained in § 165.23 apply to this safety zone.

(2936) (1) All persons and vessels are required to comply with the general regulations governing safety zones found in this part.

(2937) (2) Entry into or remaining in this safety zone when enforced is prohibited unless authorized by the COTP Honolulu, or his designated representative.

(2938) (3) Persons or vessels desiring to enter the safety zone identified in paragraph (a) of this section should submit a written request to the COTP Honolulu before initial entry into the safety zone when the Coast Guard notifies the public of safety zone enforcement. The request must explain how the vessel will operate safely in proximity to lava. A typical request should note the vessel's condition, the operator's familiarity with the surrounding waters, and any specific safety practices for operating near the lava ocean-entry points. Persons authorized initial entry may, thereafter, contact the COTP Honolulu through his designated representatives at the Command Center via telephone: 808–842–2600 and 808–842–2601; fax: 808–842–2642; or on VHF channel 16 (156.8 Mhz) to request permission to transit the safety zone.

(2939) (4) If permission is granted, all persons and vessels must comply with the instructions of the COTP Honolulu, or his designated representative, and proceed at the minimum speed necessary to maintain a safe course while transiting through or in the safety zone as well as maintain a safe distance from the lava hazards.

(2940) (5) The COTP Honolulu will provide notice of enforcement of the safety zone described in this section by verbal radio broadcasts and written notice to mariners. The Coast Guard vessels enforcing this section can be contacted on marine band radio VHF–FM channel 16 (156.8 MHZ). The COTP Honolulu and his or her designated representatives can be contacted at telephone number listed in paragraph (c)(3) of this section.

(2941) (6) The Coast Guard may be assisted in the patrol and enforcement of the safety zone by Federal, State, and local agencies.

(2942) **§165.1416 Safety Zone; Tarague Basin; Anderson AFB, GU.**

(2943) (a) *Location.* The following area, within the U.S. Coast Guard Forces Micronesia/Sector Guam Captain of the Port (COTP) Zone (See 33 CFR 3.70-15), from the surface of the water to the ocean floor, is a safety zone: A 1-mile radius centered on 13°35'59" N., 144°55'38" E. (NAD 1983) including the water arc between points 13°36'00" N., 144°56'32" E. and 13°36'12" N., 144°54'48" E. (NAD 1983).

(2944) (b) *Enforcement period*. This section will be enforced only during U.S. Air Force explosive ordnance disposal operations and only when an orange range flag is hoisted 1250 feet west of the Demo Pit at 13°35'59.7" N., and 144°55'27.4" E. In case of an emergency, an explosive ordnance disposal after daylight hours may occur in which case the orange range flag will be illuminated.

(2945) (c) *Regulations*. The general regulations governing safety zones contained in 33 CFR 165.23 apply to the zone described in paragraph (a) of this section. Entry into, transit through or within this zone is prohibited unless authorized by the COTP or a designated representative thereof.

(2946) (d) *Enforcement*. Any Coast Guard commissioned, warrant, or petty officer, and any other COTP representative permitted by law, may enforce this safety zone.

(2947) (e) *Waiver.* The COTP may waive any of the requirements of this rule for any person, vessel, or class of vessel upon finding that application of the safety zone is unnecessary or impractical for the purpose of maritime security.

(2948) (f) *Penalties*. Vessels or persons violating this rule are subject to the penalties set forth in 46 U.S.C. 70036 and 46 U.S.C. 70052.

(2949)

165.1417 Safety Zone; Tanapag Harbor, Saipan, CNMI.

(2950) (a) *Location.* The following area, within the U.S. Coast Guard Forces Micronesia/Sector Guam Captain of the Port (COTP) Zone (See 33 CFR 3.70–15), all navigable waters within a 100-yard radius of race participants for Escape for Managaha Swim in Tanapag Harbor, Saipan. Race participants, chase boats, and organizers of the event will be exempt from the safety zone.

(2951) (a) *Definitions.* As used in this section, designated representative means a Coast Guard Patrol Commander, including a Coast Guard coxswain, petty officer, or other officer operating a Coast Guard vessel and a Federal, State, and local officer designated by or assisting the Captain of the Port (COTP) U.S. Coast Guard Micronesia/Sector Guam in the enforcement of the safety zone.

(2952) (c) *Regulations*. (1) In accordance with the general regulations in section § 165.23, entry into, transiting, or anchoring within this safety zone is prohibited unless authorized by the COTP or a designated on-scene representative.

(2953) (2) This safety zone is closed to all persons and vessel traffic, except as may be permitted by the COTP or a designated on-scene representative.

(2954) (3) The ''on-scene representative'' of the COTP is any Coast Guard commissioned, warrant, or petty officer who has been designated by the COTP to act on his or her behalf.

(2955) (4) Persons and Vessel operators desiring to enter or operate within the safety zone must contact the COTP or an on-scene representative to obtain permission to do so. The COTP or an on-scene representative may be contacted via VHF Channel 16. Vessel operators given permission to enter or operate in the safety zone must comply with all directions given to them by the COTP or an on-scene representative.

(2956) (d) *Enforcement period*. This safety zone will be enforced at a specified date between February and April. The Coast Guard will provide advance notice of enforcement and a broadcast notice to mariners to inform public of specific date.

(2957)

§ 165.1418 Safety Zone; Cocos Lagoon, Merizo, GU.

(2958) (a) *Location.* The following area, within the U.S. Coast Guard Forces Micronesia/Sector Guam Captain of the Port (COTP) Zone (See 33 CFR 3.70– 15), all navigable waters within a 100-yard radius of race participants in Cocos Lagoon, Merizo, Guam. Race participants, chase boats, and organizers of the event will be exempt from the safety zone.

(2959) (a) *Definitions.* As used in this section, ''designated on-scene representative'' means a Coast Guard Patrol Commander, including a Coast Guard coxswain, petty officer, or other officer operating a Coast Guard vessel, and a Federal, State, and local officer either designated by or assisting the COTP U.S. Coast Guard Forces Micronesia/Sector Guam in the enforcement of the safety zone.

(2960) (c) *Regulations*. (1) In accordance with the general regulations in section §165.23, entry into, transiting, or anchoring within this safety zone is prohibited unless authorized by the COTP or a designated on-scene representative.

(2961) (2) This safety zone is closed to all persons and vessel traffic, except as may be permitted by the COTP or a designated on-scene representative.

(2962) (3) Persons and Vessel operators desiring to enter or operate within the safety zone must contact the COTP or a designated on-scene representative to obtain permission to do so. The COTP or a designated on-scene representative may be contacted via VHF Channel 16 or at telephone number (671) 355–4821. Vessel operators given permission to enter or operate in the safety zone must comply with all directions given to them by the COTP or a designated onscene representative.

(2963) (d) *Enforcement period*. This safety zone will be enforced on the Sunday before Memorial Day from 6:00 a.m. to 1:00 p.m. annually, unless the event is delayed or cancelled due to weather. The Coast Guard will provide advance notice of enforcement and a broadcast notice to mariners to inform the public of the specific date of the event.

(2964) **§ 165.1419 Safety Zone; Apra Outer Harbor, Naval Base Guam**.

(2965) (a) *Location.* The following areas, within the Captain of the Port U.S. Coast Guard Forces Micronesia/ Sector Guam (COTP) Zone (See 33 CFR 3.70–15), all navigable waters on the surface and below the surface within 190 yards of the fireworks barge for Independence Day celebrations at Polaris Point, Naval Base Guam. The barge will be anchored approximately 500 yards off the north tip of Polaris Point in Apra Outer Harbor.

(2966) (b) *Definition.* As used in this section, ''designated on-scene representative'' means a Coast Guard Patrol Commander, including a Coast Guard coxswain, petty officer, or other officer operating a Coast Guard vessel, and a Federal, State, and local officer either designated by or assisting the COTP U.S. Coast Guard Forces Micronesia/Sector Guam in the enforcement of the safety zone.

(2967) (c) *Regulations*. (1) In accordance with the general regulations in section § 165.23, entry into, transiting, or anchoring within this safety zone is prohibited unless authorized by the COTP or a designated on-scene representative.

(2968) (2) This safety zone is closed to all persons and vessel traffic, except as may be permit

(2969) (3) Persons and Vessel operators desiring to enter or operate within the safety zone must contact the COTP or a designated on-scene representative to obtain permission to do so. The COTP or a designated on-scene representative may be contacted via VHF Channel 16 or at telephone number (671) 355–4821. Vessel operators given permission to enter or operate in the safety zone must comply with all directions given to them by the COTP or a designated onscene representative.

(2970) (d) *Enforcement period*. This safety zone will be enforced on a specific date during the first week of July from 6 p.m. to 9 p.m. annually, unless the event is delayed or cancelled due to weather. The Coast Guard will provide advance notice of enforcement and a broadcast notice to mariners to inform public of specific date during the first week in July.

(2971)

Subpart G–Protection of Naval Vessels

(2972)

§165.2010 Purpose.

(2973) This subpart establishes the geographic parameters of naval vessel protection zones surrounding U.S. naval vessels in the navigable waters of the United States. This subpart also establishes when the U.S. Navy will take enforcement action in accordance with the statutory guideline of 14 U.S.C. 91. Nothing in the rules and regulations contained in this subpart shall relieve any vessel, including U.S. naval vessels, from the observance of the Navigation Rules. The rules and regulations contained in this subpart supplement, but do not replace or supercede, any other regulation pertaining to the safety or security of U.S. naval vessels.

(2974)

§165.2015 Definitions.

(2975) The following definitions apply to this subpart:

(2976) *Atlantic Area* means that area described in **33 CFR 3.04–1** Atlantic Area.

(2977) *Large U.S. naval vessel* means any U.S. naval vessel greater than 100 feet in length overall.

(2978) *Naval defensive sea area* means those areas described in **32 CFR** part **761**.

(2979) *Naval vessel protection zone* is a 500-yard regulated area of water surrounding large U.S. naval vessels that is necessary to provide for the safety or security of these U.S. naval vessels.

(2980) *Navigable waters of the United States* means those waters defined as such in **33 CFR** part **2**.

(2981) *Navigation rules* means the Navigation Rules, International-Inland.

(2982) *Official patrol* means those personnel designated and supervised by a senior naval officer present in command and tasked to monitor a naval vessel protection zone, permit entry into the zone, give legally enforceable orders to persons or vessels within the zone, and take other actions authorized by the U.S. Navy.

(2983) *Pacific Area* means that area described in **33 CFR 3.04–3** Pacific Area.

(2984) *Restricted area* means those areas established by the Army Corps of Engineers and set out in **33 CFR** part **334**.

(2985) *Senior naval officer present in command is*, unless otherwise designated by competent authority, the senior line officer of the U.S. Navy on active duty, eligible for command at sea, who is present and in command of any part of the Department of Navy in the area.

(2986) *U.S. naval vessel* means any vessel owned, operated, chartered, or leased by the U.S. Navy; any pre-commissioned vessel under construction for the U.S. Navy, once launched into the water; and any vessel under the operational control of the U.S. Navy or a Combatant Command.

(2987) *Vessel* means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, except U.S. Coast Guard or U.S. naval vessels.

(2988)

§165.2020 Enforcement authority.

(2989) (a) *Coast Guard*. Any Coast Guard commissioned, warrant or petty officer may enforce the rules and regulations contained in this subpart.

(2990) (b) *Senior naval officer present in command*. In the navigable waters of the United States, when immediate action is required and representatives of the Coast Guard are not present or not present in sufficient force to exercise effective control in the vicinity of large U.S. naval vessels, the senior naval officer present in command is responsible for the enforcement of the rules and regulations contained in this subpart to ensure the safety and security of all large naval vessels present. In meeting this responsibility, the senior naval officer present in command may directly assist any Coast Guard enforcement personnel who are present.

(2991)

§165.2030 Pacific Area.

(2992) (a) This section applies to any vessel or person in the navigable waters of the United States within the boundaries of the U.S. Coast Guard Pacific Area, which includes the Eleventh, Thirteenth, Fourteenth, and Seventeenth U.S. Coast Guard Districts.

(2993) **Note to paragraph** (a): The boundaries of the U.S. Coast Guard Pacific Area and the Eleventh, Thirteenth, Fourteenth, and Seventeenth U.S. Coast Guard Districts are set out in **33 CFR** part **3**.

(2994) (b) A naval vessel protection zone exists around U.S. naval vessels greater than 100 feet in length overall at all times in the navigable waters of the United States, whether the large U.S. naval vessel is underway, anchored, moored, or within a floating dry dock, except when the large naval vessel is moored or anchored within a restricted area or within a naval defensive sea area.

(2995) (c) The Navigation Rules shall apply at all times within a naval vessel protection zone.

(2996) (d) When within a naval vessel protection zone, all vessels shall operate at the minimum speed necessary to maintain a safe course, unless required to maintain speed by the Navigation Rules, and shall proceed as directed by the Coast Guard, the senior naval officer present in command, or the official patrol. When within a naval vessel protection zone, no vessel or person is allowed within 100 yards of a large U.S. naval vessel unless authorized by the Coast Guard, the senior naval officer present in command, or official patrol.

(2997) (e) To request authorization to operate within 100 yards of a large U.S. naval vessel, contact the Coast Guard, the senior naval officer present in command, or the official patrol on VHF-FM channel 16.

(2998) (f) When conditions permit, the Coast Guard, senior naval officer present in command, or the official patrol should:

(2999) (1) Give advance notice on VHF-FM channel 16 of all large U.S. naval vessel movements;

(3000) (2) Permit vessels constrained by their navigational draft or restricted in their ability to maneuver to pass within 100 yards of a large U.S. naval vessel in order to ensure a safe passage in accordance with the Navigation Rules; and

(3001) (3) Permit commercial vessels anchored in a designated anchorage area to remain at anchor when within 100 yards of passing large U.S. naval vessels; and

(3002) (4) Permit vessels that must transit via a navigable channel or waterway to pass within 100 yards of a moored or anchored large U.S. naval vessel with minimal delay consistent with security.

(3003) **Note to paragraph (f)**: The listed actions are discretionary and do not create any additional right to appeal or otherwise dispute a decision of the Coast Guard, the senior naval officer present in command, or the official patrol.

(3004)

Part 166–Shipping Safety Fairways

(3005)

Subpart A–General

(3006)

§166.100 Purpose.

(3007) The purpose of these regulations is to establish and designate shipping safety fairways and fairway anchorages to provide unobstructed approaches for vessels using U.S. ports.

(3008)

§166.103 Geographic coordinates.

(3009) Geographic coordinates expressed in terms of latitude or longitude, or both, are not intended for plotting on maps or charts whose referenced horizontal datum is the North American Datum of 1983 (NAD 83), unless such geographic coordinates are expressly labeled NAD 83. Geographic coordinates without the NAD 83 reference may be plotted on maps or charts reference to NAD 83 only after application of the appropriate corrections that are published on the particular map or chart being used.

(3010)

§166.105 Definitions.

(3011) (a) *Shipping safety fairway or fairway* means a lane or corridor in which no artificial island or fixed structure, whether temporary or permanent, will be permitted. Temporary underwater obstacles may be permitted under certain conditions described for specific areas in Subpart B. Aids to navigation approved by the U.S. Coast Guard may be established in a fairway.

(3012) (b) *Fairway anchorage* means an anchorage area contiguous to and associated with a fairway, in which fixed structures may be permitted within certain spacing limitations, as described for specific areas in Subpart B.

(3013)

§166.110 Modification of areas.

(3014) Fairways and fairway anchorages are subject to modification in accordance with 46 U.S.C. 70003.

(3015)

Subpart B–Designations of Fairways and Fairway Anchorages

(3016)

§166.300 Areas along the coast of California.

(3017) (a) *Purpose*. Fairways as described in this section are established to control the erection of structures therein to provide safe vessel routes along the coast of California.

(3018) (b) *Designated Areas*—(1) *Port Hueneme Safety Fairway*. An area one nautical mile in width centered on the alinement of Port Hueneme Entrance Channel and extending seaward from the 30-foot-depth curve for a distance of 1.5 nautical miles, thence turning southerly and widening to 1.5 nautical miles at the 3-mile limit, all between lines joining the following points:

(3019) 34°06'30"N., 119°15'00"W.

(3020) 34°07'37"N., 119°14'25"W.

(3021) 34°08'49"N., 119°13'21"W. thence generally along the 30-foot-depth curve to the seaward end of the west entrance jetty; seaward end of the east entrance jetty, thence generally along the 30-foot-depth curve to:

(3022) 34°08'21"N., 119°12'15"W.

(3023) 34°07'10"N., 119°13'20"W.

(3024) 34°05'48"N., 119°13'23"W.

(3025) (2) [Reserved]

(3026)

Part 167–Offshore Traffic Separation Schemes

(3027)

Subpart A–General

(3028)

§167.1 Purpose.

(3029) The purpose of the regulations in this part is to establish and designate traffic separation schemes and precautionary areas to provide access routes for vessels proceeding to and from U.S. ports.

(3030)

§167.3 Geographic coordinates.

(3031) Geographic coordinates are defined using North American 1927 Datum (NAD 27) unless indicated otherwise.

(3032)

§167.5 Definitions.

(3033) (a) *Area to be avoided* means a routing measure comprising an area within defined limits in which either navigation is particularly hazardous or it is exceptionally important to avoid casualties and which should be avoided by all ships or certain classes of ships.

(3034) (b) *Traffic separation Scheme (TSS)* means a designated routing measure which is aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes.

(3035) (c) *Traffic lane* means an area within defined limits in which one-way traffic is established. Natural obstacles, including those forming separation zones, may constitute a boundary.

(3036) (d) *Separation zone* or *line* means a zone or line separating the traffic lanes in which ships are proceeding in opposite or nearly opposite directions; or separating a traffic lane from the adjacent sea area; or separating traffic lanes designated for particular classes of ships proceeding in the same direction.

(3037) (e) *Precautionary area* means a routing measure comprising an area within defined limits where ships must navigate with particular caution and within which the direction of traffic flow may be recommended.

(3038) (f) *Deep-water route* means an internationally recognized routing measure primarily intended for use by ships that, because of their draft in relation to the available depth of water in the area concerned, require the use of such a route.

(3039) (g) *Two-way route* means a route within defined limits inside which two-way traffic is established, aimed at providing safe passage of ships through waters where navigation is difficult or dangerous.

(3040)

§167.10 Operating rules.

(3041) The operator of a vessel in a TSS shall comply with Rule 10 of the International Regulations for Preventing Collision at Sea, 1972, as amended.

(3042)

§167.15 Modification of schemes.

(3043) (a) A traffic separation scheme or precautionary area described in this Part may be permanently amended in accordance with 46 U.S.C. 70003, and with international agreements.

(3044) (b) A traffic separation scheme or precautionary area in this Part may be temporarily adjusted by the Commandant of the Coast Guard in an emergency, or to accommodate operations which would create an undue hazard for vessels using the scheme or which would contravene Rule 10 of the International Regulations for Preventing Collisions at Sea, 1972. Adjustment may be in the form of a temporary traffic lane shift, a temporary suspension of a section of the scheme, a temporary precautionary area overlaying a lane, or other appropriate measure. Adjustments will only be made where, in the judgment of the Coast Guard, there is no reasonable alternative means of conducting an operation and navigation safety will not be jeopardized by the adjustment. Notice of adjustments will be made in the appropriate Notice to Mariners and in the FEDERAL REGISTER. Requests by members of the public for temporary adjustments to traffic separation schemes must be submitted 150 days prior to the time the adjustment is desired. Such Requests, describing the interference that would otherwise occur to a TSS, should be submitted to the District Commander of the Coast Guard District in which the TSS is located.

(3045)

Subpart B—Description of Traffic Separation Schemes and Precautionary Areas

(3046)

§167.1300 In the approaches to the Strait of Juan de Fuca: General.

(3047) The traffic separation scheme for the approaches to the Strait of Juan de Fuca consists of three parts: the western approach, the southwestern approach, and precautionary area "JF." These parts are described in §§167.1301 through 167.1303. The geographic coordinates in §§167.1301 through 167.1303 are defined using North American Datum (NAD 83).

(3048)

§167.1301 In the approaches to the Strait of Juan de Fuca: Western approach.

(3049) In the western approach to the Strait of Juan de Fuca, the following are established:

(3050) (a) A separation zone bounded by a line connecting the following geographical positions:

(3051) 48°30.10'N., 125°09.00'W.

(3052) 48°30.10'N., 125°04.67'W.

(3053) 48°29.11'N., 125°04.67'W.

(3054) 48°29.11'N., 125°09.00'W.

(3055) (b) A traffic lane for westbound traffic between the separation zone and a line connecting the following geographical positions:

(3056) 48°32.09'N., 125°04.67'W.

(3057) 48°32.09'N., 125°08.98'W.

(3058) (c) A traffic lane for eastbound traffic between the separation zone and a line connecting the following geographical positions:

(3059) 48°27.31'N., 125°09.00'W.

(3060) 48°28.13'N., 125°04.67'W.

(3061)

§167.1302 In the approaches to the Strait of Juan de Fuca: Southwestern approach.

(3062) In the southwestern approach to the Strait of Juan de Fuca, the following are established:

(3063) (a) A separation zone bounded by a line connecting the following geographical positions:

(3064) 48°23.99'N., 125°06.54'W.

(3065) 48°27.63'N., 125°03.38'W.

(3066) 48°27.14'N., 125°02.08'W.

(3067) 48°23.50'N., 125°05.26'W.

(3068) (b) A traffic lane for north-eastbound traffic between the separation zone and a line connecting the following geographical positions:

(3069) 48°22.55'N., 125°02.80'W.

(3070) 48°26.64'N., 125°00.81'W.

(3071) (c) A traffic lane for south-westbound traffic between the separation zone and a line connecting the following geographical positions:

(3072) 48°28.13'N., 125°04.67'W.

(3073) 48°24.94'N., 125°09.00'W.

(3074)

§167.1303 In the approaches to the Strait of Juan de Fuca: Precautionary area "JF."

(3075) In the approaches to the Strait of Juan de Fuca, precautionary area "JF" is established and is bounded by a line connecting the following geographical positions:

(3076) 48°32.09'N., 125°04.67'W.

(3077) 48°30.10'N., 125°04.67'W.

(3078) 48°29.11'N., 125°04.67'W.

(3079) 48°28.13'N., 125°04.67'W.

(3080) 48°27.63'N., 125°03.38'W.

(3081) 48°27.14'N., 125°02.08'W.

(3082) 48°26.64'N., 125°00.81'W.

(3083) 48°28.13'N., 124°57.90'W.

(3084) 48°29.11'N., 125°00.00'W.

(3085) 48°30.10'N., 125°00.00'W.

(3086) 48°32.09'N., 125°00.00'W.

(3087) 48°32.09'N., 125°04.67'W.

(3088)

§167.1310 In the Strait of Juan de Fuca: General.

(3089) The traffic separation scheme in the Strait of Juan de Fuca consists of five parts: the western lanes, southern lanes, northern lanes, eastern lanes, and precautionary area "PA." These parts are described in §§167.1311 through 167.1315. The geographic coordinates in §§167.1311 through 167.1315 are defined using North American Datum (NAD 83).

(3090)

§167.1311 In the Strait of Juan de Fuca: Western lanes.

(3091) In the western lanes of the Strait of Juan de Fuca, the following are established:

(3092) (a) A separation zone bounded by a line connecting the following geographical positions:

(3093) 48°29.11'N., 125°00.00'W.

(3094) 48°29.11'N., 124°43.78'W.

(3095) 48°13.89'N., 123°54.84'W.

(3096) 48°13.89'N., 123°31.98'W.

(3097) 48°14.49'N., 123°31.98'W.

(3098) 48°17.02'N., 123°56.46'W.

(3099) 48°30.10'N., 124°43.50'W.

(3100) 48°30.10'N., 125°00.00'W.

(3101) (b) A traffic lane for north-westbound traffic.

(3102) (1) The traffic lane is established between the separation zone and a line connecting the following geographical positions:

(3103) 48°16.45'N., 123°30.42'W.

(3104) 48°15.97'N., 123°33.54'W.

(3105) 48°18.00'N., 123°56.07'W.

(3106) 48°32.00'N., 124°46.57'W.

(3107) 48°32.09'N., 124°49.90'W.

(3108) 48°32.09'N., 125°00.00'W.

(3109) (2) An exit from this lane between points 48°32.00'N., 124°46.57'W. and 48°32.09'N., 124°49.90'W. Vessel traffic may exit this lane at this location or may remain in the lane between points 48°32.09'N., 124°49.90'W. and 48°32.09'N., 125°00.00'W. en route to precautionary area "JF," as described in §167.1315.

(3110) (c) A traffic lane for south-eastbound traffic between the separation zone and a line connecting the following geographical positions:

(3111) 48°28.13'N., 124°57.90'W.

(3112) 48°28.13'N., 124°44.07'W.

(3113) 48°12.90'N., 123°55.24'W.

(3114) 48°12.94'N., 123°32.89'W.

(3115)

§167.1312 In the Strait of Juan de Fuca: Southern lanes.

(3116) In the southern lanes of the Strait of Juan de Fuca, the following are established:

(3117) (a) A separation zone bounded by a line connecting the following geographical positions:

(3118) 48°10.82'N., 123°25.44'W.

(3119) 48°12.38'N., 123°28.68'W.

(3120) 48°12.90'N., 123°28.68'W.

(3121) 48°12.84'N., 123°27.46'W.

(3122) 48°10.99'N., 123°24.84'W.

(3123) (b) A traffic lane for northbound traffic between the separation zone and a line connecting the following geographical positions:

(3124) 48°11.24'N., 123°23.82'W.

(3125) 48°12.72'N., 123°25.34'W.

(3126) (c) A traffic lane for southbound traffic between the separation zone and a line connecting the following geographical positions:

(3127) 48°12.94'N., 123°32.89'W.

(3128) 48°09.42'N., 123°24.24'W.

(3129)

§167.1313 In the Strait of Juan de Fuca: Northern lanes.

(3130) In the northern lanes of the Strait of Juan de Fuca, the following are established:

(3131) (a) A separation zone bounded by a line connecting the following geographical positions:

(3132) 48°21.15'N., 123°24.83'W.

(3133) 48°16.16'N., 123°28.50'W.

(3134) 48°15.77'N., 123°27.18'W.

(3135) 48°20.93'N., 123°24.26'W.

(3136) (b) A traffic lane for southbound traffic between the separation zone and a line connecting the following geographical positions:

(3137) 48°21.83'N., 123°25.56'W.

(3138) 48°16.45'N., 123°30.42'W.

(3139) (c) A traffic lane for northbound traffic between the separation zone and a line connecting the following geographical positions:

(3140) 48°20.93'N., 123°23.22'W.

(3141) 48°15.13'N., 123°25.62'W.

(3142)

§167.1314 In the Strait of Juan de Fuca: Eastern lanes.

(3143) In the eastern lanes of the Strait of Juan de Fuca, the following are established:

(3144) (a) A separation zone bounded by a line connecting the following geographical positions:

(3145) 48°13.22'N., 123°15.91'W.

(3146) 48°14.03'N., 123°25.98'W.

(3147) 48°13.54'N., 123°25.86'W.

(3148) 48°12.89'N., 123°16.69'W.

(3149) (b) A traffic lane for westbound traffic between the separation zone and a line connecting the following geographical positions:

(3150) 48°14.27'N., 123°13.41'W.

(3151) 48°14.05'N., 123°16.08'W.

(3152) 48°15.13'N., 123°25.62'W.

(3153) (c) A traffic lane for eastbound traffic between the separation zone and a line connecting the following geographical positions:

(3154) 48°12.72'N., 123°25.34'W.

(3155) 48°12.34'N., 123°18.01'W.

(3156)

§167.1315 In the Strait of Juan de Fuca: Precautionary area "PA."

(3157) In the Strait of Juan de Fuca, precautionary area "PA" is established and is bounded by a line connecting the following geographical positions:

(3158) 48°12.94'N., 123°32.89'W.

(3159) 48°13.89'N., 123°31.98'W.

(3160) 48°14.49'N., 123°31.98'W.

(3161) 48°16.45'N., 123°30.42'W.

(3162) 48°16.16'N., 123°28.50'W.

(3163) 48°15.77'N., 123°27.18'W.

(3164) 48°15.13'N., 123°25.62'W.

(3165) 48°14.03'N., 123°25.98'W.

(3166) 48°13.54'N., 123°25.86'W.

(3167) 48°12.72'N., 123°25.34'W.

(3168) 48°12.84'N., 123°27.46'W.

(3169) 48°12.90'N., 123°28.68'W.

(3170) 48°12.94'N., 123°32.89'W.

(3171)

§167.1320 In Puget Sound and its approaches: General.

(3172) The traffic separation scheme in Puget Sound and its approaches consists of three parts: Rosario Strait, approaches to Puget Sound other than Rosario Strait, and Puget Sound. These parts are described in §§167.1321 through 167.1323. The North American Datum (NAD 83) defines the geographic coordinates in §§167.1321 through 167.1323.

(3173)

§167.1321 In Puget Sound and its approaches: Rosario Strait.

(3174) In Rosario Strait, the following are established:

(3175) (a) A separation zone bounded by a line connecting the following geographical positions:

(3176) 48°48.98'N., 122°55.20'W.

(3177) 48°46.76'N., 122°50.43'W.

(3178) 48°45.56'N., 122°48.36'W.

(3179) 48°45.97'N., 122°48.12'W.

(3180) 48°46.39'N., 122°50.76'W.

(3181) 48°48.73'N., 122°55.68'W.

(3182) (b) A traffic lane for northbound traffic located within the separation zone described in paragraph (a) of this section and a line connecting the following geographical positions:

(3183) 48°49.49'N., 122°54.24'W.

(3184) 48°47.14'N., 122°50.10'W.

(3185) 48°46.35'N., 122°47.50'W.

(3186) (c) A traffic lane for southbound traffic located within the separation zone described in paragraph (a) of this section and a line connecting the following geographical positions:

(3187) 48°44.95'N., 122°48.28'W.

(3188) 48°46.76'N., 122°53.10'W.

(3189) 48°47.93'N., 122°57.12'W.

(3190) (d) Precautionary area "CA" contained within a circle of radius 1.24 miles centered at geographical position 48°45.30'N., 122°46.50'W.

(3191) (e) A separation zone bounded by a line connecting the following geographical positions:

(3192) 48°44.27'N., 122°45.53'W.

(3193) 48°41.72'N., 122°43.50'W.

(3194) 48°41.60'N., 122°43.82'W.

(3195) 48°44.17'N., 122°45.87'W.

(3196) (f) A traffic lane for northbound traffic located within the separation zone described in paragraph (e) of this

section and a line connecting the following geographical positions:

(3197) 48°44.62'N., 122°44.96'W.

(3198) 48°41.80'N., 122°42.70'W.

(3199) (g) A traffic lane for southbound traffic located within the separation zone described in paragraph (e) of this section and a line connecting the following geographical positions:

(3200) 48°44.08'N., 122°46.65'W.

(3201) 48°41.25'N., 122°44.37'W.

(3202) (h) Precautionary area "C" contained within a circle of radius 1.24 miles centered at geographical position 48°40.55'N., 122°42.80'W.

(3203) (i) A two-way route between the following geographical positions:

(3204) 48°39.33'N., 122°42.73'W.

(3205) 48°36.08'N., 122°45.00'W.

(3206) 48°26.82'N., 122°43.53'W.

(3207) 48°27.62'N., 122°45.53'W.

(3208) 48°29.48'N., 122°44.77'W.

(3209) 48°36.13'N., 122°45.80'W.

(3210) 48°38.38'N., 122°44.20'W.

(3211) 48°39.63'N., 122°44.03'W.

(3212) (j) Precautionary area "RB" bounded as follows:

(3213) (1) To the north by the arc of a circle of radius 1.24 miles centered on geographical position 48°26.38'N., 122°45.27'W. and connecting the following geographical positions:

(3214) 48°25.97'N., 122°47.03'W.

(3215) 48°25.55'N., 122°43.93'W.

(3216) (2) To the south by a line connecting the following geographical positions:

(3217) 48°25.97'N., 122°47.03'W.

(3218) 48°24.62'N., 122°48.68'W.

(3219) 48°23.75'N., 122°47.47'W.

(3220) 48°25.20'N., 122°45.73"W.

(3221) 48°25.17'N., 122°45.62'W.

(3222) 48°24.15'N., 122°45.27'W.

(3223) 48°24.08'N., 122°43.38'W.

(3224) 48°25.55'N., 122°43.93'W.

(3225)

§167.1322 In Puget Sound and its approaches: Approaches to Puget Sound other than Rosario Strait.

(3226) (a) The traffic separation scheme in the approaches to Puget Sound other than Rosario Strait consists of a northeast/southwest approach, a northwest/southeast approach, a north/south approach, and an east/west approach and connecting precautionary areas.

(3227) (b) In the northeast/southwest approach consisting of two separation zones, two precautionary areas ("RA" and "ND"), and four traffic lanes, the following are established:

(3228) (1) A separation zone that connects with precautionary area "RA," as described in paragraph (b)(2) of this section, and is bounded by a line connecting the following geographical positions:

(3229) 48°24.13'N., 122°47.97'W.

(3230) 48°20.32'N., 122°57.02'W.

(3231) 48°20.53'N., 122°57.22'W.

(3232) 48°24.32'N., 122°48.22'W.

(3233) (2) Precautionary area "RA," which is contained within a circle of radius 1.24 miles centered at 48°19.77'N., 122°58.57'W.

(3234) (3) A separation zone that connects with precautionary area "RA," as described in paragraph (b)(2) of this section, and is bounded by a line connecting the following geographical positions:

(3235) 48°16.25'N., 123°06.58'W.

(3236) 48°16.57N., 123°06.58'W.

(3237) 48°19.20N., 123°00.35'W.

(3238) 48°19.00'N., 123°00.17'W.

(3239) (4) A traffic lane for northbound traffic that connects with precautionary area "RA," as described in paragraph (b)(2) of this section, and is located between the separation zone described in paragraph (b)(1) of this section and a line connecting the following geographical positions:

(3240) 48°23.75'N., 122°47.47'W.

(3241) 48°19.80'N., 122°56.83'W.

(3242) (5) A traffic lane for northbound traffic that connects with precautionary area "RA," as described in paragraph (b)(2) of this section, and is located between the separation zone described in paragraph (b)(3) of this section and a line connecting the following geographical positions:

(3243) 48°15.70'N., 123°06.58'W.

(3244) 48°18.67'N., 122°59.57'W.

(3245) (6) A traffic lane for southbound traffic that connects with precautionary area "RA," as described in paragraph (b)(2) of this section, and is located between the separation zone described in paragraph (b)(1) of this section and a line connecting the following geographical positions:

(3246) 48°24.62'N., 122°48.68'W.

(3247) 48°20.85'N., 122°57.80'W.

(3248) (7) A traffic lane for southbound traffic that connects with precautionary area "RA," as described in paragraph (b)(2) of this section, and is located between the separation zone described in paragraph (b)(3) of this section and a line connecting the following geographical positions:

(3249) 48°19.70'N., 123°00.53'W.

(3250) 48°17.15'N., 123°06.57'W.

(3251) (8) Precautionary area "ND," which is bounded by a line connecting the following geographical positions:

(3252) 48°11.00'N., 123°06.58'W.

(3253) 48°17.15'N., 123°06.57'W.

(3254) 48°14.27'N., 123°13.41'W.

(3255) 48°12.34'N., 123°18.01'W.

(3256) 48°12.72'N., 123°25.34'W.

(3257) 48°11.24'N., 123°23.82'W.

(3258) 48°10.82'N., 123°25.44'W.

(3259) 48°09.42'N., 123°24.24'W.

(3260) 48°08.39'N., 123°24.24'W.

(3261) Thence along the shoreline to the point of beginning (48°11.00'N.; 123°06.58'W.).

(3262) (c) In the northwest/southeast approach consisting of two separation zones, two precautionary areas ("RA"

and "SA"), and four traffic lanes, the following are established:

(3263) (1) A separation zone that connects with precautionary area "RA," as described in paragraph (b)(2) of this section, and is bounded by a line connecting the following geographical positions:

(3264) 48°28.72N., 123°08.53'W.

(3265) 48°25.43'N., 123°03.88'W.

(3266) 48°22.88'N., 123°00.82'W.

(3267) 48°20.93'N., 122°59.30'W.

(3268) 48°20.82'N., 122°59.62'W.

(3269) 48°22.72'N., 123°01.12'W.

(3270) 48°25.32'N., 123°04.30'W.

(3271) 48°28.39'N., 123°08.64'W.

(3272) (2) A separation zone that connects with precautionary area "RA," as described in paragraph (b)(2) of this section, and is bounded by a line connecting the following geographical positions:

(3273) 48°18.83'N., 122°57.48'W.

(3274) 48°13.15'N., 122°51.33'W.

(3275) 48°13.00'N., 122°51.62'W.

(3276) 48°18.70'N., 122°57.77'W.

(3277) (3) A traffic lane for northbound traffic that connects with precautionary "RA," as described in paragraph (b)(2) of this section, and is located between the separation zone described in paragraph (c)(1) of this section and a line connecting the following geographical positions:

(3278) 48°29.28'N., 123°08.35'W.

(3279) 48°25.60'N., 123°03.13'W.

(3280) 48°23.20'N., 123°00.20'W.

(3281) 48°21.00'N., 122°58.50'W.

(3282) (4) A traffic lane for northbound traffic that connects with precautionary area "RA," as described in paragraph (b)(2) of this section, and is located between the separation zone described in paragraph (c)(2) of this section and a line connecting the following geographical positions:

(3283) 48°19.20'N., 122°57.03'W.

(3284) 48°13.35'N., 122°50.63'W.

(3285) (5) A traffic lane for southbound traffic that connects with precautionary "RA," as described in paragraph (b)(2) of this section, and is located between the separation zone described in paragraph (c)(1) of this section and a line connecting the following geographical positions:

(3286) 48°27.86'N., 123°08.81'W.

(3287) 48°25.17'N., 123°04.98'W.

(3288) 48°22.48'N., 123°01.73'W.

(3289) 48°20.47'N., 123°00.20'W.

(3290) (6) A traffic lane for southbound traffic connecting with precautionary area "RA," as described in paragraphs (b)(2) of this section, and is located between the separation zone described in paragraph (c)(2) of this section and a line connecting the following geographical positions:

(3291) 48°18.52'N., 122°58.50'W.

(3292) 48°12.63'N., 122°52.15'W.

(3293) (7) Precautionary area "SA," which is contained within a circle of radius 2 miles centered at geographical position 48°11.45'N., 122°49.78'W.

(3294) (d) In the north/south approach between precautionary areas "RB" and "SA," as described in paragraph (b)(2) and (c)(7) of this section, respectively, the following are established:

(3295) (1) A separation zone bounded by a line connecting the following geographical positions:

(3296) 48°24.15'N., 122°44.08'W.

(3297) 48°13.33'N., 122°48.78'W.

(3298) 48°13.38'N., 122°49.15'W.

(3299) 48°24.17'N., 122°44.48'W.

(3300) (2) A traffic lane for northbound traffic located between the separation zone described in paragraph (d)(1) of this section and a line connecting the following geographical positions:

(3301) 48°24.08'N., 122°43.38'W.

(3302) 48°13.10'N., 122°48.12'W.

(3303) (3) A traffic lane for southbound traffic located between the separation zone described in paragraph (d)(1) of this section and a line connecting the following geographical positions:

(3304) 48°24.15'N., 122°45.27'W.

(3305) 48°13.43'N., 122°49.90'W.

(3306) (e) In the east/west approach between precautionary areas "ND" and "SA," as described in paragraphs (b)(8) and (c)(7) of this section, respectively, the following are established:

(3307) (1) A separation zone bounded by a line connecting the following geographical positions:

(3308) 48°11.50'N., 122°52.73'W.

(3309) 48°11.73'N., 122°52.70'W.

(3310) 48°12.48'N., 123°06.58'W.

(3311) 48°12.23'N., 123°06.58'W.

(3312) (2) A traffic lane for northbound traffic between the separation zone described in paragraph (e)(1) of this section and a line connecting the following geographical positions:

(3313) 48°12.22'N., 122°52.52'W.

(3314) 48°12.98'N., 123°06.58'W.

(3315) (3) A traffic lane for southbound traffic between the separation zone described in paragraph (e)(1) of this section and a line connecting the following geographical positions:

(3316) 48°11.73'N., 123°06.58'W.

(3317) 48°10.98'N., 122°52.65'W.

(3318)

§167.1323 In Puget Sound and its approaches: Puget Sound.

(3319) The traffic separation scheme in Puget Sound consists of six separation zones and two traffic lanes connected by six precautionary areas. The following are established:

(3320) (a) A separation zone bounded by a line connecting the following geographical positions:

(3321) 48°11.08'N., 122°46.88'W.

(3322) 48°06.85'N., 122°39.52'W.

(3323) 48°02.48'N., 122°38.17'W.

(3324) 48°02.43'N., 122°38.52'W.

(3325) 48°06.72'N., 122°39.83'W.

(3326) 48°10.82'N., 122°46.98'W.

(3327) (b) Precautionary area "SC," which is contained within a circle of radius 0.62 miles, centered at 48°01.85'N., 122°38.15'W.

(3328) (c) A separation zone bounded by a line connecting the following geographical positions:

(3329) 48°01.40'N., 122°37.57'W.

(3330) 47°57.95'N., 122°34.67'W.

(3331) 47°55.85'N., 122°30.22'W.

(3332) 47°55.67'N., 122°30.40'W.

(3333) 47°57.78'N., 122°34.92'W.

(3334) 48°01.28'N., 122°37.87'W.

(3335) (d) Precautionary area "SE," which is contained within a circle of radius 0.62 miles, centered at 47°55.40'N., 122°29.55'W.

(3336) (e) A separation zone bounded by a line connecting the following geographical positions:

(3337) 47°54.85'N., 122°29.18'W.

(3338) 47°46.52'N., 122°26.30'W.

(3339) 47°46.47'N., 122°26.62'W.

(3340) 47°54.80'N., 122°29.53'W.

(3341) (f) Precautionary area "SF," which is contained within a circle of radius 0.62 miles, centered at 47°45.90'N., 122°26.25'W.

(3342) (g) A separation zone bounded by a line connecting the following geographical positions:

(3343) 47°45.20'N., 122°26.25'W.

(3344) 47°40.27'N., 122°27.55'W.

(3345) 47°40.30'N., 122°27.88'W.

(3346) 47°45.33'N., 122°26.60'W.

(3347) (h) Precautionary area "SG," which is contained within a circle of radius 0.62 miles, centered at 47°39.68'N., 122°27.87'W.

(3348) (i) A separation zone bounded by a line connecting the following geographical positions:

(3349) 47°39.12'N., 122°27.62'W.

(3350) 47°35.18'N., 122°27.08'W.

(3351) 47°35.17'N., 122°27.35'W.

(3352) 47°39.08'N., 122°27.97'W.

(3353) (j) Precautionary area "T," which is contained within a circle of radius 0.62 miles, centered at 47°34.55'N., 122°27.07'W.

(3354) (k) A separation zone bounded by a line connecting the following geographical positions:

(3355) 47°34.02'N., 122°26.70'W.

(3356) 47°26.92'N., 122°24.10'W.

(3357) 47°23.07'N., 122°20.98'W.

(3358) 47°19.78'N., 122°26.58'W.

(3359) 47°19.98'N., 122°26.83'W.

(3360) 47°23.15'N., 122°21.45'W.

(3361) 47°26.85'N., 122°24.45'W.

(3362) 47°33.95'N., 122°27.03'W.

(3363) (l) Precautionary area "TC," which is contained within a circle of radius 0.62 miles, centered at 47°19.48'N., 122°27.38'W.

(3364) (m) A traffic lane for northbound traffic that connects with precautionary areas "SC,""SE,""SF,""SG,""T," and "TC," as described in paragraphs (b), (d), (f), (h), (j), and (k) of this section, respectively, and is located between the separation zones described in paragraphs (a), (c), (e), (g), (i), and (k) of this section, respectively, and a line connecting the following geographical positions:

(3365) 48°11.72'N., 122°46.83'W.

(3366) 48°07.13'N., 122°38.83'W.

(3367) 48°02.10'N., 122°37.32'W.

(3368) 47°58.23'N., 122°34.07'W.

(3369) 47°55.83'N., 122°28.80'W.

(3370) 47°45.92'N., 122°25.33'W.

(3371) 47°39.68'N., 122°26.95'W.

(3372) 47°34.65'N., 122°26.18'W.

(3373) 47°27.13'N., 122°23.40'W.

(3374) 47°23.33'N., 122°20.37'W.

(3375) 47°22.67'N., 122°20.53'W.

(3376) 47°19.07'N., 122°26.75'W.

(3377) (n) A traffic lane for southbound traffic that connects with precautionary areas "SC,""SE,""SF,""SG,""T," and "TC," as described in paragraphs (b), (d), (f), (h), (j), and (k) of this section, respectively, and is located between the separation zones described in paragraphs (a), (c), (e), (g), (i), and (k) of this section, respectively, and a line connecting the following geographical positions:

(3378) 48°10.15'N., 122°47.58'W.

(3379) 48°09.35'N., 122°45.55'W.

(3380) 48°06.45'N., 122°40.52'W.

(3381) 48°01.65'N., 122°30.03'W.

(3382) 47°57.47'N., 122°35.45'W.

(3383) 47°55.07'N., 122°30.35'W.

(3384) 47°45.90'N., 122°27.18'W.

(3385) 47°39.70'N., 122°28.78'W.

(3386) 47°34.47'N., 122°27.98'W.

(3387) 47°26.63'N., 122°25.12'W.

(3388) 47°23.25'N., 122°22.42'W.

(3389) 47°20.00'N., 122°27.90'W.

(3390)

§167.1330 In Haro Strait, Boundary Pass, and the Strait of Georgia: General.

(3391) The traffic separation scheme in Haro Strait, Boundary Pass, and the Strait of Georgia consists of a series of traffic separation schemes, two-way routes, and five precautionary areas. These parts are described in §§ 167.1331 and 167.1332. The geographic coordinates in §§ 167.1331 and 167.1332 are defined using North American Datum (NAD 83).

(3392)

§167.1331 In Haro Strait and Boundary Pass.

(3393) In Haro Strait and Boundary Pass, the following are established:

(3394) (a) Precautionary area "V," which is bounded by a line connecting the following geographical positions:

(3395) 48°23.15'N., 123°21.12'W.

(3396) 48°23.71'N., 123°23.88'W.

(3397) 48°21.83'N., 123°25.56'W.

(3398) 48°21.15'N., 123°24.83'W.

(3399) 48°20.93'N., 123°24.26'W.

(3400) 48°20.93'N., 123°23.22'W.

(3401) 48°21.67'N., 123°21.12'W.
(3402) 48°23.15'N., 123°21.12'W.
(3403) (b) A separation zone that connects with precautionary area "V," as described in paragraph (a) of this section, and is bounded by a line connecting the following geographical positions:
(3404) 48°22.25'N., 123°21.12'W.
(3405) 48°22.25'N., 123°17.95'W.
(3406) 48°23.88'N., 123°13.18'W.
(3407) 48°24.30'N., 123°13.00'W.
(3408) 48°22.55'N., 123°18.05'W.
(3409) 48°22.55'N., 123°21.12'W.
(3410) (c) A traffic lane for eastbound traffic located between the separation zone described in paragraph (b) of this section and a line connecting the following geographical positions:
(3411) 48°21.67'N., 123°21.12'W.
(3412) 48°21.67'N., 123°17.70'W.
(3413) 48°23.10'N., 123°13.50'W.
(3414) (d) A traffic lane for westbound traffic located between the separation zone described in paragraph (b) of this section and a line connecting the following geographical positions:
(3415) 48°25.10'N., 123°12.67'W.
(3416) 48°23.15'N., 123°18.30'W.
(3417) 48°23.15'N., 123°21.12'W.
(3418) (e) Precautionary area "DI," which is bounded by a line connecting the following geographical positions:
(3419) 48°23.10'N., 123°13.50'W.
(3420) 48°24.30'N., 123°09.95'W.
(3421) 48°26.57'N., 123°09.22'W.
(3422) 48°25.10'N., 123°12.67'W.
(3423) 48°23.10'N., 123°13.50'W.
(3424) (f) A separation zone bounded by a line connecting the following geographical positions:
(3425) 48°25.96'N., 123°10.65'W.
(3426) 48°27.16'N., 123°10.25'W.
(3427) 48°28.77'N., 123°10.84'W.
(3428) 48°29.10'N., 123°11.59'W.
(3429) 48°25.69'N., 123°11.28'W.
(3430) (g) A traffic lane for northbound traffic located between the separation zone described in paragraph (f) of this section and a line connecting the following geographical positions:
(3431) 48°26.57'N., 123°09.22'W.
(3432) 48°27.86'N., 123°08.81'W.
(3433) (h) A traffic lane for southbound traffic located between the separation zone described in paragraph (e) of this section and a line connecting the following geographical positions:
(3434) 48°29.80'N., 123°13.15'W.
(3435) 48°25.10'N., 123°12.67'W.
(3436) (i) Precautionary area "HS," which is bounded by a line connecting the following geographical positions:
(3437) 48°27.86'N., 123°08.81'W.
(3438) 48°29.28'N., 123°08.35'W.
(3439) 48°30.55'N., 123°10.12'W.
(3440) 48°31.60'N., 123°10.65'W.
(3441) 48°32.83'N., 123°13.45'W.
(3442) 48°29.80'N., 123°13.15'W.
(3443) 48°27.86'N., 123°08.81'W.
(3444) (j) A two-way route between the following geographical positions:
(3445) 48°31.60'N., 123°10.65'W.
(3446) 48°35.21'N., 123°12.61'W.
(3447) 48°38.37'N., 123°12.36'W.
(3448) 48°39.41'N., 123°13.14'W.
(3449) 48°39.41'N., 123°16.06'W.
(3450) 48°32.83'N., 123°13.45'W.
(3451) (k) Precautionary area "TP," which is bounded by a line connecting the following geographical positions:
(3452) 48°41.06'N., 123°11.04'W.
(3453) 48°42.23'N., 123°11.35'W.
(3454) 48°43.80'N., 123°10.77'W.
(3455) 48°43.20'N., 123°16.06'W.
(3456) 48°39.41'N., 123°16.06'W.
(3457) 48°39.32'N., 123°13.14'W.
(3458) 48°39.76'N., 123°11.84'W.
(3459) (l) A two-way route between the following geographical positions:
(3460) 48°42.23'N., 123°11.35'W.
(3461) 48°45.51'N., 123°01.82'W.
(3462) 48°47.78'N., 122°59.12'W.
(3463) 48°48.19'N., 123°00.84'W.
(3464) 48°46.43'N., 123°03.12'W.
(3465) 48°43.80'N., 123°10.77'W.
(3466)

§167.1332 In the Strait of Georgia.

(3467) In the Strait of Georgia, the following are established:
(3468) (a) Precautionary area "GS," which is bounded by a line connecting the following geographical positions:
(3469) 48°52.30'N., 123°07.44'W.
(3470) 48°54.81'N., 123°03.66'W.
(3471) 48°49.49'N., 122°54.24'W.
(3472) 48°47.93'N., 122°57.12'W.
(3473) 48°47.78'N., 122°59.12'W.
(3474) 48°48.19'N., 123°00.84'W.
(3475) 48°52.30'N., 123°07.44'W.
(3476) (b) A separation zone bounded by a line connecting the following geographical positions:
(3477) 48°53.89'N., 123°05.04'W.
(3478) 48°56.82'N., 123°10.08'W.
(3479) 48°56.30'N., 123°10.80'W.
(3480) 48°53.39'N., 123°05.70'W.
(3481) (c) A traffic lane for north-westbound traffic located between the separation zone described in paragraph (b) of this section and a line connecting the following geographical positions:
(3482) 48°54.81'N., 123°03.66'W.
(3483) 48°57.68'N., 123°08.76'W.
(3484) (d) A traffic lane for south-eastbound traffic between the separation zone described in paragraph (b) of this section and a line connecting the following geographical positions:
(3485) 48°55.34'N., 123°12.30'W.

(3486) 48°52.30'N., 123°07.44'W.

(3487) (e) Precautionary area "PR," which is bounded by a line connecting the following geographical positions:

(3488) 48°55.34'N., 123°12.30'W.

(3489) 48°57.68'N., 123°08.76'W.

(3490) 49°02.20'N., 123°16.28'W.

(3491) 49°00.00'N., 123°19.69'W.

(3492) (f) A separation zone bounded by a line connecting the following geographical positions:

(3493) 49°01.39'N., 123°17.53'W.

(3494) 49°03.84'N., 123°21.30'W.

(3495) 49°03.24'N., 123°22.41'W.

(3496) 49°00.75'N., 123°18.52'W.

(3497) (g) A traffic lane for north-westbound traffic located between the separation zone described in paragraph (f) of this section and a line connecting the following geographical positions:

(3498) 49°02.20'N., 123°16.28'W.

(3499) 49°04.52'N., 123°20.04'W.

(3500) (h) A traffic lane for south-eastbound traffic between the separation zone described in paragraph (f) of this section and a line connecting the following geographical positions:

(3501) 49°02.51'N., 123°23.76'W.

(3502) 49°00.00'N., 123°19.69'W.

(3503)

Part 168–Escort Requirements for Certain Tankers

(3504)

§168.01 Purpose.

(3505) (a) This part prescribes regulations in accordance with section 4116(c) of the Oil Pollution Act of 1990 (OPA 90) (Pub. L. 101-380), as amended by section 711 of the Coast Guard Authorization Act of 2010 (Pub. L. 111–281). The regulations will reduce the risk of oil spills from laden, single hull and double hull tankers over 5,000 GT by requiring that these tankers be escorted by at least two suitable escort vessels in applicable waters, as defined in §168.40. The escort vessels will be immediately available to influence the tankers' speed and course in the event of a steering or propulsion equipment failure, thereby reducing the possibility of groundings or collisions.

(3506) (b) The regulations in this part establish minimum escort vessel requirements. Nothing in these regulations should be construed as relieving the master of a tanker from the duty to operate the vessel in a safe and prudent manner, taking into account the navigational constraints of the waterways to be traversed, other vessel traffic, and anticipated weather, tide, and sea conditions, which may require reduced speeds, greater assistance from escort vessels, or other operational precautions.

(3507)

§168.05 Definitions.

(3508) As used in this part–

(3509) *Disabled tanker* means a tanker experiencing a loss of propulsion or steering control.

(3510) *Double hull tanker* means any self-propelled tank vessel that is constructed with both double bottom and double sides in accordance with the provisions of **33 CFR 157.10d**.

(3511) *Escort transit* means that portion of the tanker's voyage through waters where escort vessels are required.

(3512) *Escort vessel* means any vessel that is assigned and dedicated to a tanker during the escort transit, and that is fendered and outfitted with towing gear as appropriate for its role in an emergency response to a disabled tanker.

(3513) *Laden* means transporting in bulk any quantity of applicable cargo, except for clingage and residue in otherwise empty cargo tanks.

(3514) *Single hull tanker* means any self-propelled tank vessel that is not constructed with both double bottom and double sides in accordance with the provisions of **33 CFR 157.10d**.

(3515) *Tanker master* means the licensed onboard person in charge of the tanker.

(3516) *Tanker owner or operator* means the owner or shoreside organization (individual, corporation, partnership, or association), including a demise charterer, responsible for the overall management and operation of the tanker.

(3517)

§168.10 Responsibilities.

(3518) (a) The tanker owner or operator shall:

(3519) (1) select escort vessels that can meet the performance requirements of this part; and

(3520) (2) inform the tanker master of the performance capabilities of the selected escort vessels. This information must be provided to the master before beginning the escort transit.

(3521) (b) The tanker master shall operate the tanker within the performance capabilities of the escort vessels, taking into account speed, sea and weather conditions, navigational considerations, and other factors that may change or arise during the escort transit.

(3522) (c) In an emergency, the tanker master may deviate from the requirements of this part to the extent necessary to avoid endangering persons, property, or the environment, but shall immediately report the deviation to the cognizant Coast Guard Captain of the Port (COTP).

(3523)

§168.20 Applicable vessels.

(3524) The requirements of this part apply to the following laden tankers of 5,000 gross tons or more:

(3525) (a) All single hull tankers on the waters listed in §168.40(a) and (b); and

(3526) (b) All double hull tankers on the waters listed in §168.40(a).

(3527)

§168.30 Applicable cargoes.

(3528) The requirements of this part apply to any petroleum oil listed in **46 CFR** Table **30.25–1** as a pollution category I cargo.

(3529)

§168.40 Applicable waters and number of escort vessels.

(3530) The requirements of this part apply to the following waters:

(3531) (a) *Prince William Sound*: Each tanker to which this part applies must be escorted by at least two escort vessels in those navigable waters of the United States within Prince William Sound, Alaska, and the adjoining tributaries, bays, harbors, and ports, including the navigable waters of the United States within a line drawn from Cape Hinchinbrook Light, to Seal Rocks Light, to a point on Montague Island at 60°14.6'N., 146°59'W., and the waters of Montague Strait east of a line between Cape Puget and Cape Cleare.

(3532) (b) *Puget Sound and certain associated waters*: Each tanker to which this part applies must be escorted by at least two escort vessels in those navigable waters of the United States and Washington State east of a line connecting New Dungeness Light with Discovery Island Light and all points in the Puget Sound area north and south of these lights. This area includes all the navigable waters of the United States within Haro Strait, Rosario Strait, the Strait of Georgia, Puget Sound, and Hood Canal, as well as those portions of the Strait of Juan de Fuca east of the New Dungeness-Discovery Island line.

(3533)

§168.50 Performance and operational requirements.

(3534) (a) Except as provided in paragraph (c) of §168.10, at all times during the escort transit each tanker to which this part applies:

(3535) (1) Must be accompanied by escort vessels that meet the performance requirements of paragraph (b) of this section (but not less than the number of escorts required by §168.40).

(3536) (2) Must have the escort vessels positioned relative to the tanker such that timely response to a propulsion or steering failure can be effected.

(3537) (3) Must not exceed a speed beyond which the escort vessels can reasonably be expected to safely bring the tanker under control within the navigational limits of the waterway, taking into consideration ambient sea and weather conditions, surrounding vessel traffic, hazards, and other factors that may reduce the available sea room.

(3538) (b) The escort vessels, acting singly or jointly in any combination as needed, and considering their applied force vectors on the tanker's hull, must be capable of–

(3539) (1) Towing the tanker at 4 knots in calm conditions, and holding it in steady position against a 45-knot headwind;

(3540) (2) [Reserved]

(3541) (3) Holding the tanker on a steady course against a 35-degree locked rudder at a speed of 6 knots; and

(3542) (4) Turning the tanker 90 degrees, assuming a free-swinging rudder and a speed of 6 knots, within the same distance (advance and transfer) that it could turn itself with a hard-over rudder.

(3543)

§168.60 Pre-escort conference.

(3544) (a) Before commencing an escort transit, the tanker master shall confer, by radio or in person, with the tanker pilot and the masters of the escort vessels regarding the escort operation.

(3545) (b) The purpose of the pre-escort conference is for all parties to plan and discuss particulars of the escort transit.

(3546) (c) At a minimum, the following topics must be addressed during the pre-escort conference:

(3547) (1) The destination, route, planned speed, other vessel traffic, anticipated weather, tide, and sea conditions, and other navigational considerations;

(3548) (2) The type and operational status of communication, towing, steering, and propulsion equipment on the tanker and escort vessels;

(3549) (3) The relative positioning and reaction time for the escort vessels to move into assist positions, including, if appropriate, pre-tethering the escort vessels at crucial points along the route;

(3550) (4) The preparations required on the tanker and escort vessels, and the methods employed in making an emergency towline connection, including stationing of deck crews, preparation of messenger lines, bridles, and other towing gear, and energizing appropriate deck equipment;

(3551) (5) The manner in which an emergency towline connection would be made (which escort vessel will respond, how messengers and towlines will be passed, etc.);

(3552) (6) Other relevant information provided by the tanker master, pilot or escort vessel masters.

(3553)

Part 169–Ship Reporting Systems

(3554)

Subpart A–General

(3555)

§169.1 What is the purpose of this part?

(3556) This subpart prescribes the requirements for mandatory ship reporting systems. Ship reporting systems are used to provide, gather, or exchange information through radio reports. The information is used to provide data for many purposes including, but not limited to: navigation safety, maritime security and domain awareness, environmental protection, vessel traffic services, search and rescue, weather forecasting and prevention of marine pollution.

(3557) **Note to §169.1:** For ship reporting system requirements not established by the Coast Guard, see **50 CFR Part 404**.

(3558)

§169.5 How are terms used in this part defined?

(3559) As used in this part–

(3560) *Administration* means the Government of the State whose flag the ship is entitled to fly.

(3561) *Cargo ship* means any ship which is not a passenger ship.

(3562) *Flag Administration* means the Government of a State whose flag the ship is entitled to fly.

(3563) *Gross tonnage* means tonnage as defined under the International Convention on Tonnage Measurement of Ships, 1969 (Incorporated by reference, see §169.15).

(3564) *Gross tons* means vessel tonnage measured in accordance with the method utilized by the flag state administration of that vessel.

(3565) *High speed craft* means a craft that is operable on or above the water and is capable of a maximum speed equal to or exceeding V=3.7×displ.1667, where "V" is the maximum speed and "displ" is the vessel displacement corresponding to the design waterline in cubic meters.

(3566) *High speed passenger craft* means a high speed craft carrying more than 12 passengers.

(3567) *International voyage* means a voyage from a country to which the present International Convention for the Safety of Life at Sea (SOLAS), 1974 applies to a port outside such country, or conversely. For U.S. ships, such voyages will be considered to originate at a port in the United States, regardless of when the voyage actually began. Such voyages for U.S. ships will continue until the ship returns to the United States from its last foreign port.

(3568) *Long range identification and tracking (LRIT) information or position report* means report containing the following information:

(3569) (1) The identity of the ship;

(3570) (2) The position of the ship (latitude and longitude); and

(3571) (3) The date and time of the position provided.

(3572) *LRIT Data Center* means a center established by a SOLAS Contracting Government or a group of Contracting Governments, or in the case of International Data Center, by IMO, to request, receive, process, and archive LRIT information. An LRIT Data Center may be National, Regional, Co-operative or International.

(3573) *Mandatory ship reporting system* means a ship reporting system that requires the participation of specified vessels or classes of vessels, and that is established by a government or governments after adoption of a proposed system by the International Maritime Organization (IMO) as complying with all requirements of regulation V/8-1 of the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS), except paragraph (e) thereof.

(3574) *Mobile offshore drilling unit* means a self-propelled vessel capable of engaging in drilling operations for the exploration or exploitation of subsea resources.

(3575) *Passenger ship* means a ship that carries more than 12 passengers.

(3576) *Self-propelled ships* means ships propelled by mechanical means.

(3577) *Shore-based authority* means the government appointed office or offices that will receive the reports made by ships entering each of the mandatary ship reporting systems. The office or offices will be responsible for the management and coordination of the system, interaction with participating ships, and the safe and effective operation of the system. Such an authority may or may not be an authority in charge of a vessel traffic service.

(3578) *United States* means the States of the United States, the District of Columbia, Guam, Puerto Rico, the Virgin Islands, American Samoa, the Northern Mariana Islands, and any other territory or possession of the United States.

(3579)

§169.10 What geographic coordinates are used?

(3580) Geographic coordinates expressed in terms of latitude or longitude, or both, are not intended for plotting on maps or charts where the referenced horizontal datum is the North American Datum of 1983 (NAD 83), unless such geographic coordinates are expressly labeled NAD 83. Geographic coordinates without the NAD 83 reference may be plotted on maps or charts referenced to NAD 83 only after application of the appropriate corrections that are published on the particular map or chart being used.

(3581)

§169.15 Incorporation by reference: Where can I get a copy of the publications mentioned in this part?

(3582) (a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and **1 CFR** part **51**. To enforce any edition other than that specified in this section, the Coast Guard must publish notice of change in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. Also, it is available for inspection at Coast Guard Headquarters. Contact Commandant (CG–NAV), Attn: Office of Navigation Systems, 2703 Martin Luther King Jr. Avenue SE., Stop 7418, Washington, DC 20593–7418, and is available from the sources indicated in this section.

(3583) (b) *International Electrotechnical Commission (IEC) Bureau Central de la Commission Electrotechnique Internationale*, 3 rue de Varembé, P.O. Box 131, 1211 Geneva 20, Switzerland.

(3584) (1) IEC 60945, Fourth edition 2002-08, Maritime navigation and radiocommunication equipment and

systems–General requirements–Methods of testing and required test results, incorporation by reference approved for §169.215.

(3585) (2) [Reserved]

(3586) (c) *International Maritime Organization (IMO),* 4 Albert Embankment, London SE1 7SR, U.K.

(3587) (1) IMO Resolution MSC.202(81), adopted on May 19, 2006, Adoption of Amendments to the International Convention for the Safety of Life at Sea, 1974, as Amended, incorporation by reference approved for §160.240.

(3588) (2) IMO Resolution MSC. 210(81), adopted on May 19, 2006, Performance Standards and Functional Requirements for the Long-Range Identification and Tracking of Ships, incorporation by reference approved for §§169.215 and 169.240.

(3589) (3) IMO Resolution MSC.254(83), adopted on October 12, 2007, Adoption of Amendments to the Performance Standards and Functional Requirements for the Long-Range Identification and Tracking of Ships, incorporation by reference approved for §§169.215 and 169.240.

(3590) (4) IMO Resolution A.694(17), adopted on November 6, 1991, General Requirements for Shipborne Radio Equipment Forming Part of the Global Maritime Distress and Safety System (GMDSS) and for Electronic Navigational Aids, incorporation by reference approved for §165.215.

(3591) (5) International Convention on Tonnage Measurement of Ships, 1969, incorporation by reference approved for §169.5.

(3592)

Subpart C—Transmission of Long Range Identification and Tracking Information

(3593)

§169.200 What is the purpose of this subpart?

(3594) This subpart implements Regulation 19-1 of SOLAS Ccapter V (SOLAS V/19-1) and requires certain ships engaged on an international voyage to transmit vessel identification and position information electronically. This requirement enables the Coast Guard to obtain long range identification and tracking (LRIT) information and thus heightens our overall maritime domain awareness, enhances our search and rescue operations, and increases our ability to detect anomalies and deter transportation security incidents.

(3595)

§169.205 What types of ships are required to transmit LRIT information (position reports)?

(3596) The following ships, while engaged on an international voyage, are required to transmit position reports:

(3597) (a) A passenger ship, including high speed passenger craft.

(3598) (b) A cargo ship, including high speed craft, of 300 gross tonnage or more.

(3599) (c) A mobile offshore drilling unit while underway and not engaged in drilling operations.

(3600)

§169.210 Where during its international voyage must a ship transmit position reports?

(3601) The requirements for the transmission of position reports, imposed by the United States, vary depending on the relationship of the United States to a ship identified in §169.205.

(3602) (a) *Flag State relationship*. A U.S. flag ship engaged on an international voyage must transmit position reports wherever they are located.

(3603) (b) *Port State relationship*. A foreign flag ship engaged on an international voyage must transmit position reports after the ship has announced its intention to enter a U.S. port or place under requirements in **33 CFR** part **160**, subpart **C**.

(3604) (c) *Coastal State relationship*. A foreign flag ship engaged on an international voyage must transmit position reports when the ship is within 1,000 nautical miles of the baseline of the United States, unless their Flag Administration, under authority of SOLAS V/19-1.9.1, has directed them not to do so.

(3605)

§169.215 How must a ship transmit position reports?

(3606) A ship must transmit position reports using Long Range Identification and Tracking (LRIT) equipment that has been type-approved by their Administration. To be type-approved by the Coast Guard, LRIT equipment must meet the requirements of IMO Resolutions A.694(17), MSC.210(81), and MSC.254(83), and IEC standard IEC 60945 (Incorporated by reference, see §169.15).

(3607)

§169.220 When must a ship be fitted with LRIT equipment?

(3608) A ship identified in §169.205 must be equipped with LRIT equipment–

(3609) (a) Before getting underway, if the ship is constructed on or after December 31, 2008.

(3610) (b) By the first survey of the radio installation after December 31, 2008, if the ship is–

(3611) (1) Constructed before December 31, 2008, and

(3612) (2) Operates within–

(3613) (i) One hundred (100) nautical miles of the United States baseline, or

(3614) (ii) Range of an Inmarsat geostationary satellite, or other Application Service Provider recognized by the Administration, with continuous alerting is available.

(3615) (c) By the first survey of the radio installation after July 1, 2009, if the ship is–

(3616) (1) Constructed before December 31, 2008, and

(3617) (2) Operates within the area or range specified in paragraph (b)(2) of this section as well as outside the range of an Inmarsat geostationary satellite with which continuous alerting is available. While operating in the area or range specified in paragraph (b)(2) of this section,

however, a ship must install LRIT equipment by the first survey of the radio installation after December 31, 2008.

(3618)

§169.225 Which Application Service Providers may a ship use?

(3619) A ship may use an application Service Provider (ASP) recognized by its administration. Some Communication Service Providers may also serve as an ASP.

(3620)

§169.230 How often must a ship transmit position reports?

(3621) A ship's LRIT equipment must transmit position reports at 6-hour intervals unless a more frequent interval is requested remotely by an LRIT Data Center.

(3622)

§169.235 What exemptions are there from reporting?

(3623) A ship is exempt from this subpart if it is–

(3624) (a) Fitted with an operating automatic identification system (AIS), under **33 CFR 164.46**, and operates only within 20 nautical miles of the United States baseline,

(3625) (b) A warship, naval auxiliaries or other ship owned or operated by a SOLAS Contracting Government and used only on Government non-commercial service, or

(3626) (c) A ship solely navigating the Great Lakes of North America and their connecting and tributary waters as far east as the lower exit of the St. Lambert Lock at Montreal in the Province of Quebec, Canada.

(3627)

§169.240 When may LRIT equipment be switched off?

(3628) A ship engaged on an international voyage may switch off its LRIT equipment only when it is permitted by its Flag Administration, in circumstances detailed in SOLAS V/19-1.7, or in paragraph 4.4.1, of resolution MSC.210(81), as amended by resolution MSC.254(83) (Incorporated by reference, see §169.15).

(3629)

§169.245 What must a ship master do if LRIT equipment is switched off or fails to operate?

(3630) (a) If a ship's LRIT equipment is switched off or fails to operate, the ship's master must inform his or her Flag Administration without undue delay.

(3631) (b) The master must also make an entry in the ship's logbook that states–

(3632) (1) His or her reason for switching the LRIT equipment off, or an entry that the equipment has failed to operate, and

(3633) (2) The period during which the LRIT equipment was switched off or non-operational.

(3634) Note to §169.245: for U.S. vessels, the U.S. Coast Guard serves as the Flag Administration for purposes of this section. All LRIT notifications for the U.S. Flag administration, in addition to requests or questions about LRIT, should be communicated to the U.S. Coast Guard by e-mail addressed to LRIT@uscg.mil.

(3635)

Part 207—Navigation Regulations

(3636)

§207.718 Navigation locks and approach channels, Columbia and Snake Rivers, Oregon and Washington.

(3637) (a) *General*. All locks, approach channels, and all lock appurtenances, shall be under the jurisdiction of the District Engineer, Corps of Engineers, U.S. Army, in charge of the locality. The district engineer may, after issuing a public notice and providing a 30-day opportunity for public comment, set (issue) a schedule for the daily lockage of recreational vessels. Recreational vessels are pleasure boats such a row, sail, or motor boats used for recreational purposes. Commercial vessels include licensed commercial passenger vessels operating on a published schedule or regularly operating in the "for hire" trade. Any recreational schedule shall provide for a minimum of one scheduled recreation lockage upstream and downstream (two lockages) each day. At the discretion of the district engineer, additional lockages may be scheduled. Each schedule and any changes to the schedule will be issued at least 30 days prior to implementation. Prior to issuing any schedule or any change to the schedule, the district engineer will consider all public comments and will evaluate the expected energy situation, water supply, and recreation use of the lock to determine the seasonal need for the schedule or change in schedule. The district engineer's representative at the locks shall be the project engineer, who shall issue orders and instructions to the lockmaster in charge of the lock. Hereinafter, the term "lockmaster" shall be used to designate the person in immediate charge of the lock at any given time. In case of emergency and on all routine work in connection with the operation of the lock, the lockmaster shall have authority to take action without waiting for instructions from the project engineer.

(3638) (b) *Lockage control*. The Lock Master shall be charged with immediate control and management of the lock, and of the area set aside as the lock area, including the lock approach channels. Upstream and downstream approach channels extend to the end of the wing or the guide wall, whichever is longer. At Bonneville lock the upstream approach channel extends to the mooring tie offs at Fort Rains and the downstream approach channel extends to the downstream tip of Robins Island. The Lock Master shall demand compliance with all laws, rules and regulations for the use of the lock and lock area and is authorized to issue necessary orders and directions, both to employees of the Government or to other persons within the limits of the lock or lock area, whether navigating the lock or not. Use of lock facilities is contingent upon compliance with regulations, Lock Master instructions and the safety of people and property.

(3639) (c) *Authority of Lock Master*. No one shall initiate any movement of any vessel in the lock or approaches

except by or under the direction of the Lock Master. ("Vessel" as used herein includes all connected units, tugs, barges, tows, boats or other floating objects.)

(3640) (d) *Signals*–(1) *Radio*. All locks are equipped with two-way FM radio operating on channel 14, frequency of 156.700 MHz, for both the calling channel and the working channel. Vessels equipped with two-way radio desiring a lockage shall call WUJ 33 Bonneville, WUJ 34 The Dalles, WUJ 35 John Day, WUJ 41 McNary, WUJ 42 Ice Harbor, WUJ 43 Lower Monumental, WUJ 44 Little Goose, or WUJ 45 Lower Granite, at least one-half hour in advance of arrival since the Lock Master is not in constant attendance of the locks. Channel 14 shall be monitored constantly in the vessel pilot house from the time the vessel enters the approach channel until its completion of exit. Prior to entering the lock chamber, the commercial freight or log-tow vessel operator shall report the nature of any cargo, the maximum length, width and draft of the vessel and whether the vessel is in any way hazardous because of its condition or the cargo it carries or has carried.

(3641) (2) *Pull-cord signal stations*. Pull-cord signal stations marked by large instructional signs and located near the end of the upstream and downstream lock entrance walls may be used in place of radios to signal the Lock Master for a lockage.

(3642) (3) *Entering and exit signals*. Signal lights are located outside each lock gate. When the green (go) light is on, all vessels will enter in the sequence prescribed by the Lock Master. When the red (stop) light is on, the lock is not ready for entrance and vessels shall stand clear. In addition to the above visual signals, the Lock Master will signal that the lock is ready for entrance by sounding one long blast on the lock air horn. The Lock Master will signal that the lock is ready for exit by lighting the green exit light and sounding one short blast on the air horn.

(3643) (4) *Craft lockage-readiness signal*. Upon query from Lock Master, a vessel operator will signal when he is properly moored and ready for the lockage to begin.

(3644) (e) *Permissible dimensions of vessels*. Nominal overall dimensions of vessels allowed in the lock chamber are 84 feet wide and 650 feet long. Depth of water in the lock depends upon river levels which may vary from day to day. Staff gauges showing the minimum water level depth over gate sills are located inside the lock chamber near each lock gate and outside the lock chamber near the end of both upstream and downstream guide walls, except at Bonneville where the staff gauges show water levels in feet above MSL and are located on the southern guide walls at the upstream and downstream miter gates. Bonneville's upstream sill elevation is 51 feet MSL and the downstream sill elevation is -12 feet MSL. Depth over sill at Bonneville is determined by subtracting the sill elevation from the gauge reading. Vessels shall not enter the navigation lock unless the vessel draft is at least one foot less than the water depth over the sill. Information concerning allowable draft for vessel passage through the locks may be obtained from the Lock Master. Minimum lock chamber water level depth is 15 feet except at Ice Harbor where it is 14 feet and at Bonneville where it is 19 feet. When the river flow at Lower Granite exceeds 330,000 cubic feet per second the normal minimum 15-foot depth may be decreased to as little as eight feet.

(3645) (f) *Precedence at lock*. Subject to the order of precedence, the vessel or tow arriving first; at the lock will be locked through first, however, this precedence may be modified at the discretion of the lockmaster. If immediate passage is required, lockage of vessels owned or operated by the United States shall take precedence. The precedence of all other vessels shall be as follows:

(3646) (1) When a recreational vessel lockage schedule is in effect, at the appointed time for lockage of recreation craft, recreation craft shall take precedence; however, commercial vessels may be locked through with recreation craft if safety and space permit. At other than the appointed time, the lockage of commercial and tow vessels shall take precedence and recreational craft may (only) lock through with commercial vessels only as provided in paragraph (h) of this section.

(3647) (2) If a recreational vessel lockage schedule is not in effect, commercial and tow vessels shall take precedence. Recreational craft may be locked through with commercial craft. If no commercial vessels are scheduled to be locked through within a reasonable time, not to exceed one hour after the arrival of the recreational vessels at the lock, the recreational vessel may be locked through separately. If a combined lockage cannot be arranged, the recreational craft shall be locked through after waiting three commercial lockages.

(3648) (g) *Loss of turn*. Vessels that fail to enter the lock with reasonable promptness, after being authorized to do so, shall lose their turn.

(3649) (h) *Lockage*—(1) *Multiple lockage*. The Lock Master shall decide whether one or more vessels or tows may be locked through at the same time. Vessels with flammable or highly hazardous cargo will be passed separately from all other vessels. Hazardous materials are described in Part 171, Title 49, Code of Federal Regulations. Flammable materials are defined in the National Fire Code of the National Fire Protection Association.

(3650) (2) *Recreational craft*. By mutual agreement of (all parties,) the lockmaster and captains of the vessels involved, recreational vessels may be locked through with commercial vessels. Under the recreational vessel schedule, separate lockage will not be made by recreational vessels except in accordance with the recreational lockage schedule or when circumstances warrant, such as in an emergency. When recreational craft are locked simultaneously with commercial vessels, the recreational vessel will enter the lock chamber after the commercial vessel is secured in the chamber and when practicable will depart while the commercial vessel remains secured.

(3651) (3) *Special schedules*. Recreational boating groups may request special schedules by contacting the district engineer. The schedule for the daily lockage of recreational vessels will indicate the number of boats required for a

special schedule and how many days' notice is required in order to arrange a special schedule.

(3652) (i) *Mooring in approaches prohibited*. Mooring or anchoring in the approaches to the lock is prohibited where such mooring will interfere with navigation.

(3653) (j) *Waiting for lockage*. Vessels waiting for lockage shall wait in the clear outside of the lock approach channel, or contingent upon permission by the Lock Master, may at their own risk, lie inside the approach channel at a place specified by the Lock Master. At Bonneville, vessels may at their own risk, lay-to at the downstream moorage facility on the north shore downstream from the north guide wall provided a 100-foot-wide open channel is maintained.

(3654) (k) *Mooring in lock*. All vessels must be moored within the lock chamber so that no portion of any vessel extends beyond the lines painted on the lock walls. Moorage within the lock chamber will be to floating mooring bits only and will be accomplished in a proper no-slip manner. Small vessels will not be locked with a large vessel unless the large vessel is so moored (two mooring bits) that no lateral movement is possible. The vessel operator will constantly monitor the position of his vessel and his mooring bit ties to assure that there is no fore or aft movement of his vessel and lateral movement is minimized. Propulsion by vessels within the lock chamber will not be permitted during closure operation of a lock chamber gate or as otherwise directed by the Lock Master.

(3655) (l) *Crew to move craft*. During the entire lockage, the vessel operator shall constantly attend the wheelhouse, be aware of the vessel's position, and monitor radio channel 14 on frequency 156.700 MHz, or otherwise be constantly able to communicate with the Lock Master. At a minimum, vessels shall be as vigilantly manned as if underway.

(3656) (m) *Speed*. Vessels shall be adequately powered to maintain a safe speed and be under control at all times. Vessels shall not be raced or crowded alongside another in the approach channels. When entering the lock, speed shall be reduced to a minimum consistent with safe navigation. As a general rule, when a number of vessels are entering the lock, the following vessel shall remain at least 200 feet astern of the vessel ahead.

(3657) (n) *Delay in lock*. Vessels shall not unnecessarily delay any operation of the locks.

(3658) (o) *Landing of freight*. No freight, baggage, personnel, or passengers shall be landed on or over the walls of the lock, except by permission and direction of the Lock Master.

(3659) (p) *Damage to lock or other structures*. The regulations in this section shall not relieve owners and/or operators of vessels from liability for any damage to the lock or other structures or for the immediate removal of any obstruction. No vessel in less than stable floating condition or having unusual sinking potential shall enter the locks or its approaches. Vessels must use great care not to strike any part of the lock, any gate or appurtenance thereto, or machinery for operating the gates, or the walls protecting the banks of the approach channels. All vessels with projecting irons, or rough surfaces which may damage the gates or lock walls, shall not enter the lock unless provided with suitable buffers and fenders. Vessels having chains, lines, or drags either hanging over the sides or ends or dragging on the bottom for steering or other purposes will not be permitted to pass.

(3660) (q) *Tows*. Prior to a lockage, the person in charge of a vessel towing a second vessel by lines shall, at a safe distance outside of the incoming approach channel, secure the second vessel to the towing vessel and keep it secured during the entire course of a lockage and until safely clear of the outgoing approach channel.

(3661) (r) *Violation of regulations*. Any violation of these regulations may subject the owner or master of any vessel to any or all of the following: (1) Penalties prescribed by law of the United States Government (33 U.S.C. 1); (2) Report of violation to the titled owner of the vessel; (3) Report of violation to the U.S. Coast Guard; (4) Refusal of lockage at the time of violation.

(3662) (s) *Refuse in locks*. No material of any kind shall be thrown or discharged into the lock, or be deposited in the lock area. Vessels leaking or spilling cargo will be refused lockage and suitable reports will be made to the U.S. Coast Guard. Deck cargo will be so positioned so as not to be subject to falling overboard.

(3663) (t) *Handling valves, gates, bridges, and machinery*. No person, unless authorized by the Lock Master, shall open or close any bridge, gate, valve, or operate any machinery in connection with the lock. However, the Lock Master may call for assistance from the master of any vessel using the lock, should such aid be necessary; and when rendering such assistance, the person so employed shall be directly under the orders of the Lock Master. Masters of vessels refusing to provide such assistance when it is requested of them may be denied the use of the lock by the Lock Master.

(3664) (u) [Reserved]

(3665) (v) [Reserved]

(3666) (w) *Restricted areas*. No vessel shall enter or remain in any restricted area at any time without first obtaining permission from the District Engineer, Corps of Engineers, U.S. Army, or his duly authorized representative.

(3667) (1) *At Bonneville Lock and Dam*. The water restricted to all vessels, except Government vessels, are described as all waters of the Columbia River and Bradford Slough within 1,000 feet above the first powerhouse, spillway, and second powerhouse (excluding the new navigation lock channel) and all waters below the first powerhouse, spillway, second powerhouse, and old navigation lock. This is bounded by a line commencing from the westernmost tip of Robins Island on the Oregon side of the river and running in a South 65 degrees West direction a distance of approximately 2,100 feet to a point 50 feet upstream of the Hamilton Island Boat Ramp on the Washington shore. Signs designate the restricted areas.

The approach channel to the new navigation lock is outside the restricted area.

(3668) (2) *At the Dalles Dam*. The waters restricted to only Government vessels are described as all downstream waters other than those of the navigation lock downstream approach channel which lie between the Wasco County Bridge and the project axis including those waters between the powerhouse and the Oregon shore and all upstream waters other than those of the navigation lock upstream approach channel which lie between the project axis and a line projected from the upstream end of the navigation lock guide wall to the junction of the concrete structure with the earth fill section of the dam near the upstream end of the powerhouse.

(3669) (3) *At the John Day Dam*. The waters restricted to only Government vessels are described as all of the waters within a distance of about 1,000 yards above the dam lying south of the navigation channel leading to the lock and bounded by a line commencing at the upstream end of the guide wall, and running in a direction 54°01'37" true for a distance of 771 yards, thence 144°01'37" true across the river to the south shoreline. The downstream limit is marked by orange and white striped monuments on the north and south shores.

(3670) (4) *At McNary Lock and Dam*. The waters restricted to all vessels, except to Government vessels, are described as all waters commencing at the upstream end of the Oregon fish ladder thence running in the direction of 39°28' true for a distance of 540 yards; thence 7°49' true for a distance of 1,078 yards; thence 227° 10' for a distance of 468 yards to the upstream end of the navigation lock guidewall. The downstream limits commence at the downstream end of the navigation lock guidewall thence to the south (Oregon) shore at right angles and parallel to the axis of the dam. Signs designate the restricted areas.

(3671) (5) *At Ice Harbor Lock and Dam*. The waters restricted to all vessels, except Government vessels, are described as all waters within a distance of about 800 yards upstream of the dam lying south of the navigation lock and bound by the line commencing at the upstream end of the guidewall, and running a direction of 91°10' true for a distance of 575 yards; thence 162° 45' to the south shore, a distance of about 385 yards. The downstream limits commencing at the downstream end of the guidewall; thence to the south shore, at right angles and parallel to the axis of the dam. Signs designate the restricted areas.

(3672) (6) *At Lower Monumental Lock and Dam*. The waters restricted to all vessels, except Government vessels, are described as all waters commencing at the upstream of the navigation lock guidewall and running in a direction of 46°25' true for a distance of 344 yards; thence 326°19' true for a distance of 362 yards; thence 243°19' true for a distance of 218 yards; thence 275°59' true to the north shore a distance of about 290 yards. The downstream limits commence at the downstream end of the navigation lock guidewall; thence to the north shore, at right angles and parallel to the axis of the dam. Signs designate the restricted areas.

(3673) (7) *At Little Goose Lock and Dam*. The waters restricted to all vessels, except Government vessels, are described as all waters commencing at the upstream of the navigation lock guidewall and running in a direction of 60°37' true for a distance of 676 yards; thence 345°26' true for a distance of 494 yards; thence 262°37'47" true to the dam embankment shoreline. The downstream limits commence 512 yards downstream and at right angles to the axis of the dam of the south shore; thence parallel to the axis of the dam to the north shore. Signs designate the restricted areas.

(3674) (8) *At Lower Granite Lock and Dam*. The waters restricted to all vessels, except Government vessels, are described as all waters commencing at the upstream of the navigation lock guidewall thence running in the direction of 131°31' true for a distance of 608 yards; thence 210° 46' true to the south shore, a distance of about 259 yards. The downstream limits commence at the downstream end of navigation lock guidewall; thence to the south shore, at right angles and parallel to the axis of the dam. Signs designate the restricted areas.

(3675)

§207.750 Puget Sound Area, Washington.

(3676) (a) *Waterway connecting Port Townsend and Oak Bay; use, administration and navigation–*

(3677) (1) *Works to which the regulations apply*. The "canal grounds" when used in this paragraph shall mean that area between the south end of the jetties in Oak Bay and the northern end of the dredge channel approximately 400 yards northwest of Port Townsend Canal Light. The "canal" is the water lying between these limits and the banks containing the same.

(3678) (2) [Reserved]

(3679) (3) *Trading, landing, etc*. No business, loading, or landing of freight or baggage will be allowed on or over the canal piers or bulkheads.

(3680) (4) *Refuse*. No person shall throw material of any kind into the canal.

(3681) (5) [Reserved]

(3682) (6) *Obstructions*. On the canal's being obstructed by a vessel, raft, or other craft, by sinking, grounding or otherwise, the District Engineer, Seattle, shall be notified by telephone or telegraph as soon as possible by the person in charge of the obstructing vessel, raft, or craft.

(3683) (b) *Lake Washington Ship Canal; use, administration and navigation–*

(3684) (1) *Definitions*. The term "canal" as used in the regulations in this paragraph shall include the water area in the locks and the channel and adjacent waters from a point 5,500 feet northwest of the Burlington Northern, Inc. railway bridge to the east end of the channel opposite Webster Point, Lake Washington. The term "canal grounds" shall include all grounds set aside for the use of the canal or occupied in its construction.

(3685) (2) *Supervision*. The canal and all its appurtenances shall be under the supervision of the District Engineer, Corps of Engineers, Seattle. The District Engineer will

detail as many assistants as may be necessary for the efficient operation of the canal and the enforcement of the regulations in this Paragraph. The movement of all vessels and other floating things in the canal and approaches thereto shall be under the direction of the District Engineer and his authorized assistants. All orders given under the regulations to any master or person in charge of any vessel, raft, or other watercraft by the District Engineer or his authorized assistants, either in person or through any canal operative, shall be acknowledged and obeyed. Failure to see, understand, or comply with signals or instructions shall constitute a violation of the regulations. Any person refusing to comply with the regulations or any orders given in pursuance thereof may be denied the privileges of the canal or canal grounds.

(3686) (3) *Speed.* To avoid damage to other vessels and to property along the shores, all vessels shall proceed at reduced speed in the canal as follows:

(3687) (i) From the west entrance of the Lake Washington Ship Canal to the western end of the west guide pier of the Hiram M. Chittenden Locks, and from the east end of the easternmost guide pier of said Locks to the white flashing dolphin located south of Webster Point on Lake Washington, including all of Salmon Bay, Lake Union, Portage Bay, and Union Bay, it shall be unlawful for any person to operate any watercraft or vessel at a speed in excess of 7 nautical miles per hour within 200 feet of any shoreline, pier, restricted area or shore installation.

(3688) (ii) From the western end of the aforesaid west guide pier to the eastern end of the aforesaid east guide pier at said Locks, it shall be unlawful for any person to operate any watercraft or vessel at a speed in excess of 4 nautical miles per hour.

(3689) **NOTE**. Signs are located along the canal to indicate permissible speeds.

(3690) (4) *Traffic signal lights*. In addition to the lock signal lights described in paragraph (g)(5)(ii) of this section, a red light, and a green light are installed on the west side of the Ballard Bridge, on the east side of the Fremont Bridge, 1,000 feet west of the Montlake Bridge, and 1,000 feet east of the Montlake Bridge, for the guidance of vessels approaching the sections of the canal between Salmon Bay and Lake Union and between Lake Union and Lake Washington, respectively. Vessels of 300 gross tons and over and all vessels with tows, except as hereinafter provided, shall not pass the red lights. The green lights will indicate that vessels may proceed. Vessels of less than 300 gross tons without tows may disregard these signals, but they shall travel at very slow speed when passing other vessels. Vessels of 300 gross tons and over and vessels with tows, except logs, whose destination is easterly between the Ballard Bridge and a point 2,500 feet east of the Ballard Bridge, may pass the red signals on the Ballard Bridge, provided, such passage will not interfere with approaching traffic.

(3691) (5) *Approaching and passing through locks–*

(3692) (i) *Signals for locks*. Vessels with tows desiring to use the locks shall so indicate by two long and three short blasts of a whistle, horn or megaphone. All other vessels desiring to use the locks shall so indicate by two long and two short blasts. NOTE: The term "long blasts" means blasts of four seconds duration, and the term "short blasts" means blasts of one second duration.

(3693) (ii) *Lock signal lights*. Red and green signal lights are installed on the guide pier west of the Burlington Northern, Inc. railway bridge below the locks. The green light will indicate to vessels bound for the large lock that the lock has been made ready. If the red light is burning, vessels bound for the large lock shall moor at the pier. Vessels bound for the small lock shall be guided into the small lock by traffic signals thereon. The masters of all vessels approaching the locks from Puget Sound shall be alert to receive and shall immediately comply with instructions by voice or signal from the employee on the west pier.

(3694) (iii) *Precedence at locks*. All vessels approaching the locks shall stop at the points indicated by signs placed on the canal piers or as directed by a lockman until ordered to proceed into the lock. Unless otherwise directed by the District Engineer or his authorized assistants, vessels owned or operated by the United States or the City of Seattle and passenger vessels operating on a regular schedule shall have precedence over all others in passing through the locks. Registered merchant vessels shall have precedence over pleasure craft, which shall pass through in the order of their arrival at the locks, and both shall have precedence over vessels towing floated timber or logs. Tows of floated timber and logs may be denied the use of the locks during certain hours when both locks are busy passing other traffic. However, advance notice will be given towboat companies as to the periods when log tows will be denied lockage.

(3695) (iv) *Entering locks*. Masters of vessels shall exercise the greatest care when entering either lock. The forward movement of vessels while taking position in the locks shall be very slow, and boats entering the small lock shall reduce their speed to not more than two and one-half miles per hour when within 200 feet of the outer gate and come to practically a full stop before entering the lock so that in case the engine mechanism fails to operate properly the momentum of the boat may be stopped easily by its lines. The masters of vessels entering either lock from either direction shall be alert to receive and shall immediately comply with instructions by voice or signal from the lock attendants.

(3696) (v) *Mooring in locks*. Vessels entering the locks shall be equipped with adequate lines, at least 50 feet in length being required fore and aft. While in the large lock vessels and rafts will be moored at the top of the lock wall. While in the small lock vessels shall be moored to the floating mooring wall. Lines shall not be released until the signal has been given by the lock force to leave the lock, after which there shall be no delay in leaving. All vessels not equipped to handle tie-up lines with power winches shall be equipped with suitable mooring lines of manila, or other suitable fiber, of sufficient size and strength to hold

the vessel against the currents to be met within the lock chamber. The use of wire rope for tie-up by vessels not equipped to handle such lines with power winches is prohibited. Vessels may be denied the use of the locks if their lines are not in good condition, or if the mooring bits on barges are not accessible or are not equipped to prevent lines from slipping off when the water is lowered in the lock. All vessels entering the locks should have, in addition to the master, at least one person on deck to handle lines. Mates and deckhands, when preparing to moor within the lock chambers, should not throw heavy mooring lines at the lockmen on the walls, but should wait for a heaving line to be passed to them unless otherwise directed. All towboat crews, while locking or moving a tow out of the lock chamber, should station themselves so as to preclude the possibility of being injured by the parting of cable or lines under strain. Persons attempting to take vessels through the locks without assistance on deck may be required to wait until the lock is clear of other traffic before passing through. All operators of vessels are especially cautioned to use extreme care while crowded in the locks to avoid accident or fire on their boats. Under no circumstances will small craft, such as rowboats, launches and houseboats, or any other type of pleasure boats, be locked through with barges used for carrying any type of petroleum product or other hazardous material. At the discretion of the lockmaster, small craft as described above may be locked through with barge tows containing other than dangerous material. Operators of small vessels and larger vessels operating in the proximity of each other shall be alert to the danger arising from the limited maneuverability of the larger vessels, and shall exercise all precautions to prevent accident.

(3697) (6) *Damage to locks or other structures*.

(3698) (i) The regulations in this paragraph shall not affect the liability of the owners and operators of vessels for any damage caused by their operations to the locks or other structures. The sides and corners of all vessels and rafts passing through the locks should be free from spikes or projections of any kind which might damage the locks or other structures. Vessels with appurtenances or projections which might damage the locks or other structures shall be fitted with adequate fenders. Lockage of leaking vessels or vessels with overhanging loads may be refused. Such barge or craft shall be moored in a location outside of the channel approach to the lock so as to not interfere with passing navigation. Vessels of unusual dimensions, or other characteristics which, in the opinion of the lockmaster, pose a threat to the integrity or safety of the locks or canal will be refused passage until written permission to pass is provided by the District Engineer. Sufficient written data and drawings shall be provided the District Engineer that an engineering determination can be made as to the safety of the vessel. The District Engineer shall have the right to inspect any such vessels prior to passage. The operators of all vessels shall use care to avoid striking the guide walls or other structures pertaining to the canal.

(3699) (ii) In the interest of safety and fire prevention, all woven rope fenders used with barges carrying flammable cargo should be water-soaked or otherwise fireproofed prior to entering the lock approaches.

(3700) (iii) Burning fenders should be dropped overboard immediately rather than being placed on the deck of a barge or towboat.

(3701) (iv) A minimum of one man with a portable fender shall be stationed at the head end of every tow of hazardous cargo and at the aft end if the lockmaster so directs so as to protect the lock and guide walls from damage while entering or departing the lock structures.

(3702) (v) All cylinders or containers holding gases under pressure, or any other chemical or substance, shall be securely fastened to the hull of the vessel to prevent their rolling overboard into the lock chamber and becoming a hazard.

(3703) (vi) All containers holding paint, gasoline or other volatile materials shall be securely fastened with tight-fitting covers. To preclude a concentration of potentially explosive vapors, no paint will be allowed to be applied to the exterior of vessel hulls, houses, machinery or other equipment while the vessels are in the lock chamber.

(3704) (vii) All hatches of tank barges must be closed prior to entering lock. Tank barges with open hatch or hatches will be denied lockage.

(3705) (viii) No smoking will be permitted aboard vessels with cargoes of fuel or explosives.

(3706) (ix) All vessels carrying hazardous cargoes shall so be identified with the lockmaster. They shall be in compliance with Department of Transportation (U.S. Coast Guard) regulations (**46 CFR 30-40**, **146-154** and **49 CFR 171-179**) and shall accordingly carry required markings. All DOT safety regulations for transit of hazardous cargoes shall be adhered to, whether or not specifically cited or duplicated herein.

(3707) (7) [Reserved]

(3708) (8) *Rafts*. (i) No log raft exceeding 700 feet in length or 76 feet in width shall pass through the canal. Boom sticks shall be smooth, with rounded ends, and securely tied together with cables, chains, or log swifters to prevent the raft from spreading while in the lock. Rafts containing logs that do not float above water for their entire length, or are in danger of being submerged when they enter fresh water, shall not be towed in the canal until such logs are securely fastened so as to prevent their escape from the raft.

(3709) (ii) Whenever required, log rafts passing in through the lock will be given a number that shall be fastened on one of the logs in the raft. This number will identify the raft and shall not be removed until the logs are used.

(3710) (iii) Two floats are maintained in Shilshole Bay near the entrance of the canal channel to facilitate the handling of logs in the canal. Rafts bound for the canal may be moored at one of these floats, only the portion of the raft that is to be taken through at a single lockage being brought into the canal. The remainder of the raft may be

left at the float until the first portion has been towed to its destination above the lock.

(3711) (9) *Tows*. All vessels engaged in towing shall use tow lines of the least practicable length and shall have full control of their tows at all times. Towing more than one craft abreast is forbidden if the total width of the tow, including the towboat, exceeds 70 feet.

(3712) (10) *Obstructing navigation*. (i) All vessels and tows passing through the canal shall be kept as close as practicable to the center or, when safer, to the right side of the waterway, except when passing other craft or preparing to moor at a pier or wharf. Slowly moving log rafts, tows, or vessels shall, whenever practicable, pull out of the way when meeting other vessels or when other traffic proceeding in the same direction desires to pass. Vessels are forbidden to obstruct the canal in any way or to delay by slow passage through the canal the progress of other vessels. Small and readily maneuverable vessels operating in the vicinity of larger, less maneuverable vessels shall, in all cases, keep clear and operate with caution in order that the large vessels may maintain safe steerage way and that hazards to all vessels may be reduced. All vessels shall operate with extreme caution and movements shall be made only when adequate precautions for the safety of other vessels and property are being effectively employed.

(3713) (ii) The placing of logs, vessels, or other floating objects within the limits of the dredged channels or anywhere in the canal where they may interfere with navigation to or from piers or industrial plants is prohibited.

(3714) (11) *Turning.* Vessels exceeding 100 feet in length shall not turn around, or attempt to turn around, in the concrete revetted portions of the canal at the Fremont Cut or Portage Cut sections of the canal.

(3715) (12) *Excessive working of propellers or engines*. Excessive working of the propellers of a vessel for purposes of testing or for other purposes when this creates objectionable or dangerous currents in the canal is forbidden. In case of grounding, the rapid or strong working of the vessel's engines is forbidden.

(3716) (13) *Landing or mooring*. No business, trading, or landing of passengers, freight, or baggage will be allowed on or over the canal piers or lock walls, or over the piers or grounds forming a part of the canal or its appurtenances. All persons in charge of or employed on any boat are prohibited from landing or mooring such boat at any of the canal piers, unless in transit through the canal or specially permitted to do so by the District Engineer or his authorized assistants.

(3717) (14) *Deposit of refuse*. The deposit, either from watercraft or from the shore, of any oil or refuse matter in the canal or upon the canal grounds is prohibited, nor shall water discharged from the side of a vessel be allowed to spill on the lock wall.

(3718) (15) *Aids to navigation*. Persons in charge of log rafts or other tows, and the masters of vessels and boats using the canal, shall keep a careful watch when passing buoys or other aids to navigation and promptly report to the District Engineer or his authorized assistants any displacement or damage to such aids.

(3719) **Note:** Aids to navigation and other related data are shown on Nautical Chart No. 18447 published by the National Ocean Service.

(3720) (16) *Operation of salt water barrier in the large lock of the Hiram M. Chittenden Locks*.

(3721) (i) A salt water barrier is installed across the east end of the large lock. This barrier, while in the depressed position, reduces the depth of the water available at the east end of this chamber from 36 feet to 33.75 feet at low lake elevation (20 feet above MLLW). In the raised position, the depth of water will be reduced to 16 feet. In comparison, the depth of water available for navigation at the west end of the large lock chamber is 29 feet at mean lower low water. The purpose of this barrier is to reduce salt water intrusion into Lake Washington through normal operations of the locks.

(3722) (ii) The least depth of water available over the barrier when raised will be shown on signs placed near the ends of the guide piers to the large lock. A yellow light mounted on these signs will be lighted only while the barrier is in a raised position.

(3723) (iii) Vessels transiting the lock from east to west having draft requirements that exceed the water depth available over the barrier will advise the lockmaster by sounding one long and two short blasts of a horn or whistle. When the yellow light is extinguished on the signboard, the operator of the vessel may assume the barrier has been lowered.

(3724) (iv) Vessels transiting the lock from west to east having draft requirements that exceed the depth available over the intrusion barrier will advise the lockmaster by sounding one long and two short blasts of a horn or whistle. A yellow light mounted on a standard on the south lock wall and opposite the intrusion barrier will be lighted only when the barrier is in the raised position.

(3725) (v) It shall be the responsibility of the vessel operator to satisfy himself of the position of this barrier prior to passing over it.

(3726) (c) *West Waterway, Seattle Harbor; navigation*.

(3727) (1) The movement of vessels of 250 gross tons or over and all vessels with tows of any kind through the narrow section of West Waterway between the bend at Fisher's Flour Mill dock and the bend at the junction of East Waterway with Duwamish Waterway, and through the draws of the City of Seattle and Northern Pacific Railway Company bridges crossing this narrow section, shall be governed by red and green traffic signal lights mounted on the north and south sides of the west tower of the City Light power crossing at West Spokane Street.

(3728) (2) Two green lights, one vertically above the other, displayed ahead of a vessel, shall indicate that the waterway is clear. Two red lights, one vertically above the other, displayed ahead of a vessel, shall indicate that the waterway is not clear.

(3729) (3) A vessel approaching the narrow section and drawbridges from either end of the waterway shall give one long blast of a whistle and shall not enter the narrow section until green lights are displayed.

(3730) (4) One vessel may follow another vessel in either direction, but the channel shall not be kept open in the same direction for an unreasonable time if a vessel is waiting at the other end.

(3731) (5) Tugs, launches, and small craft shall keep close to one side of the channel when vessels or boats with tows are passing.

(3732) (6) All craft shall proceed with caution. The display of a green light is not a guarantee that the channel is clear of traffic, and neither the United States nor the City of Seattle will be responsible for any damage to vessels or other property which may be chargeable to mistakes in the operation of the signal lights or to their failure to operate.

(3733)

§207.800 Collection of navigation statistics.

(3734) (a) *Definitions*. For the purpose of this regulation the following terms are defined:

(3735) (1) *Navigable waters of the United States* means those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark, and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. (See **33 CFR** part **329** for a more complete definition of this term.)

(3736) (2) *Offenses and Violations* mean:

(3737) (i) Failure to submit a required report.

(3738) (ii) Failure to provide a timely, accurate, and complete report.

(3739) (iii) Failure to submit monthly listings of idle vessels or vessels in transit.

(3740) (iv) Failure to submit a report required by the lockmaster or canal operator.

(3741) (3) *Leased or chartered vessel* means a vessel that is leased or chartered when the owner relinquishes control of the vessel through a contractual agreement with a second party for a specified period of time and/or for a specified remuneration from the lessee. Commercial movements on an affreightment basis are not considered a lease or charter of a particular vessel.

(3742) (4) *Person or entity* means an individual, corporation, partnership, or company.

(3743) (5) *Timely* means vessel and commodity movement data must be received by the Waterborne Commerce Statistics Center within 30 days after the close of the month in which the vessel movement or nonmovement takes place.

(3744) (6) *Commercial vessel* means a vessel used in transporting by water, either merchandise or passengers for compensation or hire, or in the course of business of the owner, lessee, or operator of the vessel.

(3745) (7) *Reporting situation* means a vessel movement by an operator that is required to be reported. Typical examples are listed in the instructions on the various ENG Forms. Five typical movements that are required to be reported by vessel operating companies included the following examples: Company A is the barge owner, and the barge transports corn from Minneapolis, MN to New Orleans, LA, with fleeting at Cairo, IL.

(3746) (i) *Lease/Charter:* If Company A leases or charters the barge to Company B, then Company B is responsible for reporting the movements of the barge until the lease/charter expires.

(3747) (ii) *Interline Movement:* A barge is towed from Minneapolis to Cairo by Company A, and from Cairo to New Orleans by Company B. Since Company A is the barge owner, and the barge is not leased. Company A reports the entire movement of the barge with an origin of Minneapolis and a destination of New Orleans.

(3748) (iii) *Vessel Swap/Trade:* Company A swaps barge with Company B to allow Company B to meet a delivery commitment to New Orleans. Since Company A has not leased/chartered the barge, Company A is responsible for filing the report. Company B is responsible for filing the report on the barge which is traded to Company A. The swap or trade will not affect the primary responsibility for reporting the individual vessel movements.

(3749) (iv) *Re-Consignment:* Barge is reconsigned to Mobile, AL. Company A reports the movements as originating in Minneapolis and terminating in Mobile. The point from which barge is reconsigned is not reported, only points of loading and unloading.

(3750) (v) *Fleeting:* Barge is deposited at a New Orleans fleeting area by Company A and towed by Company B from fleeting area to New Orleans area dock for unloading. Company A, as barge owner, reports entire movements from Minneapolis to the unloading dock in New Orleans. Company B does not report any barge movement.

(3751) (b) Implementation of the waterborne commerce statistics provisions of the River and Harbor Act of 1922, as amended by the Water Resources Development Act of 1986 (Pub. L. 99-662), mandates the following.

(3752) (1) *Filing Requirements*. Except as provided in paragraph (b)(2) of this section, the person or entity receiving remuneration for the movement of vessels or for the transportation of goods or passengers on the navigable waters is responsible for assuring that the activity report of commercial vessels is timely filed.

(3753) (i) For vessels under lease/charter agreements, the lessee or chartered of any commercial vessel engaged in commercial transportation will be responsible for the filing of said reports until the lease/charter expires.

(3754) (ii) The vessel owner, or his designated agent, is always the responsible party for ensuring that all commercial activity of the vessel is timely reported.

(3755) (2) The following Vessel Information Reports are to be filed with the Army Corps of Engineers, at the address specified on the ENG Form, and are to include:

(3756) (i) *Monthly Reports*. These reports shall be made on ENG Forms furnished upon written request of the vessel operating companies to the Army Corps of Engineers. The

forms are available at the following address: U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center, P.O. Box 61280, New Orleans, LA 70161-1280.

(3757) (A) All movements of domestic waterborne commercial vessels shall be reported, including but not limited to: Dry cargo ship and tanker moves, loaded and empty barge moves, towboat moves, with or without barges in tow, fishing vessels, movements of crew boats and supply boats to offshore locations, tugboat moves and movements of newly constructed vessels from the shipyard to the point of delivery.

(3758) (B) Vessels idle during the month must also be reported.

(3759) (C) Notwithstanding the above requirements, the following waterborne vessel movements need not be reported:

(3760) (1) Movements of recreational vessels.

(3761) (2) Movements of fire, police, and patrol vessels.

(3762) (3) Movements of vessels exclusively engaged in construction (e.g., piledrivers and crane barges). **Note:** however, that movements of supplies, materials, and crews to or from the construction site must be timely reported.

(3763) (4) Movements of dredges to or from the dredging site. However, vessel movements of dredge material from the dredging site to the disposal site must be reported.

(3764) (5) Specific movements granted exemption in writing by the Waterborne Commerce Statistics Center.

(3765) (D) ENG Forms 3925 and 3925b shall be completed and filed by vessel operating companies each month for all voyages or vessel movements completed during the month. Vessels that did not complete a move during the month shall be reported as idle or in transit.

(3766) (E) The vessel operating company may request a waiver from the Army Corp of Engineers, and upon written approval by the Waterborne Commerce Center, the company may be allowed to provide the requisite information of the above paragraph (D), on computer printouts, magnetic tape, diskettes, or alternate medium approved by the Center.

(3767) (F) Harbor Maintenance Tax information is required on ENG Form 3925 for cargo movements into or out of ports that are subject to the provisions of section 1402 of the Water Resources Development Act of 1986 (Pub. L. 99-662).

(3768) (1) The name of the shipper of the commodity, and the shipper's Internal Revenue Service number or Social Security number, must be reported on the form.

(3769) (2) If a specific exemption applies to the shipper, the shipper should list the appropriate exemption code. The specific exemption codes are listed in the directions for ENG Form 3925.

(3770) (3) Refer to **19 CFR** part **24** for detailed information on exemptions and ports subject to the Harbor Maintenance Tax.

(3771) (ii) *Annual Reports*. Annually an inventory of vessels available for commercial carriage of domestic commerce and vessel characteristics must be filed on ENG Forms 3931 and 3932.

(3772) (iii) *Transaction Reports*. The sale, charter, or lease of vessels to other companies must also be reported to assure that proper decisions are made regarding each company's duty for reporting vessel movements during the year. In the absence of notification of the transaction, the former company of record remains responsible until proper notice is received by the Corps.

(3773) (iv) *Reports to Lockmasters and Canal Operators*. Masters of self-propelled non-recreational vessels which pass through locks and canals operated by the Army Corps of Engineers will provide the data specified on ENG Forms 3102b, 3102c, and/or 3102d to the lockmaster, canal operator, or his designated representative in the manner and detail dictated.

(3774) (c) *Penalties for Noncompliance*. The following penalties for noncompliance can be assessed for offenses and violations.

(3775) (1) *Criminal Penalties*. Every person or persons violating the provisions of this regulation shall, for each and very offenses, be liable to a fine of not more than $5,000, or imprisonment not exceeding two months, to be enforced in any district court in the United States within whose territorial jurisdiction such offense may have been committed.

(3776) (2) In addition, any person or entity that fails to provide timely, accurate, and complete statements or reports required to be submitted by the regulation in this section may also be assessed a civil penalty of up to $6,270 per violation under 33 U.S.C. 555, as amended.

(3777) (3) *Denial of Passage*. In addition to these fines, penalties, and imprisonments, the lockmaster or canal operator can refuse to allow vessel passage.

(3778) (d) *Enforcement Policy*. Every means at the disposal of the Army Corps of Engineers will be utilized to monitor and enforce these regulations.

(3779) (1) To identify vessel operating companies that should be reporting waterborne commerce data, the Corps will make use of, but is not limited to, the following sources.

(3780) (i) Data on purchase and sale of vessels.

(3781) (ii) U.S. Coast Guard vessel documentation and reports.

(3782) (iii) Data collected at Locks, Canals, and other facilities operated by the Corps.

(3783) (iv) Data provided by terminals on ENG Form 3926.

(3784) (v) Data provided by the other Federal agencies including the Internal Revenue Service, Customs Service, Maritime Administration, Department of Transportation, and Department of Commerce.

(3785) (vi) Data provided by ports, local facilities, and State or local governments.

(3786) (vii) Data from trade journals and publications.

(3787) (viii) Site visits and inspections.

(3788) (2) *Notice of Violation*. Once a reporting violation is determined to have occurred, the Chief of the Waterborne Commerce Statistics Center will notify the responsibility

party and allow 30 days for the reports to be filed after the fact. If the reports are not filed within this 30-day notice period, then appropriate civil or criminal actions will be undertaken by the Army Corps of Engineers, including the proposal of civil or criminal penalties for noncompliance. Typical cases for criminal or civil action include, but not limited to, those violations which are willful, repeated, or have a substantial impact in the opinion of the Chief of the Waterborne Commerce Statistics Center.

(3789) (3) *Administrative Assessment of Civil Penalties*. Civil penalties may be assessed in the following manner.

(3790) (i) *Authorization*. If the Chief of the Waterborne Commerce Statistics Center finds that a person or entity has failed to comply with any of the provisions specified herein, he is authorized to assess a civil penalty in accordance with the Class I penalty provisions of **33 CFR part 326**. Provided, however, that the procedures in **33 CFR** part **326** specifically implementing the Clean Water Act (33 U.S.C. 1319(g)(4)), public notice, comment period, and state coordination, shall not apply.

(3791) (ii) *Initiation*. The Chief of the Waterborne Commerce Statistics Center will prepare and process a proposed civil penalty order which shall state the amount of the penalty to be assessed, describe by reasonable specificity the nature of the violation and indicate the applicable provisions of **33 CFR part 326**.

(3792) (iii) *Hearing Requests*. Recipients of a proposed civil penalty order may file a written request for a hearing or other proceeding. This request shall be as specified in **33 CFR** part **326** and shall be addressed to the Director of the Water Resources Support Center, Casey Building, Fort Belvoir, Virginia 22060-5586, who will provide the requesting person or entity with a reasonable opportunity to present evidence regarding the issuance modification, or revocation of the proposed order. Thereafter, the Director of the Water Resources Center shall issue a final order.

(3793) (4) *Additional Remedies*. Appropriate cases may also be referred to the local U.S. Attorney for prosecution, penalty collection, injunctive, and other relief by the Chief of the Waterborne Commerce Statistics Center.

(3794)

Part 334–Danger Zones and Restricted Area Regulations

(3795)

§334.1 Purpose.

(3796) The purpose of this part is to:

(3797) (a) Prescribe procedures for establishing, amending and disestablishing danger zones and restricted areas;

(3798) (b) List the specific danger zones and restricted areas and their boundaries; and

(3799) (c) Prescribe specific requirements, access limitations and controlled activities within the danger zones and restricted areas.

(3800)

§334.2 Definitions.

(3801) (a) *Danger zone*. A defined water area (or areas) used for target practice, bombing, rocket firing or other especially hazardous operations, normally for the armed forces. The danger zones may be closed to the public on a full-time or intermittent basis, as stated in the regulations.

(3802) (b) *Restricted area*. A defined water area for the purpose of prohibiting or limiting public access to the area. Restricted areas generally provide security for Government property and/or protection to the public from the risks of damage or injury arising from the Government's use of that area.

(3803)

§334.3 Special policies.

(3804) (a) *General.* The general regulatory policies stated in **33 CFR** part **320** will be followed as appropriate. In addition, danger zone and restricted area regulations shall provide for public access to the area to the maximum extent practicable.

(3805) (b) *Food fishing industry*. The authority to prescribe danger zone and restricted area regulations must be exercised so as not to unreasonably interfere with or restrict the food fishing industry. Whenever the proposed establishment of a danger zone or restricted area may affect fishing operations, the District Engineer will consult with the Regional Director, U.S. Fish and Wildlife Service, Department of the Interior and the Regional Director, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA),

(3806) (c) *Temporary, occasional or intermittent use*. If the use of the water area is desired for a short period of time, not to exceed thirty days in duration, and that planned operations can be conducted safely without imposing unreasonable restrictions on navigation, and without promulgating restricted area regulations in accordance with the regulations in this section, applicants may be informed that formal regulations are not required. Activities of this type shall not reoccur more often than biennially (every other year), unless danger zone/restricted area rules are promulgated under this Part. Proper notices for mariners requesting that vessels avoid the area will be issued by the Agency requesting such use of the water area, or if appropriate, by the District Engineer, to all known interested persons. Copies will also be sent to appropriate State agencies, the Commandant, U.S. Coast Guard, Washington, DC 20590, and Director, National Geospatial-Intelligence Agency, Hydrographic Center, Washington, DC 20390, ATTN: Code NS 12. Notification to all parties and Agencies shall be made at least two weeks prior to the planned event, or earlier, if required for distribution of Local Notice to Mariners by the Coast Guard.

(3807)

§334.4 Establishment and amendment procedures.

(3808) (a) *Application*. Any request for the establishment, amendment or revocation of a danger zone or restricted

area must contain sufficient information for the District Engineer to issue a public notice, and as a minimum must contain the following:

(3809) (1) Name, address and telephone number of requestor including the identity of the command and DoD facility and the identity of a point of contact with phone number.

(3810) (2) Name of waterway and if a small tributary, the name of a larger connecting waterbody.

(3811) (3) Name of closest city or town, county/parish and state.

(3812) (4) Location of proposed or existing danger zone or restricted area with a map showing the location, if possible.

(3813) (5) A brief statement of the need for the area, its intended use and detailed description of the times, dates and extent of restriction.

(3814) (b) *Public notice*. (1) The Corps will normally publish public notices and **Federal Register** documents concurrently. Upon receipt of a request for the establishment, amendment or revocation of a danger zone or restricted area, the District Engineer should forward a copy of the request with his/her recommendation, a copy of the draft public notice and a draft **Federal Register** document to the Office of the Chief of Engineers, ATTN: CECW-OR. The Chief of Engineers will publish the proposal in the **Federal Register** concurrent with the public notice issued by the District Engineer.

(3815) (2) *Content.* The public notice and **Federal Register** documents must include sufficient information to give a clear understanding of the proposed action and should include the following items of information:

(3816) (i) Applicable statutory authority or authorities; (40 Stat. 266; 33 U.S.C. 1) and (40 Stat. 892; 33 U.S.C. 3).

(3817) (ii) A reasonable comment period. The public notice should fix a limiting date within which comments will be received, normally a period not less than 30 days after publication of the notice.

(3818) (iii) The address of the District Engineer as the recipient of any comments received.

(3819) (iv) The identity of the applicant/proponent;

(3820) (v) The name or title, address and telephone number of the Corps employee from whom additional information concerning the proposal may be obtained;

(3821) (vi) The location of the proposed activity accompanied by a map of sufficient detail to show the boundaries of the area(s) and its relationship to the surrounding area.

(3822) (3) *Distribution*. Public notice will be distributed in accordance with **33 CFR 325.3(d)(1)**. In addition to this general distribution, public notices will be sent to the following Agencies:

(3823) (i) The Federal Aviation Administration (FAA) where the use of airspace is involved.

(3824) (ii) The Commander, Service Force, U.S. Atlantic Fleet, if a proposed action involves a danger zone off the U.S. Atlantic coast.

(3825) (iii) Proposed danger zones on the U.S. Pacific coast must be coordinated with the applicable commands as follows:

(3826) Alaska, Oregon and Washington:

(3827) Commander, Naval Base, Seattle

(3828) California:

(3829) Commander, Naval Base, San Diego

(3830) Hawaii and Trust Territories:

(3831) Commander, Naval Base, Pearl Harbor

(3832) (c) *Public hearing.* The District Engineer may conduct a public hearing in accordance with **33 CFR** part **327**.

(3833) (d) *Environmental documentation*. The District Engineer shall prepare environmental documentation in accordance with appendix B to **33 CFR** part **325**.

(3834) (e) *District Engineer's recommendation*. After closure of the comment period, and upon completion of the District Engineer's review he/she shall forward the case through channels to the Office of the Chief of Engineers, ATTN: CECW-OR with a recommendation of whether or not the danger zone or restricted area regulation should be promulgated. The District Engineer shall include a copy of environmental documentation prepared in accordance with appendix B to 33 CFR part 325, the record of any public hearings, if held, a summary of any comments received and a response thereto, and a draft of the regulation as it is to appear in the **Federal Register**.

(3835) (f) *Final decision*. The Chief of Engineers will notify the District Engineer of the final decision to either approve or disapprove the regulations. The District Engineer will notify the applicant/proponent and publish a public notice of the final decision. Concurrent with issuance of the public notice the Office of the Chief of Engineers will publish the final decision in the **Federal Register** and either withdraw the proposed regulation or issue the final regulation as appropriate. The final rule shall become effective no sooner than 30 days after publication in the **Federal Register** unless the Chief of Engineers finds that sufficient cause exists and publishes that rationale with the regulations.

(3836)

§334.5 Disestablishment of a danger zone.

(3837) (a) Upon receipt of a request from any agency for the disestablishment of a danger zone, the District Engineer shall notify that agency of its responsibility for returning the area to a condition suitable for use by the public. The agency must either certify that it has not used the area for a purpose that requires cleanup or that it has removed all hazardous materials and munitions, before the Corps will disestablish the area. The agency will remain responsible for the enforcement of the danger zone regulations to prevent unauthorized entry into the area until the area is deemed safe for use by the public and the area is disestablished by the Corps.

(3838) (b) Upon receipt of the certification required in paragraph (a) of this section, the District shall forward the request for disestablishment of the danger zone through channels to CECW-OR, with its recommendations. Notice of proposed rulemaking and public procedures

as outlined in §334.4 are not normally required before publication of the final rule revoking a restricted area or danger zone regulation. The disestablishment/revocation of the danger zone or restricted area regulation removes a restriction on a waterway.

(3839)

§334.6 Datum.

(3840) (a) Geographic coordinates expressed in terms of latitude or longitude, or both, are not intended for plotting on maps or charts whose reference horizontal datum is the North American Datum of 1983 (NAD 83), unless such geographic coordinates are expressly labeled NAD 83. Geographic coordinates without the NAD 83 reference may be plotted on maps or charts referenced to NAD 83 only after application of the appropriate corrections that are published on the particular map or chart being used.

(3841) (b) For further information on NAD 83 and National Service nautical charts please contact: Director, Coast Survey (N/CG2), National Ocean Service, NOAA, 1315 East-West Highway, Station 6147, Silver Spring, MD 20910-3282.

(3842) (2) Mooring, anchoring, fishing, transit and/or swimming shall not be allowed within the Restricted Area without prior written permission from the Commanding Officer of the Coast Guard Group San Francisco on Yerba Buena Island.

(3843) (c) *Enforcement*. The regulation in this section shall be enforced by the Commanding Officer of the Coast Guard Group San Francisco on Yerba Buena Island, and such agencies and persons as he/she shall designate.

(3844)

§334.1175 Pacific Ocean, at Camp Rilea, Clatsop County, Oregon; Danger Zone.

(3845) (a) *The danger zone*. The danger zone shall encompass all navigable waters of the United States, as defined at **33 CFR** part **329**, within an area bounded as follows: Beginning at

(3846) 46°09′00.32″N, 123°57′52.57″W; thence to

(3847) 46°09′00.32″N, 124°01′03.92″W; thence to

(3848) 46°05′25.38″N, 124°01′03.92″W; thence to

(3849) 46°05′25.38″N, 123°56′23.19″W. The datum for these coordinates is WGS84.

(3850) (b) *The regulations*. (1) No person or vessel shall enter or remain in the danger zone when restrictions are in force during weapons range training activities. At all other times, nothing in this regulation prohibits any lawful uses of this area.

(3851) (2) A schedule for proposed closures of the danger zone will be furnished to the Coast Guard, Astoria Command Center one week in advance of range training activities to provide local notice to mariners. Changes to the schedule made less than one week in advance of the event will be transmitted to the Command Center on the day the change is made.

(3852) (3) At least 30 minutes prior to restricting navigation in the danger zone, red flags will be raised on wooden poles immediately next to the beach at the north and south boundaries of Camp Rilea. The red flags will remain flying while the ranges are in use. During night weapons training activities, red lights will be substituted for the flags. Closure announcements will be broadcast over marine VHF Channel 16/19. When range training activities are completed, the red flags will be removed and an announcement made over marine VHF Channel 16/19 that restrictions are lifted.

(3853) (4) When restrictions are in force, Camp Rilea will visually monitor the danger zone using radar and guards, equipped with binoculars and two-way radios, posted on the beach near the north and south boundaries of the Camp. If a vessel is detected in the danger zone, a cease fire will be called on all active weapons ranges and Camp Rilea will attempt to contact the vessel using marine VHF radio. Cease fire will be maintained until the vessel leaves the danger zone.

(3854) (c) *Enforcement.* The regulations in this section shall be enforced by the Commanding Officer, Camp Rilea, Oregon and such agencies as he/she may designate.

(3855)

§334.1180 Strait of Juan de Fuca, Washington; air-to-surface weapon range, restricted area.

(3856) (a) *The restricted area*. A circular area immediately west of Smith Island with a radius of 1.25 nautical miles having its center at latitude 48°19'11" North and longitude 122°54'12" West. In the center of the area will be located a lighted and radar reflective buoy to serve as a navigational aid to mariners. The area will be used for air-to-surface target practice using non-explosive training devices.

(3857) (b) *The regulations*. (1) No person, vessel or other watercraft shall enter or remain within the designated restricted area between 0700 and 1200 hours daily, local time except as authorized by the enforcing agency and as follows: The area will be open to commercial gill net fishing during scheduled fishing periods from June 15 to October 15, annually. The October 15 closure date will be extended by the enforcing agency if determined as advantageous to the commercial gill net fishing by the Washington State Department of Fisheries.

(3858) (2) Prior to each target practice operation the restricted area will be patrolled by naval aircraft. Those persons and vessels found within the restricted area will be overflown by the aircraft at an altitude of not less than 300' in the direction in which the unauthorized person and vessel are to proceed to clear the area.

(3859) (c) The regulations in this section shall be enforced by the Commandant, Thirteenth Naval District, Seattle, Washington, and such agencies as he may designate.

(3860)

§334.1190 Hood Canal and Dabob Bay, WA; naval non-explosive torpedo testing areas.

(3861) (a) *Hood Canal in vicinity of Bangor*–(1) *The area*. All waters of Hood Canal between latitude 47°46'00" and latitude 47°42'00", exclusive of navigation lanes one-fourth nautical mile wide along the west shore and along

the east shore south from the town of Bangor (latitude 47°43'28").

(3862) (2) *The regulations*. (i) The area will be used intermittently by the Navy for non-explosive torpedo ranging. Launching will be conducted only between 8 a.m., and sunset on days other than Saturdays, Sundays, and holidays. At no time will the navigation lanes generally paralleling the shore be closed to navigation.

(3863) (ii) Navigation will be permitted within the area at all times except when naval exercises are in progress. No vessel shall enter or remain in the area when such exercises are in progress. Prior to commencement of an exercise, the Navy will make an aerial or surface reconnaissance of the area. Vessels underway and laying a course through the area will not be interfered with, but they shall not delay their progress. Vessels anchored or cruising in the area and vessels unobserved by the Navy reconnaissance which enter or are about to enter the area while a torpedo is in the water will be contacted by a Navy patrol boat and advised to steer clear. Torpedoes will be tested only when all vessels or other craft have cleared the area.

(3864) (iii) When operations are in progress, use of the area will be indicated by the presence of Naval vessels flying a "Baker" (red) flag.

(3865) (iv) Notices of temporary suspension and revival of operations will be published in local newspapers and in Notice to Mariners published by the United States Coast Guard.

(3866) (b) *Dabob Bay in the vicinity of Quilcene*–(1) *The area*. All waters of Dabob Bay beginning at latitude 47°39'27", longitude 122°52'22"; thence northeasterly to latitude 47°40'19", longitude 122°50'10"; thence northeasterly to a point on the mean high water line at Takutsko Pt.; thence northerly along the mean high water line to latitude 47°48'00"; thence west on latitude 47°48'00" to the mean high water line on the Bolton Peninsula; thence southwesterly along the mean high water line of the Bolton Peninsula to a point on longitude 122°51'06"; thence south on longitude 122°51'06" to the mean high water line at Whitney Pt.; thence along the mean high water line to a point on longitude 122°51'15"; thence southwesterly to the point of beginning.

(3867) (2) *The regulations*. (i) Propeller-driven or other noise- generating craft shall not work their screws or otherwise generate other than incidental noise in the area during periods of actual testing, which will be indicated by flashing red beacons at strategic locations, and all craft shall keep well clear of vessels engaged in such testing.

(3868) (ii) No vessel shall trawl or drag in the area.

(3869) (iii) No vessel shall anchor in the area except between the shore and the 10-fathom depth line.

(3870) (iv) Operations will normally be confined to the period from 9:30 a.m., to 2:30 p.m., on Mondays through Fridays, and will normally consist of intermittent tests of less than 30 minutes duration, with boat passage permitted between tests. Transits of log-tows and other slow-moving traffic will be arranged on a mutually satisfactory individual basis as appropriate. Emergencies or high-priority projects may occasionally cause operations outside the periods specified above. No operations will be conducted on Sundays.

(3871) (c) The regulations in this section shall be enforced by the Commandant, Thirteenth Naval District, and such agencies as he may designate.

(3872)

§334.1200 Strait of Juan de Fuca, eastern end; off the westerly shore of Whidbey Island; naval restricted areas.

(3873) (a) *Area No. 1*. Bounded by a line commencing at

(3874) 48°20'57"N., 122°40'39"W.; thence to

(3875) 48°20'40"N., 122°42'59"W.; thence to

(3876) 48°21'19"N., 122°43'02"W.; thence to

(3877) 48°21'13"N., 122°40'26"W.; and thence along the shore line to the point of beginning.

(3878) (b) *Area No. 2.* Bounded by a line commencing at

(3879) 48°21'53"N.; 122°40'00"W.; thence to

(3880) 48°23'12"N., 122°41'17"W.; thence to

(3881) 48°23'29"N., 122°40'22"W.; thence to

(3882) 48°22'21"N., 122°39'50"W.; and thence along the shore line to the point of beginning.

(3883) (c) *The regulations*. (1) Persons and vessels shall not enter these areas except at their own risk.

(3884) (2) All persons and vessels entering these areas shall be obliged to comply with orders received from naval sources pertaining to their movements while in the areas.

(3885) (3) The regulations in this Paragraph shall be enforced by the Commander, Naval Base, Seattle, and such agencies as he/she may designate.

(3886)

§334.1210 Admiralty Inlet, entrance; naval restricted area.

(3887) (a) Admiralty Inlet, entrance; naval restricted area —(1) *The area*. Beginning at Point Wilson Light thence southwesterly along the coast line to latitude 48°07'N.; thence northwesterly to a point at latitude 48°15'N., longitude 123°00'W.; thence due east to Whidbey Island; thence southerly along the coast line to latitude 48°12.5'N.; thence southerly to the point of beginning.

(3888) (2) *The regulations*. (i) Use of any equipment such as anchors, fishing gear, grapnels, etc., which may foul underwater installations within the restricted area, is prohibited. Dumping of any non-buoyant objects in this area is prohibited.

(3889) (ii) The regulations of this paragraph shall be enforced by the Commander, Naval Base, Seattle, and such agencies as he/she may designate.

(3890)

§334.1215 Port Gardner, Everett Naval Base, Naval Restricted Area, Everett, Washington.

(3891) (a) *The area*. The waters of Port Gardner and East Waterway surrounding Naval Station Everett beginning at Point 1, a point near the northwest corner of Naval Station Everett at

(3892) 47°59'40"N., 122°13'23.5"W.; thence to

(3893) 47°59'40"N., 122°13'30"W. (Point 2); thence to
(3894) 47°59'20"N., 122°13'33"W. (Point 3); thence to
(3895) 47°59'13"N., 122°13'38"W. (Point 4); thence to
(3896) 47°59'05.5"N., 122°13'48.5"W. (Point 5); thence to
(3897) 47°58'51"N., 122°14'04"W. (Point 6); thence to
(3898) 47°58'45.5"N., 122°13'53"W. (Point 7); thence to
(3899) 47°58'45.5"N., 122°13'44"W. (Point 8); thence to
(3900) 47°58'48"N., 122°13'40"W. (Point 9); thence to
(3901) 47°58'59"N., 122°13'30"W. (Point 10); thence to
(3902) 47°59'14"N., 122°13'18"W. (Point 11); thence to
(3903) 47°59'13"N., 122°13'12"W. (Point 12); thence to
(3904) 47°59'20"N., 122°13'08"W. (Point 13); thence to
(3905) 47°59'20"N., 122°13'02.5"W. (Point 14), a point upon the Naval Station's shore in the northeast corner of East Waterway.

(3906) (b) *The regulation*. (1) All persons and vessels are prohibited from entering the waters within the restricted area for any reason without prior written permission from the Commanding Officer of the Naval Station Everett.

(3907) (2) Mooring, anchoring, fishing and/or recreational boating shall not be allowed within the restricted area without prior written permission from the Commanding Officer, Naval Station Everett.

(3908) (c) *Enforcement.* The regulation in this section, promulgated by the United States Army Corps of Engineers, shall be enforced by the Commanding Officer, Naval Station Everett and such agencies and persons as he/she shall designate.

(3909)

§334.1220 Hood Canal, Bangor, naval restricted areas.

(3910) (a) *Hood Canal, Bangor; Naval restricted areas*–(1) *Area No. 1*. That area bounded by a line commencing on the east shore of Hood Canal at
(3911) 47°46'18"N, 122°42'18"W; thence
(3912) 47°46'32"N, 122°42'20"W; thence to
(3913) 47°46'38"N, 122°42'52"W; thence to
(3914) 47°44'15"N, 122°44'50"W; thence to
(3915) 47°43'53"N, 122°44'58"W; thence to
(3916) 47°43'17"N, 122°44'49"W.

(3917) (2) *Area No. 2*. Waters of Hood Canal within a circle of 1,000 yards diameter centered on a point located at
(3918) 47°46'26"N, 122°42'49"W.

(3919) (3) *The regulations*–(i) *Area No. 1*. No person or vessel shall enter this area without permission from the Commander, Naval Submarine Base Bangor, or his/her authorized representative.

(3920) (ii) *Area No. 2*. (A) The area will be used intermittently by the navy for magnetic silencing operations.

(3921) (B) Use of any equipment such as anchors, grapnels, etc., which may foul underwater installations within the restricted area, is prohibited at all times.

(3922) (C) Dumping of any nonbuoyant objects in this area is prohibited.

(3923) (D) Navigation will be permitted within that portion of this circular area not lying within Area No. 1 at all times except when magnetic silencing operations are in progress.

(3924) (E) When magnetic silencing operations are in progress, use of the area will be indicated by display of quick flashing red beacons on the pier located in the southwest quadrant of the area.

(3925) (4) *Enforcement*. The regulations in this subsection shall be enforced by the Commander, Naval Submarine Base Bangor, or his/her authorized representative.

(3926)

§334.1230 Port Orchard; naval restricted area.

(3927) (1) *The area*. Shoreward of a line beginning at a point on the west shoreline of Port Orchard bearing 90° from stack (at latitude 47°42'01", longitude 122°36'54"); thence 90°, approximately 190 yards, to a point 350 yards from stack; thence 165°, 6,000 yards, to a point bearing 179°, 1,280 yards, from Battle Point Light; thence westerly to the shoreline at latitude 47°39'08" (approximate location of the Brownsville Pier).

(3928) (2) *The regulations*. (i) No vessel shall, at any time, anchor or tow a drag of any kind in this area.

(3929) (ii) The regulations in this paragraph shall be enforced by the Commander, Naval Base, Seattle, and such agencies as he/she may designate.

(3930)

§334.1240 Sinclair Inlet; naval restricted areas.

(3931) (a) *Sinclair Inlet; naval restricted areas*.

(3932) (1) *Area No. 1*. All the waters of Sinclair Inlet westerly of a line drawn from the Bremerton Ferry Landing at 47°33'48"N., 122°37'23" W., on the north shore of Sinclair Inlet; and 47°32'52"N., 122°36'58"W., on the south shore of Sinclair Inlet.

(3933) (2) *Area No. 2*. That area of Sinclair Inlet to the north and west of an area bounded by a line commencing at
(3934) 47°33'40"N., 122°37'32"W.; thence south to
(3935) 47°33'36"N., 122°37'30"W.; thence southwest to
(3936) 47°33'23"N., 122°37'45"W.; thence southwest to
(3937) 47°33'19"N., 122°38'12"W.; thence southwest to
(3938) 47°33'10"N., 122°38'19"W.; thence southwest to
(3939) 47°33'07"N., 122°38'29"W.; thence southwest to
(3940) 47°33'04"N., 122°39'07"W.; thence west to the north shore of Sinclair Inlet at
(3941) 47°33'04"N., 122°39'42"W.

(3942) (3) *The regulations*. (i) *Area No. 1*. No vessel of more than, or equal to, 100 gross tons shall enter the area or navigate therein without permission from the enforcing agency, except Washington State Ferries on established routes.

(3943) (ii) *Area No. 2*. This area is for the exclusive use of the United States Navy. No person, vessel, craft, article or thing, except those under supervision of military or naval authority shall enter this area without permission from the enforcing agency.

(3944) (b) *Enforcement*. The regulation in this section shall be enforced by the Commander, Navy Region Northwest, and such agencies and persons as he/she shall designate.

(3945)

§334.1244 Puget Sound, Manchester Fuel Depot, Manchester, Washington; naval restricted areas.

(3946) (a) *The area*. The waters of Puget Sound surrounding the Manchester Fuel Depot Point A, a point along the northern shoreline of the Manchester Fuel Depot at

(3947) 47°33'55"N., 122°31'55"W.; thence to

(3948) 47°33'37"N., 122°31'50"W. (Point B); thence to

(3949) 47°33'32"N., 122°32'06"W. (Point C); thence to

(3950) 47°33'45.9"N., 122°32'16.04"W.(Point D), a point in Puget Sound on the southern shoreline of the Manchester Fuel Depot.

(3951) (b) *The regulations*. No person, vessel, craft, article or thing except those under the supervision of the military or naval authority shall enter the area without the permission of the enforcing agency or his/her designees. The restriction shall apply during periods when a ship is loading and/or pier operations preclude safe entry. The restricted periods will be identified by the use of quick flashing beacon lights, which are mounted on poles at the end of the main fuel pier on the south side of Orchard Point at the entrance of Rich Passage. Entry into the area is prohibited when the quick-flashing beacons are in a flashing mode.

(3952) (c) *Enforcement.* The regulation in this section shall be enforced by the Commander, Navy Region Northwest, and such agencies and persons as he/she shall designate.

(3953)

§334.1250 Carr Inlet, Naval Restricted Areas.–

(3954) (a) Carr Inlet, naval restricted areas —(1) *The Area*. The Waters of Carr Inlet bounded on the southeast by a line running from Gibson Point on Fox Island to Hyde Point on McNeil Island, on the northwest by a line running from Green Point (at latitude 47°16'54"N., longitude 122°41'33"W.) to Penrose Point; plus that portion of Pitt Passage extending from Carr Inlet to Pitt Island, and that portion of Hale Passage extending from Carr Inlet southeasterly to a line drawn perpendicular to the channel 500 yards northwesterly of the Fox Island Bridge.

(3955) (2) *The Regulations*. (i) The area shall be used as an acoustic range for research studies and special noise trials. No explosives shall be used.

(3956) (ii) No marine craft of any type shall at any time approach or remain within one hundred yards of the hydrophone buoys. The hydrophone buoys will be anchored in Carr Inlet on a line perpendicular to the course line opposite Ketner's Point, and about one mile from the Fox Island shore. The course line, or range, will bear 134°38'21" (314°38'21") true, and will be marked by range beacons erected near the shoreline approximately one mile north-northeast of Steilacoom and approximately two miles north-northeast of Home.

(3957) (iii) *Buoy Testing Area*. No vessel shall, at anytime, anchor or tow a drag of any kind within 1,000 yards of the buoy testing area.

(3958) (iv) The remainder of the area shall be open to navigation at all times except when the range is in use or when hydrophones are being calibrated. When the range is in use or hydrophones are being calibrated, quick flashing beacon lights will be displayed on signal towers located at Gibson Point, Green Point, Penrose Point, Pitt Island and Hyde Point. These beacon lights will be either red or green. The beacon lights will show quick flashing every two seconds. The ranging of vessels or calibration of hydrophones requiring restrictions will be conducted 24 hours per day for up to 5 days consecutively, and will total approximately 150 days spread throughout the year. Shutting off of beacon lights will indicate termination of use of the range. Insofar as possible, the schedule of operations giving the days the range will be in use for each forthcoming month will be published in local newspapers and in the local U.S. Coast Guard Notice to Mariners.

(3959) (v) When the red beacon lights are displayed, indicating that the range is in use or hydrophones are being calibrated, navigation within the area will be restricted as follows:

(3960) (a) As used in this section, the words "operate, power vessel, and non-power vessel" are defined as follows:

(3961) (1) "Operate": To be physically present in the designated area.

(3962) (2) "Power vessel": A vessel propelled principally by a mechanical propulsion system (i.e., gasoline, diesel, steam or electric drive to a propeller, pump jet, paddle wheel or other device), and being propelled by that means.

(3963) (3) "Non-power vessel": A vessel not equipped with a mechanical propulsion system, such as a rowboat, canoe, or sailboat propelled by oars, paddles, or sails, respectively.

(3964) (b) Power vessels shall not operate within the area, except that traffic in either direction between Hale Passage and upper Carr Inlet, within 200 yards of the low water mark off Green Point, will be cleared by signal for approximately 15 minutes total time within this area at the termination of individual ranging runs, while the vessel being ranged takes position for the next run. Clearance to traverse the area around Green Point will be indicated by extinguishing the red flashing beacon lights and displaying the green flashing beacon lights on all signal towers.

(3965) (c) Non-powered marine craft shall not operate within one mile of the course line bearing 134°38'21" (314°38'21") true, and within two miles to the southeast and two miles to the northwest of the hydrophone buoys situated in Carr Inlet opposite Ketner's Point; provided, however, non-powered craft may operate within four hundred yards of the low water mark on the northeast side of McNeil Island, within two hundred yards of the low water mark at Green Point, and within two hundred yards of the low water mark on the southwest shore of Fox Island.

(3966) (d) Towboats shall have free access and egress to designated tow havens within Carr Inlet, as follows: The Navy will establish and maintain suitable mooring buoys for the use of tugs and their tows at the following points:

(1) approximately 1,500 yards northwest of Gibson Point Light and approximately 400 yards offshore from the low water mark on the Fox Island shore; (2) approximately 1,500 yards northwest of Hyde Point and approximately 400 yards offshore from the low water mark on McNeil Island shore; and (3) approximately 1,500 yards east of Wyckoff Shoal. Towboats will signal by radio (Marine Band Channel 14, 13, 12, or 6) or telephone as far in advance as possible of the time they enter the tow haven, such signals to be directed to "Carr Inlet Range Control" at the range instrument laboratory building located on Fox Island. The Navy shall promptly suspend operations when necessary to permit the access and egress of such tow traffic, and Carr Inlet Range Control shall signal the tows when the area is clear.

(3967) (e) Through commercial traffic, including tows, to points within Carr Inlet, and through Carr Inlet, Pitt Passage and Hale Passage to adjacent waters will be permitted free access and egress, as follows: Such traffic will signal by radio (Marine Band Channel 14, 13, 12, or 6) or telephone as far in advance as possible of the time they enter the area, such signals to be directed to "Carr Inlet Range Control" at the range instrument laboratory located on Fox Island. The Navy shall promptly suspend operations when necessary to permit the passage of such traffic, and Carr Inlet Range Control shall signal when the area is clear for passage.

(3968) (f) The warden of the McNeil Island penitentiary and his authorized representatives shall be permitted to operate within the area at any time, as may be necessary, for the patrol and search for escaped convicts.

(3969) (g) Red or green signal flags will be displayed on the signal towers in case of failure of the red or green beacon lights. The display of the signal flags at the top of the flag masts will have the same significance as the beacon lights.

(3970) (3) The regulations in this paragraph shall be enforced by the Commander, Naval Base, Seattle, and such agencies as he may designate.

(3971) (b) [Reserved]

(3972)

§334.1260 Dabob Bay, Whitney Point, Naval Restricted Area.

(3973) (a) Dabob Bay, Whitney Point, naval restricted area —(1) *The area.* Beginning at the high water line along the westerly shore of Dabob Bay, 100 yards northerly of the Naval control building located at approximately N. latitude 47°45'36" and W. longitude 122°51'00", thence S. 89°59'E. 2000 yards, thence to S. 00°01'W. 200 yards thence N. 89°59'W. approximately 2000 yards to the high water line 100 yards southerly of the control building.

(3974) (2) *The regulations*. (i) No vessel shall, at any time, anchor or tow a drag of any kind in this area.

(3975) (ii) The regulations in this paragraph shall be enforced by the Commander, Naval Base, Seattle, or his/her authorized representative.

(3976)

§334.1270 Port Townsend, Indian Island, Walan Point; naval restricted area.

(3977) (a) *The area*. The waters of Port Townsend Bay bounded by a line commencing on the north shore of Walen Point at

(3978) 48°04'42"N., 122°44'30"W.; thence to

(3979) 48°04'50"N., 122°44'38"W.; thence to

(3980) 48°04'52"N., 122°44'57"W.; thence to

(3981) 48°04'44"N., 122°45'12"W.; thence to

(3982) 48°04'26"N., 122°45'21"W.; thence to

(3983) 48°04'10"N., 122°45'15"W.; thence to

(3984) 48°04'07"N., 122°44'49"W.; thence to a point on the Walen Point shoreline at

(3985) 48°04'16"N., 122°44'37"W.

(3986) (b) *The regulations*. This area is for the exclusive use of the U.S. Navy. No person, vessel, craft, article or thing shall enter the area without permission of the enforcing agency. The restrictions shall apply during periods when ship loading and/or pier operations preclude safe entry. The periods will be identified by flying a red flag from the ship and/or pier.

(3987) (c) *Enforcement.* The regulation in this section shall be enforced by Commander, Navy Region Northwest and such agencies and persons as he/she shall designate.

(3988)

§334.1340 Pacific Ocean, Hawaii; danger zones.

(3989) (a) *Danger zones–*

(3990) (1) *Aerial bombing and strafing target surrounding Kaula Rock, Hawaii*. The waters within a circular area with a radius of three (3) miles having its center on Kaula Rock at 21°39'30"N., 160°32'30"W.

(3991) (2) *Submerged unexploded ordnance danger zone, Kahoolawe Island, Hawaii*. The waters adjacent to Kahoolawe Island within the area encompassed by the following coordinates beginning at

(3992) 20°37'30"N., 156°32'48"W.; thence to

(3993) 20°34'48"N., 156°30'24"W.; thence to

(3994) 20°28'54"N., 156°30'30"W.; thence to

(3995) 20°28'06"N., 156°41'48"W.; thence to

(3996) 20°30'30"N., 156°44'12"W.; thence to

(3997) 20°33'12"N., 156°44'30"W.; thence to

(3998) 20°37'30"N., 156°36'24"W.; thence to the beginning coordinates.

(3999) (b) *The regulations*. No person, vessel or other craft shall enter or remain in any of the areas at any time except as authorized by the enforcing agency.

(4000) (c) *Enforcing agency*. The regulations in this section shall be enforced by the Commander, Naval Base Pear Harbor, HI 96860-5020 and such agencies as he/she may designated.

(4001)

§334.1350 Pacific Ocean, Island of Oahu, Hawaii; danger zone.

(4002) (a) *The danger zone*. Beginning at point of origin at Kaena Point Light in

(4003) 21°34'42"N., 158°16'54"W.; thence on a bearing of 282°30' True to

(4004) 21°38'N., 158°33'W.; thence along the arc of a circle centered at Kaena Point Light to

(4005) 21°42'30"N., 158°03'W.; thence on a bearing of 228° True to

(4006) 21°35'33"N., 158°11'30"W.; thence to point of origin.

(4007) (b) *The regulations*. (1) The area will be closed to the public and all shipping on specific dates to be designated for actual firing and no person, vessel or other craft shall enter or remain in the area during the times designated for firing except as may be authorized by the enforcing agency. Notification to maritime interests of specific dates of firing will be disseminated through the U.S. Coast Guard media of the Local Notice to Mariners and the NOTAMS published by the Corps of Engineers. On dates not specified for firing, the area will be open to normal maritime traffic.

(4008) (2) The regulations of this section shall be enforced by the Commanding General, United States Army, Hawaii/25th Infantry Division, APO 957, and such agencies as he may designate.

(4009)

§334.1360 Pacific Ocean at Barber's Point, Island of Oahu, Hawaii; danger zone.

(4010) (a) *The danger zone*. The waters within a rectangular area beginning at a point in

(4011) 21°17'56"N., 158°05'21"W.; thence to

(4012) 21°17'30"N., 158°05'21"W.; thence to

(4013) 21°17'58"N., 158°02'49"W.; thence to

(4014) 21°18'24"N., 158°02'49"W.; thence along the shoreline at the highwater mark along the southerly boundary of Naval Air Station, Barbers Point, to the point of beginning.

(4015) (b) *The regulations*. (1) The area is closed to all surface craft, swimmers, divers and fishermen except to craft and personnel authorized by the enforcing agency.

(4016) (2) The regulations in this section shall be enforced by the Commanding Officer, Naval Air Station, Barber's Point, HI 96862, and such agencies as he/she may designate.

(4017)

§334.1370 Pacific Ocean at Keahi Point, Island of Oahu, Hawaii; danger zone.

(4018) (a) *The danger zone*. The waters within an area beginning at a point in

(4019) 21°18'21.4"N., 157°59'14.2"W.; thence to

(4020) 21°18'11.0"N., 158°00'17.5"W.; thence to

(4021) 21°17'11.8"N., 158°00'06.5"W.; and thence to

(4022) 21°17'22.5"N., 157°59'03.1"W.

(4023) (b) *The regulations*. (1) The area is closed to all surface craft, swimmers, divers, and fishermen except to craft and personnel authorized by the enforcing agency.

(4024) (2) The regulations in this section shall be enforced by the Commanding Officer, Explosive Ordnance Disposal Training and Evaluation Unit One, Barbers Point, HI 96862-5600.

(4025)

§334.1380 Marine Corps Base Hawaii, (MCBH) Kaneohe Bay, Island of Oahu, Hawaii-Ulupau Crater Weapons Training Range; danger zone.

(4026) (a) *The danger zone*. The area within a sector extending seaward a distance of 3.8 nautical miles between radial lines bearing 357.1° true and 124.9° true, respectively, from a starting point on Mokapu Peninsula at 21°27'11.84"N., 157°43'53.83"W., and overlapping the existing 500-yard wide prohibited area. The danger zone is defined as a pie-shaped area bounded by the landward starting point on Mokapu Peninsula and the three seaward points forming an arc with a 3.8 nautical-mile radius at its center (Point B) with a radial line bearing 56.9° true. The three seaward points have the following coordinates:

(4027) Point A: 21°30'59.66"N., 157°44'05.97"W.

(4028) Point B: 21°29'16.58"N., 157°40'30.19"W.

(4029) Point C: 21°25'01.79"N., 157°40'33.70"W.

(4030) (b) *The regulations*. (1) Weapons firing at Ulupau Crater Weapons Training Range may occur at any time between 6 a.m. and 11 p.m., Monday through Sunday. Specific dates and hours for weapons firing, along with information regarding onshore warning signals, will be promulgated by the U.S. Coast Guard's Local Notice to Mariners. Information on weapons firing schedules may also be obtained by calling the MCBH Range Manager, AC/S G-3 (telephone number 808 257–8816/17).

(4031) (2) Whenever live firing is in progress during daylight hours, two large red triangular warning pennants will be flown at each of two highly visible and widely separated locations on the shore at Ulupau Crater.

(4032) (3) Whenever any weapons firing is scheduled and in progress during periods of darkness, flashing red warning beacons will be displayed on the shore of Ulupau Crater.

(4033) (4) Boaters will have complete access to the danger zone whenever there is no weapons firing scheduled, which will be indicated by the absence of any warning flags, pennants or beacons displayed ashore.

(4034) (5) The danger zone is not considered safe for boaters whenever weapons firing is in progress. Boaters shall expeditiously vacate the danger zone at best speed and by the most direct route whenever weapons firing is scheduled. Passage of vessels through the danger zone when weapons firing is in progress will be permitted, but boaters shall proceed directly through the area at best speed. Weapons firing will be suspended as long as there is a vessel in the danger zone. Whenever a boater disregards the publicized warning signals that hazardous weapons firing is scheduled, the boater will be personally requested to expeditiously vacate the danger zone by MCBH Kaneohe Bay military personnel utilizing by hailing the vessel on VHF channel 16 or contacting directly by U.S. Navy surface craft.

(4035) (6) Observation posts will be manned whenever any weapons firing is scheduled and in progress. Visibility

will be sufficient to maintain visual surveillance of the entire danger zone and for an additional distance of 5 miles in all directions whenever weapons firing is in progress.

(4036) (c) *The enforcing agency*. The regulations shall be enforced by the Commanding Officer, MCB Hawaii, Kaneohe Bay and such agencies as he/she may designate.

(4037)

§334.1390 Pacific Ocean off the Pacific Missile Range Facility at Barking Sands, Island of Kauai, Hawaii; danger zone.

(4038) (a) *The danger zone*. All navigable waters within an area beginning at a point on the shore at

(4039) 22°04′13.65″N, 159°46′30.76″W; and continue south along the shoreline to

(4040) 21°58′42.77″N, 159°45′26.35″W. Thence extending southwest to

(4041) 21°56′6.00″N, 159°46′55.91″W extending northwest to

(4042) 21°58′59.81″N, 159°50′51.42″W, continuing north to

(4043) 22°02′28.09″N, 159°51′28.15″W, and continuing northeast to

(4044) 22°06′30.71″N, 159°49′20.43″W; and thence to point of beginning. All coordinates reference 1983 North American Datum (NAD 83).

(4045) (b) *The regulations*. (1) Dredging, dragging, seining, and other similar operations within the danger zone are prohibited.

(4046) (2) All persons, boats, vessels, or other craft are prohibited from entering, transiting, or remaining within the danger zone during range operations, test and training activities, or increases in force protection that pose a hazard to the general public, as determined by the enforcing agency. The enforcing agency's determination of the necessity of closing the danger zone due to increases in force protection will be based on the Department of Defense Force Protection Condition (FPCON) System. From the lowest security level to the highest, FPCON levels are titled Normal, Alpha, Bravo, Charlie and Delta.

(4047) (3) Closure of the danger zone will be indicated by Notice to Mariners, the presence of Pacific Missile Range Facility range boats, beach markings including beach signs along the north and south beach borders alerting shoreline foot traffic, security patrols, and radio transmissions on common ocean frequencies to include Marine band channel 6 (156.300 MHz), Marine band channel 16 (156.800 MHz), and CB channel 22. The enforcing agency will post the danger zone closure schedule on its official Navy Web site, http://www.cnic.navy.mil/PMRF/, and Facebook page, http://www.facebook.com/PacificMissileRangeFacility. The danger zone closure schedule may also be obtained by calling the following phone numbers: 808–335–4301, 808–335–4388, and 808–335–4523.

(4048) (4) Consistent with paragraph (b)(2) of this section, the enforcing agency is authorized to prohibit access into the danger zone by anyone, and all willful violations of the enforcing agency's prohibitions are punishable under 33 U.S.C. 3.

(4049) (c) *The enforcing agency*. The regulations in this section shall be enforced by the Commanding Officer, Pacific Missile Range Facility, Hawaii and such agencies or persons as he or she may designate.

(4050)

§334.1400 Pacific Ocean, at Barbers Point, Island of Oahu, Hawaii; restricted area.

(4051) (a) *The area*. That portion of the Pacific Ocean lying offshore of Oahu between Ewa Beach and Barbers Point, basically outlined as follows:

(4052) Station

(4053) A (shoreline)–21°18'06"N., 158°04'24"W.

(4054) B–21°17'00"N., 158°03'30"W.

(4055) C–21°15'00"N., 158°03'18"W.

(4056) D–21°15'36"N., 158°01'06"W.

(4057) E (shoreline)–21°18'30"N., 158°02'00"W.

(4058) (b) *The regulations*. (1) Vessels shall not anchor within the area at any time.

(4059) (2) Dredging, dragging, seining, or other fishing operations which might foul underwater installations within the area are prohibited.

(4060) (3) Use of the restricted area for boating, fishing (except as prohibited in paragraph (b)(2) of this section) and other surface activities is authorized.

(4061) (4) The regulations in this section shall be enforced by the Officer in Charge, Fleet Area Control and Surveillance Facility, Pearl Harbor, Hawaii 96860-7625, and such agencies as he/she may designate.

(4062)

§334.1410 Pacific Ocean, at Makapuu Point, Waimanalo, Island of Oahu, Hawaii, Makai Undersea Test Range.

(4063) (a) *The restricted area*. The waters within an area beginning at a point in

(4064) 21°18'50"N., 157°39'07"W.; thence to

(4065) 21°20'33"N., 157°38'00"W.; thence to

(4066) 21°22'02"N., 157°39'07"W.; and thence to

(4067) 21°19'35"N., 157°40'46"W.

(4068) (b) *The regulations*. (1) During critical testing phases of surface and submerged units, the operating officials of the Makai Test Range will mark in a conspicuous manner the location of the equipment which might be subject to damage from navigation and fishing activities or might represent a hazard to persons or property in the vicinity. During the display of signals in the restricted area, all persons and surface craft will remain away from the area until such time as the signals are withdrawn. At all other times the area is open to unrestricted fishing, boating and general navigation.

(4069) (2) Operating officers and personnel of the Makai Test Range will be responsible for marking in a conspicuous manner the location of surface and underwater equipment which is subject to damage from navigation and fishing activities in the vicinity or represents a hazard to persons

or property in the vicinity, and the location of the work area during critical testing phases. Surface communication by boat will be provided by the Makai Test Range during testing phases.

(4070) **§ 334.1415 Pacific Ocean, adjacent to the Finegayan Small Arms Range at Naval Base Guam Telecommunication Site, on the northwestern coast of Guam; danger zone.**

(4071) (a) *The area.* Coordinates are bounded by the following four points: Point A (13°34'57"N.; 144°49'53"E.) following the high tide line to Point B (13°35'49"N.; 144°47'59"E.), Point C 13°34'57" N.; 144°47'45"E.), and Point D (13°34'48"N; 144°49'50"E.). The datum for these coordinates is NAD–83.

(4072) (b) *The regulation.* (1) Vessels or persons shall expeditiously transit through the danger zone when the small arms range is in use. Vessels shall not be permitted to anchor or loiter within the danger zone while the range is in use. Range activities shall be halted until all vessels are cleared from the danger zone. When the range is not in use, the danger zone shall be open to normal maritime traffic and all activities to include anchoring and loitering.

(4073) (2) When the range is in use, the person(s) or officer(s) in charge shall display a red flag from a conspicuous and easily-seen location along the nearby shore to signify that the range is in use and will post lookouts to ensure the safety of all vessels transiting through the area. If the range is in use at night, a strobe light shall be displayed from the same conspicuous and easily- seen location in lieu of flags. The range shall not be used when visibility is equal to or less than the maximum range of the weapons being used at the facility.

(4074) (c) *Enforcement*. The restrictions on public access in this section shall be enforced by the Commander, Joint Region Marianas, and such agencies as the Commander may designate in writing.

(4075)

§334.1420 Pacific Ocean off Orote Point, Apra Harbor, Island of Guam, Marianas Islands; small arms firing range.

(4076) (a) *The danger zone*. The waters within an area delineated by a line joining the following positions:

(4077) 13°26'03.9"N., 144°37'38.3"E.

(4078) 13°25'26.0"N., 144°36'14.2"E.

(4079) 13°24'51.2"N., 144°36'31.9"E.

(4080) 13°25'28.7"N., 144°37'59.1"E.

(4081) 13°25'43.2"N., 144°38'09.5"E.

(4082) (b) *The regulations*.

(4083) (1) The danger zone shall be closed to the public and shipping on specific dates to be designated for actual firing and no person, vessel or other craft shall enter or remain in the danger zone designated for firing except as may be authorized by the enforcing agency. Notification to maritime interests of specific dates of firing will be disseminated by the enforcing agency. On dates not specified for firing, the danger zone shall be open to normal maritime traffic.

(4084) (2) The regulations in this section shall be enforced by the Commanding Officer, U.S. Naval Station, Guam, Marianas Islands and such agencies as he may designate.

(4085) **§ 334.1425 Pacific Ocean adjacent to the Mason Live-Fire Training Range Complex located at U.S. Marine Corps Base, Camp Blaz, on the northwestern coast of Guam; danger zone.**

(4086) (a) *The areas*. The danger zone will consist of two areas: An outer area (Area 1) for larger caliber weapons and a smaller area (Area 2) for smaller caliber weapons that is set within Area 1. The datum for the coordinates in this section is NAD–83.

(4087) (1) *Area 1*. The waters bounded by the following seven points: Point A (13°38′59.443″ N; 144°51′11.522″ E) following the mean high water line to Point B (13°38′36.722″ N; 144°52′50.256″ E), following the mean high water line to Point C (13°38′33.936″ N; 144°52′53.031″ E), Point D (13°40′8.336″ N; 144°53′44.876″ E), Point E (13°40′56.842″ N; 144°53′42.808″ E), Point F (13°41′28.434″ N; 144°52′37.582″ E), and Point G (13°41′3.344″ N; 144°51′53.652″ E).

(4088) (2) *Area 2*. A subset of waters within Area 1 bounded by the following six points: Point A (13°39′7.432″ N; 144°52′8.210″ E) following the mean high water line to Point B (13°38′36.722″ N; 144°52′50.256″ E), following the mean high water line to Point C (13°38′33.936″ N; 144°52′53.031″ E), Point D (13°39′54.724″ N; 144°53′37.400″ E), Point E (13°40′25.737″ N; 144°52′43.157″ E), and Point F (13°40′6.494″ N; 144°52′7.349″ E).

(4089) (b) *The regulation*. (1) The enforcing agency will designate which area will be closed for use on dates designated for live fire. No persons, watercraft, or vessels shall enter or remain in the area during the times designated for live fire except those authorized by the enforcing agency. All live-fire training will cease if a person, watercraft, or vessel inadvertently enters the designated area and may resume once they have cleared the danger zone. The Installation Range Control Officer will be responsible for submitting all local Notices to Mariners for specific dates of firing, which will be disseminated through the U.S. Coast Guard and on the Marine Corps Base Camp Blaz website. The area will be open to normal maritime traffic when the range is not in use.

(4090) (2) When the range is in use red flags will be displayed from conspicuous and easily seen locations on the east and west boundaries of the danger zone to signify that the range is in use. These flags will be removed when firing ceases for the day.

(4091) (3) During the night firing, red lights will be displayed on the east and west sides of the danger zone to enable safety observers to detect vessels that may attempt to enter the danger zone. All range flags and red lights will be visible from 360 degrees. Due to the depth of the ocean the danger zone will not be marked with bu

(4092) (c) *Enforcement*. The restrictions on public access through the danger zone shall be enforced by the Commander, Marine Corps Base, Camp Blaz, and such agencies as the Commander may designate in writing.

(4093)

§334.1430 Apra Inner Harbor, Island of Guam; restricted area.

(4094) (a) *The restricted area*. The waters within Apra Inner Harbor and adjacent waters of Apra Outer Harbor inclosed by a line beginning at the northeast corner of a pier at

(4095) 13°26'32.1"N., 144°39'02.8"E., and thence to the northern tip of a small island at

(4096) 13°26'40.2"N., 144°39'28.1"E., and thence to the northwest corner of the point of land at

(4097) 13°26'28.1"N., 144°39'52.5"E.

(4098) (b) *The regulations*.

(4099) (1) All swimmers and all vessels and craft except public vessels of the United States are prohibited from entering this area without prior permission of the enforcing agency.

(4100) (2) The regulations in this section shall be enforced by Commander Naval Forces Marianas and such agencies as he may designate.

(4101) (3) The water areas of the outer boundaries of the restricted area will not be marked but signs will be posted at the designated boundary coordinates to warn against trespassing in the restricted area.

(4102)

TITLE 40–PROTECTION OF ENVIRONMENT

(4103)

Part 140–Marine Sanitation Device Standard

(4104)

§140.1 Definitions.

(4105) For the purpose of these standards the following definitions shall apply:

(4106) (a) *Sewage* means human body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes;

(4107) (b) *Discharge* includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping;

(4108) (c) *Marine sanitation device* includes any equipment for installation onboard a vessel and which is designed to receive, retain, treat, or discharge sewage and any process to treat such sewage;

(4109) (d) *Vessel* includes every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on waters of the United States;

(4110) (e) *New vessel refers* to any vessel on which construction was initiated on or after January 30, 1975;

(4111) (f) *Existing vessel* refers to any vessel on which construction was initiated before January 30, 1975;

(4112) (g) *Fecal coliform bacteria* are those organisms associated with the intestines of warm-blooded animals that are commonly used to indicate the presence of fecal material and the potential presence of organisms capable of causing human disease.

(4113)

§140.2 Scope of standard.

(4114) The standard adopted herein applies only to vessels on which a marine sanitation device has been installed. The standard does not require the installation of a marine sanitation device on any vessel that is not so equipped. The standard applies to vessels owned and operated by the United States unless the Secretary of Defense finds that compliance would not be in the interest of national security.

(4115)

§140.3 Standard.

(4116) (a) (1) In freshwater lakes, freshwater reservoirs or other freshwater impoundments whose inlets or outlets are such as to prevent the ingress or egress by vessel traffic subject to this regulation, or in rivers not capable of navigation by interstate vessel traffic subject to this regulation, marine sanitation devices certified by the U.S. Coast Guard (see **33 CFR** part **159**, published in 40 FR 4622, January 30, 1975), installed on all vessels shall be designed and operated to prevent the overboard discharge of sewage, treated or untreated, or of any waste derived from sewage. This shall not be construed to prohibit the carriage of Coast Guard-certified flow-through treatment devices which have been secured so as to prevent such discharges.

(4117) (2) In all other waters, Coast Guard-certified marine sanitation devices installed on all vessels shall be designed and operated to either retain, dispose of, or discharge sewage. If the device has a discharge, subject to paragraph (d) of this section, the effluent shall not have a fecal coliform bacterial count of greater than 1,000 per 100 milliliters nor visible floating solids. Waters where a Coast Guard-certified marine sanitation device permitting discharge is allowed include coastal waters and estuaries, the Great Lakes and inter-connected waterways, fresh-water lakes and impoundments accessible through locks, and other flowing waters that are navigable interstate by vessels subject to this regulation.

(4118) (b) This standard shall become effective on January 30, 1977 for new vessels and on January 30, 1980 for existing vessels (or, in the case of vessels owned and operated by the Department of Defense, two years and five years, for new and existing vessels, respectively, after promulgation of implementing regulations by the Secretary of Defense under section 312(d) of the Act).

(4119) (c) Any vessel which is equipped as of the date of promulgation of this regulation with a Coast Guard-certified flow-through marine sanitation device meeting the requirements of paragraph (a)(2) of this section, shall not be required to comply with the provisions designed to prevent the overboard discharge of sewage, treated

or untreated, in paragraph (a)(1) of this section, for the operable life of that device.

(4120) (d) After January 30, 1980, subject to paragraphs (e) and (f) of this section, marine sanitation devices on all vessels on waters that are not subject to a prohibition of the overboard discharge of sewage, treated or untreated, as specified in paragraph (a)(1) of this section, shall be designed and operated to either retain, dispose of, or discharge sewage, and shall be certified by the U.S. Coast Guard. If the device has a discharge, the effluent shall not have a fecal coliform bacterial count of greater than 200 per 100 milliliters, nor suspended solids greater than 150 mg/1.

(4121) (e) Any existing vessel on waters not subject to a prohibition of the overboard discharge of sewage in paragraph (a)(1) of this section, and which is equipped with a certified device on or before January 30, 1978, shall not be required to comply with paragraph (d) of this section, for the operable life of that device.

(4122) (f) Any new vessel on waters not subject to the prohibition of the overboard discharge of sewage in paragraph (a)(1) of this section, and on which construction is initiated before January 31, 1980, which is equipped with a marine sanitation device before January 31, 1980, certified under paragraph (a)(2) of this section, shall not be required to comply with paragraph (d) of this section, for the operable life of that device.

(4123) (g) The degrees of treatment described in paragraphs (a) and (d) of this section are "appropriate standards" for purposes of Coast Guard and Department of Defense certification pursuant to section 312(g)(2) of the Act.

(4124)

§140.4 Complete prohibition.

(4125) (a) Prohibition pursuant to CWA section 312(f)(3): a State may completely prohibit the discharge from all vessels of any sewage, whether treated or not, into some or all of the waters within such State by making a written application to the Administrator, Environmental Protection Agency, and by receiving the Administrator's affirmative determination pursuant to section 312(f)(3) of the Act. Upon receipt of an application under section 312(f)(3) of the Act, the Administrator will determine within 90 days whether adequate facilities for the safe and sanitary removal and treatment of sewage from all vessels using such waters are reasonably available. Applications made by States pursuant to section 312(f)(3) of the Act shall include:

(4126) (1) A certification that the protection and enhancement of the waters described in the petition require greater environmental protection than the applicable Federal standard;

(4127) (2) A map showing the location of commercial and recreational pump-out facilities;

(4128) (3) A description of the location of pump-out facilities within waters designated for no discharge;

(4129) (4) The general schedule of operating hours of the pump-out facilities;

(4130) (5) The draught requirements on vessels that may be excluded because of insufficient water depth adjacent to the facility;

(4131) (6) Information indicating that treatment of wastes from such pump-out facilities is in conformance with Federal law; and

(4132) (7) Information on vessel population and vessel usage of the subject waters.

(4133) (b) Prohibition pursuant to CWA section 312(f)(4)(A): a State may make a written application to the Administrator, Environmental Protection Agency, under section 312(f)(4)(A) of the Act, for the issuance of a regulation completely prohibiting discharge from a vessel of any sewage, whether treated or not, into particular waters of the United States or specified portions thereof, which waters are located within the boundaries of such State. Such application shall specify with particularly the waters, or portions thereof, for which a complete prohibition is desired. The application shall include identification of water recreational areas, drinking water intakes, aquatic sanctuaries, identifiable fish-spawning and nursery areas, and areas of intensive boating activities. If, on the basis of the State's application and any other information available to him, the Administrator is unable to make a finding that the waters listed in the application require a complete prohibition of any discharge in the waters or portions thereof covered by the application, he shall state the reasons why he cannot make such a finding, and shall deny the application. If the Administrator makes a finding that the waters listed in the application require a complete prohibition of any discharge in all or any part of the waters or portions thereof covered by the State's application, he shall publish notice of such findings together with a notice of proposed rule making, and then shall proceed in accordance with 5 U.S.C. 553. If the Administrator's finding is that applicable water quality standards require a complete prohibition covering a more restricted or more expanded area than that applied for by the State, he shall state the reasons why his finding differs in scope from that requested in the State's application.

(4134) (1) For the following waters the discharge from a vessel of any sewage (whether treated or not) is completely prohibited pursuant to CWA section 312(f)(4)(A):

(4135) (i) Boundary Waters Canoe Area, formerly designated as the Superior, Little Indian Sioux, and Caribou Roadless Areas, in the Superior National Forest, Minnesota, as described in 16 U.S.C. 577–577d1.

(4136) (ii) Waters of the State of Florida within the boundaries of the Florida Keys National Marine Sanctuary as delineated on a map of the Sanctuary at http://www.fknms.nos.noaa.gov/.

(4137) (2)(i) For the marine waters of the State of California, the following vessels are completely prohibited from discharging any sewage (whether treated or not):

(4138) (A) A large passenger vessel;

(4139) (B) A large oceangoing vessel equipped with a holding tank which has not fully used the holding tank's capacity, or which contains more than *de minimis* amounts

of sewage generated while the vessel was outside of the marine waters of the State of California.

(4140) (ii) For purposes of paragraph (b)(2) of this section:

(4141) (A) "Marine waters of the State of California" means the territorial sea measured from the baseline as determined in accordance with the Convention on the Territorial Sea and the Contiguous Zone and extending seaward a distance of three miles, and all enclosed bays and estuaries subject to tidal influences from the Oregon border (41.999325 North Latitude, 124.212110 West Longitude, decimal degrees, NAD 1983) to the Mexican border (32.471231 North Latitude, 117.137814 West Longitude, decimal degrees, NAD 1983). A map illustrating these waters can be obtained from EPA or viewed at http://www.epa.gov/region9/water/no-discharge/overview.html.

(4142) (B) A "large passenger vessel" means a passenger vessel, as defined in section 2101(22) of title 46, United States Code, of 300 gross tons or more, as measured under the International Convention on Tonnage Measurement of Ships, 1969, measurement system in 46 U.S.C. 14302, or the regulatory measurement system of 46 U.S.C. 14502 for vessels not measured under 46 U.S.C. 14302, that has berths or overnight accommodations for passengers.

(4143) (C) A "large oceangoing vessel" means a private, commercial, government, or military vessel of 300 gross tons or more, as measured under the International Convention on Tonnage Measurement of Ships, 1969, measurement system in 46 U.S.C. 14302, or the regulatory measurement system of 46 U.S.C. 14502 for vessels not measured under 46 U.S.C.14302, that is not a large passenger vessel.

(4144) (D) A "holding tank" means a tank specifically designed, constructed, and fitted for the retention of treated or untreated sewage, that has been designated and approved by the ship's flag Administration on the ship's stability plan; a designated ballast tank is not a holding tank for this purpose.

(4145) (c)(1) Prohibition pursuant to CWA section 312(f)(4)(B): A State may make written application to the Administrator of the Environmental Protection Agency under section 312(f)(4)(B) of the Act for the issuance of a regulation establishing a drinking water intake no-discharge zone which completely prohibits discharge from a vessel of any sewage, whether treated or untreated, into that zone in particular waters, or portions thereof, within such State. Such application shall:

(4146) (i) Identify and describe exactly and in detail the location of the drinking water supply intake(s) and the community served by the intake(s), including average and maximum expected amounts of inflow;

(4147) (ii) Specify and describe exactly and in detail, the waters, or portions thereof, for which a complete prohibition is desired, and where appropriate, average, maximum and low flows in million gallons per day (MGD) or the metric equivalent;

(4148) (iii) Include a map, either a USGS topographic quadrant map or a NOAA nautical chart, as applicable, clearly marking by latitude and longitude the waters or portions thereof to be designated a drinking water intake zone; and

(4149) (iv) Include a statement of basis justifying the size of the requested drinking water intake zone, for example, identifying areas of intensive boating activities.

(4150) (2) If the Administrator finds that a complete prohibition is appropriate under this paragraph, he or she shall publish notice of such finding together with a notice of proposed rulemaking, and then shall proceed in accordance with 5 U.S.C. 553. If the Administrator's finding is that a complete prohibition covering a more restricted or more expanded area than that applied for by the State is appropriate, he or she shall also include a statement of the reasons why the finding differs in scope from that requested in the State's application.

(4151) (3) If the Administrator finds that a complete prohibition is inappropriate under this paragraph, he or she shall deny the application and state the reasons for such denial.

(4152) (4) For the following waters the discharge from a vessel of any sewage, whether treated or not, is completely prohibited pursuant to CWA section 312(f)(4)(B):

(4153) (i) Two portions of the Hudson River in New York State, the first is bounded by an east-west line through the most northern confluence of the Mohawk River which will be designated by the Troy-Waterford Bridge (126th Street Bridge) on the south and Lock 2 on the north, and the second of which is bounded on the north by the southern end of Houghtaling Island and on the south by a line between the Village of Roseton on the western shore and Low Point on the eastern shore in the vicinity of Chelsea, as described in Items 2 and 3 of 6 NYCRR Part 858.4.

(4154) (ii) [Reserved]

(4155)

§140.5 Analytical procedures.

(4156) In determining the composition and quality of effluent discharge from marine sanitation devices, the procedures contained in **40 CFR** part **136**, "Guidelines Establishing Test Procedures for the Analysis of Pollutants," or subsequent revisions or amendments thereto, shall be employed.

(4157)

TITLE 46–SHIPPING

(4158)

Part 15–Manning Requirements (in part)

(4159)

Subpart J–Vessels in Foreign Trade

(4160)

§15.1001 General.

(4161) Self-propelled vessels engaged in foreign commerce are required to use a pilot holding a valid MMC or license

with appropriate endorsement as a first-class pilot when operating in the navigable waters of the United States specified in this subpart.

(4162)

§15.1020 Hawaii.

(4163) The following offshore marine oil terminals located within U.S. navigable waters of the State of Hawaii: *Barbers Point, Island of Oahu*. The waters including the Hawai'ian Independent Refinery, Inc. and the Chevron moorings lying within an area bounded by a line bearing 180 degrees true from Barbers Point Light to

(4164) 21°14.8'N., 158°06.4'W.; thence easterly to

(4165) 21°14.8'N., 158°03.3'W.; thence northeasterly to

(4166) 21°15.6'N., 158°01.1'W.; thence northwesterly to

(4167) 21°18.5'N., 158°02.0'W.; thence westerly along the shoreline to

(4168) 21°17.8'N., 158°06.4"W.

(4169)

TITLE 50–WILDLIFE AND FISHERIES

(4170)

Part 224–Endangered Marine and Anadromous Species

(4171)

§224.103 Special prohibitions for endangered marine mammals.

(4172) (a) [Reserved]

(4173)

Part 226—Designated Critical Habitat

(4174) **§ 226.206 Critical habitat for the Southern Resident killer whale (*Orcinus orca*).**

(4175) Critical habitat is designated for the Southern Resident killer whale as described in this section. The maps, clarified by the textual descriptions in this section, are the definitive source for determining the critical habitat boundaries.

(4176) (a) *Critical habitat boundaries*. Critical habitat is designated to include all areas in paragraphs (a)(1) and (2) of this section.

(4177) (1) *Inland waters of Washington State*. Critical habitat includes three specific marine areas of Puget Sound, Washington, within the following counties: Clallam, Jefferson, King, Kitsap, Island, Mason, Pierce, San Juan, Skagit, Snohomish, Thurston, and Whatcom. Critical habitat includes all waters relative to a contiguous shoreline delimited by the line at a depth of 20 ft (6.1 m) relative to extreme high water in each of the following areas:

(4178) (i) *Summer Core Area*. All U.S. marine waters in Whatcom and San Juan counties; and all marine waters in Skagit County west and north of the Deception Pass Bridge (Highway 20) (48°24′25″N., 122°38′35″W.).

(4179) (ii) *Puget Sound Area*. All marine waters in Island County east and south of the Deception Pass Bridge (Highway 20) (48°24′25″N., 122°38′35″W.), and east of a line connecting the Point Wilson Lighthouse (48°8′39″N., 122°45′12″W.) and a point on Whidbey Island located at 48°12′30″N., 122°44′26″W.; all marine waters in Skagit County east of the Deception Pass Bridge (Highway 20) (48°24′25″N., 122°38′35″W.); all marine waters of Jefferson County east of a line connecting the Point Wilson Lighthouse (48°8′39″N., 122°45′12″W.) and a point on Whidbey Island located at latitude 48°12′30″N., 122°44′26″W., and north of the Hood Canal Bridge (Highway 104 (47°51′36″N., 122°37′23″W.); all marine waters in eastern Kitsap County east of the Hood Canal Bridge (Highway 104) (47°51′36″N., 122°37′23″W.); all marine waters (excluding Hood Canal) in Mason County; and all marine waters in King, Pierce, Snohomish, and Thurston counties.

(4180) (iii) *Strait of Juan de Fuca Area*. All U.S. marine waters in Clallam County east of a line connecting Cape Flattery, Washington (48°23′10″N., 124°43′32″W.), Tatoosh Island, Washington (48°23′30″N., 124°44′12″W.), and Bonilla Point, British Columbia (48°35′30″N., 124°43′00″ W); all marine waters in Jefferson and Island counties west of the Deception Pass Bridge (Highway 20) (48°24′25″N., 122°38′35″W.), and west of a line connecting the Point Wilson Lighthouse (48°8′39″N., 122°45′12″W.) and a point on Whidbey Island located at 48°12′30″N., 122°44′26″W.

(4181) (2) *Coastal marine waters along the U.S. West Coast*. Critical habitat includes six specific marine areas along the coasts of Washington, Oregon, and California. Critical habitat includes all waters relative to a contiguous shoreline delimited by the line at a depth of 20 ft (6.1 m) relative to mean high water in each of the following areas:

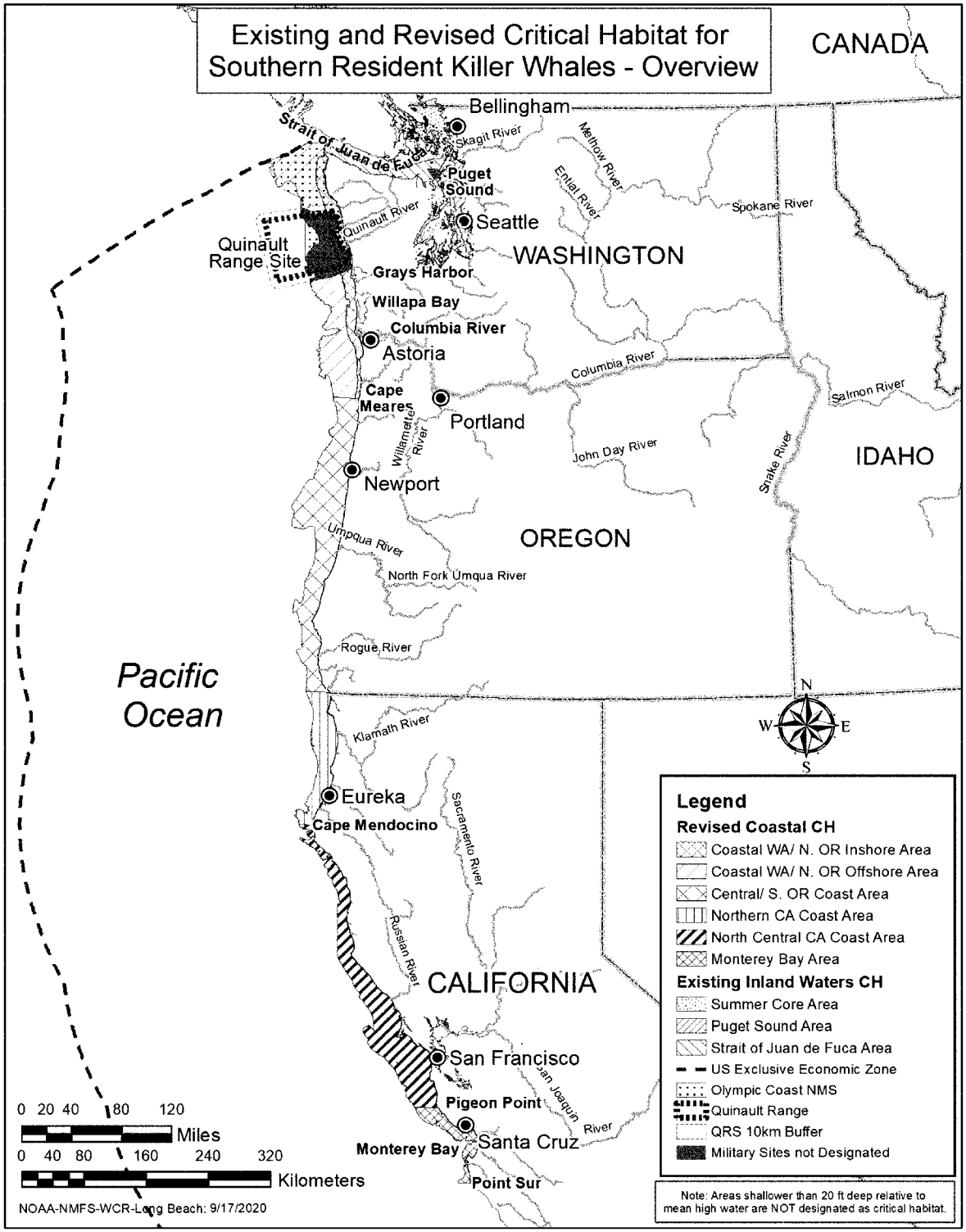
(4182) (i) *Coastal Washington/Northern Oregon Inshore Area*. U.S. marine waters west of a line connecting Cape Flattery, Washington (48°23′10″N., 124°43′32″W.), Tatoosh Island, Washington (48°23″N., 124°44′12″W.), and Bonilla Point, British Columbia (48°35′30″N., 124°43′00″W.), from the U.S. international border with Canada south to Cape Meares, Oregon (45°29′12″ N), between the 6.1-m and 50-m isobath contours. This includes waters off Clallam, Jefferson, Grays Harbor, and Pacific counties in Washington and Clatsop and Tillamook counties in Oregon.

(4183) (ii) *Coastal Washington/Northern Oregon Offshore Area*. U.S. marine waters west of a line connecting Cape Flattery, Washington (48°23′10″N., 124°43′32″W.), Tatoosh Island, Washington (48°23′30″N., 124°44′12″W.), and Bonilla Point, British Columbia (48°35′30″N., 124°43′00″W.) south to Cape Meares, Oregon (45°29′12″N.), between the 50-m and 200-m isobath contours. This includes waters off Clallam, Jefferson, Grays Harbor, and Pacific counties in Washington and Clatsop and Tillamook counties in Oregon.

(4184) (iii) *Central/Southern Oregon Coast Area*. U.S. marine waters from Cape Meares, Oregon (45°29′12″N.) south to the border between Oregon and California (42°00′00″ N), between the 6.1-m and 200-m isobath

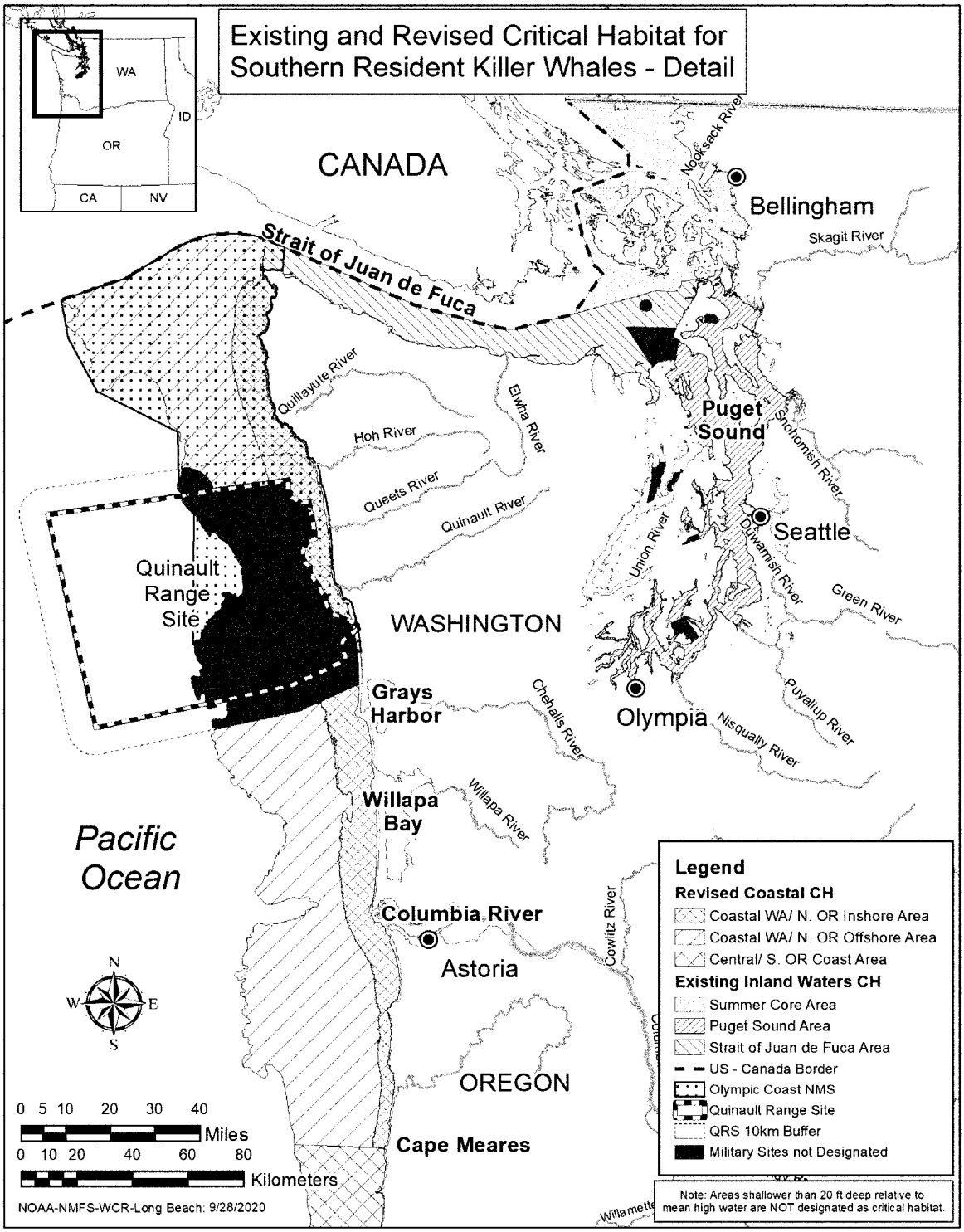
(4213)

Figure 1 to Paragraph (d) – Existing and Revised Critical Habitat for Southern Resident Killer Whales - Overview



(4214)

Figure 2 to paragraph (d) – Existing and Revised Critical Habitat for Southern Resident Killer Whales - Detail



contours. This includes waters off Tillamook, Lincoln, Lane, Douglas, Coos, and Curry counties in Oregon.

(4185) (iv) *Northern California Coast Area*. U.S. marine waters from the border between Oregon and California (42°00′00″N.) south to Cape Mendocino, California (40°26′19″N.), between the 6.1-m and 200-m isobath contours. This includes waters off Del Norte and Humboldt counties in California.

(4186) (v) *North Central California Coast Area*. U.S. marine waters from Cape Mendocino, California (40°26′19″N.) south to Pigeon Point, California (37°11′00″N.), between the 6.1-m and 200-m isobath contours. This includes waters off Humboldt, Mendocino, Sonoma, Marin, San Francisco, and San Mateo counties in California.

(4187) (vi) *Monterey Bay Area*. U.S. marine waters from Pigeon Point, California (37°11′00″N.) south to Point Sur, California (36°18′00″N.), between the 6.1-m and 200-m isobath contours. This includes waters off San Mateo, Santa Cruz, and Monterey counties in California.

(4188) (b) *Essential features*. The essential features for the conservation of Southern Resident killer whales are the following:

(4189) (1) Water quality to support growth and development;

(4190) (2) Prey species of sufficient quantity, quality, and availability to support individual growth, reproduction, and development, as well as overall population growth; and

(4191) (3) Passage conditions to allow for migration, resting, and foraging.

(4192) (c) *Sites owned or controlled by the Department of Defense*. Critical habitat does not include the following particular areas owned or controlled by the Department of Defense, or designated for its use, in the State of Washington, including shoreline, nearshore areas around structures such as docks and piers, and marine areas where they overlap with the areas described in paragraph (a) of this section:

(4193) (1) Naval Undersea Warfare Center, Keyport;

(4194) (2) Naval Ordnance Center, Port Hadlock (Indian Island);

(4195) (3) Naval Fuel Depot, Manchester;

(4196) (4) Naval Air Station, Whidbey Island;

(4197) (5) Naval Station, Everett;

(4198) (6) Naval Hospital Bremerton;

(4199) (7) Fort Lewis (Army);

(4200) (8) Pier 23 (Army);

(4201) (9) Puget Sound Naval Ship Yard;

(4202) (10) Strait of Juan de Fuca naval air to-surface weapon range, restricted area;

(4203) (11) Strait of Juan de Fuca and Whidbey Island naval restricted areas;

(4204) (12) Admiralty Inlet naval restricted area;

(4205) (13) Port Gardner Naval Base restricted area;

(4206) (14) Port Orchard Passage naval restricted area;

(4207) (15) Sinclair Inlet naval restricted area;

(4208) (16) Carr Inlet naval restricted area;

(4209) (17) Port Townsend/Indian Island/Walan Point naval restricted area;

(4210) (18) Crescent Harbor Explosive Ordnance Units Training Area; and

(4211) (19) Quinault Range (including the surf zone at Pacific Beach) and a 10-km buffer around most of the Quinault Range, not including the portion of this buffer that extends beyond 10 km into the Olympic Coast National Marine Sanctuary (OCNMS).

(4212) (d) *Maps of Southern Resident killer whale critical habitat*.

(4215)

Part 404–Papahanaumokuakea Marine National Monument

(4216)

§404.1 Scope and purpose.

(4217) The regulations in this part codify the provisions of Presidential Proclamation 8031, and govern the administration of the Northwestern Hawaiian Islands Marine National Monument. These regulations are jointly implemented by the Secretaries of the Interior, through the U.S. Fish and Wildlife Service (USFWS), and Commerce, through the National Oceanic and Atmospheric Administration (NOAA). Nothing in these regulations shall be deemed to diminish or enlarge the jurisdiction of the State of Hawaii.

(4218)

§404.2 Boundary.

(4219) The Northwestern Hawaiian Islands Marine National Monument consists of all lands and interest in lands owned or controlled by the Government of the United States within the boundaries of the Monument, including emergent and submerged lands and waters of the Northwestern Hawaiian Islands. The map in Appendix A to this part 404 depicts the outer boundary of the Monument, which consists of the geodetic lines connecting the coordinates specified in the Proclamation.

(4220)

§404.3 Definitions.

(4221) The following definitions are applicable only to this part.

(4222) *Areas to be avoided* means the four designated areas that should be avoided by vessels that are conducting passage through the Monument without interruption.

(4223) *Attract or Attracting* means luring or attempting to lure a living resource by any means, except the mere presence of human beings (e.g., swimmers, divers, boaters).

(4224) *Bottomfish Species* means Bottomfish management unit species as defined at **50 CFR 665.12**.

(4225) *Categories of hazardous cargoes* means goods classified in the International Maritime Dangerous Goods (IMDG) Code; substances classified in chapter 17 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code); and chapter 19 of the International Code for the Construction and Equipment of Ships Carrying

Liquefied Gases in Bulk (IGC Code); oils as defined in MARPOL Annex I; noxious liquid substances as defined in MARPOL Annex II; harmful substances as defined by MARPOL Annex III; and radioactive materials specified in the Code for the Safe Carriage of the Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes in Flasks on Board Ships (INF Code).

(4226) *Commercial Bottomfishing* means commercial fishing for bottomfish species.

(4227) *Commercial passenger vessel* means a vessel that carries individuals who have paid for such carriage.

(4228) *Commercial pelagic trolling* means commercial fishing for pelagic species.

(4229) *Deserting a vessel* means:

(4230) (1) Leaving a vessel aground or adrift:

(4231) (i) Without notifying the Secretaries of the vessel going aground or adrift within 12 hours of its discovery and developing and presenting to the Secretaries a preliminary salvage plan within 24 hours of such notification;

(4232) (ii) After expressing or manifesting intention to not undertake or to cease salvage efforts; or

(4233) (iii) When the Secretaries are unable, after reasonable efforts, to reach the owner/operator within 12 hours of the vessel's condition being reported to authorities.

(4234) (2) Leaving a vessel at anchor when its condition creates potential for a grounding, discharge, or deposit and the owner/operator fails to secure the vessel in a timely manner.

(4235) *Ecological Reserve* means the areas of the Monument, identified in the Proclamation, consisting of contiguous, diverse habitats that provide natural spawning, nursery, and permanent residence areas for the replenishment and genetic protection of marine life, and also to protect and preserve natural assemblages of habitats and species within areas representing a broad diversity of resources and habitats found within the Monument. Specific coordinates for Ecological Reserves within the Monument are found in the Proclamation, and the Ecological Reserves consist of the areas within the geodetic lines connecting these coordinates. The Ecological Reserves are depicted on the map in Appendix A to part 404.

(4236) *Ecological integrity* means a condition determined to be characteristic of an ecosystem that has the ability to maintain the function, structure, and abundance of natural biological communities, including rates of change in response to natural environmental variation.

(4237) *Fishing year* means the year beginning at 0001 local time on January 1 and ending at 2400 local time on December 31.

(4238) *IMO* means the International Maritime Organization.

(4239) *Introduced Species* means:

(4240) (1) A species (including, but not limited to, any of its biological matter capable of propagation) that is non-native to the ecosystem(s) protected by the Monument; or

(4241) (2) Any organism into which genetic matter from another species has been transferred in order that the host organism acquires the genetic traits of the transferred genes.

(4242) *Landing* means offloading fish from a fishing vessel or causing fish to be offloaded from a fishing vessel.

(4243) *Midway Atoll Special Management Area* means the area of the Monument surrounding Midway Atoll out to a distance of 12 nautical miles, established for the enhanced management, protection, and preservation of Monument wildlife and historical resources. The geographic coordinates of this area, which consists of the area within the geodetic lines connecting these coordinates, are found in the Proclamation. The Midway Atoll Special Management Area is depicted on the map in Appendix A to part 404.

(4244) *Mobile transceiver unit* means a vessel monitoring system or VMS device, as described in Appendix E to this part, installed on board a vessel that is used for vessel monitoring and transmitting the vessel's position as required by this part.

(4245) *Monument* means the Northwestern Hawaiian Islands Marine National Monument.

(4246) *Native Hawaiian Practices* means cultural activities conducted for the purposes of perpetuating traditional knowledge, caring for and protecting the environment and strengthening cultural and spiritual connections to the Northwestern Hawaiian Islands that have demonstrable benefits to the Native Hawaiian community. This may include, but is not limited to, the non-commercial use of Monument resources for direct personal consumption while in the Monument.

(4247) *Ocean-based ecotourism* means a class of fee-for-service activities that involves visiting the Monument for study, enjoyment, or volunteer assistance for purposes of conservation and management.

(4248) *Office for Law Enforcement (OLE)* refers to NOAA, National Marine Fisheries Service, Office for Law Enforcement.

(4249) *Pelagic Species* means Pacific Pelagic Management Unit Species as defined at **50 CFR 665.12**.

(4250) *Pono* means appropriate, correct, and deemed necessary by traditional standards in the Hawaiian culture.

(4251) *Proclamation* means Presidential Proclamation 8031, dated June 15, 2006 (71 FR 36443).

(4252) *Recreational activity* means an activity conducted for personal enjoyment that does not result in the extraction of Monument resources and that does not involve a fee-for-service transaction. This includes, but is not limited to, wildlife viewing, SCUBA diving, snorkeling, and boating.

(4253) *Secretaries* means the Secretary of Commerce and the Secretary of the Interior or their designees.

(4254) *Special Preservation Area (SPA)* means discrete, biologically important areas of the Monument, identified in the Proclamation, within which uses are subject to conditions, restrictions, and prohibitions, including but

not limited to access restrictions. SPAs are used to avoid concentrations of uses that could result in declines in species populations or habitat, to reduce conflicts between uses, to protect areas that are critical for sustaining important marine species or habitats, or to provide opportunities for scientific research. Specific coordinates for Special Preservation Areas within the Monument are found in the Proclamation, and the Special Preservation Areas consist of the areas within the geodetic lines connecting these coordinates. The Special Preservation Areas are depicted on the map in Appendix A to part 404.

(4255) *Special ocean use* means an activity or use of the Monument that is engaged in to generate revenue or profits for one or more of the persons associated with the activity or use, and does not destroy, cause the loss of, or injure Monument resources. This includes ocean-based ecotourism and other activities such as educational and research activities that are engaged in to generate revenue, but does not include commercial fishing for bottomfish or pelagic species conducted pursuant to a valid permit issued by NOAA.

(4256) *Stowed and not available for immediate use* means not readily accessible for immediate use, e.g., by being securely covered and lashed to a deck or bulkhead, tied down, unbaited, unloaded, or partially disassembled (such as spear shafts being kept separate from spear guns).

(4257) *Sustenance fishing* means fishing for bottomfish or pelagic species in which all catch is consumed within the Monument, and that is incidental to an activity permitted under this part.

(4258) *Vessel monitoring system or VMS* means a vessel monitoring system or mobile transceiver unit as described in §404.5 and approved by Office for Law Enforcement for use on vessels permitted to access the Monument, as required by this part.

(4259)

§404.4 Access to the Monument.

(4260) (a) Entering the Monument is prohibited and thus unlawful except:

(4261) (1) As provided in §§ 404.8 and 404.9;

(4262) (2) Pursuant to a permit issued under §§ 404.10 or 404.11; or

(4263) (3) When conducting passage without interruption in accordance with paragraphs (b) through (f) of this section.

(4264) (b) Any person passing through the Monument without interruption is subject to the prohibitions in §§ 404.5, 404.6, and 404.7.

(4265) (c) The following vessels, except vessels entitled to sovereign immunity under international law, passing through the Monument without interruption must participate in the ship reporting system as provided in paragraphs (d) and (e) of this section:

(4266) (1) Vessels of the United States, except as provided in paragraph (f) of this section;

(4267) (2) All other ships of 300 gross tonnage or greater, entering or departing a United States port or place; and

(4268) (3) All other ships in the event of an emergency, entering or departing a United States port or place.

(4269) (d) Immediately upon entering the reporting area, the vessels described in paragraph (c) of this section must provide the following information by e-mail sent to nwhi.notifications@noaa.gov in the IMO standard reporting format and data syntax shown in Appendix E:

(4270) (1) Vessel name, call sign or ship station identity, flag, and IMO identification number if applicable.

(4271) (2) Date, time (UTC) and month of entry.

(4272) (3) Position.

(4273) (4) True course.

(4274) (5) Speed in knots and tenths.

(4275) (6) Destination and estimated time of arrival.

(4276) (7) Intended route through the Monument and the reporting area.

(4277) (8) Vessel draft (in meters).

(4278) (9) Categories of hazardous cargoes on board.

(4279) (10) Any vessel defects or deficiencies that restrict maneuverability or impair normal navigation.

(4280) (11) Any pollution incident or goods lost overboard within the Monument, the reporting area, or the U.S. EEZ.

(4281) (12) Contact information for the vessel's agent or owner.

(4282) (13) Vessel size (length overall, gross tonnage) and type.

(4283) (14) Total number of persons on board.

(4284) (e) Immediately upon leaving the reporting area, the vessels described in paragraph (c) must provide the following information by e-mail sent to nwhi.notifications@noaa.gov in the IMO standard reporting format and data syntax shown in Appendix E:

(4285) (1) Vessel name, call sign or ship station identity, flag, and IMO identification number if applicable, and either Federal documentation or State registration number if applicable.

(4286) (2) Date, time (UTC) and month of exit.

(4287) (3) Position.

(4288) (4) Any pollution incident or goods lost overboard within the Monument, the reporting area, or the U.S. EEZ.

(4289) (f)(1) Vessels of the United States less than 300 gross tonnage that are not equipped with onboard e-mail capability must provide notification of entry and the information described in paragraphs (d)(1), (2), (3) as applicable, (6), (7), (8), (9) as applicable, (10), (12), (13), and (14) of this section at least 72 hours, but no longer than 1 month, prior to the entry date. Notification of departure from the Monument and the information described in paragraph (e) of this section must be provided within 12 hours of leaving. Notification under this paragraph may be made by e-mail, telephone, or fax, by contacting:

(4290) (i) E-mail: nwhi.notifications@noaa.gov;

(4291) (ii) Telephone: 866–478–NWHI (6944);

(4292) (iii) *Fax*: 1–808–455–3093.

(4293) (2) The information must be provided in the IMO standard reporting format and data syntax shown in Appendix E.

(4294) (g) All vessels passing through the Monument without interruption other than those described in paragraphs (c)(1) through (3) of this section should participate in the ship reporting system set forth in paragraphs (d) and (e) of this section.

(4295)

§404.5 Requirements for a vessel monitoring system.

(4296) (a) *Requirement for use*. Effective August 28, 2006, an owner or operator of a vessel that has been issued a permit for accessing the Monument must ensure that such vessel has an OLE-approved, operating VMS on board when voyaging within the Monument. An operating VMS includes an operating mobile transmitting unit on the vessel and a functioning communication link between the unit and OLE as provided by an OLE-approved communication service provider. Appendix B to this part 404 provides information regarding OLE-approved transmitting units.

(4297) (b) *Installing and activating the VMS*. Only a VMS that has been approved by OLE may be used. When installing and activating the OLE-approved VMS, or when reinstalling and reactivating such VMS, the vessel owner or operator must:

(4298) (1) Follow procedures indicated on an installation and activation checklist, which is available from OLE; and

(4299) (2) Submit to OLE a statement certifying compliance with the checklist, as prescribed on the checklist.

(4300) (c) *Interference with the VMS*. No person may interfere with, tamper with, alter, damage, disable, or impede the operation of the VMS, or attempt any of the same.

(4301) (d) *Interruption of operation of the VMS*. When a vessel's VMS is not operating properly, the owner or operator must immediately contact OLE, and follow instructions from that office. If notified by OLE that a vessel's VMS is not operating properly, the owner and operator must follow instructions from that office. In either event, such instructions may include, but are not limited to, manually communicating to a location designated by OLE the vessel's positions or returning to port until the VMS is operable.

(4302) (e) *Access to position data*. As a condition of authorized access to the Monument, a vessel owner or operator subject to the requirements for a VMS in this section must allow OLE, the USCG, and their authorized officers and designees access to the vessel's position data obtained from the VMS. Consistent with other applicable laws, including the limitations on access to, and use of, VMS data collected under the Magnuson-Stevens Fishery Conservation and Management Act, the Secretaries may have access to, and use of, collected data for scientific, statistical, and management purposes.

(4303) (f) *Authority for installation and operation*. OLE has authority over the installation and operation of the VMS unit. OLE may authorize the connection or order the disconnection of additional equipment, including a computer, to any VMS unit when deemed appropriate by OLE.

(4304) (g) *Activities Regarding Vessel Monitoring Systems*. Effective August 28, 2006, the following activities regarding vessel monitoring systems are prohibited and thus unlawful for any person to conduct or cause to be conducted:

(4305) (1) Operating any vessel within the Monument without an OLE type-approved mobile transceiver unit described in this section;

(4306) (2) Failing to install, activate, repair, or replace a mobile transceiver unit prior to leaving port;

(4307) (3) Failing to operate and maintain a mobile transceiver unit on board the vessel at all times as specified in this section;

(4308) (4) Tampering with, damaging, destroying, altering, or in any way distorting, rendering useless, inoperative, ineffective, or inaccurate the VMS, mobile transceiver unit, or VMS signal required to be installed on or transmitted by a vessel as specified in this section;

(4309) (5) Failing to contact OLE or follow OLE instructions when automatic position reporting has been interrupted as specified in this section;

(4310) (6) Registering a VMS or mobile transceiver unit to more than one vessel at the same time;

(4311) (7) Connecting or leaving connected additional equipment to a VMS unit or mobile transceiver unit without the prior approval of OLE; and

(4312) (8) Making a false statement, oral or written, to an authorized officer regarding the installation, use, operation, or maintenance of a VMS unit or mobile transceiver unit or communication service provider.

(4313)

§404.6 Prohibited activities.

(4314) The following activities are prohibited and thus unlawful for any person to conduct or cause to be conducted:

(4315) (a) Exploring for, developing, or producing oil, gas, or minerals within the Monument;

(4316) (b) Using or attempting to use poisons, electrical charges, or explosives in the collection or harvest of a Monument resource;

(4317) (c) Introducing or otherwise releasing an introduced species from within or into the Monument; and

(4318) (d) Anchoring on or having a vessel anchored on any living or dead coral with an anchor, anchor chain, or anchor rope.

(4319)

§404.7 Regulated activities.

(4320) Except as provided in §§404.8, 404.9 and 404.10, the following activities are prohibited and thus unlawful

for any person to conduct or cause to be conducted within the Monument without a valid permit as provided for in §404.11:

(4321) (a)Removing,moving,taking,harvesting,possessing, injuring, disturbing, or damaging; or attempting to remove, move, take, harvest, possess, injure, disturb, or damage any living or nonliving Monument resource;

(4322) (b) Drilling into, dredging, or otherwise altering the submerged lands other than by anchoring a vessel; or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands;

(4323) (c) Anchoring a vessel;

(4324) (d) Deserting a vessel aground, at anchor, or adrift;

(4325) (e) Discharging or depositing any material or other matter into Special Preservation Areas or the Midway Atoll Special Management Area except vessel engine cooling water, weather deck runoff, and vessel engine exhaust;

(4326) (f) Discharging or depositing any material or other matter into the Monument, or discharging or depositing any material or other matter outside the Monument that subsequently enters the Monument and injures any resources of the Monument, except fish parts (i.e., chumming material or bait) used in and during authorized fishing operations, or discharges incidental to vessel use such as deck wash, approved marine sanitation device effluent, cooling water, and engine exhaust;

(4327) (g) Touching coral, living or dead;

(4328) (h) Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the Monument;

(4329) (i) Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or the Midway Atoll Special Management Area; and

(4330) (j) Attracting any living Monument resource.

(4331)

§404.8 Emergencies and law enforcement activities.

(4332) The prohibitions in this part do not apply to activities necessary to respond to emergencies threatening life, property, or the environment, or to activities necessary for law enforcement purposes.

(4333)

§404.9 Armed Forces actions.

(4334) (a) The prohibitions in this part do not apply to activities and exercises of the Armed Forces (including those carried out by the United States Coast Guard) that are consistent with applicable laws.

(4335) (b) These regulations shall not limit agency actions to respond to emergencies posing an unacceptable threat to human health or safety or to the marine environment and admitting of no other feasible solution.

(4336) (c) All activities and exercises of the Armed Forces shall be carried out in a manner that avoids, to the extent practicable and consistent with operational requirements, adverse impacts on Monument resources and qualities.

(4337) (d) In the event of threatened or actual destruction of, loss of, or injury to a Monument resource or quality resulting from an incident, including but not limited to spills and groundings, caused by a component of the Department of Defense or the United States Coast Guard, the cognizant component shall promptly coordinate with the Secretaries for the purpose of taking appropriate actions to respond to and mitigate the harm and, if possible, restore or replace the Monument resource or quality.

(4338)

§404.10 Commercial fishing.

(4339) (a) *Lobster fishing*. Any commercial lobster fishing permit is subject to a zero annual harvest limit condition.

(4340) (b) *Fishing and bottomfish and pelagic species*.

(4341) (1) Notwithstanding the prohibitions in §404.7(a) and (h), commercial fishing for bottomfish and associated pelagic species may continue within the Monument subject to paragraph (c) of this section, until June 15, 2011, provided that:

(4342) (i) The fishing is conducted in accordance with a valid commercial bottomfish permit issued by NOAA; and

(4343) (ii) Such permit was in effect on June 15, 2006, and is subsequently renewed pursuant to NOAA regulations at **50 CFR part 665**, subpart E as necessary.

(4344) (2) Total landings for each fishing year from fishing allowed under paragraph (b)(1) of this section may not exceed the following amounts:

(4345) (i) 350,000 pounds for bottomfish species; and

(4346) (ii) 180,000 pounds for pelagic species.

(4347) (3) Commercial fishing for bottomfish and associated pelagic species is prohibited in the Monument after June 15, 2011.

(4348) (c) *General requirements*. Any commercial fishing within the Monument shall be conducted in accordance with the following restrictions and conditions:

(4349) (1) A valid permit or facsimile of a valid permit shall be on board the fishing vessel and available for inspection by an authorized officer;

(4350) (2) No attempt is made to falsify or fail to make, keep, maintain, or submit any logbook or logbook form or other required record or report.

(4351) (3) Only gear specifically authorized by the relevant permit issued under the Magnuson-Stevens Fishery Conservation and Management Act is allowed to be in the possession of a person conducting commercial fishing under this section;

(4352) (4) Any person conducting commercial fishing notifies the Secretaries by telephone, facsimile, or electronic mail at least 72 hours before entering the Monument and within 12 hours after leaving the Monument in accordance with §404.4(b) and (c);

(4353) (5) All fishing vessels must carry an activated and functioning VMS unit on board at all times whenever the vessel is in the Monument;

(4354) (6) All fishing vessels must carry an observer when requested to do so by the Secretaries;

(4355) (7) The activity does not take place within any Ecological Reserve, any Special Preservation Area, or the Midway Atoll Special Management Area.

(4356)

§404.11 Permitting procedures and criteria.

(4357) (a) *Issuance*. Subject to such terms and conditions as the Secretaries deem appropriate, a person may conduct an activity prohibited by §404.7 if such activity is specifically authorized by a permit issued under this section.

(4358) (b) *Application requirements*. Applicants for permits under this section shall submit applications to: NOAA/Inouye Regional Center; NOS/ONMS/PMNM/Attn: Permit Coordinator; 1845 Wasp Blvd., Building 176; Honolulu, HI 96818.

(4359) (c) *Permit Types*. A permit under this subpart may be issued if the Secretaries find that the activity:

(4360) (1) Is research designed to further understanding of Monument resources and qualities;

(4361) (2) Will further the educational value of the Monument;

(4362) (3) Will assist in the conservation and management of the Monument;

(4363) (4) Will allow Native Hawaiian practices subject to paragraph (e) of this section;

(4364) (5) Will allow a special ocean use subject to paragraph (f) of this section; or

(4365) (6) Will allow recreational activities subject to paragraph (g) of this section.

(4366) (d) *Findings.* A permit may not be issued under this section unless the Secretaries find:

(4367) (1) The activity can be conducted with adequate safeguards for the resources and ecological integrity of the Monument;

(4368) (2) The activity will be conducted in a manner compatible with the purposes of the Proclamation, considering the extent to which the conduct of the activity may diminish or enhance Monument resources, qualities, and ecological integrity, any indirect, secondary or cumulative effects of the activity, and the duration of such effects;

(4369) (3) There is no practicable alternative to conducting the activity within the Monument;

(4370) (4) The end value of the activity outweighs its adverse impacts on Monument resources, qualities, and ecological integrity;

(4371) (5) The duration of the activity is no longer than necessary to achieve its stated purpose;

(4372) (6) The applicant is qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct;

(4373) (7) The applicant has adequate financial resources available to conduct and complete the activity and mitigate any potential impacts resulting from its conduct;

(4374) (8) The methods and procedures proposed by the applicant are appropriate to achieve the proposed activity's goals in relation to their impacts to Monument resources, qualities, and ecological integrity;

(4375) (9) The applicant's vessel has been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of §404.5; and

(4376) (10) There are no other factors that would make the issuance of a permit for the activity inappropriate.

(4377) (e) *Additional findings for Native Hawaiian practice permits*. In addition to the findings listed in paragraph (d) of this section, a permit to allow Native Hawaiian practices under paragraph (c)(4) of this section, may not be issued unless:

(4378) (1) The activity is non-commercial and will not involve the sale of any organism or material collected;

(4379) (2) The purpose and intent of the activity are appropriate and deemed necessary by traditional standards in the Native Hawaiian culture (pono), and demonstrate an understanding of, and background in, the traditional practice, and its associated values and protocols;

(4380) (3) The activity benefits the resources of the Northwestern Hawaiian Islands and the Native Hawaiian community;

(4381) (4) The activity supports or advances the perpetuation of traditional knowledge and ancestral connections of Native Hawaiians to the Northwestern Hawaiian Islands; and

(4382) (5) Any Monument resource harvested from the Monument will be consumed in the Monument.

(4383) (f) *Additional findings, criteria, and requirements for special ocean use permits*. (1) In addition to the findings listed in paragraph (d) of this section, the following requirements apply to the issuance of a permit for a special ocean use under paragraph (c)(5) of this section:

(4384) (i) Any permit for a special ocean use issued under this section:

(4385) (A) Shall authorize the conduct of an activity only if that activity is compatible with the purposes for which the Monument is designated and with protection of Monument resources;

(4386) (B) Shall not authorize the conduct of any activity for a period of more than 5 years unless renewed;

(4387) (C) Shall require that activities carried out under the permit be conducted in a manner that does not destroy, cause the loss of, or injure Monument resources; and

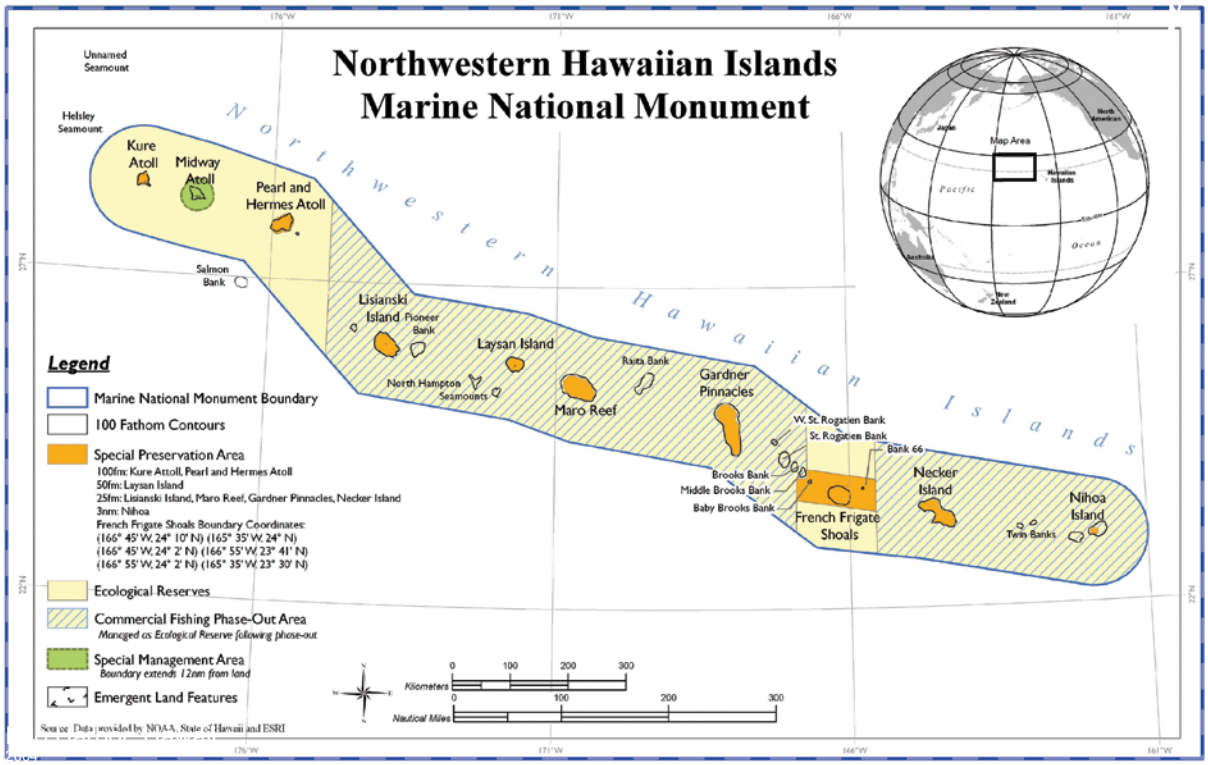
(4388) (D) Shall require the permittee to purchase and maintain comprehensive general liability insurance, or post an equivalent bond, against claims arising out of activities conducted under the permit and to agree to hold the United States harmless against such claims;

(4389) (ii) Each person issued a permit for a special ocean use under this section shall submit an annual report to the Secretaries not later than December 31 of each year which describes activities conducted under that permit and revenues derived from such activities during the year.

(4390) (2) In addition to the findings listed in paragraph (d) of this section, a permit may not be issued for a special ocean use unless the activity has been determined to be

(4410)

Appendix A to Part 404—Map of the Monument Outer Boundary and Ecological Reserves, Special Preservation Areas and Midway Atoll Special Management Area



consistent with the findings made pursuant to paragraph (f) of this section.

(4391) (3) Categories of special ocean use being permitted for the first time under this section will be restricted in duration and permitted as a special ocean use pilot project. Subsequent permits for any category of special ocean use may only be issued if a special ocean use pilot project for that category meets the requirements of this section, and any terms and conditions placed on the permit for the pilot project.

(4392) (4) Public notice shall be provided prior to requiring a special ocean use permit for any category of activity not previously identified as a special ocean use.

(4393) (5) The following requirements apply to permits for a special ocean use for an activity within the Midway Atoll Special Management Area.

(4394) (i) A permit for a special ocean use for activities within the Midway Atoll Special Management Area may be issued provided:

(4395) (A) The activity furthers the conservation and management of the Monument; and

(4396) (B) The Director of the United States Fish and Wildlife Service or his or her designee has determined that the activity is compatible with the purposes for which the Midway Atoll National Wildlife Refuge was designated.

(4397) (ii) As part of a permit issued pursuant to this paragraph (f)(5), vessels may be allowed to transit the Monument as necessary to enter the Midway Atoll Special Management Area.

(4398) (6) A permit for a special ocean use for activities outside the Midway Atoll Special Management Area may be issued provided:

(4399) (i) The activity will directly benefit the conservation and management of the Monument;

(4400) (ii) The purpose of the activity is for research or education related to the resources or qualities of the Monument;

(4401) (iii) Public notice of the application and an opportunity to provide comments is given at least 30 days prior to issuing the permit; and

(4402) (iv) The activity does not involve the use of a commercial passenger vessel.

(4403) (g) *Additional findings for recreation permits*. A permit for recreational activities under paragraph (c)(6) of this section may be issued for activities to be conducted within the Midway Atoll Special Management area if, in addition to the findings listed in paragraph (d) of this section:

(4404) (1) The activity is for the purpose of recreation as defined in section 404.3;

(4405) (2) The activity is not associated with any for-hire operation; and

(4406) (3) The activity does not involve any extractive use.

(4407) (h) *Sustenance fishing. Sustenance fishing*, as defined in 404.3, may be allowed outside of any Special

(4421)

TABLE E.1–Information Required for Entry Notification

Telegraphy	Function	Information required	Example field text
	System identifier	CORAL SHIPREP //	CORAL SHIPREP //
A	Ship	Vessel name/call sign/flag/IMO number/Federal documentation or State registration number if applicable//	A/OCEAN VOYAGER/C5FU8/BAHAMAS/IMO 9359165//
B	Date, time (UTC), and month of entry	A 6-digit group giving day of month (first two digits), hours and minutes (last four digits) in coordinated universal time, suffixed by the letter Z (indicating time in UTC), and three letters indicating month //	B/271107Z DEC//
C	Position	A 4-digit group giving latitude in degrees and minutes, suffixed with the letter N (indicating north), followed by a single /, and a five digit group giving longitude in degrees and minutes, suffixed with the letter W (indicating west)// [Report in the World Geodetic System 1984 Datum (WGS-84)]	C/2728N/17356W//
E	True course	3-digit number indicating true course//	E/180//
F	Speed in knots and tenths	3-digit group indicating knots decimal tenths//	F/20.5//
I	Destination and estimated time of arrival	Name of port city/country/estimated arrival date and time group expressed as in (B)//	I/SEATTLE/USA/311230Z DEC//
L	Intended route through the reporting area	Route information should be reported as a direct rhumbline (RL) course through the reporting area and intended speed (expressed as in E and F) or a series of way points (WP). Each waypoint entry should be reported as latitude and longitude, expressed as in (C), and intended speed between waypoints (as in F)//(Note: As many "L" lines as needed may be used to describe the vessel's intended route.)	L/RL/215/20.5// -OR- L/WP/2734N/17352W/20.5// L/WP/2641N/17413W/20.5// L/WP/2605N/17530W/20.5//
O	Vessel draft in meters	Maximum present static draft reported in meters decimal centimeters//	O/11.50//
P	Categories of Hazardous Cargoes*	Classification Code (e.g. IMDG, IBC, IGC, INF)/and all corresponding Categories of Hazardous Cargoes (delimited by commas)// Note: If necessary, use a separate "P" line for each type of Classification Code.	P/IMDG/1.4G,2.1,2.2,2.3,3,4.1,6.1,8,9//
Q	Defects or deficiencies**	Brief details of defects, damage, deficiencies or limitations that restrict maneuverability or impair normal navigation// (If none, enter the number zero.)	Q/Include details as required//
R	Pollution incident or goods lost overboard**	Description of pollution incident or goods lost overboard within the Monument, the Reporting Area, or the U.S. Exclusive Economic Zone// (If none, enter the number zero.)	R/0//
T	Contact information of ship's agent or owner	Name/address/and phone number of ship's agent or owner//	
U	Ship size (length overall and gross tonnage) and type	Length overall reported in meters decimal centimeters/number of gross tons/type of ship (e.g. bulk carrier, chemical tanker, oil tanker, gas tanker, container, general cargo, fishing vessel, research, passenger, OBO, RORO)//	U/294.14/54592/CONTAINER SHIP//
W	Persons	Total number of persons on board//	W/15//

TABLE E.1 Notes

***** Categories of hazardous cargoes means goods classified in the International Maritime Dangerous Goods (IMDG) Code; substances classified in chapter 17 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) and chapter 19 of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code); oils as defined in MARPOL Annex I; noxious liquid substances as defined in MARPOL Annex II; harmful substances as defined in MARPOL Annex III; and radioactive materials specified in the Code for the Safe Carriage of the Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes in Flasks on Board Ships (INF Code).

****** In accordance with the provisions of the MARPOL Convention, ships must report information relating to defects, damage, deficiencies or other limitations as well as, if necessary, information relating to pollution incidents or loss of cargo. Safety related reports must be provided to CORAL SHIPREP without delay should a ship suffer damage, failure or breakdown affecting the safety of the ship (Item Q), or if a ship makes a marked deviation from a route, course or speed previously advised (Item L). Pollution or cargo lost overboard must be reported without delay (Item R).

Preservation Area as a term or condition of any permit issued under this part. Sustenance fishing in the Midway Atoll Special Management Area shall not be allowed unless the activity has been determined by the Director of the U.S. Fish and Wildlife Service or his or her designee to be compatible with the purposes for which the Midway Atoll National Wildlife Refuge was established. Sustenance fishing must be conducted in a manner compatible with the Proclamation and this part, including considering the extent to which the conduct of the activity may diminish Monument resources, qualities, and ecological integrity, as well as any indirect, secondary, or cumulative effects of the activity and the duration of such effects. Sustenance fishing is subject to systematic reporting requirements when developed by the Secretaries.

(4408)

§404.12 International law.

(4409) These regulations shall be applied in accordance with international law. No restrictions shall apply to or be enforced against a person who is not a citizen, national, or resident alien of the United States (including foreign flag vessels) unless in accordance with international law.

(4411)

E.1 Entry Notification Format

(4412) Immediately upon entering the Reporting Area, vessels required to participate must provide the information in Table E.1.

(4413)

E.2 Prior Notification of Entry Format

(4414) Vessels of the United States less than 300 gross tonnage that are not equipped with onboard email capability must provide the following notification of entry at least 72 hrs, but no longer than 1 month, prior to entry date, utilizing the data syntax described above. Notification may be made via the following communication methods, listed in order of preference: Email [*nwhi.notifications@noaa.gov*]; fax [1–808–455–3093]; telephone [1–866–478–NWHI (6944)].

(4415)

Table E.2–Information Required for Prior Notification

System identifier	PRIOR NOTICE//.
Items	A, B, C (as applicable), I, L, O, P (as applicable), Q, T, U, W.

(4416)

E.3 Exit Notification Format

(4417) Immediately upon leaving the Reporting Area, vessels required to participate must provide the following information. Vessels of the United States less than 300 gross tonnage that are not equipped with onboard email capability must provide the following Exit Notification information within 12 hrs of leaving the Reporting Area. Notification may be made via the following communication methods, listed in order of preference: Email [*nwhi.notifications@noaa.gov*]; fax [1–808–455–3093]; telephone [1–866–478–NWHI (6944)].

(4418)

TABLE E.3–Information Required for Exit Notification

Telegraphy	Function	Information required	Example field text
	System identifier	CORAL SHIPREP //	CORAL SHIPREP //
A	Ship	Vessel name/call sign/flag/IMO number/Federal documentation or State registration number if applicable//	A/OCEAN VOYAGER/C5FU8/BAHAMAS/IMO 9359165//
B	Date, time (UTC), and month of entry	A 6-digit group giving day of month (first two digits), hours and minutes (last four digits), suffixed by the letter Z indicating time in UTC, and three letters indicating month//	B/271657Z DEC//
C	Position	A 4-digit group giving latitude in degrees and minutes, suffixed with the letter N (indicating north), followed by a single /, and a five digit group giving longitude in degrees and minutes, suffixed with the letter W (indicating west)// [Report in the World Geodetic System 1984 Datum (WGS-84)]	C/2728N/17356W//
R	Pollution incident or goods lost overboard**	Description of pollution incident or goods lost overboard within the Monument, the Reporting Area, or the U.S. Exclusive Economic Zone// (If none, enter the number zero.)	R/0//

(4419)

TABLE E.4–Example Entry Report

CORAL SHIPREP//
A/SEA ROVER/WFSU/USA/IMO 8674208/DOC 602011//
B/010915Z JUN//
C/2636N/17600W//
E/050//
F/20.0//
I/LOS ANGELES/USA/081215Z JUN//
L/RL/050/20.0//
O/10.90//
P/IMDG/3,4.1,6.1,8,9//
Q/0//
R/0//
T/JOHN DOE/CONTAINER SHIPPERS INC, 500 PORT ROAD, ROOM 123, LOS ANGELES, CA, USA 90050/213–123–1234//
U/199.90/27227/CONTAINER SHIP//
W/15//

(4420)

TABLE E.5–Example Exit Report

CORAL SHIPREP//
A/SEA ROVER/WFSU/USA/IMO 8674208/DOC 602011//
B/011515Z JUN//
C/2747N/17416W//
R/0//

Oregon and Washington

(1) The Oregon-Washington coast of the United States is mostly rugged and mountainous, with high land rising abruptly from the sea in many places. The mountains are generally well timbered, and in some places, especially north of the Columbia River, the timber is particularly dense and heavy.

(2)

Disposal sites and dumping grounds

(3) These areas are rarely mentioned in the Coast Pilot but are shown on the nautical charts. (See Disposal Sites and Dumping Grounds, chapter 1, and charts for limits.)

(4)

Aids to navigation

(5) Lights are numerous along the coast; there are only a few places where a vessel is not in sight of one or more lights. Sound signals are at most of the principal light stations. Many coastal and harbor buoys are equipped with radar reflectors, which greatly increase the range at which the buoys may be detected. The critical dangers are buoyed and are generally marked by kelp.

(6) There are many aerolights along the coast that are useful for navigation purposes, but they should not be confused with the marine lights. (See the Light List for a complete description of navigational aids.)

(7) The frequent occurrence of fog along this coast makes radar an invaluable aid in detecting other traffic and obtaining a line of position and/or fix. Bridge-to-bridge radio communication (VHF-FM) is another useful aid, regardless of weather, in waters where maneuvering room is limited or restricted. The primary advantages of this radio system are its line-of-sight characteristic and relative freedom from static interference.

(8)

COLREGS Demarcation Lines

(9) Lines have been established to delineate those waters upon which mariners must comply with the International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS), and those waters upon which mariners must comply with the Inland Navigational Rules Act of 1980 (Inland Rules). The waters inside of the lines are **Inland Rules Waters**, and the waters outside of the lines are **COLREGS Waters**. (See **33 CFR Part 80**, chapter 2, for specific lines of demarcation.)

(10)

Ports and Waterways Safety

(11) (See **33 CFR Part 160**, chapter 2, for regulations governing vessel operations and requirements for notification of arrivals, departures, hazardous conditions and certain dangerous cargoes to the Captain of the Port.)

(12)

Channels

(13) **Federal project depth** is the dredging depth of a channel as authorized by an Act of Congress upon recommendation of the Chief of Engineers, U.S. Army. **Controlling depth** in a channel is its least depth; it restricts use of the channel to drafts less than that depth.

(14) Where deepwater channels are maintained by the Corps of Engineers and the controlling depths are printed on the charts, the Coast Pilot usually gives only the project depth. Because of constant shoaling in places, depths may vary considerably between maintenance dredgings. (See Notice to Mariners and latest editions of charts for controlling depths.)

(15) Where secondary channels are maintained regularly by the Corps of Engineers, the Coast Pilot refers to information in Appendix A. Surveys and channel condition reports are available through a USACE hydrographic survey website listed in Appendix A. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts.

(16) In the case of other channels, the controlling depths printed in the Coast Pilot are from the latest available reports, which may, however, be several years old.

(17)

Depths

(18) **Depths** along most of the Pacific coast decrease much too rapidly from seaward to be of any practical use as an aid to navigation. The 100-fathom curve lies at an average distance of less than 10 miles from shore, but this distance is exceeded in the approaches to Heceta Bank, Columbia River and the Strait of Juan de Fuca.

(19) In general, depths given alongside wharves are those reported by owners and/or operators of the waterfront facilities and have not been verified by government surveys. Since these depths may be subject to change, local authorities should be consulted for current controlling depths.

(20) Depths are in feet below the low-water tidal datum of the charts; deck heights where given are in feet above the chart datum for water depths.

(21)

Traffic Separation Schemes

(22) **Traffic Separation Schemes (Traffic Lanes)** have been established in the Straits of Juan de Fuca and Georgia and Haro Straits.

(23)

Vessel Traffic Services

(24) **Vessel Traffic Services (VTS)** have been established in the Strait of Juan de Fuca, east of Port Angeles and in the waters of Rosario Strait, Admiralty Inlet, Puget Sound and the navigable waters adjacent to these areas. The services have been established to prevent collisions and groundings and to protect the navigable waters from environmental harm.

(25) The Vessel Traffic Services provide for a **Vessel Traffic Center (VTC)** that may regulate the routing and movement of vessels by radar surveillance, movement reports of vessels, VHF-FM radio communications and specific reporting points. The systems consists of traffic lanes, separation zones, precautionary areas and reporting points.

(26) Participation in the **Vessel Traffic Service** is mandatory for certain vessels within navigable waters of the United States and within the 12-mile boundary of the U.S. territorial sea. (See chapter 7 for details.) The Vessel Traffic Service in the Strait of Juan de Fuca, east of Port Angeles, and in the waters of Rosario Strait, Admiralty Inlet and Puget Sound is mandatory. (See **33 CFR 161.1** through **161.60**, chapter 2, for rules governing vessel operations in the Vessel Traffic Service and chapter 12 for details.)

(27)

Area to be Avoided

(28) Along the coasts of Oregon, Washington and Hawaii are areas that require specific attention. Most of these areas are associated with marine sanctuaries and are noted on charts as an Area to be Avoided. These areas are adopted by the International Maritime Organization in an effort to avoid the risk of pollution to their associated sanctuaries. See the following chapters for detailed information on the areas: the Olympic Coast, Washington (chapter 8), and Hawaii (chapter 9).

(29)

Offshore Vessel Traffic Management Recommendations

(30) Based on the West Coast Offshore Vessel Traffic Risk Management Project, which was co-sponsored by the Pacific States/British Columbia Oil Spill Task Force and U.S. Coast Guard Pacific Area, it is recommended that, where no other traffic management areas exist such as Traffic Separation Schemes, Vessel Traffic Services or recommended routes, vessels 300 gross tons or larger transiting along the coast anywhere between Cook Inlet and San Diego should voluntarily stay a minimum distance of 25 nautical miles offshore. It is also recommended that tank ships laden with persistent petroleum products and transiting along the coast between Cook Inlet and San Diego should voluntarily stay a minimum distance of 50 nautical miles offshore. Vessels transiting short distances between adjacent ports should seek routing guidance as needed from the local Captain of the Port or VTS authority for that area. This recommendation is intended to reduce the potential for vessel groundings and resulting oil spills in the event of a vessel casualty.

(31)

Drawbridges

(32) The general regulations that apply to all drawbridges are given in **33 CFR 117.1** through **117.49**, chapter 2, and the specific regulations that apply only to certain drawbridges are given in **33 CFR Part 117, Subpart B**, chapter 2. Where these regulations apply, references to them are made in the Coast Pilot under the name of the bridge or the waterway over which the bridge crosses.

(33) The drawbridge opening signals (see **33 CFR 117.15**, chapter 2) have been standardized for most drawbridges within the United States. The opening signals for those few bridges that are nonstandard are given in the specific drawbridge regulations. The specific regulations also address matters such as restricted operating hours and required advance notice for openings.

(34) The mariner should be acquainted with the general and specific regulations for drawbridges over waterways to be transited.

(35)

Anchorages

(36) Anchorages, affording shelter for large vessels from the severe northwest winds of summer, may be had in a number of places along the coast. In southeast and southwest weather there are few places where shelter is available; Humboldt Bay, Coos Bay, Columbia River, Willapa Bay and Grays Harbor, but most of these places must be made before the sea rises, as afterward the bars become impassable. Neah Bay, just inside the entrance to the Strait of Juan de Fuca, is used considerably by small vessels in west or south weather. Many anchorages have been established in the area covered by this Coast Pilot. (See **33 CFR Part 110**, chapter 2, for limits and regulations.)

(37)

Oil Well Structures

(38) Pacific offshore platforms are regulated by **safety zones** administered and enforced by the United States Coast Guard. (See **33 CFR 147**, chapter 2, for limits and regulations.) If, for safety reasons, a vessel must approach an offshore platform, it is essential to notify the operator of the platform and/or the Captain of the Port on VHF-FM channel 16 for permission to enter the safety zone. Boarding or mooring to a platform is strongly discouraged and may be considered trespass unless permission is given in advance from the platform operator or Captain of the Port or access to the platform is required as a result of emergency circumstances.

(39) In general, the oil well structures (platforms), depending on their size, depth of water in which located, proximity of vessel routes, nature and amount of vessel traffic and the effect of background lighting, may be marked in one of the following ways:

(40) Quick flashing white light(s) visible at least 5 miles: sound signal sounded when visibility is less than 5 miles.

(41) Quick flashing white light(s) visible at least 3 miles: sound signal sounded when visibility is less than 3 miles.

(42) Quick flashing white or red lights visible at least 1 mile: may or may not be equipped with sound signal.

(43) Structures on or adjacent to the edges of navigable channels and fairways, regardless of location, may be required to display lights and sound signals for the safety of navigation.

(44) Associated structures within 100 yards of the main structure, regardless of location, are not normally lighted but are marked with red or white retro-reflective material. Mariners are cautioned that uncharted submerged pipelines and cables may exist in the vicinity of these structures or between such structures and the shore.

(45) During construction of a well or during drilling operations, and until such time as the platform is capable of supporting the required aids, fixed white lights on the attending vessel or drilling rig may be shown in lieu of the required quick flashing lights on the structure. The attending vessel's foghorn may also be used as a substitute.

(46) Submerged wells may or may not be marked depending on their location and depth of water over them.

(47) All obstruction lights and sound signals, used to mark the various structures, are operated as privately maintained aids to navigation. (See **33 CFR 67**, for detailed regulations for the marking of offshore structures.)

(48) Information concerning the establishment, change or discontinuance of offshore oil-well structures and their appurtenances is published in the Local Notice to Mariners or by Broadcast Notice. Additional information may also be obtained from the Coast Guard Commander. Mariners are advised to navigate with caution in the vicinity of these structures and in those waters where oil exploration is in progress and to use the latest and largest scale chart of the area.

(49) During the continuing program of establishing, changing and discontinuing oil-well structures, special caution should be exercised when navigating the inshore and offshore waters of the affected areas in order to avoid collision with any of the structures.

(50) Information concerning seismographic operations is not published in Notice to Mariners unless such operations create a menace to navigation in waters used by general navigation. Where seismographic operations are being conducted, casings (pipes), buoys, stakes and detectors are installed. Casings are marked with flags by day and fixed red lights by night; buoys are colored international orange and white horizontal bands; and stakes are marked with flags.

(51)

Pipelaying barges

(52) With the increased number of pipeline laying operations, operators of all types of vessels should be aware of the dangers of passing close aboard, close ahead or close astern of a jetbarge or pipelaying barge. Pipelaying barges and jetbarges usually move at 0.5 knot or less and have anchors that extend out about 3,500 to 5,000 feet in all directions and that may be marked by lighted anchor buoys. The exposed pipeline behind the pipelaying barge and the area in the vicinity of anchors are hazardous to navigation and should be avoided. The pipeline and anchor cables also represent a submerged hazard to navigation. It is suggested, if safe navigation permits, for all types of vessels to pass well ahead of the pipelaying barge or well astern of the jetbarge. The pipelaying barge, jetbarge and attending vessels may be contacted on VHF-FM channel 16 for passage instructions.

(53)

Fish havens

(54) Fish havens, some marked by private buoys, are numerous along the Pacific coast. Navigators should be cautious about passing over fish havens or anchoring in their vicinity.

(55)

Kelp

(56) Kelp grows on nearly every danger with a rocky bottom. It will be seen on the surface of the water during the summer and autumn; during the winter and spring it is not always to be seen, especially where it is exposed to a heavy sea. Many rocks are not marked by kelp, because a heavy sea will occasionally tear it away and a moderate current will draw it under water so that it will not be seen. When passing on the side of a kelp patch from which the stems stream away with the current, care should be taken to give it a good berth. Dead, detached kelp floats on the water curled in masses, while live kelp, attached to rocks, streams away level with the surface. Live kelp is usually an indication of depths less than 10 fathoms.

(57)

Logs and deadheads

(58) Mariners are cautioned that a large number of logs and deadheads are adrift in the navigable water of Washington and Oregon at all times, particularly after storms, spring freshets and unusually high tide. Mariners are urged to be alert for the presence of such logs and deadheads, as they constitute a serious menace to craft of small and moderate size.

(59)

River entrances

(60) Along the Oregon and Washington coast, bars build up at the mouths of the many rivers and streams that empty into the Pacific Ocean. The tidal currents at these entrances can obtain considerable velocity, especially when the ebb tide is reinforced by the river runoff. The most dangerous condition prevails when a swift ebb current meets the heavy seas rolling in from the Pacific at the shallow river entrances. The water piles up and breaks and creates a bar condition too rough for small craft. In a bar area, sea conditions can change rapidly and without warning; always cross with caution.

(61)

Regulated boating areas

(62) Regulated navigation areas are located at several river and harbor entrances along the Oregon coast (See **33 CFR 165.1325**, chapter 2, for regulations.) The bars located in the regulated navigation areas will be closed to all vessels whenever environmental conditions exceed the operational limitations of the relevant Coast Guard search and rescue resources as determined by the Captain of the Port (COTP). When a bar is closed, the operation of any vessel in the regulated navigation area is prohibited unless specifically authorized by the COTP or his designated representative. It is important for the small-craft operators to know when operating in the general vicinity of a regulated navigation area and be prepared for any changing tidal or sea conditions which may be hazardous to the vessel.

(63)

Danger zones

(64) **Danger zones** and **restricted areas** are along the Pacific coast, in the Straits of Juan de Fuca and Georgia and in Puget Sound. (See **33 CFR 334**, chapter 2, for limits and regulations.)

(65)

Caution

(66) Heavy concentrations of fishing gear may be expected off Grays Harbor, Columbia River, Coos Bay, Humboldt Bay and Destruction Island between December 1 and August 15, from shore to about 30 fathoms.

(67) To reduce the destruction of fishing gear by vessels and to reduce the fouling of propellers and shafts by fishing gear, Washington Sea Grant, Washington State University Extension has coordinated an agreement between towboaters and crab fishermen for the establishment of towboat lanes along the Pacific coast between San Francisco, California and Cape Flattery, Washington. Copies of the agreement showing fishing areas and towboat lanes may be obtained from Washington Sea Grant, 3716 Brooklyn Avenue NE, Box 355060, Seattle, WA 98105-6716; 206–543–6600; *seagrant@uw.edu*.

(68)

Tides

(69) A very important characteristic of the tides along the west coast of the United States is the large inequality in the heights of the two high waters and of the two low waters of each day. On the outer coast the average difference between the heights of the two high waters of the day is from 1 to 2 feet and the average difference in the heights of the two low waters from 2 to 3 feet. It was because of this large difference in the low-water heights that the mean of the lower low waters, rather than the mean of all low waters, was adopted as the plane of reference for the charts of this region.

(70) This inequality changes with the declination of the moon. When the moon is near the equator the inequality is relatively small; but when the moon is near its greatest north or south declination, the difference in the heights of the two high waters or of the two low waters of each day reaches a maximum. The tides at this time are called **tropic tides**.

(71) Off the outer coast, the mean rise of the tide is about 7.5 feet off the coast of Washington. Extreme variations from 3 feet below to 10 feet above the datum may reasonably be expected.

(72) In Coos Bay the tide is from ½ to 1½ hours later, and the rise of high water about same as in Humboldt Bay.

(73) In Yaquina Bay the mean rise is about 7 feet.

(74) At the entrance to Columbia River the mean rise is about 7 feet. It requires about 6 hours for high water to pass from the entrance to the Columbia River to the mouth of the Willamette River. In passing up the Columbia River the range of tide decreases until it is only 1.4 feet at the mouth of the Willamette. Above this point the tidal range becomes too small to be of practical importance. There are, however, large fluctuations in the level due to meteorological conditions. An extreme variation of 24.5 feet has been noted at St. Johns on the Willamette River. Columbia River is usually highest during May, June and July and lowest during September, October and November.

(75) In Willapa Bay and in Grays Harbor the mean rise is about 9 feet.

(76) Passing through the Strait of Juan de Fuca, the tide occurs about 3 hours and 40 minutes later at Port Townsend than at Cape Flattery. The mean rise increases from 7.2 feet above the datum at Cape Flattery to 7.9 feet at Port Townsend. There is an increase in the average inequality between the two low waters of each day from 3 feet at Cape Flattery to 5 feet at Port Townsend. The average inequality between the two high waters of each day at both places is about 1.5 feet.

(77) In Puget Sound the tide is about ½ to 1 hour later than at Port Townsend. The mean rise increases from 7.5 feet at Port Townsend to 13.5 feet at Olympia. In Puget Sound the average difference between the two low waters of each day is 6 feet. At Seattle an extreme range from 4.5 feet below the datum of mean lower low water to 15 feet above the same datum has been observed. At Olympia, in the south part of the sound, an extreme high water 18 feet above the datum has been noted.

(78) In the San Juan Islands, the mean rise of the tide varies from 6.5 to 8 feet. An extreme range from 4.5 feet below to 12 feet above the same datum may reasonably be expected.

(79) In using the Tide Tables, high or low water should not be confused with slack water. For ocean stations there is usually little difference between the time of high or low water and the beginning of ebb or flood currents; but for places in narrow channels, landlocked harbors, or on tidal rivers the time of slack water may differ by several hours from the time of high or low water stand. The relation of the times of high and low water to the turning of the current depends upon a number of factors, hence no simple rule can be given. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for the

predicted times of slack water or strength of current. Links to a user guide for this service can be found in chapter 1 of this book.

(80)

Currents

(81) A current, the outer limit of which extends offshore more than 300 miles, flows approximately parallel to the U.S. Pacific coast from latitude 50° to 30°N. The direction of the current is generally south throughout the year except as noted below. Its velocity, which averages about 0.2 knot, is greatly influenced by prevailing winds; north winds increase it, and south winds diminish it. North of latitude 45°N. the set is usually north from November through February.

(82) Along the coast during certain periods there is a weak north flow known as the **Davidson Inshore Current**, which is evident between Point Conception and Cape Flattery from November through February.

(83) Along the coast of Vancouver Island there is usually a northwest flow, which as measured at Swiftsure Bank (48°32.0'N., 124°59.7'W.) has a velocity of nearly 0.5 knot at all seasons.

(84) The above statements apply to general or average conditions. The currents, particularly offshore, at a specific time depend largely upon prevailing winds, whereas alongshore and off the entrances to inland waterways they depend also upon tidal and drainage effects. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(85)

Tsunamis

(86) Although the coasts of Oregon and Washington are not generally subject to waves of the magnitude that strike the Hawai‘ian Islands and other Pacific areas, widespread damage to shipping and to waterfront areas occasionally occurs. The tsunami of March 28, 1964, originating in the Gulf of Alaska, caused 16 deaths and several million dollars damage to ships and property in California, Oregon and Washington. The loss of life and property can be lessened if shipmasters and others acquaint themselves with the behavior of these waves so that intelligent action can be taken when they become imminent. (See chapter 1 for details about these waves.)

(87) The Warning System operated by the National Oceanic and Atmospheric Administration and described in chapter 9 supplies warnings to the Civil Defense authorities in California, Oregon and Washington who are responsible for disseminating this information to the affected areas. The warnings are also broadcast by the National Weather Service on NOAA Weather Radio.

(88) When a warning is received, persons should vacate waterfront areas and seek high ground. The safest procedure for ships will depend on the amount of time available, and this may not always be known. A ship well out at sea would ride such waves safely, and hence if time is available to put to sea, that would be the safest action. On the other hand, the crew of a ship in harbor may have a difficult time averting serious damage. The ship may be washed ashore by incoming waves or grounded because of excessive withdrawal of water between crests. Much of the damage in the Los Angeles area during the 1960 Chilean tsunami was caused by rapid currents and the swift rise and fall of the water level that parted mooring lines and set floating docks and ships adrift.

(89)

Blue, fin and humpback whales

(90) All whales are protected under the Marine Mammal Protection Act (MMPA) and, when in Sanctuary waters, under the National Marine Sanctuaries Act (NMSA). Certain large whales, including blue, fin and humpback whales, are also listed as endangered under the Endangered Species Act (ESA). Blue, fin and humpback whales migrate through or may be found in large aggregations feeding in the nutrient-rich and highly productive waters along the continental shelf of California, Oregon and Washington. Whales may not react to approaching vessels, increasing the risk of collision. A collision could result in significant damage to the vessel and death or serious injury to the whale. Collisions with vessels in these waters may be affecting the recovery of blue, fin and humpback whales. NOAA is responsible for providing protection to whales under the MMPA, ESA and NMSA and provides the following species information and precautionary measures for mariners to reduce risk of vessel collisions.

(91) **Descriptions of blue, fin and humpback whales:**

(92) **Blue whales**: body is mottled bluish-gray; up to 85 feet in length; blow is tall and columnar; relatively small dorsal fin is usually not seen during surfacing (but can be seen prior to a dive); tail flukes are often raised before a dive. The most recent population estimate for blue whales off the U.S. west coast is approximately 2,500.

(93) **Fin whales**: body is solid gray to black above and white below, with a chevron pattern behind head often visible from above; up to 79 feet in length; blow is tall and shaped like an inverted cone; the dorsal fin is usually sickle shaped and visible during surfacing; tail flukes are rarely raised before a dive. The most recent population estimate for fin whales off the U.S. west coast is approximately 3,000.

(94) **Humpback whales**: body is dark gray with black and white patches on underside; up to 52 feet in length; blow is round and bushy; long white and black flippers; head covered with knobs or nodules; relatively prominent dorsal fin relative to body size; flukes are often raised before deep dives. The most recent population estimate for humpback whales off the U.S. west coast is approximately 2,000.

(95) **Occurrence of blue, fin and humpback whales:** Though these large whales are found along the western coast of the United States year-round, overall abundance

(112)

Mean Surface Water Temperatures (°C) and Densities

	Years		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
Astoria, OR (Tongue Point)	48	Temp	4.7	5.4	7.4	10.5	13.4	15.8	18.6	19.3	17.5	14.0	9.4	6.2	11.8
		Density	0.1	-0.2	-0.5	-0.7	-0.7	-0.6	-0.5	-0.2	0.4	1.0	0.9	0.5	0.0
Neah Bay, WA	37	Temp	7.3	7.4	7.9	9.1	10.6	11.6	11.8	11.6	11.3	10.6	9.4	8.2	9.7
		Density	22.4	22.2	22.5	22.7	23.2	23.2	23.7	23.9	23.8	23.4	22.9	22.5	23.0
Seattle, WA (Elliot Bay)	50	Temp	8.6	8.2	8.2	8.9	10.3	11.9	13.1	13.4	13.0	12.2	10.8	9.6	10.7
		Density	20.4	20.0	19.9	19.5	19.5	19.9	20.7	21.4	21.8	21.8	21.5	20.9	20.6
Hilo, HI	26	Temp	22.3	22.2	22.1	22.2	22.7	23.3	23.7	23.9	24.2	24.1	23.5	22.7	23.1
		Density	19.6	19.2	19.0	17.6	18.2	18.9	18.5	18.6	19.2	19.5	19.3	18.9	18.9
Honolulu, HI	28	Temp	24.4	24.3	24.3	24.7	25.4	26.0	26.4	26.8	26.9	26.9	26.1	25.0	25.6
		Density	25.4	25.6	25.6	25.8	25.8	25.8	25.9	25.9	25.9	25.9	25.8	25.7	25.8
Kaneohe Bay, HI	16	Temp	22.7	22.7	23.3	23.8	25.1	26.2	26.3	26.6	26.2	26.2	24.7	23.1	24.8
		Density	25.3	25.4	25.1	25.3	25.4	25.9	25.9	26.0	25.9	25.9	25.6	25.4	25.6
Midway Island	28	Temp	19.7	19.5	20.1	21.0	22.7	25.1	26.4	26.9	26.9	25.1	23.2	21.3	23.2
		Density	26.4	26.4	26.5	26.5	26.6	26.7	26.7	26.6	26.6	26.5	26.5	26.4	26.5

Temperature (Celsius)
F (Fahrenheit) = 1.8C (Celsius) + 32

Density as used in this table is the specific gravity of the sea water or the ratio between the weight of a sea-water sample and the weight of an equal volume of distilled water at 15°C (59°F).

is highest from May to November, when whales are feeding on dense aggregations of krill and other forage fish. Blue whales are most commonly seen in California from May through September. Fin whales are most common in summer and winter, and humpback whales are most common in summer and fall.

(96) **Precautions when transiting whale habitat:**

(97) Vessel operators and observers are advised to keep a sharp lookout for whales when transiting near the coast, especially near the 100-fathom curve and offshore islands. NOAA has established two whale advisory zones to alert mariners of the seasonal presence (May through November) of blue, fin and humpback whales and to encourage vessel operators to keep a sharp lookout for whales and proceed with caution within these areas. NOAA works with the U.S. Coast Guard and the National Weather Service to broadcast and publish this information annually.

(98) NOAA may make recommendations to large vessels to reduce speed in specific areas to reduce the risk of lethal ship strikes. NOAA's recommendations are broadcast via the Coast Guard Notice to Mariners (and appear in the published Local Notice to Mariners) and NOAA Weather Radio. To receive current advisories and other whale-related information, mariners can sign up for e-mail announcements here: *rain.org/mailman/listinfo/noaa-whale-advisory-l*.

(99) Please report any collisions with whales or any observed injured, entangled or dead whales to NOAA at 877–SOS–WHALE (877–767–9425) or to the U.S. Coast Guard on VHF Channel 16. For more information, visit: *sanctuaries.noaa.gov/protect/shipstrike/welcome.html*.

(100) **Precautions when in the presence of whales**:

(101) NOAA has established additional guidelines to help keep both mariners and whales safe. In the presence of whales, mariners should:

(102) Maintain a distance of at least 100 yards from any marine mammal;

(103) Never pass in front of a whale's path;

(104) Avoid sudden speed or directional changes around whales;

(105) Never get between two whales, especially a cow and her calf;

(106) Always travel parallel to whales and at or below their speed;

(107) Never chase whales.

(108) Civil and criminal penalties could apply if these guidelines are not observed. NOAA's National Marine Fisheries Service (NMFS) has regulatory responsibility for implementing the MMPA and ESA. Whales in a national marine sanctuary are also protected under the National Marine Sanctuaries Act (NMSA), which prohibits unauthorized take or possession of any marine mammal in sanctuary waters, including harassment and disturbance.

(109)

Weather, west coast and Hawaii

(110) This section presents an overall, seasonal picture of the weather that can be expected in the offshore waters along the entire west coast of the United States as well as coastal and near-coastal sites and the Hawai'ian and Pacific Islands. Detailed information, particularly concerning navigational weather hazards, can be found in the weather articles in the following chapters.

(111) All weather articles in this volume are the product of the **National Oceanographic Data Center (NODC)** and the **National Climatic Data Center (NCDC).** The

meteorological and climatological tables are the product of the NCDC. Both centers are entities of the **National Environmental Satellite, Data, and Information Service (NESDIS)** of the **National Oceanic and Atmospheric Administration (NOAA)**. If further information is needed in relation to the content of the weather articles, meteorological tables or climatological tables, contact the National Climatic Data Center, Attn: Customer Service Division, Federal Building, 151 Patton Avenue, Room 120, Asheville, NC 28801-5001. You may also contact the CSD at 704–271–4994, or fax your request to 704–271–4876.

(113) Climatological tables and meteorological tables for coastal locations relevant to discussions within this volume are located in this chapter, and in following chapters within the appropriate port text description. The climatological tables are a special extraction from the International Station Meteorological Climate Summary (ISMCS). The ISMCS is a CD-ROM jointly produced by the National Climatic Data Center (NCDC), Fleet Numerical Meteorology and Oceanography Detachment-Asheville, and the U.S. Air Force Environmental Technical Applications Center, Operating Location-A. The meteorological tables for the ocean areas are compiled from observations made by ships in passage and extracted from the National Climatic Data Center's Tape Deck-1129, Surface Marine Observations. Listed in Appendix A are National Weather Service offices and radio stations that transmit weather information.

(114) The Pacific coastal region of the United States and the adjacent ocean areas are located along the east portion of the Pacific high-pressure system. This high, when well developed, forms the principal circulation control forcing most of the low-pressure systems to follow a course to the north of the contiguous United States. This is reflected in the presence of the Aleutian low in the Gulf of Alaska. This action damps out weather changes that might otherwise occur and brings a stability factor that would not otherwise exist. Air that reaches the coast as a result of the prevailing westerly winds has acquired much moisture during its ocean passage, resulting in high humidities along the coast. The marine influence is also evidenced in a cooling effect in summer and a warming influence in winter.

(115) Two features of the climate in these waters, while not commonplace, warrant the mariner's attention because of their severity. One is the tropical cyclones and the other a local wind known as the Santa Ana.

(116) **Tropical cyclones** originate south of the area, off the west Mexican coast, in summer and autumn. About 15 form each season, of which eight reach hurricane intensity. Few come far enough north to affect U.S. coastal waters. The ones that do have usually lost their hurricane intensity and are short lived. However, these storms can be dangerous and have generated winds of more than 120 knots. Further reference is made to tropical cyclones in the seasonal description.

(117) Winter, like an incoming tide, creeps over the northeastern North Pacific. Subtle changes begin in September. Seas off central and southern California come under the protection of a weak, good-weather subtropical high centered near 35°N and 145°W. Only enough storms penetrate this protective barrier to make winter a distinguishable season off southern California. This same high-pressure system in conjunction with a strengthening Aleutian Low, bodes differently for points further north. Summer breezes become gales. Rain is commonplace. Winds and cool temperatures make the air feel damp and chilly. Storms become routine and onshore flow is near-persistent. Choppy seas turn rough.

(118) Winter storms usually work their way from the central Pacific northward into the Gulf of Alaska or to the coast of British Columbia, trailing their frontal systems across the area. Two or three times a month, on an average, a storm will move directly through the seas off the Washington-Oregon coast. The more seaward storms generate the moderate to strong southeast through west winds that prevail over northern waters and influence the weather as far south as central California. The stronger winds that blow over a long fetch of water whip up rough seas. Seas of 12 feet (3.7 m) or more are generated 15 to 20 percent of the time. In addition, the warm south flow brings cloudiness, drizzle and sometimes fog. Drizzle occurs about 5 to 8 percent of the time, and there are about 2 to 4 days a month when dense fog reduces visibilities to 0.5 mile (0.9 km) or less at sea. These conditions can persist for a week or more if one of these big storms stalls in the Gulf of Alaska. The south flow is also responsible for air temperatures in the upper forties and fifties (8.9° to 15°C). Cold temperatures are unusual and are most likely when cold Arctic air is fed into a low in the Gulf by a large high in the Bering Sea or when a rare outbreak of Arctic air occurs over the area from the north or northeast. Temperatures at these times may drop below freezing (<0°C) off the Washington coast and into the upper thirties (3.3° to 3.9°C) farther south. The infrequency of cold temperatures lessens the chances for snow, which is observed less than 2 percent of the time off Washington and less than 1 percent of the time off Oregon.

(119) When a storm moves close or through these northern waters, weather changes rapidly. The center is preceded by a strong southeast to southwest flow that may reach gale force (gales occur on about 3 to 5 days per winter month) and may whip seas up to 20 feet (6.1 m) or more; seas of these heights occur up to 4 percent of the time. These conditions are often accompanied by clouds and rain, with temperatures in the fifties (10° to 15°C). After the center passes, winds will veer to the west through north and remain strong for a while. Brief showers soon end, the clouds break, and temperatures drop into the low forties (5° to 6.7°C). A high-pressure system from the central Pacific may follow and bring a brief period of clear conditions. If a storm stalls or it is followed by a series of storms, bad weather can be prolonged for a week or more. Rain falls on 18 to 28 days per winter month in

these north waters, and skies are overcast or obscured 40 to 50 percent of the time.

(120) Storms to the west and northwest of the Washington-Oregon offshore waters, while not as frequent as in winter, still generate southeast to west winds as they work their way north. The prevailing storm track is shifting northward so not as many lows move directly through the area, and they are often less intense. Gales from these near and distant storms blow on about 2 days in March, and they are rare by May. Seas also calm down. In March, waves of 12 feet (3.7 m) or more occur 15 to 20 percent of the time; this drops to 10 percent by April and to around 5 percent by May. The general south flow from these storms still bring rain, drizzle and fog. Rain or drizzle can be expected on about 15 to 18 days in March and 9 to 15 days in May. Dense fog (visibilities less than 0.5 mile (0.9 km)) forms on less than 2 days per month, while visibilities drop below 2 miles (4 km), 2 to 4 percent of the time. Because of the clouds and rain associated with this south flow, it is not always responsible for the warmest spring temperatures. Usually, it is accompanied by temperatures in the forties and low fifties (5° to 11.1°C) in March and 50°F (10°C) readings during May. An occasional cold north outbreak, usually following a storm, can drop March temperatures into the mid- to upper thirties (0.6° to 3.9°C).

(121) Two important features are responsible for the summer weather in these offshore waters, the subtropical Pacific high and the cold California Current.

(122) The influence of high-pressure systems becomes increasingly frequent in these northern waters during spring. In fact, a principal path of highs from the central and western Pacific runs through this area and onto the Washington-Oregon coast. These systems bring clearing conditions, west through north winds and sometimes mild temperatures. Temperatures can, on occasion, get up into the upper fifties and low sixties (14.4° to 16.7°C) in March and into the upper sixties (19.4° to 20.0°C) in May. Clear to partly cloudy skies occur most often with west to north winds. Wind speeds are less than 10 knots most often with west to north winds.

(123) The high is made up of high-pressure systems, which either form in the eastern Pacific or move into the area from western Pacific waters, the Bering Sea, or the Gulf of Alaska. By July the mean center of the Pacific High is located around 40°N and 150°W. The south flowing California Current is partially driven by the clockwise circulation of these high-pressure systems. Upwelling also contributes to cool water temperatures. Sea-surface temperatures run 10° to 15°F (-12.2° to -9.4°C) cooler than they do off the Atlantic coast. Its influence is so great that average air temperatures off Eureka never get out of the fifties (10.6° to 15.0°C), and extremes have only reached 87°F (30.6°C), just 9°F (-12.8°C) warmer than the January extreme. The California Current and coastal upwelling are responsible for the poor visibilities of summer and fall. The most dense and frequent fog occurs over the narrow stream of coldest water, just off the coast and is often limited to a band of 50 miles (81 km) or less. At other times, fog covers large areas, both in latitude and longitude, and may extend for hundreds of miles (>161 km). Its effect is even more pronounced onshore, as you can read in the weather articles in the chapters following. The effect of the California Current in summer extends along the entire coast.

(124) When a high sits to the west, which is most of the time in summer, west through north winds blow over the offshore waters. Between Point Arguello and Portland, this warm moist air is being chilled by the California Current. This results in not only cool temperatures but low clouds and fog. West through north winds blow 70 to 80 percent of the time. In the offshore waters, where merchant ships are trying to avoid poor visibilities, fog and haze are still encountered 30 to 40 percent of the time between Point Arguello and San Francisco. The fog reduces visibilities to below 0.5 mile (0.9 km) up to 5 days per month. Skies are obscured by fog, or are overcast, up to 50 percent of the time in these offshore waters. Temperatures are often in the mid-fifties to mid-sixties (11.7° to 19.4°C) at these times.

(125) Between San Francisco and Portland, fog and haze occur 15 to 25 percent of the time. Fog reduces visibilities to below 0.5 mile (0.9 km) on about 3 to 8 days per month. Skies are obscured or overcast about 30 to 40 percent of the time. In addition to fog, this offshore area is often plagued by gales and rough seas created by a tight pressure gradient between a high off the coast and a heat low over the southwestern United States and Mexico. Gales blow on about 4 to 6 days per month. Strong winds whip up seas of 12 to 20 feet (3.7 to 6.1 m) about 3 to 10 percent of the time.

(126) As storms become less frequent during summer, so does rain. By August, rain falls 3 to 7 percent of the time in the offshore waters from Point Arguello to Vancouver Island.

(127) In the offshore waters between Portland and Vancouver Island, west and northwest winds blow more than one-half of the time, skies are clear 20 to 30 percent of the time, and temperatures are frequently in the sixties (16.1° to 20.6°C). Gales are rare, and, while it rains 5 to 10 percent of the time, this a lot less frequent than during any other season. West through north winds often bring poor visibilities to this area. Fog and haze are encountered 8 to 15 percent of the time. Fog drops visibilities below 0.5 mile (0.9 km) on about 2 to 5 days per month and is most frequent from midsummer on.

(128) Fall arrives subtly in September north of Point Arguello. It is delayed a month or so to the south by the subtropical high. High-pressure systems still bring some sunny, mild days with light west through north winds off Oregon and Washington, but even on these days, swells from distant storms often cast an ominous mood over these waters. Some storms move close enough to generate a southeast through southwest flow off Oregon and Washington. They also bring rain to offshore Washington waters about 8 to 13 percent of the time. A tightening of

pressure gradients off Oregon in September is responsible for gales on 2 to 5 days and for seas of 12 feet (3.7 m) or more 2 to 4 percent of the time. September is usually the driest month in offshore waters from Oregon southward. Precipitation frequencies are 6 percent off Oregon. Fog reduces visibilities to less than 0.5 mile (0.9 km) on about 4 to 6 days in September. September temperatures usually range from the upper fifties and low sixties (14.4° to 16.7°C) in the north.

(129) During October and particularly November, storms become more frequent and more intense and move closer to the area than those of summer and early autumn. As the subtropical high weakens and retreats southward and the Aleutian Low is at its deepest, these storms move to the northwest and north, most affecting the vulnerable waters off Washington and Oregon. They frequently sweep these seas with strong southeast through southwest winds, which carry rain and sometimes fog. These winds average 15 to 20 knots. Gales occur on about 2 to 4 days in October and 3 to 6 days in November, off Washington and Oregon. Strong winds whip up seas of 12 feet (3.7 m) or more about 10 to 16 percent of the time. Rain falls more often as autumn progresses. It occurs about 8 to 20 percent of the time in October, increasing to 16 to 30 percent by November in these north seas. This is about as much as it rains in any month. Fog continues to plague this area and often rides in on a strong, warm south flow that accompanies a low-pressure system. It reduces visibilities to below 0.5 mile (0.9 km) on about 2 to 5 days per month. Temperatures of Washington and Oregon are often in the fifties (10.6° to 15°C) in October and mid-forties to mid-fifties (8.9° to 13.9°C) the following month.

(130)

Principal ports

(131) The principal deep-draft commercial ports within the area of this Coast Pilot are Coos Bay, Portland, Vancouver, Grays Harbor, Seattle, Tacoma and Honolulu.

(132) Other ports are Astoria, Longview, Port Angeles, Anacortes, Bellingham, Olympia and Hilo.

(133)

Pilotage

(134) In the area covered by this Coast Pilot, pilotage, with a few exceptions, is compulsory for all foreign vessels and for U.S. vessels under register in the foreign trade. It is optional for U.S. vessels in the coastwise trade, provided they are under the control and direction of a pilot duly licensed by federal law for the waters which that vessel travels.

(135) At ports the pilots must be notified in advance in order for the pilot boat to meet the vessel at the proper time. Most of the pilot boats and stations may be contacted by radio; though ships' agents normally arrange for pilots, a vessel may notify the pilot station of its estimated time of arrival by radio. Specific information is given in the description of the various ports.

(136)

Towage

(137) Tugs of various sizes are available at all the deep-draft ports. Arrangements for their use are usually made by the ship's agent but in some cases may be made from the vessel by radio. For further information, refer to the description of the port.

(138)

Vessel arrival inspections

(139) Quarantine, customs, immigration and agricultural quarantine officials are stationed in most major U.S. ports. Consult Appendix A for a list of ports of entry found in this Coast Pilot. Vessels subject to such inspections generally make arrangements in advance through ships' agents. Unless otherwise directed, officials usually board vessels at their berths.

(140)

Harbormasters and wharfingers

(141) Harbormasters and wharfingers are mentioned in the text when applicable. They generally have charge of the anchorage and berthing of vessels.

(142)

Supplies

(143) Supplies of all kinds are available at Portland, Seattle and Tacoma. Limited quantities can be obtained at many other ports.

(144)

Repairs

(145) Large ocean-going vessels may be drydocked for complete repairs at Portland and Seattle. Fishing boats and yachts can be hauled out and can have hulls and engines repaired at numerous other places. The Coast Pilot gives information on some of these facilities; usually the largest repair facility in each area is mentioned.

(146) **Salvage** equipment is available at Portland and Seattle.

(147)

Small-craft facilities

(148) There are numerous places where fuel, supplies, protected berths, repairs and shore facilities are available for small craft. For isolated places and small cities, the Coast Pilot describes the more important of these facilities; for large port areas, where individual facilities are too numerous to mention, the information given is more general. Additional information may be obtained online and from various local small-craft guides.

(149) **A vessel of less than 65.6 feet (20 meters) in length or a sailing vessel shall not impede the passage of a vessel that can safely navigate only within a narrow channel or fairway. (Navigation Rules, International-Inland Rule 9(b).)**

(150) Puget Sound has many small-craft harbors with excellent facilities Temporary moorage is usually available for transients at most of the harbors.

(151)

Standard time

(152) The time zone in Oregon and Washington is Pacific Standard Time, which is 8 hours behind Coordinated Universal Time (UTC). The time zone in Hawaii is Hawaii-Aleutian Standard Time (HAST), which is 10 hours behind UTC. The Mariana Islands, Guam and American Samoa, located west of the International Dateline, are 11 hours ahead of UTC.

(153)

Daylight saving time

(154) In Oregon and Washington, clocks are advanced 1 hour on the second Sunday of March and are set back to standard time on the first Sunday of November. Daylight saving time is not observed in Hawaii, American Samoa, Guam or any of the outer Pacific Islands.

(155)

Legal public holidays

(156) The following are legal holidays in the area covered by this Coast Pilot: New Year's Day, January 1; Martin Luther King, Jr.'s Birthday, third Monday in January; Washington's Birthday, third Monday in February; Memorial Day, last Monday in May; Independence Day, July 4; Labor Day, first Monday in September; Columbus Day, second Monday in October; Veterans Day, November 11; Thanksgiving Day, fourth Thursday in November; and Christmas Day, December 25. The national holidays are observed by employees of the federal government and the District of Columbia and may not be observed by all the states in every case.

(157) In addition, the following holidays are also observed in the area covered by this Coast Pilot: Lincoln's Birthday, February 12, in Washington, first Monday in February, in Oregon; Presidents Day, first Monday in February, in Hawaii; Kuhio Day, March 26, in Hawaii; Good Friday, in Hawaii from 1200 to 1500; Kamehameha Day, June 11, in Hawaii; Admission Day, third Friday in August, in Hawaii; General Election Day, first Tuesday after first Monday in November, in Washington.

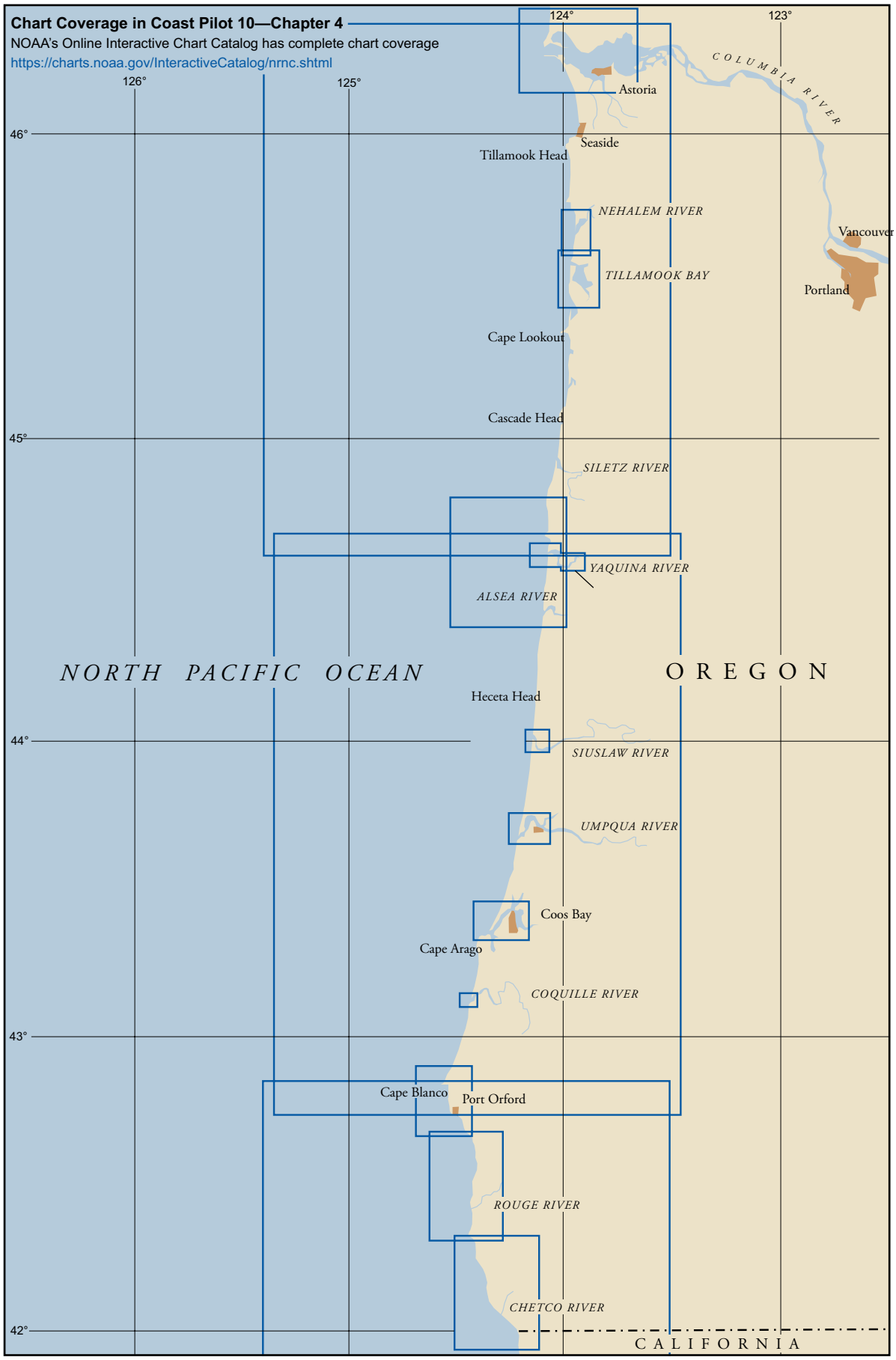


Chart Coverage in Coast Pilot 10—Chapter 4
NOAA's Online Interactive Chart Catalog has complete chart coverage
https://charts.noaa.gov/InteractiveCatalog/nrnc.shtml
126°
125°
124°
123°
46°
45°
44°
43°
42°
Astoria
COLUMBIA RIVER
Seaside
Tillamook Head
NEHALEM RIVER
Vancouver
TILLAMOOK BAY
Portland
Cape Lookout
Cascade Head
SILETZ RIVER
YAQUINA RIVER
ALSEA RIVER
NORTH PACIFIC OCEAN
OREGON
Heceta Head
SIUSLAW RIVER
UMPQUA RIVER
Coos Bay
Cape Arago
COQUILLE RIVER
Cape Blanco
Port Orford
ROUGE RIVER
CHETCO RIVER
CALIFORNIA

Chetco River to Columbia River, Oregon

(1) This chapter describes 200 miles of the Oregon coast from the mouth of the Chetco River to the mouth of the Columbia River. Also described are the Chetco and Rogue Rivers, Port Orford, Coquille River, Coos Bay, Umpqua and Siuslaw Rivers, Yaquina Bay and River, Nehalem River and Tillamook Bay. The cities of Coos Bay and North Bend on Coos Bay and Newport on Yaquina Bay are the only deep-draft ports on the Oregon coast. The principal dangers are unmarked Rogue River Reef and Orford Reef, which is marked by a light.

(2)

COLREGS Demarcation Lines

(3) The lines established for this part of the coast are described in **33 CFR 80.1305** through **80.1360**, chapter 2.

(4)

Weather, Chetco River to Columbia River

(5) Fog and rain are the major weather headaches to the mariner along the Oregon coast. Summer and early fall bring light winds, mild temperatures, clear or partly cloudy skies and frequent fog. While fog is a problem all along the coast, its frequency increases as you head south. Around Astoria, visibilities drop below 0.5 mile (0.9 km) on 4 to 6 days per month from August through October. At North Bend, this happens on 6 to 13 days per month from July through December. August is usually the worst month. Fog is thickest at night and in the morning. Conditions often improve by midafternoon, when skies clear or become partly cloudy. Temperatures climb into the mid-sixties (16.7° to 19.4°C) in summer and low sixties (16.1° to 17.2°C) in fall. At night, they drop into the low fifties (10.6° to 11.7°C) in summer and mid-forties (6.1° to 8.3°C) in autumn. Winds are generally light in summer and early fall. Northwesterlies and southwesterlies through southerlies are frequent, the latter becoming increasingly so in fall. Winds at North Bend on Coos Bay are an exception and strongest in June, July and August. They blow at 17 knots or more 15 to 20 percent of the time and at 28 knots or more 1 to 2 percent of the time.

(6) Rain (0.1 inch or more) falls on less than 10 days per month from May through September. It becomes more frequent in October and reaches a peak in January, when 15 to 20 rainy days occur on the average. Snow is uncommon, since temperatures are usually mild. Winter temperatures reach the low fifties (10.6° to 11.7°C) during the day and fall into the upper thirties (3° to 4°C) at night; extremes have dipped into the low teens (-11.7° to -10.6°C). Fog can occur in winter with fronts or under rare clear skies; it is more likely in early winter. Winter and spring winds are moderately strong, particularly south of Newport. From North Bend southward, winds reach 17 knots or more about 5 to 15 percent of the time and 28 knots or more about 1 to 3 percent of the time. Extreme wind speeds usually occur in either winter or early spring and have climbed to around 50 knots. They are most common from a south direction. Winter winds along the entire coast are generally out of the southeast through south. Northwesterlies are also common. It is not until May that these directions switch roles and northwesterlies become more or as frequent. Spring warming is also a slow process. By April, temperatures are about 4° to 7° above January levels.

(7)

Chetco Cove to Hunters Cove

(8) From the California-Oregon boundary for 3.8 miles to Chetco River, the coast is composed of low rocky cliffs, bordered by numerous rocks and ledges, covered and awash, and backed by a low narrow tableland. Several prominent rocky knolls rise from 100 to 200 feet above this tableland. Due to the numerous dangers, the coast should not be approached closer than 1.5 miles. The sea boundary between the Eleventh and Thirteenth Coast Guard Districts is at the state boundary between California and Oregon.

(9) **Chetco Cove**, 15.5 miles north of Point St. George, affords some protection from northwest winds but is exposed in south weather. **Chetco Point** marks the northwest side of the cove. There are numerous visible and covered rocks fringing the shore of the cove and its approaches. The areas east and west of the **Chetco River** mouth are foul with several rocks and shoals. At high tide the rocks are covered by water making the areas appear navigable, but they are extremely dangerous. Mariners are cautioned to avoid these areas at all times.

(10) The river is entered through a dredged channel that leads between two stone jetties to the Port of Brookings turning basin, about 0.3 mile above the jetties. The turning basin and a small-craft basin just north of it are protected to the west by a 1,800-foot-long dike. Another small-craft basin is about 250 yards southeast of the turning basin. A barge slip, just east of the turning basin, is at the north side of the mouth of the entrance channel to the lower small-craft basin. The river entrance channel is marked by a **029.5°** lighted range. A light is on the outer end of the west jetty, and a mariner-radio-activated sound signal

is on the inner end of the east jetty, initiated by keying the microphone five times on VHF-FM channel 83A.

(11) A **federal project** provides for a 14-foot entrance channel and turning basin from deep water in Chetco Cove to the turning basin just inside the breakwater protecting the Port of Brookings; access channels with project depths of 12 feet lead north and south from the turning basin. (See Notice to Mariners and latest editions of charts for controlling depths.) An overhead power cable crossing the river about 0.6 mile above the jetties has a clearance of about 46 feet. The highway bridge has a clearance of 59 feet.

(12)

COLREGS Demarcation Lines

(13) The lines established for the Chetco River are described in **33 CFR 80.1305**, chapter 2.

(14)

Regulated navigation area

(15) A **regulated navigation area** is in Chetco Cove, surrounding the entrance to the river. (See **33 CFR 165.1325**, chapter 2, for limits and regulations.)

(16)

Coast Guard

(17) **Chetco River Coast Guard Station** is on the east side of the river 450 yards inside the entrance. A lookout tower atop a building at the station is used to observe the bar during heavy weather. The Coast Guard has established Chetco River Regulated Navigation Area Warning Sign, a **rough bar advisory sign** 13 feet above the water, visible from the channel looking seaward, on the north end of the Coast Guard moorings, to promote safety for small-boat operators. The sign is diamond-shaped and painted white with an international orange border and with the words "Rough Bar" in black letters. The sign is equipped with two quick flashing amber lights that will be activated when hazardous conditions exist and the bar is restricted to recreational and uninspected passenger vessels. Boaters are cautioned, however, that if the lights are not flashing, it is no guarantee that sea conditions are favorable.

(18) Recorded bar condition and weather reports are available by calling Chetco River Coast Guard Station at 541–469–4571. Additionally, within a three-mile radius from the Coast Guard station, a continual broadcast is on radio station 1610 AM containing bar conditions, bar restrictions and local weather. Bar conditions are also broadcast by radio station KURY (910 kHz) every hour during the summer daylight hours.

(19) A **heavy weather flag**, a square RED flag with a square BLACK center, will be displayed on a pole that is located near the north end of the Coast Guard station and is visible to mariners from both directions to indicate that winds 48 knots and above are forecast for the area. Display of flags are required from one hour before sunrise to one hour after sunset. Weather flags are flown at select Coast Guard stations to supplement other weather notification sources. Light signals corresponding to these flags are not displayed at night. In all cases mariners should rely upon National Weather Service broadcasts as their primary source of government-provided weather information.

(20) The upper and lower small-craft basins are used primarily by commercial fishing boats and pleasure craft. The upper basin has over 500 berths, most with electricity; gasoline, diesel fuel, water, ice, marine supplies and a launching ramp are available. Berths with electricity and water are reported to be available in the lower basin. A 60-ton lift and wet and dry winter storage are available.

(21) From Chetco Cove for 4.5 miles to Cape Ferrelo, the coast is composed of high broken cliffs, bordered by numerous rocky islets and ledges extending, in some cases, over 0.5 mile offshore.

(22) **Goat Island**, locally known as Bird Island, is 1.9 miles northwest of Chetco Point and 500 yards offshore. It has deep water off its west and southwest faces, but rocks and foul ground extend 350 yards south from the southeast point. The island is readily identified; its profile closely resembles that of Prince Island off Pyramid Point.

(23) **Cape Ferrelo**, 4.4 miles northwest of Chetco Point, is the prominent headland north of St. George Reef and, though not projecting seaward to any extent, is conspicuous because of its bold, rugged face. Several rocks and islets lie up to 0.5 mile directly off the cape.

(24) From Cape Ferrelo for 9.5 miles to Crook Point, the coast is very rugged and rocky, with several large and prominent islets and reefs extending well offshore. In some cases, these form anchorages for small vessels in north weather.

(25) **Whalehead Island**, the outer of two rocky islets 2.3 miles north of Cape Ferrelo, is 107 feet high. The inner of the two islets is 128 feet high. A rock awash lies 800 yards south of the highest point of the island.

(26) A rugged cliff from 200 to 300 feet high is 3.3 miles north of Cape Ferrelo. The face is about 1 mile long, and behind it rises a treeless triple-headed hill to heights of 700 to 800 feet.

(27) **Thomas Creek**, 3.7 miles north of Cape Ferrelo, is crossed by the highest bridge in Oregon; the bridge stands 345 feet above the creek.

(28) **Leaning Rock**, 49 feet high, is 0.5 mile offshore and 3.5 miles north of Whalehead Island. It has a perpendicular face on its northwest side and slopes gradually southeast. Several other rocks are near it.

(29) Between Whalehead Island and Crook Point are two prominent grassy areas in the forest near the crest of the hills about 2 miles apart and situated at an elevation of nearly 2,000 feet; the south one is known as **Rocky Prairie**.

(30) **Yellow Rock**, 84 feet high, is 4.5 miles north of Whalehead Island and 0.5 mile offshore. The rock is yellowish in color and can be recognized from 4 miles offshore.

(31) **Bosley Butte**, 8.5 miles northeast of Cape Ferrelo, shows above the coast ridges from the west and northwest as flat-topped with two summits separated by a slight depression. The northeast summit is rounded

and somewhat larger but is slightly lower than the east summit.

(32) **Mack Arch** is a double-headed rocky islet 0.8 mile offshore, 1.5 miles south of Crook Point and 8 miles north-northeast of Cape Ferrelo. The west head is 231 feet high and the east a little lower; both are black to near the summits, which are generally white from bird droppings. The arch, about 100 feet high, is under the east summit and shows prominently from south. A rock awash lies 125 yards south of the east point.

(33) The bight to the east-southeast of Mack Arch has been used as a temporary anchorage during moderate northwest weather. The rocks and reefs break the swell. In approaching the bight, pass to the south of Mack Arch about midway between it and Yellow Rock. Anchor in 11 fathoms, sand bottom, with Mack Arch bearing 296° and Yellow Rock bearing 155°. No breakers have been observed, but caution should be exercised as the place has not been closely surveyed.

(34) **Mack Reef** extends from Mack Arch to Crook Point and comprises many rocks, visible or sunken, varying in height from awash to 133 feet. From south these rocks stand out conspicuously when seen against the white sand dunes north of Crook Point. Mack Arch, because of its size and height, is the most prominent.

(35) **Mack Arch Cove** lies immediately east of Mack Reef and affords fair shelter in northwest weather in 6 to 7 fathoms, sandy bottom. In entering from south, pass east of Mack Arch, giving it a berth of about 150 yards, but taking care to avoid the rock 125 yards south of its east point. Then bring the 125-foot rock, in the north part of the reef, to bear 352° and steer for it on that bearing until up to the area abreast the group of rocks 0.5 mile north of Mack Arch.

(36) **Crook Point** is moderately low but terminates seaward in a rocky knoll 175 feet high, with a slight depression immediately behind it. The rocks close to the point often show up during moderately thick weather; several have a very noticeable pinnacle formation.

(37) From the vicinity of Crook Point to the mouth of the **Pistol River** are sand dunes that show up prominently in clear weather and distinctly mark this section. In thick weather these dunes are not readily distinguished. From the mouth of the river to Cape Sebastian are numerous rocks and rocky islets extending 0.3 mile offshore, reaching in some cases a height of 150 feet. The Pistol River bar opens in the rainy season; its location varies from year to year.

(38) **Hunters Cove**, a small constricted cove under the southeast face of Cape Sebastian, is formed partly by the cape and partly by **Hunters Island** in the entrance. The island is 0.2 mile in extent, rocky, flat-topped and 113 feet high. Shoal water extends from it east to the beach. The cove is used occasionally by launches and small craft. During strong northwest weather the sea at the entrance is rather lumpy for small boats. With moderate southwest weather a heavy sea piles up across the entrance between the cape and Hunters Island.

(39)

Cape Sebastian to Humbug Mountain

(40) **Cape Sebastian**, 33.5 miles north of Point St. George, is conspicuous from either north or south. It is the seaward termination of a ridge transverse to the coast and rises abruptly from seaward to a height of 694 feet, with a depression behind it, and then more gradually to a height of about 2,000 feet. The seaward face is precipitous and broken and has a few trees; southward the lower part is grass covered. A rock covered 1¾ fathoms that seldom breaks is 0.5 mile offshore, 0.9 mile northwest of the west extremity of the cape.

(41) From Cape Sebastian for 6 miles to the mouth of Rogue River, the coast is considerably broken, quite rugged and low near the beach and has a few outlying rocks.

(42) The outer of three exposed rocks off the entrance to **Hunter Creek**, 3.7 miles north of Cape Sebastian, lies nearly 0.5 miles offshore.

(43) **Rogue River**, 6 miles north of Cape Sebastian, is an important sport fishing stream. Several float landings and a hoist for trailer-drawn craft are just above the old lumber dock on the north side of the river near the mouth. **Gold Beach**, on the opposite side of the river from **Wedderburn**, is the larger town. The entrance to Rogue River is protected by stone jetties; buoys mark the approach. A seasonal light and sound signal are on the seaward end of the northwest jetty. A **federal project** provides for a 13-foot entrance channel from the ocean along the north jetty to a point about 0.4 mile above the northwest jetty light. At this point, a dredged access channel continues east-northeast from the entrance channel then turns sharply south-southeast and leads between two jetties to a boat basin at Gold Beach. (See Notice to Mariners and latest editions of charts for controlling depths.)

(44) Due to shoal water, breakers are almost always present at the outer ends of the jetties at the entrance. This area can be particularly dangerous when the sea is running from the west or southwest. On the south side of the entrance channel, between the jetties, is an area of shoal water and gravel bars. The water here breaks to a height of 6 feet when a swell is running. Small craft sometimes find themselves set into this area by northwest winds and/or on an ebb tide.

(45)

Coast Guard

(46) The Coast Guard has a seasonal lifeboat station in the boat basin that operates from June to mid-September and can be reached on VHF-FM channel 12.

(47) The Coast Guard has established Rogue River Regulated Navigation Area Warning Sign, a seasonal **rough bar advisory sign**, on the north side of the river, 0.6 mile upstream of the entrance, to promote safety for small-boat operators. The sign is diamond-shaped and painted with an international orange border and with

the words **"Rough Bar"** in black letters. The sign is equipped with two quick flashing amber lights that will be activated when hazardous conditions exist and the bar is restricted to recreational and uninspected passenger vessels. Boaters are cautioned, however, that if the lights are not flashing, it is no guarantee that sea conditions are favorable.

(48) A **heavy weather flag**, a square RED flag with a square BLACK center, will be displayed on a pole that is located near the south side of the Coast Guard lifeboat station and is visible to mariners from both directions to indicate that winds 48 knots and above are forecast for the area. Display of flags are required from one hour before sunrise to one hour after sunset. Weather flags are flown at select Coast Guard stations to supplement other weather notification sources. Light signals corresponding to these flags are not displayed at night. In all cases mariners should rely upon National Weather Service broadcasts as their primary source of government-provided weather information.

(49)

Caution

(50) The controlling depths in Rogue River channel and basin are usually considerably less than project depth and are subject to continual and pronounced change; vessels are advised not to enter the river without local knowledge.

(51)

COLREGS Demarcation Lines

(52) The lines established for the Rogue River are described in **33 CFR 80.1310**, chapter 2.

(53) About 200 berths, some with electricity, gasoline, diesel fuel, water, ice, launching ramps, wet and dry winter storage and marine supplies, are available in Gold Beach.

(54) A concrete arch highway bridge across Rogue River, 0.8 mile above the mouth, has a fixed span with a clearance of 30 feet. An overhead power cable with a clearance of 77 feet crosses the river about 0.2 mile east of the highway bridge. The bridge is prominent when off the mouth of the river.

(55) The north head at Rogue River entrance that reaches a height of 700 feet a mile north of the river, the marked depression in the coast range made by the river valley, and the rocks of Rogue River Reef are prominent from seaward.

(56) **Rogue River Reef**, extending over 4 miles northwest from Rogue River entrance, includes many visible and covered rocks; because of the broken bottom, vessels should stay over 5 miles offshore when passing this area. A 0.5-mile-wide channel separates the reef from the beach, but it is not safe to use without local knowledge. **Northwest Rock**, 4 miles northwest of Rogue River entrance, is the outermost visible rock of the reef. A rock, covered 2½ fathoms, is 0.3 mile west of Northwest Rock. **Needle Rock**, 1.1 miles southeast of Northwest Rock, is the most prominent of the rocks in the reef; the needle is on the south side.

(57) North of Rogue River the coast trends north for 10 miles and then northwest to Cape Blanco. The mountains are high, irregular, dark and covered with chaparral. The beach is bordered by numerous rocks for 5 miles then is comparatively clear with the exception of Orford and Blanco Reefs.

(58) A group of covered and visible rocks, 1 mile long and 0.5 mile wide, lies 5 miles north of Rogue River and nearly 2 miles offshore; these rise abruptly from 12 fathoms. **North Rock**, 7 feet high, is the largest and nearest to the beach. A rock, covered 1¼ fathoms, lies about 0.6 mile northwest of North Rock.

(59) The channel between Rogue River Reef and the mainland and North Rock and the mainland is sometimes used by coastwise freighters in clear weather. This channel should not be attempted by strangers.

(60) **Brushy Bald Mountain**, nearly 9 miles northeast of Rogue River entrance and 3 miles inland, shows up in hazy weather as a flat rounded peak, with a gentle slope from a west and south direction.

(61) **Sisters Rocks** are a group of three rocky islets 10.5 miles north of Rogue River entrance. The smallest, 0.8 mile offshore, is the outermost. There is fairly smooth water in northwest weather under the lee of the largest islet.

(62) **Colebrooke Butte**, 2 miles east of Sisters Rocks, appears from the west as a cone with gentle sloping sides. The upper part usually shows against the skyline and is readily recognized. From the south, it shows as a rounded peak that resembles Brushy Bald Mountain, though it is somewhat lower. The north part of the summit is tree covered and dark green, and the south part is grass and brush covered and light green. The slopes are timbered except for the lower part of the seaward slope, which is bare and brown.

(63) **Lookout Rock**, 2.3 miles north of Sisters Rocks, is a prominent projecting cliff, with a marked depression behind it. The seaward face is precipitous.

(64) **Bald Mountain**, 3.2 miles northeast of Lookout Rock, appears from offshore as an irregular knob at the northwest end of a long ridge. **Rocky Peak**, on the southeast end of the ridge, is a sharp conical peak. From a southwest direction, three peaks or knobs show; from a north-northwest direction, two peaks show almost in range. These peaks were used by the early navigators as a landfall for Port Orford in coming from the north.

(65) Prominent **Humbug Mountain**, 3.3 miles north of Lookout Rock and 4 miles south of Port Orford, is conical in shape, and its seaward face is steep and rugged.

(66)

Island Rock to Blacklock Point

(67) **Island Rock**, 1.3 miles off the seaward face of Humbug Mountain, is flat on top. A needle rock is 200 yards off its northwest end. These rocks are prominent when approaching Port Orford from south. Except for two small rocky patches, covered 6¾ and 10 fathoms,

within 0.5 mile of the north end of Island Rock, there is deep water around these islands and between them and the beach.

(68) **Redfish Rocks** are a group of islets covering an area 0.5 mile square, lying 2 miles north of Island Rock and nearly 1 mile offshore. They are six in number and range from 10 to 140 feet in height. Many covered rocks lie within this area.

(69) **Port Orford**, 6.5 miles south of Cape Blanco and 19 miles north of Rogue River, is a cove that affords good shelter in northwest weather but is exposed and dangerous in south weather. It is easy of access and is probably the best natural northwest lee north of Point Reyes.

(70) The town of **Port Orford**, on the north side of the cove, is the home of the famous yellow cedar; lumber is trucked from the town.

(71) **The Heads**, forming the west point of the cove, appear from south as a long ridge with three knobs. The inner two are slightly higher and covered with trees. **Tichenor Rock** lies 175 yards south of The Heads.

(72) **Klooqueh Rock**, 0.3 mile off the northwest face of The Heads, is black and conical in shape. It is prominent, especially when coming from the northwest inside Orford Reef. Rocky ledges are between this rock and shore.

(73) Anchorage may be had in about the center of Port Orford in 5 to 10 fathoms, sand bottom; however, it is reported that many anchors have been lost near the rocky 1¾-fathom shoal 0.2 mile east of the south end of the breakwater. The cove is marked by a lighted bell buoy and a light, 0.5 mile south and 0.8 mile east-northeast of Tichenor Rock, respectively. Small craft may anchor closer to The Heads where better protection is afforded against the northwest winds, which sweep with considerable force through the depression at the head of the cove.

(74) **Battle Rock**, in the north part of the cove close to shore, is high, narrow, and black; it is detached only at extreme high tides. Visible and covered rocks extend up to 0.5 mile from shore around the cove.

(75) A wharf east of **Graveyard Point** is used mostly for commercial fishing. Fishing boats are lifted to cradles on the wharf with two large hoists. The wharf can accommodate vessels that are a maximum of 44 feet in length, 15 feet in width and no more than 19 tons. Gasoline, diesel fuel, water, marine supplies, ice and dry boat storage is available on the wharf; minor repairs can be made. At times, shoaling causes the water depth alongside the wharf to be less than adequate for docking. Mariners are urged to contact the wharf office at 541–332–1306 for the latest conditions. A 550-foot breakwater extends southeast from Graveyard Point and provides some protection for the wharf.

(76) From The Heads for 6.5 miles to Cape Blanco, the coast extends in a general north-northwest direction. North of The Heads the shore is a narrow sand ridge, rising at one point to 160 feet, covered with grass, fern and brush, and ending abruptly nearly 3 miles from The Heads at the edge of the Elk River Valley. North of this point are sand dunes extending to the mouth of **Elk River**, a small unimportant stream. Beyond the mouth of Elk River to Cape Blanco, the coast consists of vertical cliffs, wooded to the edge, and in some places over 150 feet high.

(77) **Orford Reef**, from 2 to 5 miles offshore between The Heads and Cape Blanco, is composed of a group of irregular rocks up to 149 feet high and ledges, many of which are awash or show a break. Kelp extends from Orford Reef to within 1.3 miles of the shore.

(78) **Fox Rock** and **Southeast Black Rock**, 1.3 miles apart, about 5 miles southwest of Cape Blanco, are the southernmost rocks of Orford Reef; they usually show a heavy break. **Northwest Rock**, 3 miles southwest of Cape Blanco, is the northernmost visible rock of Orford Reef, although several rocks, covered 5 fathoms, are 1.2 miles northeast of Northwest Rock.

(79) **Blanco Reef**, extending 1.5 miles southwest from Cape Blanco, consists of numerous rocks and ledges, some of which are marked by kelp. **Black Rock**, 1.2 miles southwest of Cape Blanco Light, is the southernmost visible rock of Blanco Reef. **Pyramid Rock**, 1 mile west of the light, is the northernmost visible rock of the reef, although a rocky patch uncovers about 3 feet 0.4 mile to the north. Rocky patches, covered ½ to 6 fathoms, extend from 0.5 mile southwest of Black Rock to 0.4 mile west of Pyramid Rock.

(80) In clear weather small vessels with local knowledge sometimes use the passage inside Orford Reef and between Orford Reef and Blanco Reef.

(81) **Cape Blanco** projects about 1.5 miles from the general trend of the coast. It is a small bare tableland, terminating seaward in a cliff 203 feet high, with low land behind it. A large high rock lies close under the south side of the cape. From seaward the cape is not prominent, but, from north or south, it appears like a moderately low bluff islet. The group of buildings at Cape Blanco is very prominent.

(82) **Cape Blanco Light** (42°50'13"N., 124°33'49"W.), 245 feet above the water, is shown from a 59-foot white conical tower near the center of the flat part of the cape.

(83) Numerous covered and visible rocks extend 0.5 mile or more northwest from the cape.

(84) **Gull Rock**, 1 mile north of Cape Blanco Light, is surrounded by covered rocks. Its seaward face is black and rugged, and the summit has two knobs, the higher being to the south. A rocky patch, covered 3 fathoms, lies 0.5 mile west of Gull Rock.

(85) **Castle Rock**, 1.5 miles northeast of Cape Blanco Light and 300 yards off the mouth of **Sixes River**, rises abruptly from the sea and is readily made out 10 miles to seaward. Many low rocks and ledges are within 400 yards, and several rocky islets are to the west and northwest.

(86) **Blacklock Point** is a precipitous rocky point 2.5 miles north-northeast of Cape Blanco. The cliff is 157 feet high. A sharp high point, bordered by rocks, stretches out nearly 300 yards. A narrow curved line of rocks extends

(90)

METEOROLOGICAL TABLE – COASTAL AREA OFF CAPE BLANCO
Between 42°N to 44°N and 124°W to 127°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	6.5	5.8	4.0	2.4	1.6	2.3	2.1	1.3	1.4	1.8	4.5	5.6	2.9
Wave Height > 9 feet [1]	11.9	11.4	9.8	5.5	5.4	4.7	5.2	3.2	3.3	4.9	11.3	12	6.5
Visibility < 2 nautical miles [1]	6.3	6.9	4.5	5.0	4.5	4.9	7.7	14.8	8.7	9.8	5.9	7.1	7.4
Precipitation [1]	18.7	17.7	15.9	10.1	7.6	5.7	3.6	4.0	4.6	6.8	15.2	18.2	9.3
Temperature > 69° F	0.0	0.0	0.0	0.1	0.3	0.7	1.3	1.5	1.2	0.4	0.1	0.1	0.6
Mean Temperature (°F)	49.7	50.0	50.3	51.5	53.6	56.5	58.9	59.3	59.8	57.0	54.0	51.1	55.0
Temperature < 33° F [1]	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Mean RH (%)	83	82	82	81	82	84	86	87	86	85	83	83	84
Overcast or Obscured [1]	42.9	43.2	39.4	34.0	33.6	37.0	37.6	43.6	32.9	34.4	41.4	40.4	38.0
Mean Cloud Cover (8^{ths})	5.7	5.7	5.6	5.2	5.1	5.3	4.8	5.2	4.4	4.7	5.5	5.6	5.2
Mean SLP (mbs)	1018	1017	1017	1019	1019	1019	1019	1017	1016	1018	1018	1018	1018
Ext. Max. SLP (mbs)	1037	1051	1039	1043	1042	1046	1040	1037	1038	1050	1050	1045	1051
Ext. Min. SLP (mbs)	969	973	984	980	988	995	997	992	985	982	976	961	961
Prevailing Wind Direction	S	S	S	N	N	N	N	N	N	N	S	S	N
Thunder and Lightning [1]	0.4	0.7	0.1	0.2	0.2	0.1	0.1	0.1	0.3	0.3	0.6	0.5	0.3

[1] Percentage Frequency

0.8 mile west-southwest from the point. A rock that breaks in heavy weather is 1 mile northwest of the point. Rocky patches, covered 4 fathoms, are within 1.3 miles of the point in a west and northwest direction.

(87)

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(88) From Cape Blanco for 112 miles to Yaquina Head, the coast is remarkably straight and trends in a north-northeast direction. It differs considerably from the coast to the south. The coastal mountains are much lower, the difference being more marked because of the high mountains inland. The shore consists of high yellow sand dunes and cliffs broken by bold rocky headlands of moderate height and backed by low pine-covered hills. There are few outlying dangers, the outermost being Blacklock Point, Coquille Rock, and Cape Arago.

(89) From Blacklock Point the shore continues rocky with cliffs gradually decreasing in height for 1.5 miles north, thence for about 11 miles the shore is a broad sandy beach backed by dunes and long narrow lakes. The tree line is at an average distance of 0.2 mile from the sea. From the end of the sand beach for 2 miles to the mouth of Coquille River, the shore again consists of rocky cliffs, 40 to 80 feet high, with several outlying rocks as much as 0.5 mile from shore. Covered dangers extend 1.6 miles west from Coquille Point. The land directly behind this stretch of coast is comparatively flat and wooded, rising to heights of 1,000 feet in 2.5 to 3 miles.

(91)

Coquille River

(92) **Coquille River** is 18 miles north of Cape Blanco. Some fishing boats operate from **Bandon**, about 0.8 mile above the mouth.

(93) **Coquille Point** is 0.6 mile south of Coquille River entrance. Several rocky islets extend 0.5 mile off the point, and rocks showing breakers in any swell extend 1.2 miles west and a mile northwest of the point.

(94) **Coquille Rock**, 1.6 miles northwest of the point, is covered 28 feet and breaks in heavy weather.

(95) A long, low area of shifting dunes is north of the Coquille River entrance. The conical tower and dwelling of an abandoned lighthouse is near the inner end of the north jetty.

(96)

COLREGS Demarcation Lines

(97) The lines established for the Coquille River are described in **33 CFR 80.1315**, chapter 2.

(98) A dredged entrance channel leads east-southeast between two jetties at the mouth of the Coquille River, thence continues on to Bandon before turning northward into the natural river channel—see Notice to Mariners and latest editions of charts for controlling depths. A light and sound signal are on the south jetty. The channel is subject to frequent change, and the deepest water is not always on the entrance range. Local knowledge is essential when the bar is rough. It is reported that the bar breaks even in calm seas, and mariners should favor the north in approaching the entrance range. The reported depth above Bandon is about 6 feet to Coquille, 21 miles above the entrance.

(99)

Coast Guard

(100) A Coast Guard motor lifeboat is stationed at the mooring basin at Bandon on the south side of the river about 0.8 mile above the entrance.

(101) The Coast Guard has established Coquille River Regulated Navigation Area Warning Sign, a seasonal **rough bar advisory sign**, 29 feet above the water, visible from the channel looking seaward on the south

shore just north of the Coast Guard station, to promote safety for small-boat operators. The sign is diamond shaped, painted with an international orange border, and with the words **"Rough Bar"** in black letters. The sign is equipped with two quick flashing amber lights that will be activated when hazardous conditions exist and the bar is restricted to recreational and uninspected passenger vessels. Boaters are cautioned, however, that if the lights are not flashing, it is no guarantee that sea conditions are favorable.

(102) A small-craft basin, on the south side of the river about 0.9 mile above the entrance, has about 180 berths and a launching ramp; marine supplies and fuel (via truck) are available. The 310-foot wharf of a former lumbermill, northeast of the small-craft basin, has reported depths of 12 feet alongside. A machine shop is at Bandon.

(103) A highway bridge, 3 miles above the entrance, has a lift span with clearances of 28 feet down and 74 feet up; the span remains in the closed position. (See **33 CFR 117.1** through **117.59** and **117.875**, chapter 2, for drawbridge regulations.) An overhead cable east of the bridge has a clearance of 72 feet.

(104) The village of **Prosper** is 4 miles above Coquille River entrance.

(105) Several power cables cross the river between Prosper and Coquille; the least clearance is 68 feet.

(106) **Coquille**, 21 miles above the entrance, is the distributing center for several agricultural communities of the river valley and has railway connections with the interior.

(107)

Fivemile Point to Tenmile Creek

(108) North of the entrance to the Coquille River the sand dunes extend for about 4 miles and are then succeeded by cliffs. **Fivemile Point**, 6 miles north of the river entrance, is a rocky cliff 60 feet high with a cluster of rocks, 10 to 40 feet high, extending more than 0.3 mile offshore.

(109) North of Fivemile Point the coast consists of cliffs, 40 to 80 feet high, which rise to heights of 100 to 250 feet 2 miles south of Cape Arago and are cut by deep gulches, named the **Seven Devils**. Numerous rocks of varying shapes and sizes border the beach.

(110) **South Cove**, immediately under the south point of Cape Arago, is used extensively as a summer anchorage by small craft and fishing boats with local knowledge.

(111) **Cape Arago**, 29 miles north-northeast of Cape Blanco, is an irregular jagged point projecting about a mile from the general trend of the coast. There are no high mountains immediately behind the cape, and it is conspicuous only when the mountains in the interior are obscured. The seaward face of the cape, 2.5 miles long in a north direction, is a narrow wooded tableland 50 feet high, with rugged and broken cliffs and outlying rocks of the same height as the cliff. Immediately off the cape are reefs extending northwest for about a mile. A small cove near the north end, inside the reefs, is sometimes used by small boats with local knowledge.

(112)

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(113) **Baltimore Rock**, 3.2 miles north-northeast of Cape Arago, is covered 9 feet and usually breaks. It is the outermost rock of a covered ledge extending northwest from the shore. A lighted buoy is 0.2 mile north of the rock. East of Baltimore Rock, **Mussel Reef** extends about 0.8 mile northwest from **Yoakam Point** and has a least depth of 18 feet; mariners should exercise caution in this area.

(114) **Coos Head**, 229 feet high, is on the south side of the entrance to Coos Bay. The cliffs of Coos Head are about 100 feet high and terminate in several small rocky points with sand beaches between them. The buildings of a former government facility are conspicuous on the bluffs just southwest of Coos Head.

(115) **Coos Bay**, 33 miles north of Cape Blanco, is used as a harbor of refuge and can be entered at any time except in extreme weather. Coos Bay is one of the most important harbors between San Francisco and the Columbia River and one of the largest forest products ports in the world. Principal foreign exports are logs, woodchips, lumber and plywood. The coastwise trade consists mainly of logs.

(116) From the entrance the bay extends northeast for 8 miles with widths of 0.3 to 1 mile, then bends southeast for about 4 miles to the mouth of Isthmus Slough. The dredged channel through the bay is bordered by marshland and intersected by several sloughs.

(117)

Prominent features

(118) Coos Head and Umpqua River Light are good guides to the entrance. The sand dunes north toward Umpqua River are prominent. The entrance to the bay is protected by jetties. A light with a seasonal sound signal marks the north jetty. A lighted whistle buoy is 1.8 miles west-northwest of the entrance. The channels are marked with lighted ranges, lights, buoys and daybeacons. Although no longer lighted, Cape Arago Lighthouse is a prominent 44-foot white octagonal tower attached to a building on a rocky, partially wooded island close inshore, 2.5 miles north of the cape.

(119)

Routes

(120) Vessels should make sure of the entrance range before standing close in. There is usually a current sweeping either north or south just off the jetties, and this current should be guarded against. The entrance ranges should be watched carefully until clear of all dangers. The south current is often encountered during the summer. With strong south winds during the winter, the current sometimes sets to the north.

(121) Approaching from any direction in thick weather, great caution is essential. The currents are variable and

(132)

Vessel Reporting Advisory
Operations in the Vicinity of Southwest Oregon Regional Airport

Inbound and outbound vessel traffic near **Southwest Oregon Regional Airport** may affect procedures for aircraft landing and departing at the airport. Vessels with an air draft of 144 feet or greater present a potential obstruction to airspace that require advisories be issued to aircraft by air traffic controllers, and in some cases, runway use may need to be restricted. Notification by vessels exceeding 144 feet air draft (including raised cranes or other cargo gear), when operating in the vicinity of the airport is essential to provide aircraft important notice of potential airspace obstruction during instrument approaches.

Vessels with an air draft height of 144 feet (44 meters) or greater are advised to report the following information:
• The vessel's name, a point of contact and a call-back method of communication to the ship.
• The vessel's maximum air draft height (including masts, cranes, antenna or other projections).
• If inbound from sea, report time of arrival at Coos Bay Channel Lighted Buoy 15 (with at least 10 minutes advance notice), and again when past Coos Bay Channel Lighted Buoy 20.
• If outbound to sea, report time of arrival at Coos Bay Channel Lighted Buoy 20 (with at least 10 minutes advance notice), and again when past Coos Bay Channel Lighted Buoy 15.

Notification can be made to the Airport Operations staff via telephone at 541–297–4777 or 541–297–4234. Vessels without telephone capability are requested to provide notification to the Coos Bay Pilots on VHF-FM channels 13 and 16, to be relayed to the Airport Operations personnel.

uncertain. Velocities of 3 to 3.5 knots have been observed offshore between Blunts Reef and Swiftsure Bank, and greater velocities have been reported. The most favorable time for crossing the bar is on the last of the flood current, and occasionally it is passable only at this time.

(122)

COLREGS Demarcation Lines

(123) The lines established for Coos Bay are described in **33 CFR 80.1320**, chapter 2.

(124)

Channels

(125) A **federal Project** provides for a 37-foot channel across the bar to a point 1.1 miles above the mouth of Isthmus Slough, and thence, 22 feet to Millington, 14.7 miles above the entrance to the bay. Turning basins at North Bend and Coos Bay have project depths of 37 feet. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through a USACE hydrographic survey website listed in Appendix A.

(126)

Coast Guard

(127) The Coast Guard has established Coos Bay South Slough Regulated Navigation Warning Sign, a **rough bar advisory sign**, on the east end of the breakwater at Charleston Boat Basin in about 43°20'48"N., 124°19'18"W., to promote safety for small-boat operators. The sign is diamond-shaped and painted white with an international orange border and with the words **"Rough Bar"** in black letters. The sign is equipped with two quick flashing amber lights that will be activated when hazardous conditions exist and the bar is restricted to recreational and uninspected passenger vessels. Boaters are cautioned, however, that if the lights are not flashing, it is no guarantee that the sea conditions are favorable.

(128)

Anchorage

(129) Anchorage for small craft can be had almost anywhere in the bay outside the dredged channels and below the railroad bridge.

(130)

Caution

(131) Due to the rapid and severe onset of weather from the North Pacific Ocean, anchorage in the ocean outside of Coos Bay is reported not safe and is dangerous during the winter months. Like all unprotected areas along the Oregon coast, large swells and heavy winds characterize the area during the winter. These conditions can suddenly and unexpectedly besiege the unwary with catastrophic results. The prevailing direction of both swell and wind will drive disabled or improperly handled vessels onto the shore.

(133)

Dangers

(134) **Guano Rock**, on the south side of the entrance channel and 280 yards northwest of Coos Head, uncovers only at extreme low water.

(135) A submerged section of the north entrance jetty extends about 300 yards west of the visible jetty; and a submerged section of the south entrance jetty extends about 100 yards west of the visible jetty. Because of the submerged jetties, it is reported that there are breakers in these areas most of the time. Extreme care must be exercised at all times.

(136) A submerged jetty extends 500 yards off the east shore of Coos Bay just inside the entrance, 0.8 mile northeast of Coos Head. In entering with a strong northwest wind, large vessels have difficulty in making the turn and may find themselves being set toward the submerged jetty.

(137)

Bridges

(138) The Coos Bay Railroad bridge across Coos Bay, 7.5 miles above the entrance, has a swing span with a vertical

(158)

Facilities at Coos Bay

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/ Operated by:
Roseburg Forest Products Wood Chip Dock	43°25'32"N., 124°15'28"W.	1,430	40	17	• Open storage (40 acres) • Steel loading tower and belt-conveyor system	Shipment of wood chips	Roseburg Forest Products Co.
Ocean Terminals North Bend Wharf	43°24'37"N., 124°13'12"W.	750	38	10	• Open storage (32 acres) • Four 30-ton log loaders	Receipt and shipment of logs and lumber	Ocean Terminals Co.
Oregon Chip Terminal Wharf	43°23'20"N., 124°13'10"W.	1,086	36	12	• Open storage • Steel loading tower and belt-conveyor system	Shipment of wood chips	Pacific Chip Terminal Inc./Oregon Chip Terminal Inc.
Dolphin Terminals Wharf	43°22'49"N., 124°13'02"W.	825	36	10	N/A	Occasional shipment of logs	Oregon International Port of Coos Bay/ Dolphin Terminals
Georgia Pacific Coos Bay Wood Chip Wharf	43°21'42"N., 124°12'09"W.	500	35	12	• Open storage • Steel loading tower and chain-conveyor system	Shipment of wood chips	Georgia Pacific Corp.
Coos Bay Dock Wharf	43°21'43"N., 124°12'02"W.	726	36	12	• Open storage (20 acres) • Covered storage (115,000 square feet)	• Shipment of logs, finished lumber, plywood and paper products • Receipt of conventional and containerized general cargo	Georgia Pacific Corp./ Knutson Towboat Co.
Knutson Log Yard Dock	43°19'55"N., 124°11'37"W.	500	17	-	Open storage (45 acres)	Receipt of logs	Knutson Transportation Co.

Dimensions are given in feet
* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

clearance of 12 feet. Mariners should use extreme caution when passing through the bridge because of unpredictable changing winds, currents, and sea conditions reported in this area. The bridgetender monitors VHF-FM channel 18A and works on channel 13; call sign KT-2006. A fixed highway bridge, 8.1 miles above the entrance, has a clearance of 123 feet across the main channel. A power cable, 100 yards west of the fixed bridge, has a clearance of 167 feet. (See **33 CFR 117.1** through **117.59** and **117.871**, chapter 2, for drawbridge regulations.)

(139)

Currents

(140) Current observations in the entrance to Coos Bay indicated a velocity of about 2 knots. The greatest observed ebb velocity was a little over 3 knots. Predictions for the entrance may be obtained from the Tidal Current prediction service at *tidesandcurrents.noaa.gov*. (Links to a user guide for this service can be found in chapter 1 of this book. During long runouts an ebb current of 5 knots has been reported at Guano Rock.

(141)

Pilotage, Coos Bay

(142) Pilotage is compulsory for all foreign vessels and all U.S. vessels under registry. Pilotage is optional for U.S. vessels in the coastwise trade that have onboard a pilot licensed by the federal government for these waters.

(143) Pilotage for Coos Bay, its tributaries and Yaquina Bay is available from **Coos Bay Pilots Association**, 686 N Front Street, Coos Bay, OR 97420; telephone 541–267–6555; fax 541–267–5256.

(144) The pilot boats monitor VHF-FM channels 13 and 16 and use channels 12 and 18A as working frequency.

(145) The pilot boats, COOS BAY and NORTH BEND, are 75-foot-long tugs with black hulls, orange pilothouses and white stacks. The pilot boats used the standard pilot lights at night. Vessels are handled 24 hours a day, weather permitting.

(146) Arrangements for pilots are usually made by ships' agents or by telephone. A 24-hour notice of time of arrival is requested. The pilots usually board vessels about 1 mile northwest of Coos Bay Approach Lighted Whistle Buoy K. Vessels are requested to maintain a speed of about 4 to 5 knots and rig the ladder, without manropes, about 3 meters above the water.

(147)

Towage

(148) Tugs up to 7,000 HP and Z-Drives are available for ship and barge assist, escort and rescue services. Arrangements can be made through vessel agent or by calling 541-267-2515.

(149)

Quarantine, customs, immigration and agricultural quarantine

(150) Coos Bay is a customs port of entry. (See Vessel Arrival Inspections, chapter 3.)

(151) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1, for details.)

(152)

Coast Guard

(153) **Coos Bay Coast Guard Station** is on the south side of Charleston Boat Basin, 0.7 mile southeast of Coos Head. **North Bend Coast Guard Air Station** is at Southwest Oregon Regional Airport.

(154)

Harbor regulations

(155) The port authority, Oregon International Port of Coos Bay, is controlled by a Board of Port Commissioners and a port manager. Harbor regulations are prescribed by the Port Commissioners and enforced by the port manager. The port manager's office is at 125 Central Avenue, Suite 300, Coos Bay.

(156)

Wharves

(157) Most of the deep-draft facilities in the Port of Coos Bay are at the cities of Coos Bay and North Bend; only these facilities are listed in the table. The alongside depths are reported depths; for information on the latest depths contact the port manager or the private operators. All the facilities described have direct highway connections and most have connections to a Class I railroad. Water is available at most of the wharves, but electrical shore power connections are only available at reference numbers 1 and 6 in the table. Special handling equipment, if available, is mentioned under *Mechanical Handling Facilities* in the table.

(159)

Supplies

(160) Most marine supplies and services are available at Coos Bay. Fuel oil is available at one fuel pier. Diesel oil and water are available.

(161)

Repairs

(162) There are no facilities for major repairs to large oceangoing vessels in Coos Bay; the nearest such facilities are in Portland, OR. Above-the-waterline repairs can be made at several machine shops on the waterfront. There are two 1,000-ton drydocks at Coos Bay that can handle vessels up to 180 feet in length and 45 feet in width. The largest marine railway can handle vessels to 1,200 tons, 137 feet long, 45 feet wide, and 12 feet in draft. Hull and engine repairs can be made here. Electronic repairs can be arranged for. (See Charleston Boat Basin, this chapter, for small-craft facilities and repairs.)

(163)

Communications

(164) The cities of Coos Bay and North Bend are served by U.S. Highway 101 and a Class I railroad. Two state highways connect to Interstate Highway 5 inland. Southwest Oregon Regional Airport is just northwest of North Bend.

(165) **South Slough**, shoal and navigable only for small boats, extends 4 miles south from its junction with Coos Bay near the entrance. A federal project provides for a 17-foot entrance channel extending south from the junction for about 0.6 mile to the Charleston Boat Basin, thence a 16-foot channel continues to a highway bascule bridge. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through a USACE hydrographic survey website listed in Appendix A.

(166) The channel from junction with Coos Bay to Charleston Boat Basin is subject to shoaling. A **regulated navigation area warning sign** is on the west side of the channel, approaching Charleston Boat Basin. The sign is diamond-shaped, white with orange border worded *ROUGH BAR* and has lights that flash when the bar is restricted to recreational and uninspected passenger vessels. Contact the nearest U.S. Coast Guard unit for further information. Additionally, mariners are advised to seek local knowledge when transiting this area.

(167) **Charleston Boat Basin**, operated and maintained by the Port of Coos Bay, is 0.3 mile north of Charleston, across the slough from **Barview**. The basin is used by commercial and sport fishermen. About 500 berths with electricity, gasoline, diesel fuel, water, ice, a launching ramp and marine supplies are available. A pumpout station and wet and dry winter boat storage are available in the basin. A repair facility at the basin has a drydock that can handle vessels to 300 tons, 90 feet long and 30 feet wide and a marine railway that can handle craft 70 feet long, 22 feet wide and 6 feet draft for hull and engine repairs. Electronic repairs can also be made at the basin. Four fish piers are in the basin, and three fish packing facilities are just south of the basin on South Slough. **Coos Bay Coast Guard Station** is on the south side of the basin.

(168) A Coast Guard buoy storage area is in Coos Bay about 150 yards east of the channel and about 2.5 miles above the entrance jetties.

(169) The highway bridge over South Slough, 1 mile south of the entrance, has a bascule span with a clearance of 22 feet. (See **33 CFR 117.1** through **117.59** and **117.892**, chapter 2, for drawbridge regulations.) Power and television cables south of the bridge have a least clearance of 71 feet.

(170) The west shore of Coos Bay as far as the bend is formed by a sandspit covered with dunes, partly wooded, and in some places as much as 90 feet high. On the east shore and above the bend are low rolling hills with houses and several prominent buildings.

(171) **Haynes Inlet** and **North Slough**, which join the bay through a common entrance on the north side, are navigated by small boats. Haynes Inlet and North Slough channels are marked by private daybeacons. A causeway with a fixed bridge over North Slough has a clearance of 15 feet. The causeway extends east and joins the state highway fixed bridge over Haynes Inlet, which has a clearance of 20 feet (27 feet at center).

(172) **North Bend**, 9.5 miles above the entrance, is a city with many sawmills and factories; considerable lumber is shipped from here. North Bend Fire Department has a fire boat and launches dock along the city. **Coos Bay**, 12 miles above the entrance, is the principal city on the bay and is the distributing center for the area, which is primarily devoted to lumbering, fishing and agriculture. Coos Bay also includes the **Empire** district, which is 4

miles above the entrance. North Bend and Coos Bay form practically one continuous city extending along the shore from North Point to the mouth of Coalbank Slough.

(173) Three sloughs empty into Coos Bay between the city of Coos Bay and Coos River. **Coalbank Slough** is unused. **Isthmus Slough** is used for logging operations to **Millington**. The highway bridge across the slough has a bascule span with a clearance of 18 feet. (See **33 CFR 117.1** through **117.59** and **117.879**, chapter 2, for drawbridge regulations.) The overhead power and television cables just north of the bridge and the overhead power cable 0.9 mile south of the bridge have clearances of 100 and 150 feet, respectively. **Catching Slough** is navigable for several miles by light-draft vessels. The fixed highway bridge across the mouth has a clearance of 40 feet. The power cable for about 1.7 miles above the bridge has a least clearance of 57 feet; other overhead cables upstream have a least known clearance of 13 feet.

(174) **Coos River** empties through two channels into the bay at its head. The north unmarked channel follows the east side of the bay and empties abreast of North Bend. **Marshfield Channel**, marked by a lighted range, lights, and buoy, crosses the flats and empties abreast the city of Coos Bay.

(175) Coos River divides at a point 3.2 miles above **Graveyard Point** into **South Fork** and **Millicoma River**. A highway bridge across the river, 0.9 mile above Graveyard Point, has a lift span with clearances of 28 feet down and 54 feet up. (See **33 CFR 117.1** through **117.59** and **117.873**, chapter 2, for drawbridge regulations.) The least clearance of the overhead power cables crossing Millicoma River is 40 feet. **Allegany**, 7.5 miles above the confluence, is the head of navigation on Millicoma River. **Dellwood**, 8.2 miles above the confluence, is the head of navigation on South Fork.

(176) A fixed highway bridge crossing South Fork 0.5 mile above the confluence has been removed; two concrete piers remain. A fixed highway bridge crossing South Fork 1.9 miles above the confluence has a clearance of 38 feet. Several overhead power and telegraph cables cross South Fork; least clearance is 42 feet.

(177)

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(178) From Coos Bay for 19.5 miles to Umpqua River, the coast consists of sand beaches and dunes backed by moderately low hills. The mouth of **Tenmile Creek** is 13.7 miles north of Coos Head.

(179)

Umpqua River to Smith River

(180) **Umpqua River** is entered 22.7 miles north of Coos Bay. Some lumber, sand, crushed rock and oil are barged on the river, but commercial traffic is very light. The **customs port of entry** is at Coos Bay.

(181) The south point at the entrance to the river is marked by sand dunes, partly covered with trees, that reach elevations of 300 feet. About a mile below the entrance is a bright bare spot in the dunes that shows prominently among the trees. Shifting sand dunes about 100 feet high are on the spit on the north side of the entrance.

(182) **Umpqua River Light** (43°39'44"N., 124°11'55"W.), is shown from a white conical tower just south of the mouth of the river. Trees surround the light, but the lantern shows over the tops.

(183) The entrance to the river is protected by jetties. The south jetty extends 1,200 yards seaward from the shoreline and is marked by a light with a seasonal sound signal. About 160 yards of the outer end of the jetty is submerged. A lighted whistle buoy, about 0.9 mile west of the south jetty light, marks the approach. A **086.1°** lighted range and lighted buoy mark the entrance channel, which is subject to frequent changes. The middle jetty extends from the shoreline and connects with the outer section of the south jetty. The north jetty extends 1,100 yards seaward from the shoreline. The river channels are marked by lighted ranges, lights, buoys and daybeacons. A Coast Guard lookout tower is about midway out on the middle jetty.

(184)

COLREGS Demarcation Lines

(185) The lines established for the Umpqua River are described in **33 CFR 80.1325**, chapter 2.

(186)

Channels

(187) A **federal project** provides for depths of 26 feet in the entrance channel, thence 22 feet to Gardiner and Reedsport, and 22 feet in the turning basin at Reedsport. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through the USACE hydrographic survey website listed in Appendix A.

(188) The channel over the bar is reported shoalest usually during September. Later in the season the river cuts a deeper channel through the bar. Depths in the channels and basins may vary considerably between dredging operations.

(189)

Coast Guard

(190) The Coast Guard has established Umpqua River Regulated Navigation Area Warning Sign, a **rough bar advisory sign**, visible from the channel looking seaward, on Winchester Point about 1.5 miles inside the river entrance, to promote safety for small-boat operators. The sign is diamond-shaped, painted white with an international orange border, and with the words **"Rough Bar"** in black letters. The sign is equipped with two quick flashing yellow lights that will be activated when hazardous conditions exist and the bar is restricted to recreational and uninspected passenger vessels. Boaters are cautioned, however, that if the lights are not flashing, it is no guarantee that conditions are favorable.

(191) A **heavy weather flag**, a square RED flag with a square BLACK center, will be displayed on a pole that is located on the north side of the Coast Guard lookout tower at the Umpqua River entrance and is visible to mariners from both directions to indicate that winds 48 knots and above are forecast for the area. Display of flags are required from one hour before sunrise to one hour after sunset. Weather flags are flown at select Coast Guard stations to supplement other weather notification sources. Light signals corresponding to these flags are not displayed at night. In all cases mariners should rely upon National Weather Service broadcasts as their primary source of government provided weather information.

(192) **Umpqua River Coast Guard Station** is in East Basin about 2.3 miles from the entrance.

(193)

Supplies

(194) Gasoline, diesel fuel, water and fuel oil for launches may be obtained at Reedsport.

(195)

Repairs

(196) A machine shop is at Reedsport; a marine railway here can handle craft to 150 feet. A tidal graving dock for barges, 260 feet long and 60 feet wide, is operated by this firm across the river. Hull and engine repairs for small craft can be made at East Basin.

(197) **West Basin** and **East Basin**, 1.8 and 2.3 miles above the entrance respectively, are small-craft basins entered through dredged channels that lead from the main river channel. The entrance channel to West Basin is marked by a light and daybeacon and the entrance to East Basin is marked by two lights. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through the USACE hydrographic survey website listed in Appendix A.

(198) The village of **Winchester Bay** is a fishing resort on the east side of East Basin. A fish wharf with cold storage and ice plant on its outer end is on the west side of the basin. Berths with electricity, gasoline, diesel fuel, water, ice, launching ramps, marine supplies and an 8-ton crane are available in East Basin.

(199) **Gardiner** is on the northeast bank of the river, 8.5 miles inside the entrance. A dredged channel branches off the main channel and leads to a turning basin near the town. There is a public small-craft launching ramp at Gardiner.

(200) **Reedsport**, on the southwest bank of the river, 10 miles inside the entrance, is a station on the railroad and the principal town on the river. A plywood plant and a sawmill are in the town. The plywood plant wharf, at the entrance to Scholfield Creek, is in ruins and not used. The sawmill barges lumber intermittently from the port wharf, which is between the swing bridges; the wharf has about 18 feet along the loading face. A lumber wharf, used occasionally, is on the northwest end of Bolon Island.

(201) The U.S. Route 101 highway bridge crossing the river at the upper end of the turning basin at Reedsport has a swing span with a clearance of 36 feet. Just west of the bridge is a power cable with a clearance of 152 feet; the least clearance of cables above the highway bridge is 95 feet. The railroad bridge, 500 yards above the highway bridge, has a swing span with a clearance of 16 feet. (See **33 CFR 117.1** through **117.59** and **117.893**, chapter 2, for drawbridge regulations.)

(202) At high tide Umpqua River is navigable by vessels of 6-foot draft to **Scottsburg**, 14.8 miles above Reedsport.

(203) **Scholfield Creek** enters Umpqua River north of Reedsport. The entrance to the creek is marked by a buoy and a daybeacon. A fixed highway bridge with a clearance of 20 feet crosses the creek 0.9 mile above the mouth, and a railroad bridge with a 30-foot fixed span and clearance of 16 feet crosses the creek 2 miles above the mouth. Overhead power cables with a least clearance of 41 feet cross the creek between the two bridges.

(204) **Smith River** enters Umpqua River from the northeast at Reedsport. The controlling depth is about 5 feet for 5 miles above the mouth, thence 2 feet to **Sulphur Springs Landing**, 18 miles above the mouth. The highway bridge, 2.7 miles above the mouth, has a retractable span with a clearance of 22 feet. (See **33 CFR 117.1** through **117.49**, chapter 2, for drawbridge regulations.) An overhead telephone cable with a clearance of 67 feet crosses the river just below the bridge.

(205)

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(206) From Umpqua River for 21 miles to Siuslaw River, the coast is straight and consists of sand dunes broken only by the mouths of **Threemile Creek**, **Tahkenitch Creek**, **Siltcoos River** and the stream from **Cleawox Lake**.

(207)

Siuslaw River

(208) **Siuslaw River**, 8.3 miles south of Heceta Head Light, has some logging operations, and finished lumber is barged to Pacific ports. Prominent from offshore is wooded **Cannery Hill**, on the east side of the river 1.4 miles above the entrance. The **customs port of entry** is at Coos Bay.

(209)

COLREGS Demarcation Lines

(210) The lines established for the Siuslaw River are described in **33 CFR 80.1330**, chapter 2.

(211) Siuslaw River is entered through a dredged channel between two jetties—the seaward ends of the jetties are submerged. The river then leads south to a turning basin off the town of Florence, 4.4 miles above the entrance, thence east for about 2 miles to Cushman. A light, seasonal sound signal and a Coast Guard tower are on the north jetty. The channel is marked by a **094.3°** lighted

entrance range and by other ranges and navigational aids to 1 mile above Florence. The uncharted buoys at the mouth of the river are frequently shifted to mark the best water. The bar at the entrance is narrow, and the depths vary greatly because of storms and freshets. The entrance and south jetty shoals tend to build during late winter and spring. Mariners are advised to contact **Siuslaw River Coast Guard Station** on VHF-FM channel 16 before attempting to cross the bar. A **federal project** provides for an 18- to 16-foot depth in the entrance channel to the highway bridge at Florence; thence 16 feet in the turning basin; thence 12 feet to Cushman. (See Notice to Mariners and latest editions of the chart for controlling depths.)

(212) The Coast Guard has established Siuslaw River Regulated Navigation Warning Sign, a **rough bar advisory sign**, 37 feet above the water, visible from the channel looking seaward, on the Coast Guard lookout tower on the north jetty, to promote safety for small-boat operators. The sign is diamond-shaped and painted white with an international orange border and with the words **"Rough Bar"** in black letters. The sign is equipped with two quick flashing amber lights that will be activated when hazardous conditions exist and the bar is restricted to recreational and uninspected passenger vessels. Boaters are cautioned, however, that if the lights are not flashing, it is no guarantee that sea conditions are favorable.

(213) A **heavy weather flag**, a square RED flag with a square BLACK center, will be displayed on a pole that is located on the southwest corner of the Coast Guard station and is visible to mariners from both directions to indicate that winds 48 knots and above are forecast for the area. Display of flags are required from one hour before sunrise to one hour after sunset. Weather flags are flown at select Coast Guard stations to supplement other weather notification sources. Light signals corresponding to these flags are not displayed at night. (See illustration, chapter 1.) In all cases mariners should rely upon National Weather Service broadcasts as their primary source of government provided weather information.

(214) **Siuslaw Coast Guard Station** is on the east side of the river, 1.3 miles above the entrance.

(215) **Florence** is a small town on the north bank of Siuslaw River 4.4 miles above the entrance. A bascule highway bridge with a clearance of 17 feet crosses the river from Florence to **Glenada**, a small settlement on the south bank of the river opposite Florence. (See **33 CFR 117.1** through **117.59** and **117.889**, chapter 2, for drawbridge regulations.) An overhead power cable with a clearance of 23 feet crosses the river about 150 yards east of the bridge; the cable is submerged at the main channel. Another overhead power cable with a clearance of 88 feet crosses the river about 1 mile above the bridge.

(216) A cannery wharf and a small port-operated boat basin and marina are at Florence; fish are shipped by truck. Another marina, about 0.15 mile west of the bridge, has about 80 berths, dockside electricity, gasoline, water, ice, launching ramp and marine supplies; minor engine repairs can be made. The Port of Siuslaw Marina, about 0.3 mile east of the bridge, has over 250 berths, gasoline, diesel fuel, water, ice, some marine supplies and launching ramps. Wet and dry winter storage is also available.

(217) **Cushman**, on the north bank of the river 2 miles above Florence, has lumber and shingle mills. The products from these mills are shipped by rail and barge. A small-craft repair facility here has a marine railway that can handle craft to 60 feet long for engine and hull repairs. A 50-ton hoist is also available for handling small craft. About 50 berths with electricity, water and a launching ramp are available. Wet and dry winter storage is also available at this facility. A large marine supply firm is at Cushman. An overhead power cable with a clearance of 75 feet crosses the river at Cushman. The railroad bridge across the river, 1 mile above Cushman, has a swing span with a clearance of 15 feet. (See **33 CFR 117.1** through **117.59** and **117.889**, chapter 2, for drawbridge regulations.) An overhead power cable with a clearance of 80 feet crosses the river at Mapleton.

(218) Light-draft vessels can go to **Mapleton**, 17 miles above the mouth, but the channel is narrow and crooked. A barge facility, about 14 miles above the mouth of the river, ships wood products and some perishable goods downriver.

(219)

Heceta Head to Mary Peak

(220) From Siuslaw River for 7.5 miles to Heceta Head, the coast is composed of sand dunes that are quite conspicuous in contrast with the dark trees partly covering them.

(221) **Heceta Head**, 28.5 miles north of Umpqua River Light, has a seaward face 2.5 miles long with nearly vertical cliffs 100 to 200 feet high. The summit of the head reaches an elevation of 1,000 feet 0.5 mile from the cliffs and is covered with grass and a few pines. A sharp black conical rock, 180 feet high, marks the extreme west and north part of the head and is easily made out from either north or south. **Cox Rock**, 1.5 miles south of the south part of the head, is conical and usually white on top with bird droppings.

(222) **Heceta Head Light** (44°08'15"N., 124°07'42"W.), 205 feet above the water, is a private light shown from a 56-foot white conical tower on a bench cut in the high bluff near the west extremity. Because of the high bluff north of the light, vessels from north will not make out the tower or buildings until abreast of the station.

(223) **Heceta Bank**, 70 miles north-northwest of Cape Blanco and 30 miles offshore west of Heceta Head, covers an irregular area about 30 miles long and 10 miles wide. The least depth on the bank is 25 fathoms, but the depths are irregular. The depths north and south of the bank are considerably greater.

(224) From Heceta Head to Cape Perpetua, a distance of 9 miles, the coast consists of high broken rocky cliffs, except for the first 2 miles, which are composed of much

(237)

METEOROLOGICAL TABLE – COASTAL AREA OFF CAPE BLANCO
Between 42°N to 44°N and 124°W to 127°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	6.5	5.8	4.0	2.4	1.6	2.3	2.1	1.3	1.4	1.8	4.5	5.6	2.9
Wave Height > 9 feet [1]	11.9	11.4	9.8	5.5	5.4	4.7	5.2	3.2	3.3	4.9	11.3	12	6.5
Visibility < 2 nautical miles [1]	6.3	6.9	4.5	5.0	4.5	4.9	7.7	14.8	8.7	9.8	5.9	7.1	7.4
Precipitation [1]	18.7	17.7	15.9	10.1	7.6	5.7	3.6	4.0	4.6	6.8	15.2	18.2	9.3
Temperature > 69° F	0.0	0.0	0.0	0.1	0.3	0.7	1.3	1.5	1.2	0.4	0.1	0.1	0.6
Mean Temperature (°F)	49.7	50.0	50.3	51.5	53.6	56.5	58.9	59.3	59.8	57.0	54.0	51.1	55.0
Temperature < 33° F [1]	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Mean RH (%)	83	82	82	81	82	84	86	87	86	85	83	83	84
Overcast or Obscured [1]	42.9	43.2	39.4	34.0	33.6	37.0	37.6	43.6	32.9	34.4	41.4	40.4	38.0
Mean Cloud Cover (8ths)	5.7	5.7	5.6	5.2	5.1	5.3	4.8	5.2	4.4	4.7	5.5	5.6	5.2
Mean SLP (mbs)	1018	1017	1017	1019	1019	1019	1019	1017	1016	1018	1018	1018	1018
Ext. Max. SLP (mbs)	1037	1051	1039	1043	1042	1046	1040	1037	1038	1050	1050	1045	1051
Ext. Min. SLP (mbs)	969	973	984	980	988	995	997	992	985	982	976	961	961
Prevailing Wind Direction	S	S	S	N	N	N	N	N	N	N	S	S	N
Thunder and Lightning [1]	0.4	0.7	0.1	0.2	0.2	0.1	0.1	0.1	0.3	0.3	0.6	0.5	0.3

[1] Percentage Frequency

lower sloping sandy cliffs, backed by a strip of clear land. The hills behind reach an elevation of over 800 feet in less than 0.5 mile from the beach and are heavily wooded.

(225) **Tenmile Creek**, 5 miles north of Heceta Head, is marked by a sand beach about 0.3 mile long at its mouth.

(226) **Cape Perpetua** is 9 miles north of Heceta Head and consists of two projecting points; the north point is the bolder of the two. The cape reaches a height of 800 feet a short distance from the beach and 1,000 feet at a distance of 0.8 mile. The rocky cliff forming the face of the north point is reddish. A few rocks that uncover are close to its face.

(227) **Yachats River**, navigable only for canoes, breaks through the coast hills immediately north from Cape Perpetua.

(228) The coast for 2.5 miles north of Cape Perpetua consists of cliffs, 15 to 30 feet high, with a narrow strip of grassy land 0.2 to 1 mile wide behind them. Thence for 5.5 miles to Alsea Bay there are low bluffs, with a broad sand beach in front and comparatively low wooded country behind them.

(229) **Table Mountain**, 11 miles northeast of the mouth of Alsea Bay, is flat-topped, covered with dead trees and looks whitish. Another summit is 0.6 mile southwest of Table Mountain.

(230) **Mary Peak**, a prominent mountain 24 miles east of the entrance to Yaquina Bay, is wooded on its sides, but its summit is covered with grass.

(231)

Alsea Bay to Yaquina Reef

(232) **Alsea Bay** is 68 miles north of Cape Arago. The north point is low, broad and sandy, but the south point is an abrupt sandstone cliff about 100 feet high, covered with trees. The entrance has a shifting bar with a depth of about 6 feet. With a rising tide, the bar fills in with sand and the full effect of the tide cannot be counted on. There are considerable fishing and crabbing in the bay and river, but boats rarely cross the bar. **Waldport**, a mile inside the entrance, is the principal settlement. A marina with about 100 berths, gasoline and a launching ramp is on the northeast side of the town. The river, marked by seasonal private buoys, is navigable by small craft to about 10 miles above the mouth. There are several marinas along the river above Waldport; most have berths and gasoline. Outboard engine repairs can be made at a marina about 3 miles above the mouth.

(233) The fixed bridge of the Oregon Coast Highway crossing Alsea Bay, a mile inside the entrance, has a clearance of 66 feet.

(234)

COLREGS Demarcation Lines

(235) The lines established for Alsea Bay are described in **33 CFR 80.1335**, chapter 2.

(236) The 11.5-mile coast between Alsea Bay and Yaquina Bay is nearly straight and consists of a low sand beach backed by dunes at each end with bluffs up to 100 feet high between; the land behind is low and wooded with areas of second-growth timber. Rocks covered 2 to 4 fathoms extend almost 2 miles offshore. **Seal Rocks**, abreast the highest part of the bluffs about 5 miles north of Alsea Bay entrance, extend up to 0.5 mile offshore for 2 miles; the tallest is 20 feet high.

(238) **Stonewall Bank**, 17 miles southwest of Yaquina Head Light and 14 miles offshore, is 9 miles long in a north direction and 2.5 miles wide. There is a least depth of 13 fathoms on the bank. An unmarked submerged obstruction is close southwest of Stonewall Bank in about 44°29.8'N., 124°24.9'W.

(239) **Yaquina Head**, 32.5 miles north of Heceta Head, is distinguished by two conical hills covered with grass. The outer one is 356 feet high and the inner 390 feet high, with a low saddle between them. The extremity of the point, which projects about a mile from the general

trend of the coast, is broken and rocky but comparatively low. One mile inland from the point, the grass-covered land changes to a dense forest and the hills rise rapidly. Two covered ledges lie north of the point 0.6 mile from the beach. There is a covered rock and considerable kelp about a mile south of the point. A patch of rocks that uncovers 8 feet is about a mile north of Yaquina Head Light. South to Yaquina Bay, the coast consists of broken yellow cliffs, bordered on the south part by broad sand beaches.

(240) **Yaquina Head Light** (44°40'36.3"N., 124°04'46.0"W.), 162 feet above the water, is shown from a 93-foot white conical tower on the flat bench projecting at the west extremity of the head.

(241) **Yaquina Reef** and its continuation north is a ridge of hard sand and rock covered 4 to 25 feet and marked by breakers. The reef extends from the submerged outer end of the north jetty and parallel to the shore to Yaquina Head. The submerged wreck of the ship JOHN ASPIN is about 0.65 mile north from the outer end of the north jetty.

(242) **South Reef**, with a least depth of 12 feet, is a continuation of Yaquina Reef, the two being separated by the entrance channel.

(243)

Yaquina Bay

(244) **Yaquina Bay** entrance is 4 miles south of Yaquina Head Light. The bay is a tidal estuary, the harbor itself being merely the widening of **Yaquina River** just inside the entrance.

(245) The north point of Yaquina Bay entrance is a sandy bluff, 120 feet high. A lighthouse and a Coast Guard lookout tower are on the high part of the point. When viewed from the northwest, the circular lighthouse tower on the roof of a two-story frame dwelling obscures the lower portion of the lookout tower. The south entrance point is a low sand beach backed by dunes rising to 150 feet.

(246) The entrance to Yaquina Bay is protected by jetties 330 yards apart. The long north jetty, with the outer 100 yards submerged, extends out to Yaquina Reef. The south jetty is marked by a light about 200 yards inside the seaward end and a sound signal. A lighted whistle buoy is 1.5 miles southwest of the entrance. The channels are marked by lighted ranges, lights and buoys. Between the jetties, numerous submerged rocks lie along the outside of the charted entrance channel limits.

(247) During the summer, when the swell is approximately parallel with the coast, the bar is comparatively smooth, being partially sheltered by Yaquina Head. In winter, however, the heavy west swell makes the bar very rough. A smooth bar and a favorable tide are necessary for large vessels leaving Yaquina Bay.

(248)

Coast Guard

(249) The Coast Guard has established Yaquina Bay Entrance Regulated Navigation Area Warning Sign (44°37'29"N., 124°03'27"W.) at the Coast Guard station on the north side of the river at Newport. The sign is 22 feet above the water and diamond-shaped and painted white with an international orange border, with the words *ROUGH BAR*. The sign is equipped with four quick flashing lights that will be activated when the bar is restricted to recreational and uninspected passenger vessels. Vessel operators are cautioned, however, that if the lights are not flashing, it is no guarantee that sea conditions are favorable.

(250) A **heavy weather flag**, a square RED flag with a square BLACK center, will be displayed on a pole that is located on the western corner of the Coast Guard station and is visible to mariners from both directions to indicate that winds 48 knots and above are forecast for the area. Display of flags is required from one hour before sunrise to one hour after sunset. Weather flags are flown at select Coast Guard stations to supplement other weather notification sources. Light signals corresponding to these flags are not displayed at night. (See illustration, chapter 1.) In all cases mariners should rely upon National Weather Service broadcasts as their primary source of government-provided weather information.

(251)

COLREGS Demarcation Lines

(252) The lines established for Yaquina Bay are described in **33 CFR 80.1340**, chapter 2.

(253)

Regulated Navigation Area

(254) A regulated navigation area surrounds the entrance of Yaquina Bay. See **33 CFR 165.1 through 165.13** and **165.1325**, chapter 2, for limits and regulations.

(255)

Channels

(256) A **federal project** provides for a 40-foot entrance channel, thence 30 feet from the first turn in the channel to and in the turning basin at McLean Point, thence 18 feet to Yaquina, thence 10 feet to Toledo at the head of the project. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through the USACE hydrographic survey website listed in Appendix A.

(257) At the entrance to Yaquina Bay and River, the buoys cannot be relied upon to indicate the best water, and in the river, depths are subject to frequent change. Recreational boaters unfamiliar with the area are advised to contact the Coast Guard on VHF-FM channel 16 or telephone 541–265–5381 for the latest bar conditions, advisory or to arrange an escort when unfamiliar with bar conditions. Professional mariners desiring to enter Yaquina Bay

and River should employ a pilot or someone with local knowledge.

(258) A fixed highway bridge across the channel, about 1.3 miles above the entrance, has a clearance of 129 feet. **Yaquina Bay Coast Guard Station** is on the north side of the bay, 400 yards northeast of the bridge.

(259) NOAA's **Marine Operations Center-Pacific** operates a pier on the south side of Yaquina Bay, one-quarter mile east of the highway bridge, which serves as the shipbase for the Administration's Pacific Fleet. The north face of the pier has a 520-foot berth, 260-foot berth and another 520-foot berth, from west to east, with 24 to 27 feet alongside. The east end of the south face of the pier has a 230-foot berth with 22 to 26 feet alongside. The berths are marked by four private lights. There is a 215-foot floating dock inshore at the east end of the pier. The waters inside the pier are restricted to authorized traffic only. To report emergencies or suspicious activity at this pier contact by phone at (541) 351–4612.

(260) **Newport**, just inside the north entrance point, is the principal town on the bay and river. The town has a considerable fishing industry with several small fish-processing plants. Lumber, logs, paper and plywood, either barged from upper river mills or delivered by truck, are shipped from the wharves at **McLean Point**, just east of Newport.

(261)

Currents

(262) The current velocity is about 2.4 knots on the flood and 2.3 knots on the ebb in Yaquina Bay entrance. Near Newport docks the velocity is about 0.5 knot. Off Yaquina, and 1 mile south of Toledo, the velocity is about 1.4 knots. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(263)

Pilotage, Yaquina Bay

(264) Pilotage is compulsory for all foreign vessels and U.S. vessels under register. Pilotage is optional for U.S. vessels in the coastwise trade that have onboard a pilot licensed by the federal government for these waters. Pilotage for Yaquina Bay is available from Coos Bay Pilots Association. See Pilotage, Coos Bay, indexed as such, earlier this chapter for details.

(265) Pilots usually board vessels about 0.5 mile west of Yaquina Bay Approach Lighted Whistle Buoy Y (44°35'52"N., 124°06'47"W.).

(266)

Towage

(267) Tugs are available from Toledo and Coos Bay.

(268)

Quarantine, customs, immigration and agricultural quarantine

(269) Newport is a customs port of entry. (See Vessel Arrival Inspections, chapter 3.)

(270) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(271)

Wharves

(272) There are two deep-draft wharves in Yaquina Bay. The wharf at McLean Point about 1 mile east of the highway bridge has two berths. Berth 1, just north of the turning basin, has 465 feet of berthing space, 30 to 32 feet reported alongside and a deck height of 21 feet. Berth 1 was reported under construction until June 2011. Berth 2 (barge dock), just northeast of the turning basin, has 250 feet of berthing space, 25 feet reported alongside and a deck height of 15 feet. A concrete Ro/Ro extension connected to Berth 2 has 140 feet of berthing space in line with Berth 1, 30 feet reported alongside, and a deck height of 14 feet. Logs, lumber, plywood, and paper are shipped from both berths. The wharf is owned and operated by the Port of Newport.

(273)

Small-craft facilities

(274) The Port of Newport operates a boat basin on the south side of the bay about 350 yards east of the bridge. The basin is protected to the north and west by jetties marked on the outer ends by a daybeacon and a light, respectively. A dredged entrance channel leads through the jetties, thence south along the west jetty turning east at the foot and terminating at a boat ramp at the head of the boat basin. In 2008, the controlling depth was 6 feet. Gasoline berths, diesel fuel, electricity, water, ice and a pumpout facility are available. Hull, engine and shaft repairs can be made. Facilities can be contacted on VHF-FM channel 12 by hailing the Port of Newport South. The Port of Newport Internet address is *portofnewport.com*.

(275) The Port of Newport operates a commercial moorage on the north shore about 0.7 mile above the highway bridge; a marina is also in this area. The moorage area is protected from the main channel by a detached breakwater marked by a light at each end. Berths for about 206 vessels, gasoline, diesel fuel, electricity and water are available; marine supplies can be obtained in Newport. The marina can be contacted on VHF-FM channel 12 by hailing "Port of Newport North." A marine repair facility is just north of **Oneatta Point**, 3.8 miles above the highway bridge at the entrance to the bay. The facility has two travel lifts, one 15-ton and one 70-ton, and two 60-ton cranes.

(276)

Communication

(277) Communication is by highway and air. The municipal airport is about 4 miles south of Newport. A

U.S. highway extends north and south along the coast, and a state highway leads to the interior.

(278) **Yaquina** is a small settlement 4.2 miles above the entrance. A power cable across Yaquina River, 0.5 mile above Yaquina, has a clearance of 77 feet. At Yaquina, there is moorage and a 6,000 pound hoist. Fuel and supplies can be purchased. Several small marinas are along the river between Newport and Toledo. (See Newport small-craft facilities description.)

(279) **Toledo**, about 11.5 miles above the entrance, has large lumbermills and a papermill. The least depths alongside the wharves are 10 feet. Toledo also has a moorage capability for about 20 boats 65 feet or less. There is access to a 40-ton travel lift and a 300-ton marine dry dock. The fixed highway bridge, 0.5 mile above Toledo, has a clearance of 34 feet. An overhead pipeline with a clearance of 54 feet crosses **Depot Slough** just above the mouth. Overhead pipelines 0.3 mile above the mouth of the slough have a clearance of 18 feet.

(280)

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(281) From Yaquina Head to the mouth of Columbia River, the coast is fairly straight. The headlands are Cape Foulweather, Cascade Head, Cape Lookout, Cape Meares, Cape Falcon and Tillamook Head. The 30-fathom curve follows the general trend of the coast about 3.5 miles offshore, without indicating the several headlands. When about opposite Tillamook Head, the curve swings west and is about 7.5 miles off the end of Clatsop Spit.

(282)

Iron Mountain to Depoe Bay

(283) From Yaquina Head for 5.5 miles to Cape Foulweather, the coast consists of yellow and white sandstone cliffs, low and broken. **Iron Mountain**, 1.5 miles northeast of Yaquina Head Light, is a 654-foot-high hill. When viewed from the south, the highest third of the hill is bare and composed of a red rock formation; the north side and lower part of the hill are covered with thick brush.

(284) A low flat rock, 8 feet high, is 0.4 mile offshore 2.8 miles north of Yaquina Head.

(285) **Otter Rock**, 11 feet high, is 3.2 miles north of Yaquina Head and 0.6 mile offshore. **Gull Rock**, 56 feet high, is 1.2 miles north of Otter Rock and 0.4 mile offshore. In line between the two rocks is a kelp field with several rocks, covered and awash. Covered rocks that break are 0.5 to 1 mile north of Gull Rock.

(286) **Cape Foulweather** is a prominent headland with about 6 miles of seaward face consisting of rocky cliffs over 60 feet high. The cape is formed by several grass-covered headlands, separated by densely wooded gulches. Near the middle of the cape is a strip of flat land, 0.5 mile long and 0.2 mile wide, bare of trees. The highest point of the cape is near the south part. A grassy patch is conspicuous on the southwest slope. A white building with a red roof, 0.7 mile north-northeast of Gull Rock, is prominent on the high bluff just south of Cape Foulweather. About 0.9 mile southeast of the extreme west point of the cape is a rocky point 445 feet high, and east of the point the hills rise to 1,100 feet in 0.6 mile. Dangers extend for nearly 2 miles north of the north point of Cape Foulweather and about 600 yards offshore.

(287) The coast highway follows the shoreline closely at Cape Foulweather.

(288) **Depoe Bay**, 8 miles north of Yaquina Head, has one of the best small-boat shelters along this part of the coast. The bay proper has foul ground on both the north and south sides, but the channel leading to the narrow dredged channel to the inner basin is deep and well marked. The foul areas break in moderate seas and are marked by kelp. Prominent from seaward is the concrete arch bridge over the entrance to the basin. A lighted whistle buoy is 1.1 miles west of the entrance to the bay. A lighted bell buoy and **086.2°** lighted range mark the entrance to the bay and the approach to the dredged channel to the basin. A mariner-radio-activated sound signal, located on the south side of the entrance is about 50 yards southwest of the bridge and is initiated by keying the microphone five times on VHF-FM channel 83A.

(289)

COLREGS Demarcation Lines

(290) The lines established for Depoe Bay are described in **33 CFR 80.1345**, chapter 2.

(291)

Regulated Navigation Area

(292) A regulated navigation area surrounds the entrance of Depoe Bay. See **33 CFR 165.1** through **165.13** and **165.1325**, chapter 2, for limits and regulations.

(293) The fixed concrete arched bridge over the entrance is unusual in that its width of 30 feet is less than the clearance of 42 feet. The navigator is cautioned against the dangerous surge in the narrow entrance to the basin. Boats over 50 feet long cannot enter the basin without a special waiver from the harbormaster, and then only at high water. The entrance should not be attempted at night or in rough weather without local knowledge. **Depoe Bay Coast Guard Station**, at the inner basin, monitors VHF-FM channel 16 or may be contacted at 541–765–2123.

(294)

Coast Guard

(295) The Coast Guard has established Depoe Bay Regulated Navigation Area Warning Sign, a **rough bar advisory sign**, 25 feet above the water, visible from the channel looking seaward, on a building on the north side of the basin entrance channel, to promote safety for small-boat operators. The sign is diamond-shaped and painted white with an international orange border and with the words "**Rough Bar**" in black letters. The sign is equipped with two quick flashing amber lights that will be activated when hazardous conditions exist and the bar is restricted to recreational and uninspected passenger vessels. Boaters are cautioned, however, that if the lights

are not flashing, it is no guarantee that sea conditions are favorable.

(296) A **heavy weather flag**, a square RED flag with a square BLACK center, will be displayed on a pole that is located approximately 50 yards north of the bridge across the entrance to Depoe Bay, on the west side of highway 101, to indicate that winds 48 knots and above are forecast for the area. Display of flags are required from one hour before sunrise to one hour after sunset. Weather flags are flown at select Coast Guard stations to supplement other weather notification sources. Light signals corresponding to these flags are not displayed at night. (See illustration, chapter 1.) In all cases mariners should rely upon National Weather Service broadcasts as their primary source of government-provided weather information.

(297) The town of **Depoe Bay** is on the north side of the basin. The basin has a concrete bulkhead, mooring floats and a tidal grid for minor hull repair work. Also available are berths with electricity, gasoline, diesel fuel, water, ice, launching ramp and marine supplies. Hull and engine repairs can be made.

(298)

Siletz Bay to Netarts Bay

(299) From Cape Foulweather for 9.5 miles to the entrance of Siletz Bay, the coast continues as yellow broken bluffs, 40 to 100 feet high, bordered by about 3 miles of sandy beaches. From the north point of the bluffs to the bay entrance are sand dunes covered with low brush.

(300) The entrance to **Siletz Bay** is 15 miles north of Yaquina Head. The entrance channel is subject to frequent change, and drafts of 4 or 5 feet are considered the deepest that can be safely taken in at high water.

(301)

Regulated Navigation Area

(302) A regulated navigation area surrounds the entrance of Siletz Bay. See **33 CFR 165.1** through **165.13** and **165.1325**, chapter 2, for limits and regulations.

(303) The north point at the entrance is a low bluff with a narrow sand beach. The south point is a low sandspit about 250 yards wide. The dunes on the spit are thinly wooded near the shore but become thickly wooded inland. Several houses are on the spit. The bay inside the entrance is shoal. **Siletz River** enters the bay at the southeast end.

(304) **Taft** and **Cutler City** are communities on the bay; both are parts of **Lincoln City**, which is 1.8 miles north. There are several marinas on the bay; a facility just above the highway bridge at the mouth of Siletz River has gasoline, water, ice, a launching ramp and some marine supplies. Outboard engine repairs can be made here. The highway bridge just below the marina has a clearance of 31 feet.

(305) From Siletz Bay the coast extends 7 miles north to the Salmon River. For 2.5 miles of this stretch to the outlet of **Devils Lake**, the yellow standstone cliffs are 80 to 100 feet high. The lake is a large body of freshwater, 10 feet above sea level, that empties through a narrow stream. At 0.5 mile west-southwest of the mouth of the stream is a covered rock that generally breaks. For 3 miles north from the outlet of the lake, the bluffs are 20 to 60 feet high, rising to grassy hills. A broad beach and ledges of rocks are along the shore.

(306) **Salmon River** empties at the south extremity of Cascade Head; the entrance is nearly closed by sandbars.

(307) Immediately south of Salmon River is a rocky cliff whose seaward face is 0.6 mile long. The summit is a dome-shaped butte 510 feet high. From here a rolling grassy plateau with a few trees extends south and east to the river. A rock, 46 feet high, is 700 yards west of this cliff, and about a mile south is a covered rock 630 yards off the beach. Immediately south of and in line with Cascade Head, opposite the mouth of the river, are three grayish rocks about 765 yards offshore. These have heights of 56 feet on the north, 25 feet in the center and 47 feet on the south.

(308) **Cascade Head**, 23 miles north of Yaquina Head, is very jagged and heavily wooded. The face of the cliff is 3 miles long, is over 700 feet high in places, and is cut by several deep gorges through which the waters of three creeks are discharged in cascades 60 to 80 feet high. Several rocks are about 0.1 mile offshore.

(309) **Two Arches**, 30 feet high, is a rock 0.9 mile north of the south point of Cascade Head. The arches are visible from north; the inner is the larger.

(310) From Cascade Head for 9.5 miles to Cape Kiwanda, the coast is a low sand beach with a narrow marsh behind the south part. Rolling hilltops, occasionally wooded, rise to an elevation of 500 feet behind the beach.

(311) **Neskowin Rock**, at the high-water line about 0.3 mile north of the north extremity of the cliffs marking Cascade Head, rises abruptly from the sand beach to 113 feet in height. The rock is dark brown and wooded on top.

(312) North of Neskowin Rock the Oregon Coast Highway is about 0.5 mile inland. At night the headlights of automobiles traveling this road cause intermittent flashes as they make the turns and might be mistaken for lights of vessels.

(313) **Nestucca River** empties into **Nestucca Bay** 5.5 miles north of Cascade Head. The channel over the bar changes frequently in position and depth, and only light-draft vessels having local knowledge are able to cross. A fixed highway bridge at Pacific City has a clearance of 10 feet. The river has many snags that change the depths and shift the channel. Even in a moderate sea, the bar is extremely dangerous. The point on the first side of the entrance consists of several low-rolling, grassy hillocks, about 400 to 500 feet high, which approach very close to the beach. The north point is the south extremity of the sandspit and dunes that extend to Cape Kiwanda.

(314) **Pacific City** is a summer resort about 3 miles above the entrance to Nestucca Bay. Gasoline and supplies are available in the community.

(315) **Haystack Rock**, 327 feet high, 0.5 mile southwest of Cape Kiwanda and 0.5 mile offshore, is a prominent

landmark. The rock is conical and dark for about half its height, and in summer the top is whitened by bird droppings.

(316) **Cape Kiwanda**, 33 miles north of Yaquina Head, is a low yellow rocky point, much broken and eroded, that projects about 0.5 mile from the general trend of the coast. Behind the cape are bright sand dunes, 500 feet high, which are prominent from seaward. Just south of Cape Kiwanda is a beach resort area; a public launching ramp is here. A whistle buoy is about 0.7 mile west of the cape.

(317) From Cape Kiwanda the coast extends 7.5 miles in a general north direction to Cape Lookout. It is broken about halfway by the entrance to **Sand Lake**, which is shallow and not navigable. The coast consists of sand beaches and dunes until about a mile north of Sand Lake where it changes to vertical sandstone cliffs, 50 to 100 feet high. These continue to Cape Lookout.

(318) **Cape Lookout**, 40 miles north of Yaquina Head, projects west for 1.5 miles, forming a narrow rocky promontory 432 feet in height at its seaward extremity. The south face is nearly straight, and its precipitous cliffs have numerous caves. The north face is sloping and covered with a thick growth of timber. The ridge that forms the cape runs at about right angles to the coast, reaching an elevation of some 2,000 feet, 3.8 miles inland. The north face of the cape is smooth and bold for the first mile and then is much broken and marked by caves and several cascades. Fair shelter in northwest winds may be had under the south side of the cape in 6 to 8 fathoms, sandy bottom.

(319) North of Cape Lookout for 4.5 miles, the land falls to a low narrow sandy peninsula, separating Netarts Bay from the ocean. The sand dunes on the peninsula are visible for 10 or 12 miles.

(320) **Netarts Bay** is a shallow lagoon, most of which is bare at low water. The village of **Netarts** is on the North shore a mile inside the entrance. Only light-draft boats with local knowledge can enter. A small-boat basin with two floating piers and a launching ramp are at Netarts. North of the entrance to Netarts Bay, for 1.5 miles to the rocks forming the south part of Cape Meares, the coast is a sandy beach, backed by cliffs 50 to 120 feet high. These cliffs, topped by sand dunes varying in height from 150 to 200 feet, are good landmarks.

(321)

COLREGS Demarcation Lines

(322) The lines established for Netarts Bay are described in **33 CFR 80.1350**, chapter 2.

(323)

Regulated Navigation Area

(324) A regulated navigation area surrounds the entrance of Netarts Bay. See **33 CFR 165.1** through **165.13** and **165.1325**, chapter 2, for limits and regulations.

(325)

Cape Meares to Tillamook

(326) **Cape Meares**, 48 miles north of Yaquina Head, is high and rocky, with a 2-mile-long seaward face. The north part is the higher, with nearly vertical cliffs 640 feet high. The west point is narrow, covered with fern and brush, and terminates seaward in a cliff 200 feet high.

(327) **Three Arch Rocks** are the largest of a cluster extending 350 yards off the south point of the cape. They range in height from 204 to 275 feet. The largest arch is in the middle of the lowest rock and is about half the height of the rock above water. These rocks are the favorite resort of sea lions, whose barking can be heard a considerable distance with a favorable wind.

(328) **Pillar Rock** (45°29'22"N., 123°58'49"W.) lies off Cape Meares and is 75 feet high. **Pyramid Rock**, 0.4 mile northwest of Pillar Rock, is 110 feet high and leans seaward. A submerged rock covered 34 feet, lies 0.4 mile northwest of Pyramid Rock.

(329) From Cape Meares to Kincheloe Point, the coast is a low partly wooded sandspit, with dunes 40 to 50 feet high. It forms the west shore of Tillamook Bay. A sand dike prevents a breakthrough north of Cape Meares, at **Pitcher Point**.

(330) **Tillamook Bay** entrance is 42 miles south of the Columbia River, 25.5 miles south of Tillamook Rock, and 5 miles north of Cape Meares. The bay has a tidal area of about 13 square miles, most of which, at low tide, presents a succession of sand and mud flats. There is no commercial traffic in the bay except for fishing boats and pleasure craft.

(331) **Kincheloe Point** is low and sandy and appears to be an island from a distance to the north. The north side of the entrance is the termination of a high wooded ridge extending between the bay and Nehalem River. **Green Hill**, opposite Kincheloe Point, is a 400-foot spur that terminates in a bluff rounded point. The prominent hill is covered by ferns, grass and dense brush with trees on top.

(332) **Tillamook Bay Coast Guard Station** is on the north shore west of Garibaldi. A lookout tower is near the intersection of the north entrance jetty and the shore.

(333)

COLREGS Demarcation Lines

(334) The lines established for Tillamook Bay are described in **33 CFR 80.1355**, chapter 2.

(335)

Regulated Navigation Area

(336) A regulated navigation area surrounds the entrance of Tillamook Bay and extends into the entrance to Kincheloe Point. See **33 CFR 165.1** through **165.13** and **165.1325**, chapter 2, for limits and regulations.

(337) The entrance to Tillamook Bay is protected by jetties. The north jetty extends about 600 yards offshore; the westernmost 150 yards of the jetty is submerged. The south jetty extends 1,000 yards offshore with the westernmost 100 yards submerged. Extreme caution

should be taken in the vicinity of the jetties. A **federal project** provides for an 18-foot entrance channel that crosses the bar and leads eastward between the jetties through the north part of Tillamook Bay to an inactive turning basin just west of Miami Cove. An access channel leads to a 12-foot small boat basin at the town of Garibaldi. (See Notice to Mariners and latest editions of charts for controlling depths.)

(338) The main approach to Tillamook Bay is from the north. A lighted whistle buoy is 1.5 miles north-northwest of the seaward end of the north jetty, and a lighted buoy is near the entrance. The north jetty is marked by a light and seasonal sound signal. There is a sector light marking the center of the jetties that signals when the mariner is clear of the south jetty and safe to make the approach into the bay. The arcs of the sector light are red visible from 092.5° to 094.0°, white visible from 091.5° to 092.5° and green visible from 090°to 091.5°. Mariners should use caution while making the approach to the jetties due to frequent shoaling and heavy breakers in the vicinity of the approach channel. The channel to Garibaldi is marked by lights. Caution is advised during periods of heavy seas.

(339) Several visible and covered rocks are on the north side of the dredged channel. **Sow and Pigs**, across the channel from Kincheloe Point and nearly 500 yards off the north shore, is a rocky ledge that uncovers 1 to 6 feet. The ledge is dangerous when entering with a flood current, as the current sets toward it.

(340)

Currents

(341) The current velocity is 3 knots in the entrance to Tillamook Bay.

(342)

Coast Guard

(343) The Coast Guard has established Tillamook Bay Regulated Navigation Area Warning Sign, a **rough bar advisory sign**, on the north side of the entrance channel near the lookout tower, visible from the channel, to promote safety for small-boat operators. The sign is diamond-shaped and painted white with an international orange border and with the words *rough bar* in black letters. The sign is equipped with two quick flashing amber lights that will be activated when hazardous conditions exist and the bar is restricted to recreational and uninspected passenger vessels. There is also a regulated navigation area warning sign on the north side of the channel near the entrance to Garibaldi boat Basin with similar characteristics. Boaters are cautioned that if the lights are not flashing, it is no guarantee that sea conditions are favorable.

(344) **Garibaldi**, a lumber and fishing town, is on the north shore 2 miles inside the entrance. A grey concrete stack and a silver elevated tank are conspicuous. There are several small fish companies at Garibaldi.

(345) The town has a boat basin for commercial and sport fishing vessels. Berths for about 250 craft, electricity, gasoline, diesel fuel, water, ice, a launching ramp and marine supplies are available at the basin. A drydock in the basin can handle craft to 100 tons, 68 feet long, or up to 9 feet in. draft. Repair work must be arranged for independently of the drydock operator; complete marine repairs can be made.

(346) South of Garibaldi, unmarked **Bay City Channel** follows the east side of Tillamook Bay to the south end where it continues through narrow and crooked **Hoquarten Slough** to Tillamook, 11 miles above Tillamook Bay entrance. The channel has a depth of about 6 feet to Bay City, 4.4 miles above Tillamook Bay entrance, but south of this point depths are less than 3 feet to Tillamook. During freshets, snags are carried into the upper part of the bay where they form a menace to navigation.

(347) **Bay City** has a small oyster cannery on an earth-fill pier. Fishing and crabbing are carried on in the vicinity, but all shipments are made by truck or rail.

(348) **Tillamook** is noted for the production of cheese. It is the distributing center for a rich farming and dairying section.

(349) **Tillamook River** empties into the south part of Tillamook Bay just west of the entrance to Hoquarten Slough. A fixed highway bridge with a clearance of 15 feet crosses the river about 0.7 mile above the mouth. A small marina is just south of the bridge on the west bank of **Trask River**, just inside the mouth; berths with electricity, water, ice, gasoline, a launching ramp and marine supplies are available. Outboard engine repairs can be made. This marina is open only during the summer. Depths of about 2 feet can be carried in Tillamook River to the highway bridge. Wet and dry winter boat storage is available at the marina.

(350)

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(351) From Tillamook Bay to Nehalem River, the coast is nearly straight for about 5 miles. Several lakes in this stretch are separated from the beach by wooded sand dunes. The heavily wooded hills begin to rise 0.5 mile to 0.8 mile from the beach and in 1 mile reach elevations of 1,000 to 1,600 feet.

(352) **Twin Rocks** are 700 yards offshore and 2 miles north of the entrance to Tillamook Bay. Their bases are so close together that they usually look like one rock. The south and larger has an arch in it.

(353)

Nehalem River

(354) **Nehalem River**, 5 miles north of Tillamook Bay entrance, is tidal for about 10 miles from the entrance. Above this point the river is a mountain stream full of riffles and obstructed by boulders. The river constitutes a natural outlet for an extensive area of heavily timbered country. Lumbering and fishing are the principal industries. Sawmills are along the lower river.

(355)

COLREGS Demarcation Lines

(356) The lines established for the Nehalem River are described in **33 CFR 80.1360**, chapter 2.

(357)

Regulated Navigation Area

(358) A regulated navigation area surrounds the entrance of Nehalem River. See **33 CFR 165.1** through **165.13** and **165.1325**, chapter 2, for limits and regulations.

(359) **Nehalem Beach**, the north point at the entrance, is a narrow sandspit, bare of trees, and with dunes of moderate elevation over the north part. The south side of the entrance is a low broad sand beach, backed by wooded country rising to elevations of 400 feet.

(360) The entrance is protected by jetties extending 600 yards from the shoreline, though there are a number of breaks in the jetties. A private range marks the entrance channel. Mariners are advised to seek local knowledge before using the entrance channel because of seasonal changes.

(361) The depths on the bar and within the bay are not sufficient for coastwise shipping. The controlling depth is about 4 feet on the bar and 3 to 8 feet to Wheeler. The channel is changeable.

(362) A marina is on the east side of the river just inside the entrance. Berths with electricity, gasoline, water, ice, launching ramp and marine supplies are available. Engine repairs can be made; wet winter boat storage is also available.

(363) **Brighton** is a small settlement on the east shore, 1 mile inside the entrance to the river. A marina is at Brighton. Berths with electricity, gasoline, water, ice and a launching ramp is at the marina. Dry winter storage and engine repairs are available. **Wheeler**, 4.7 miles above the entrance, has an abandoned sawmill, a launching ramp and wharf in ruins. All traffic is by truck.

(364) **Nehalem** is a small settlement on the west shore of the river, 6.3 miles above the entrance. A fixed highway bridge over the river just below Nehalem has a clearance of 30 feet. Close north of this bridge is an overhead power cable with a clearance of 52 feet. A surfaced launching ramp is on the east side of the river about 0.1 mile below the highway bridge.

(365)

Cape Falcon to Saddle Mountain

(366) The coast is low and sandy for about 3 miles north of Nehalem River entrance, then a dense forest begins that rises gradually to the south slope of Neahkahnie Mountain. There are grassy hillocks, 40 to 100 feet high, in the vicinity of the beach.

(367) **Cape Falcon**, 17 miles north of Cape Meares and 10 miles south of Tillamook Rock, projects about 2 miles from the general trend of the coast. The seaward face, less than 0.5 mile in extent, is very jagged with numerous rocks under the cliffs. The southwest point of the cape is composed of nearly vertical cliffs, 200 feet high, and is partially timbered. **Falcon Rock**, 0.7 mile west of the cape, is small and not very conspicuous.

(368) **Smuggler Cove**, a small bight just south of Cape Falcon, is an excellent anchorage for small boats. The best anchorage is close to the north shore in 4 to 5 fathoms, protected from all except southwest winds. Care should be taken to avoid two rocks, bare at extreme low water, that are about 150 yards from the north shore of the cove and rise abruptly from deep water.

(369) **Neahkahnie Mountain**, 2.8 miles inland of Cape Falcon, is a prominent landmark and the most important feature for locating Nehalem River. The west summit of the double-headed mountain is rounded and 1,900 feet high, but the east summit is serrated and divided into three peaks of nearly equal height. The entire southeast slope is bare of timber but is covered with grass and fern. The seaward face terminates in rocky broken cliffs over 500 feet high, and there are a few rocks about 100 feet from the beach. The two summits are visible from south; from north, the west summit hides the east and is very conspicuous.

(370) Northeast of Cape Falcon, and 2 to 3 miles back from the shoreline, is a group of peaks; the highest and most prominent has a rounded summit, with a very gentle slope to the south and a more marked and abrupt drop to the north. It is very conspicuous from west in clear weather.

(371) **Arch Cape**, rocky and precipitous, projects slightly from the general trend of the coast. It is the termination of a mountain ridge rising to 2,775 feet about 3 miles east. The cape is bare of timber. A high rock is close to the cape and connected with it at low water. A smaller rock is about 100 yards seaward of the larger. There are several other high rocks in the vicinity of the cape.

(372) **Castle Rock** derives its name from its remarkable resemblance to a medieval castle with two towers, the taller of which is on the seaward end. It is about 0.8 mile west of the highest part of Arch Cape and is the outermost bare rock. The upper part of the rock is covered with bird droppings and shows up very distinctly in sunlight. A rock awash is about 0.9 mile off the cape and 0.4 mile southwest of Castle Rock; another rock, bare at lowest tides, is 0.5 mile offshore and 1 mile south of Castle Rock.

(373) **Hug Point** is a small cliff close to the beach, 1.8 miles north of Arch Cape; the cliffs in its vicinity are above 180 feet high.

(374) **Double Peak**, halfway between Cape Falcon and Tillamook Head, is the seaward end of a ridge extending east that reaches a height of 1,050 feet in less than 0.7 mile from the shore. It is heavily wooded and pitches abruptly to the sea, ending in a rocky broken cliff 100 feet high and 0.2 mile long. A rock is close to and abreast of the south end of the cliff; another rock is close to and abreast the north end. A ledge, with two rocks that uncover about 4 feet, is about a mile west-southwest of the highest part of the cliff.

(375) From Double Peak, the coast extends north for 2.7 miles to the mouth of **Ecola Creek**, and then turns sharply northwest for the same distance to the west point

of Tillamook Head. The coast is high and wooded with broken cliffs bordered by numerous rocks, except at Cannon Beach at the mouth of Ecola Creek.

(376) **Haystack Rock**, 1.5 miles north of Double Peak, is the largest of a cluster of rocks stretching out from the low-water line to 10 fathoms. A rock awash at low water and surrounded by about 9 fathoms is 0.8 mile southwest of Haystack Rock.

(377) **Tillamook Head**, 76 miles north of Yaquina Head, ends in two points that are 0.5 mile apart. The cliffs are 560 feet high at the south point and 1,000 feet high at the north point. A pinnacle rock is at the foot of the north cliffs, and extending offshore from it for 300 yards is a cluster of rocks, 45 to 150 feet high, the outer one being the lowest. The summit of the head is flat and densely wooded, with slightly lower land behind it.

(378) **Tillamook Rock**, nearly 1.2 miles west of the south point of Tillamook Head, has an abandoned lighthouse and buildings on it. The west face leans a little seaward. A rock awash is between Tillamook Rock and the nearest part of Tillamook Head.

(379) North of Tillamook Head the coast is a broad sand beach extending for 17 miles to Clatsop Spit, on the south side of the entrance to Columbia River. Low sandy ridges, covered with grass, fern and brush, extend parallel with and back of the beach. **Necanicum River**, a small stream, empties at the summer resort of **Seaside**, 2.5 miles from the north side of Tillamook Head.

(380)

Danger Zone

(381) A danger zone extends seaward from the shore of Clatsop Spit, north of Necanicum River. **See 33 CFR 334.1** through **334.6** and **334.1175**, chapter 2, for limits and regulations.

(382) **Saddle Mountain**, double-headed and 3,283 feet high, is the landfall for the approach to the Columbia River. The mountain is 14 miles east of Tillamook Rock and is visible 50 miles offshore. From northwest, the mountain appears to be triple-headed; the northeast peak appears cone shaped, sharp, and lowest; the middle peak is irregularly cone shaped; and the south and highest peak is a flat-topped cone.

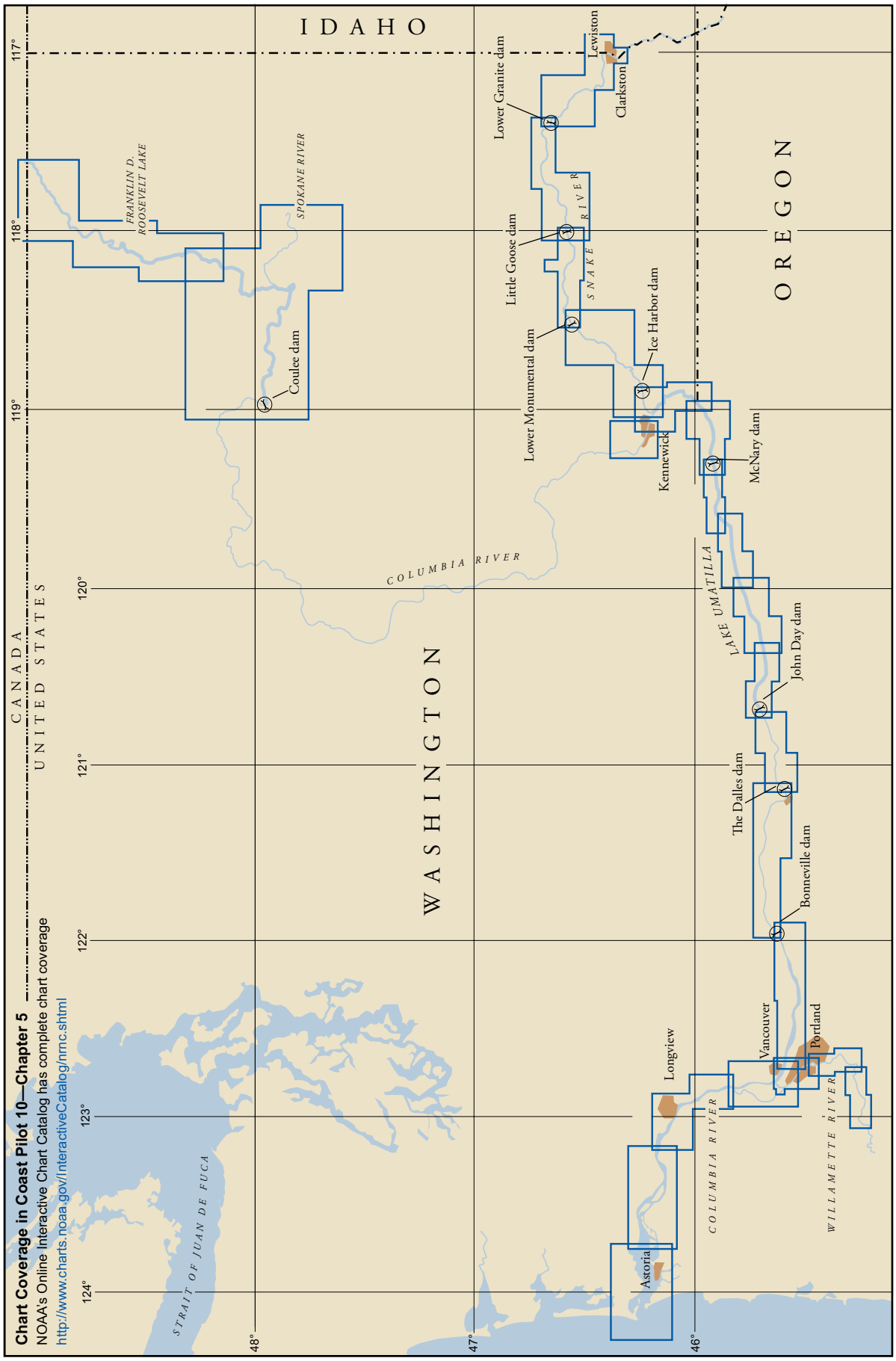
Chart Coverage in Coast Pilot 10—Chapter 5
NOAA's Online Interactive Chart Catalog has complete chart coverage
http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml
CANADA
UNITED STATES
IDAHO
WASHINGTON
OREGON
FRANKLIN D. ROOSEVELT LAKE
SPOKANE RIVER
COLUMBIA RIVER
SNAKE RIVER
LAKE UMATILLA
COLUMBIA RIVER
WILLAMETTE RIVER
STRAIT OF JUAN DE FUCA
Coulee dam
Lower Granite dam
Little Goose dam
Lower Monumental dam
Ice Harbor dam
McNary dam
John Day dam
The Dalles dam
Bonneville dam
Lewiston
Clarkston
Kennewick
Longview
Vancouver
Portland
Astoria
117°
118°
119°
120°
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122°
123°
124°
48°
47°
46°

Columbia River, Oregon and Washington

(1) This chapter describes the Columbia River from its mouth at the Pacific Ocean to the head of navigation above Richland, WA. Also described are its two major tributaries, the Willamette River in Oregon and the Snake River in Washington and Idaho. The deep-draft ports of Astoria, Longview, Portland and Vancouver are described as well as many smaller ports.

(2) **Note:** The nautical charts covering the Columbia, Willamette, and Snake Rivers show statute mile designations. However, the **distances** given in the text for these waterways are the **nautical miles** above their respective mouths with the statute mile equivalents shown in parentheses. Unless otherwise indicated, all other distances are given in nautical miles.

(3) **Mile 0.0**, on the Columbia River, is at the junction of the Main Channel Range and a line joining the outer ends of the jetties. The distance to the mouth of the Columbia River from a position 0.5 mile west of the Columbia River Approach Lighted Whistle Buoy CR is 5.8 (6.6) miles.

(4) A table to aid in converting nautical miles to statute miles/statute miles to nautical miles can be found at the end of chapter 1.

(5)

COLREGS Demarcation Lines

(6) The lines established for the Columbia River are described in **33 CFR 80.1365**, chapter 2.

(7)

Caution

(8) The volcanic eruptions of Mount Saint Helens in mid-1980 caused extensive flooding with resulting heavy siltation in the lower Columbia River. Large amounts of mud, logs and other debris entered Columbia River from Cowlitz River, just east of Longview at Mile 59 (68). In late 1980, dredging was done in the aforementioned area; however, mariners are advised to use caution in the Columbia River and its tributaries. Self-propelled hopper dredges, dredge barges and pipeline dredges may be encountered throughout the transit from sea to Bonneville Dam. Mariners should contact these vessels on VHF-FM channel 13 to make passing arrangements and navigate with due caution through these areas.

(9) Rice Island, Miller Sands, Jim Crow Sands and Cottonwood Islands are used for dredging disposal sites. Elevations of these islands constantly change, as well as the overall shape and dimensions.

(10)

Columbia River

(11) **Columbia River** rises in British Columbia, Canada, through which it flows for some 370 (425) miles before entering the continental United States in northeast Washington. Thence it flows south to its junction with Snake River, from which it curves west and forms the boundary between the States of Washington and Oregon for the remainder of its course to the Pacific Ocean. Its entrance is 548 miles north of San Francisco and 145 miles south of the Strait of Juan de Fuca. The length of the river is 647 (745) miles in the United States. Between the Cascade Mountains, the river flows through a canyon averaging about 5 miles wide between high cliffs on each side; of this width, the river occupies about 1 mile, the rest being marsh, low islands and lowlands. Near the mouth, the river becomes wider and in some places is 5 miles across.

(12) Columbia and Willamette Rivers are navigable by deep-draft vessels to Vancouver, WA, and Portland, OR. Barges navigate the Columbia River to Pasco and Kennewick, WA, 286 (329) miles above the mouth.

(13) Navigation on the tributary Snake River, which joins the Columbia at Pasco, is possible to Lewiston, Idaho. The hydroelectric power plants at the dams on the Columbia provide the major supply of electricity for the entire Northwest.

(14) The commerce, both foreign and domestic, is extensive. The exports are principally logs, lumber and forest products, grain, flour, chemicals, fruit, fish, general and containerized cargo and general merchandise; the imports are coal, petroleum products, bulk salt, bulk cement, alumina, and general and containerized cargo.

(15) There are numerous settlements and landings, but Astoria, OR; Longview, WA; Vancouver, WA; and Portland, OR, are the principal shipping points. The distances above the mouth of the Columbia River to these ports are, respectively, 12 (14) miles, 58 (66) miles, 92 (106) miles, and 97 (112) miles; Portland is on the Willamette River 9 (10.5) miles above its junction with the Columbia. The Columbia River has major highways (state, U.S. and interstate) on the south and north sides connecting principal cities and the towns in between.

(16)

Prominent features

(17) **Columbia River Approach Lighted Whistle Buoy CR** (46°11'06"N., 124°11'01"W.), about 5.3 miles

(20)

Washington State Requirements—Reporting Oil Spills and Vessel Emergencies
All vessels must report oil spills or potential oil spills to both Washinton State (800–258–5990) and the National Response Center (800–424–8802). Tank vessels and cargo and passenger ships 300 gross tons or larger must make notifications to Washington State for vessel emergencies, including a loss or serious degradation of propulsion, steering, means of navigation, electrical generating capability and seakeeping capability constituting a substantial threat of pollution affecting Washington state natural resources. In addition to any notifications to the USCG, the owner or operator must notify the state of any vessel emergency that results in the discharge or substantial threat of a discharge of oil to state waters or that may affect the natural resources of the state within one hour of the onset of the emergency.

Washington State Vessel Inspections
The Washington State Department of Ecology regulates cargo and passenger vessels and tank vessels operating in Washington waters. A cargo vessel is any self-propelled vessel in commerce that is 300 gross tons or more. A passenger vessel is any vessel 300 gross tons or more with a fuel capacity of at least 6,000 gallons that carries passengers for compensation. A tank vessel is a ship that is constructed or adapted to carry, or that carries, oil in bulk as cargo or cargo residue. Washington State Ecology inspectors may conduct vessel inspections on regulated cargo, passenger, and fishing vessels when in Washington waters. Additional information—
www.ecology.wa.gov/regulations-permits/guidance-technical-assistance/guidance-for-oil-industry/vessel-information.

Oil Transfer Requirements
Safe bunkering procedures must be followed during fueling operations. For vessels 300 gross tons or greater, Washington State Ecology inspectors may conduct inspections of these regulated oil transfers on vessels receiving fuel for propulsion within Washington waters. Details can be found in state regulations at Washington Administrative Code (WAC) 317-40. Additional information—
www.ecology.wa.gov/regulations-permits/guidance-technical-assistance/requirements-for-bunkering.

Tank vessels delivering oil in bulk to a non-recreational vessel or facility within Washington waters must meet state oil transfer requirements. They may also be subject to Washington State oil transfer inspections for these regulated oil transfers. Details can be found in WAC 173-184. Additional information—
www.ecology.wa.gov/regulations-permits/compliance-enforcement/oil-transfers.

For a transfer of more than 100 gallons of bulk oil to a facility or non-recreational vessel, the delivering vessel must submit an Advance Notice of Transfer (ANT) report to Ecology. This ANT must be submitted 24 hours prior to the transfer for facilities or within the timeframe required by local USCG Captain of the Port. The ANT report can be made either: online using the State website at: *https://secureaccess.wa.gov/ecy/ants*, by e-mail to *OilTransferNotifications@ecy.wa.gov*, or by fax to 360–407–7288 or 800–664–9184.

Contingency Plan Requirements
Tank vessels and cargo and passenger ships 300 gross tons or larger transiting Washington waters must either have a Washington State Department of Ecology approved oil spill contingency plan or be a member of a non-profit cooperative that provides oil spill response capabilities consistent with their Washington State approved contingency plan. The non-profit cooperative for the Columbia River is the Maritime Fire & Safety Association (MFSA) and for Puget Sound and Grays Harbor is Washington State Maritime Cooperative. Also available is the National Response Corporation, a multiple vessel plan. Additional information—
www.ecology.wa.gov/regulations-permits/plans-policies/contingency-planning-for-oil-industry.

southwest of the entrance to Columbia River, has red and white stripes.

(18) **Mount Saint Helens**, nearly 8,500 feet high with a truncated-cone shape, is about 75 miles east of the entrance to the river. On a clear day it is visible when looking up the valley from seaward. **Mount Hood** and **Mount Adams** are lofty snow-covered peaks, which are also visible from parts of Columbia River on a clear day.

(19) In 1980, several volcanic eruptions occurred from Mount Saint Helens. Mount Saint Helens' eruptions were the first in the continental United States since the volcanic eruption of Mount Lassen in northern California in 1915; both volcanoes are part of the Cascade Range.

(21)

Clatsop Spit to Grays River

(22) **Clatsop Spit** and its northern terminus, **Social Security Beach**, are on the south side of the Columbia River entrance. These areas consist of low sand beachs, extending about 2.5 miles northwest from Point Adams. There is a tendency for shoaling at the beaches to build up to the northwest because of spring freshets and northwest storms; vessels are cautioned to keep informed about conditions at the spit and beach.

(23) **Point Adams**, just inside Clatsop Spit, is a low sandy point covered with spruce and undergrowth to the edge of the sand beach and low dunes. The point usually shows well from seaward, particularly if it is hazy inside.

(24) **Cape Disappointment**, the rugged north point at the Columbia River entrance, is the first major headland along the 20 miles of sand beach north from Tillamook Head. It comprises a group of rounding hills covering an area 2.5 miles long and 1 mile wide, divided by a narrow valley extending north-northwest. The seaward faces of these hills are precipitous cliffs with jagged, rocky points and small strips of sand beach. **Cape Disappointment Light** (46°16'33"N., 124°03'08"W.), 220 feet above the water, is shown from a 53-foot white conical tower with white horizontal band at top and bottom, black horizontal band in the middle and a black cupola with ball topmark, on the south point of the cape. **Cape Disappointment Coast Guard Station** is at Fort Canby on the east side of the cape.

(25) From the south, Cape Disappointment shows as three low knobs, separated by low flat ridges. North Head Light shows on the west slope of the west knob. From the west, the cape is not prominent, but it stands out clearly when there is fog, haze, or smoke inside the cape. From northwest, the cape appears as a flat island with a slight depression in the center and a timbered knob at each end. From this direction, a low, flat hill with gently sloping sides between the cape and high ridges east appears as an island from a distance.

(26) **McKenzie Head**, 0.8 mile northwest of Cape Disappointment Light, is 190 feet high and nearly round. On its seaward face it is covered with grass and fern, bare of trees. On its east face it is heavily wooded with spruce.

(27) **North Head**, the extreme west point of the cape, is 270 feet high, with a very jagged, precipitous cliff, backed by a narrow grassy strip; the higher ground behind it is covered with trees. **North Head Light** (46°17'56"N., 124°04'41"W.), 194 feet above the water, is shown from a white conical tower, with black roof and round topmark, on the west point.

(28) The entrance to Columbia River is marked by two jetties. The south jetty extends 2.7 miles seaward from the northwest end of Clatsop Spit; the westernmost mile of the jetty is submerged. The north jetty extends 800 yards seaward from the shoreline on the north side of the entrance. The north and south jetties have suffered severe deterioration and may no longer be correctly represented on the nautical charts of the area. Mariners should ensure extra caution when transiting in the vicinity of the jetties and river entrance.

(29)

Channels

(30) Federal project depths in the **Columbia River** are 55 feet (48 feet in the southern quarter) over the bar, thence 43 feet past the confluence of the Willamette and Columbia Rivers to the lower turning basin at Vancouver; and thence 35 feet through the upper turning basin at Vancouver. Above Vancouver the federal project depth is 27 feet for about 75 (86) miles to The Dalles, thence 14 feet for about 87 (100) miles to McNary Dam. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. USACE surveys and channel condition reports are available through a hydrographic survey website listed in Appendix A. Controlling depths throughout the river channels and basins may be considerably less than project depths.

(31) The depths over the lower sills of the locks at The Dalles, John Day and McNary Dams may be the controlling depth for this stretch of the river; the least sill depth (at McNary Dam) will usually exceed 12 feet at normal pool level. In the pool above McNary Dam to Pasco and Kennewick, depths range from 14 to 115 feet. Navigation on the Snake River is possible to Lewiston, ID.

(32)

Depths

(33) Minimum depths are given at mean lower low water from the entrance of the Columbia River to Harrington Point, thence at Columbia River Datum to Bonneville Dam on the Columbia River, and Willamette Falls Locks at Oregon City on the Willamette River. **Columbia River Datum** is the mean lower low water during lowest river stages. The staff gage at the Columbia River Pilots' Office, at the foot of 14th Street at Astoria, OR, is set with zero at mean lower low water. The staff gages on the bars from Harrington Point to Portland, OR, are set with zero at Columbia River Datum. Above the Willamette Falls Locks, at Oregon City, depths of the Willamette River are at **Willamette River Datum**. Above Bonneville Dam depths of the Columbia River are referred to the normal pool level of the various dams on the Columbia River.

(34)

Anchorages

(35) **General anchorages** are in the Columbia River. (See **33 CFR 110.1** and **110.228**, chapter 2, for limits and regulations.)

(36)

Bridges and cables

(37) Clearances of bridges and cables over Columbia River and its tributaries are at **mean lower low water** below Harrington Point and at **Columbia River Datum** between Harrington Point and Bonneville Dam. Above Bonneville Dam the clearances are referred to the normal pool level of the various dams on the Columbia River. On the Willamette River above the Willamette Falls Locks, at Oregon City, clearances are referred to the datum of **Newburg Pool**. Minimum clearance of cable crossing the main channel of the Columbia and Willamette Rivers to Portland and Vancouver is 216 feet.

(38)

Caution regarding aids to navigation

(39) During the seasonal high-water conditions, aids to navigation may be destroyed or rendered unreliable.

Mariners are warned to exercise caution in navigating the river and to obtain the latest information regarding aids to navigation by local inquiry and through local Notice to Mariners, available upon request to the Commander, 13th Coast Guard District, Seattle, (see Appendix A for address). Every effort is made to restore the aids to operating condition as soon as possible.

(40)

Weather, Columbia River, Oregon and Washington

(41) The maritime climate near the Columbia River's mouth slowly turns continental as you head upstream. Temperatures become warmer in summer and colder in winter. Daily temperatures vary more. Rain and fog are less frequent, but the chance of snow is greater. In the Columbia River Gorge, winds are deflected and channeled by topography.

(42) Average winter daytime temperatures vary from the upper forties (8.9° to 9.4°C) near the mouth to the upper thirties (3.3° to 3.9°C) near the Snake River junction. At night, this range is from the mid-thirties (0.6° to 2.8°C) to the mid-twenties (-5.0° to -2.8°C). Cold spells occur with an outbreak of frigid Canadian air. Extreme temperatures range from the low teens (-11.7° to -11.1°C) near the coast to below zero upriver (-18.3°C). Snow, of a significant amount, falls on 2 to 5 days each year and is most likely upriver. Occasionally, an ice storm or "silver thaw" will occur; this happens most often between the Gorge and Vancouver. While winds are strongest in late fall and winter, they seldom reach gale force along the Columbia. Extremes of 75 knots have occurred; strongest winds are usually out of the south or southwest. Wind flow is generally from the east through southeast in winter, and wind speeds reach 17 knots or more about 5 to 10 percent of the time. However, locally at Troutdale, winds blow at 17 knots or more up to 30 percent of the time. Fog drops winter visibilities below 0.5 mile (0.9 km) on about 3 to 6 days per month.

(43) Spring temperatures rise slowly near the mouth of the Columbia, compared to the rise upriver. By April, daytime temperatures upriver average in the midsixties (17.2° to 19.4°C), while those near the mouth are in the midfifties (11.7° to 13.9°C). Average low temperatures are near 40°F (4.4°C) everywhere. Rain and fog become less frequent than they were in winter. Gales are rare and winds of 17 knots or more blow less than 5 percent of the time except locally around The Dalles, where winds of 17 knots or more occur 18 to 25 percent of the time from April through August. By April, winds are generally out of the west through northwest. Flooding on the Columbia is most likely to occur from April through June, when snow melt at its headwater is most rapid. While flooding is kept under control, to a great extent, by multi-purpose dams, heavy rains during the melting season can trigger floods.

(44) Summer winds remain west through northwest and generally light. Near the mouth of the river, these maritime winds have a cooling effect. They keep average daytime temperatures below 70°F (21.1°C) at Astoria and below 80°F (26.7°C) at Portland. This effect diminishes upstream, and east of the Cascades daytime temperatures average close to 90°F (32.2°C). Lows at night fall into the low fifties near the coast and upper fifties (14.4° to 15.0°C) inland. Rain falls on only a few days per month, usually in the form of showers or thunderstorms. Toward late summer, fog becomes a hazard near the mouth. At Astoria, visibilities fall below 0.5 mile (0.9 km) on about 4 days in August.

(45) Fog spreads upstream to Portland and Troutdale by September. During the fall, fog reduces visibilities to less than 0.5 mile (0.9 km) on 4 to 8 days per month, west of the Columbia River Gorge. The difference in fog east and west of the Gorge does not extend to temperatures. The temperature range is smallest in fall. In October, daytime high temperatures range from the low sixties (16.1° to 16.7°C) near the mouth to the midsixties (17.2° to 19.4°C) upriver, while average low temperatures vary from the mid-forties (6.1° to 8.3°C) near the coast to the low forties inland (5.0° to 5.6°C. By October, winds begin to blow more out of the east through southeast and become stronger. While gales are infrequent, winds of 17 knots or more occur 4 to 10 percent of the time. Rain falls on about 5 to 15 days per month west of the Cascades and 2 to 6 days per month to the east.

(46)

Lower Columbia Region Harbor Safety Plan

(47) The Lower Columbia Region Harbor Safety Committee has developed a **Lower Columbia Region Harbor Safety Plan** that formally establishes Standards of Care for the Columbia River and its navigable tributaries from the seaward approaches to the Columbia River Entrance to Bonneville Dam. The standards contained in the Lower Columbia Region Harbor Safety Plan complement and supplement existing federal, state and local laws. These standards were developed and adopted by local experts to improve maritime safety but do not replace the good judgment of a ship's master in the safe operation of a vessel. The Harbor Safety Plan provides important safety information and good marine practices for professional and recreational mariners transiting the Lower Columbia Region. The Harbor Safety Plan is available at *lcrhsc.org*.

(48)

Routes, Columbia River approach

(49) The lights at the entrance and at Willapa Bay 28 miles north are distinguishing marks for determining a vessel's position and subsequent shaping of her course.

(50) In thick weather, great caution is essential on the approach from any direction. The currents are variable and uncertain. Velocities of 3 to 3.5 knots have been observed between Blunts Reef and Swiftsure Bank, and velocities considerably in excess of those amounts have been reported. Under such conditions, vessels should keep outside the 30-fathom curve until Columbia River Approach Lighted Whistle Buoy CR has been made.

(51) In clear weather, vessels should have no difficulty in entering the river as the aids to navigation are numerous. In thick weather, however, when aids cannot be seen, strangers should not attempt to enter without a pilot.

(52) Dredges will usually be found at work in the channels; these dredges should be passed with caution and reduced speed. (See **33 CFR 162.225**, chapter 2, for navigation regulations.)

(53)

Weather, Cape Disappointment

(54) An estimate of bar conditions, visibility and weather may be obtained by radio from the Coast Guard station at Cape Disappointment.

(55)

Currents

(56) The currents in the Columbia River and approaches are available from the Tidal Current prediction service at *tidesandcurrents.noaa.gov*. Links to a user guide for this service can be found in chapter 1 of this book.

(57)

Caution

(58) The Columbia River bar is reported to be very dangerous because of sudden and unpredictable changes in the currents often accompanied by breakers. It is reported that ebb currents on the north side of the bar attain velocities of 6 to 8 knots and that strong northwest winds sometimes cause currents that set north or against the wind in the area outside the jetties.

(59) In the entrance the currents are variable, and at times reach a velocity of over 5 knots on the ebb; on the flood they seldom exceed a velocity of 4 knots. The current velocity is 3.5 knots, but this tidal current is always modified both as to velocity and time of slack water by the river discharge. On the flood there is a dangerous set toward Clatsop Spit, its direction being approximately east-southeast; on the ebb the current sets along the line of buoys. Heavy breakers have been reported as far inside the entrance as Buoy 20, north of Clatsop Spit.

(60) See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(61)

Freshets

(62) The annual high-water freshet stage on the Columbia occurs in the latter part of May, but on Willamette River the peak-flow period usually begins mid-December and continues through February, according to measurements taken by the U.S. Geological Survey over the past 70 years. Thus, the Willamette is low or nearly so at the time of the peak flow on the Columbia in late May. This causes the Willamette to apparently change direction under the influence of the stronger flow or "backup" from the Columbia, which change is apparent at least as far up the Willamette as the city of Portland.

(63) On Columbia River, the freshet flow causes some shoaling in the dredged cuts, but redredging is done to maintain project depths.

(64) Since logging is one of the main industries of the region, free floating logs and submerged deadheads or sinkers are a constant source of danger in the Columbia and Willamette Rivers. The danger is increased during spring freshets. **Deadheads** or **sinkers** are logs that have become adrift from rafts or booms. One end of the sinker settles to the bottom while the other end floats just awash, rising and falling with the tide.

(65)

Ice

(66) Ice forms occasionally in both the Willamette and Columbia Rivers, but it is seldom heavy enough to affect navigation seriously.

(67)

Pilotage, Columbia River and Bar

(68) Pilotage across the Columbia River bar and up or down the river is compulsory for U.S. vessels enrolled or sailing under Registry and all foreign vessels, except foreign recreational or fishing vessels not more than 100 feet in length or 250 gross tons international.

(69) Columbia River Pilots and Columbia River Bar Pilots serve Columbia River and its tributaries, from the entrance over the bar to the head of navigation. Larger ports served are Astoria and Portland, OR, and Vancouver, Kalama, and Longview, WA.

(70) Pilotage is provided by the Columbia River Bar Pilots for the river entrance, from the open sea 5 miles from shore by a line described in ORS 776.025 to a line across the Columbia River along longitude 123°44'00" W., and by the Columbia River Pilots from the line across the Columbia River along longitude 123°55'00" W., to the head of navigation on the Columbia or Willamette Rivers and their tributaries. The Columbia River Pilots office address is: 13225 N. Lombard, Portland, OR 97203; telephone 503–289–9922; Fax 503–289–9955. The Columbia River Bar Pilots office address is: 100 16th Street, Astoria, OR 97103; telephone 503–325–2641; Fax 503–325–5630; email dispatch@columbiariverbarpilots.com.

(71) All vessels requesting the service of the Columbia River Bar Pilots are requested to give notification of their time of arrival directly to the Columbia River Bar Pilots, Astoria, at least 24 hours in advance by telephone, fax or email to the pilot office in Astoria. The Columbia River Bar Pilots office is capable of communicating by VHF radio with vessels offshore at distances greater than 60 miles. If the arrival time changes due to weather or other causes, the Columbia River Bar Pilots are to be notified no later than 4 hours before the original ETA expires. Failure to communicate in a timely manner directly to the Columbia River Bar Pilots may result in delay. Merchants Exchange, vessel agents and Columbia River Pilots are advised of information received by the Columbia River Bar Pilots. When incoming from sea without the service

of a Columbia River Bar Pilot, vessels or agents must give notice to the Columbia River Pilots between the hours of 0800 and 1600 and at least 24 hours prior to estimated time of arrival at Astoria. The call may be placed to the Columbia River Bar Pilots office in Astoria, OR.

(72) Large air-draft vessels that have an expected overhead clearance of less than 10 feet will require extra precautions. Please contact the Columbia River Pilots for specific arrangements.

(73) When ordering a Columbia River Bar Pilot, the following information is required:

(74) 1. Complete name and type of vessel.

(75) 2. The date and time of vessel ETA at the Pilot Station.

(76) 3. Maximum fresh water draft. If vessel is not even keel, provide fore and aft fresh water drafts.

(77) 4. Any pertinent special information or instructions about the vessels and its arrival.

(78) Embarking and disembarking Columbia River Bar Pilots is accomplished by helicopter or boat. All vessels are required to contact Columbia River Bar Pilots via VHF channel 9, 13 or 16 at least two hours before their ETA. The call sign for the Bar Pilot office is KOK-360. Vessels will be asked to confirm arrival time and are advised to call in again when 15 miles from the Columbia River (CR) buoy via VHF channels 9 or 13. At that time vessels will be advised of pilot boarding instructions. The primary method of pilot boarding is by helicopter. The Bar Pilots also keep one of two pilot boats on standby at all times. Vessels should not approach the CR buoy until advised by a pilot. While awaiting a pilot boarding by helicopter or pilot boat, vessels should stay within a marshaling area approximately 5 miles west of the CR buoy. Pilots boarding by helicopter will generally board within 4 to10 miles northwest to southwest of the CR buoy. Boarding by pilot boat generally takes place in the vicinity of the CR buoy.

(79)

Helicopter transfer procedures

(80)

General:

(81) Operations will be in accordance with ICAO regulations and with the International Chamber of Shipping's Guide to Helicopter/Ship Operations rules. The pilot helicopter SEAHAWK is 43 feet long with a rotor span of 36 feet and has a yellow body with the word PILOT prominently displayed on the side. Vessel configuration, sea state and wind force will determine if a hoist or landing will be conducted. To provide the highest degree of safety for boarding, the Master may be requested to alter course or speed of the vessel, if safe to do so. The objective is to provide **minimum roll of the vessel** at the time of transfer.

(82)

Communication:

(83) 1. After initial contact, the arriving vessel shall call in to Columbia River Bar Pilots on VHF channel 9 when 15 miles from the CR buoy.

(84) 2. Pilot helicopter "SEAHAWK" will then be dispatched to the vessel with the Marine Pilot.

(85) 3. The arriving vessel must remain on VHF channel 9 for helicopter operations until the marine pilot is safely transferred and the helicopter has departed the area.

(86)

Masters, prior to helicopter arrival must confirm the following:

(87) 1. Check that no wires or aerials are above the helicopter maneuvering zone.

(88) 2. Check that no loose objects are in or near the helicopter maneuvering zone.

(89) 3. **At night**, the vessel should be illuminated with all available deck lighting, but not in such a way as to blind the helicopter crew. Deck lights must remain ON until the helicopter has departed the area.

(90) 4. Assisting crewman should wear eye protective goggles.

(91) 5. Camera flashlight equipment must not be used as it will interfere with the helicopter crew's night vision.

(92) 6. If requested by helicopter pilot, switch ship's radar to "stand-by."

(93) 7. DO NOT CHANGE COURSE OR SPEED unless instructed by helicopter.

(94) 8. If conditions are rough, a trail/tag line may be used:

(95) a. The vessel crew tending the trail line must ensure that the line is not tied to the vessel and does not become fouled with the vessel.

(96) b. The vessel crew tending the trail line shall use it to guide the Marine Pilot to the intended hoist area using only enough force to stabilize and keep the Pilot from swinging into hazards.

(97) c. The trail line, when used, must **NOT** be fastened to the vessel.

(98)

Land on deck operations:

(99) 1. All vessel crew assisting with the transfer must remain clear of designated helicopter maneuvering zone.

(100) 2. No vessel crew should ever approach the helicopter unless directed.

(101) 3. Never pass in back or in front of the helicopter while it approaches or is on deck.

(102)

Pilot boat transfer procedures

(103) If the arriving vessel is advised that the pilot boat be utilized for pilot transfer, one of two boats will be used, as follows:

(104) The pilot boat ASTORIA is 72 feet long and has a yellow hull and yellow super structure with the word PILOT prominently displayed on the side of the house. The pilot boat COLUMBIA is also 72 feet long and

has an orange hull and orange superstructure with the word PILOT prominently displayed on the side of the house. When either the ASTORIA or COLUMBIA are used, speed of the vessel should be approximately 10 to 12 knots and the pilot ladder should be rigged 2 meters above the waterline. With either boat, the ladder should be rigged on the side indicated by the pilot boat, as close to midship as possible, with no manropes, and clear of all discharges and obstructions. The ladder must be rigged in accordance with SOLAS requirements and must be well lighted at night. When regulations require a combination ladder, it must be rigged as close to 7 meters above the water as possible. Manropes are required on outbound vessels.

(105) When transferring pilots off Astoria, pilot boat CONNOR FOSS is used. It is 63 feet in length with a dark green hull and white superstructure. The word PILOT is prominently displayed on the superstructure. When using the CONNOR FOSS, the pilot ladder should be rigged midship, 2 meters above the waterline, in accordance with SOLAS requirements. Maximum speed of the vessel should be 9 knots.

(106) Inbound vessels greater than 600 feet LOA with a fresh water draft of less than 36 feet are generally able to transit the river at any time. Inbound vessels greater than 600 feet LOA with drafts of 36 feet or greater and inbound vessels less than 600 feet LOA with drafts 80 percent of maximum or greater are requested to arrive at Astoria 2 hours prior to Astoria high tide (Tongue Pt. Station) in order to take advantage of tidal conditions. During minus tides, 1 foot of draft correction will be added to the vessel's draft for every 1 foot of minus tide. For example, a 35-foot draft during a 1-foot minus tide will be treated as a 36-foot draft. Outbound vessels with drafts of up to 38 feet can generally sail at any time. Outbound vessels with drafts of 38 feet or greater may have sailing times set to take advantage of optimum tidal conditions.

(107) Masters of vessels arriving at the Columbia River when the bar is not passable are advised to stand offshore at least 10 miles west of the Columbia River Approach Buoy "CR" and await instructions from the Columbia River Bar Pilots. Using the open roadstead in the vicinity of the Columbia River entrance as an anchorage is dangerous in any weather and IS NOT recommended by the Columbia River Bar Pilots.

(108) A fixed amber light is maintained by the Columbia River Bar Pilots atop the pilot office at Astoria. When this light is exhibited it will inform outward-bound vessels that desire a Bar Pilot that the bar is not passable and that the vessel should remain in port.

(109) **Baker Bay** is a shoal open bight, east of Cape Disappointment, formed by the cape and the recession of the land north. **Sand Island**, low and flat, fronts the bay on the southwest side.

(110) A dredged channel leads north from the Columbia River along the west side of Sand Island thence to the Port of Ilwaco mooring basin about 3 miles above the entrance. The entrance is between two detached jetties marked at the channel ends by lights. The channel is marked by lights, daybeacons and lighted and unlighted buoys. The entrance usually has swells and is subject to continual change; the channel should be navigated only at high water with local knowledge. The rest of Baker Bay is covered with shoals and abandoned fish traps.

(111) **Ilwaco** is the base for a large commercial and sport fishing fleet. Berths with electricity, gasoline, diesel fuel, ice, water and other supplies are available. The largest marine railway can handle vessels up to 75 feet long for all types of repairs. Lifts up to 50 tons are also available. Wet winter boat storage is available at this port. Machine and carpentry shops are at this boatyard. The **Port of Ilwaco** administers the docks and facilities of the port. For information about the channel or facilities, contact the port manager or harbormaster at 360–642–3143 or on VHF-FM channel 16.

(112) **Desdemona Sands**, marked by a light near the west end, is a shoal area extending southeast for about 8 (9.2) miles from just inside the entrance to Columbia River. Desdemona Sands has the main river channel to the south and a secondary channel to the north. The southern section of Desdemona Sands is composed of shifting sand shoals that dry at low water. Only shallow draft vessels should attempt to navigate Desdemona Shoals; mariners are urged to use caution in the area.

(113) A boat basin is at **Hammond**; the entrance is marked by a light and a daybeacon on the east and west jetties, respectively. In 2008, a reported depth of 5 feet was available in the basin channel with shoaling to lesser depths at the south end. Berths with electricity, for about 140 craft, gasoline, diesel fuel, water, ice, marine supplies and a launching ramp are available at the basin. Wet winter storage and minor repairs are available in the basin.

(114) A packing plant wharf is about 0.5 mile southeast of the boat basin at Hammond.

(115) **Warrenton**, on the **Skipanon Waterway** at Mile 9.5 (11), is the base of a large sport fishing fleet. About 1 mile above the entrance to the waterway is a basin with a marina on the south side. Berths with electricity, gasoline, diesel fuel, water, ice, marine supplies and a launching ramp are available. A marine railway that can handle boats up to 80 feet long is at the marina for hull repairs.

(116) The channel to the turning basin is marked by a **198°30'** lighted range; lights mark the channel entrance.

(117) Above the waterfront area, the river is crossed by a fixed highway bridge with a clearance of 17 feet. A power cable upstream from the bridge has a clearance of 21 feet.

(118) **Scarboro Hill**, 820 feet high, is on the Washington side about 7 (8) miles east of Cape Disappointment. It is a long, gradually rising ridge, covered with grass, fern and some trees. A number of conspicuous light-colored buildings of the historical Fort Columbia State Park may be seen near the base of the hill.

(119) A dredged marked channel leads from Columbia River near the east end of Baker Bay to a basin at **Chinook**, on the Washington side. Berths with electricity, gasoline, diesel fuel, water, ice, a launching ramp and some marine supplies are available at the basin. A packing company wharf is at the basin. A 6-ton hoist is available for engine repair work. Wet winter storage is available in the basin.

(120) **Smith Point**, at Mile 11.3 (13.0) on the Oregon side, is the west termination of a high, wooded ridge; it is the first prominent point on the south bank southeast of Point Adams. The ridge culminates in **Coxcomb Hill**, 595 feet high, behind Astoria. The Astoria Column on the top of the hill is prominent.

(121) **Youngs Bay** is a shoal body of water just west of Smith Point. It receives the waters of **Youngs River** and **Lewis and Clark River**. The docks of a marine repair yard are 0.5 mile above the Old Route 101 highway bridge crossing the Lewis and Clark River. The yard can handle vessels up to 350 tons for hull and engine repairs. Traffic on the two rivers is confined chiefly to tugs handling log rafts just above the highway bridges. Small tugs operate to the town of **Olney** on Youngs River at high tide.

(122) A dredged channel leads from Columbia River through Youngs Bay to naturally deep water at the mouth of Youngs River. In 2007, the controlling depth in the dredged channel was 4 feet. A channel, marked by buoys and daybeacons, leads south from the dredged channel in Youngs Bay to the mouth of the Lewis and Clark River. In 1992, the mouth of the river had shoaled to bare.

(123) Youngs Bay is crossed by U.S. Route 26/101 vertical-lift highway bridge with clearances of 39 feet down and 74 feet up, about 0.3 mile above the mouth. The bridgetender monitors VHF-FM channel 16 and works on channel 13, call sign WHG-914. The highway bascule bridge, 2.1 miles above the bay entrance at the entrance to Youngs River, has a clearance of 24 feet. (See **33 CFR 117.1** through **117.59** and **117.899**, chapter 2, for drawbridge regulations.) In 2003, the north draw leaf of the bascule span was disabled. The least clearance of overhead cables across Youngs River to about 4 miles above the mouth is 103 feet.

(124) Over Lewis and Clark River, 0.8 miles above the mouth, is a highway bascule bridge with a clearance of 25 feet. The power cable at the bridge and the two about 1.8 miles above the mouth have a least clearance of 64 feet. The highway bridge, 4.8 miles above the mouth, has a fixed span 18 feet wide with clearance of 10 feet. (See **33 CFR 117.1** through **117.59** and **117.899**, chapter 2, for drawbridge regulations.) Clearances and depths on Youngs River and Lewis and Clark River are at **mean lower low water.**

(125) **Point Ellice**, on the Washington side 11 (12.7) miles inside the entrance, is the termination of a spur from the mountain ridge back of Scarboro Hill. The point is rounding and rocky, but not high. Two high hillocks lie behind the point. In this area there are many abandoned fish traps and pile structures that extend into the river.

(126) **Astoria**, at Mile 12 (14) on the Oregon side, extends from Youngs Bay to Tongue Point. It is the principal city on the Columbia River below Longview, WA. It has connections with the interior by both rail and highway.

(127)

Anchorages

(128) **General anchorages** are north and west of Tongue Point. (See **33 CFR 110.1** and **110.228**, chapter 2, for limits and regulations.) The area immediately south of **Rice Island** proves to be a good anchorage for small craft with depths of 15 to 30 feet.

(129) The fixed highway bridge between Astoria and Point Ellice has a clearance of 193 feet (205 feet at the center) over the main channel near Astoria. The span over the north channel near Point Ellice has a clearance of 48 feet.

(130)

Currents

(131) Above Astoria the current velocity is 1 to 3 knots except during the freshet period when the ebb is considerably increased, although not enough to affect navigation seriously.

(132)

Weather, Astoria

(133) Astoria's perennially verdant landscape is hemmed by rather low mountains on the north, east and south. On the west it is open to the Pacific Ocean over 4 miles (7 km) or more of low green dunelands and the last 10 miles (19 km) of the Columbia River.

(134) Weather hazards occasionally occur. Storms may sink or wreck ships. Even in fair weather, wind and wave may combine to produce a type of breaker known as the "widow-maker" and swamp a boat. Heavy rains inundate lowlands, and high tides aggravated by gales may push seawater across highways and up beaches. Rains may cause earthslides, mostly in highway cuts. Storms may fell trees or break power and phone lines. Lightning strikes are rare. Showers of small hail may briefly whiten the ground during many of the months. Occasionally in winter there may be rather brief periods of freezing temperatures, with snow or ice.

(135) The climate of Astoria is generally characterized by summers with cool breezes and waters, moderate temperatures and periods of fog. Heat waves are uncommon and usually brief. Winters often bring dampness, increased precipitation, storms, winds and cloudiness with brief periods of freezing temperatures, snow and ice.

(136)

Pilotage, Astoria

(137) See Pilotage, Columbia River and Bar, indexed as such, earlier this chapter.

(138)

Towage

(139) Tugs to 3,600 hp are available at Astoria with 12 hours notice. Arrangements for tugs are usually made

(149)

Facilities at Hammond, Warrenton and Astoria

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Point Adams Packing Co. Hammond Wharf	46°12'01"N., 123°56'26"W.	180	41	20	Two ¾-ton mast-and-boom derricks	Receipt of seafood	California Shellfish, Inc.
Nygaard Brothers Logging Company Warrenton Wharf	46°11'29"N., 123°55'24"W.	460	40	15	• Open storage (80 acres) • One 200-ton crawler crane • Log stackers/loaders	Receipt of logs	City of Warrenton/ Nygaard Brothers Logging Co. and Warrenton Fiber Co.
Warrenton Fiber Company Wharf	46°11'25"N., 123°55'25"W.	470	12	20	• Open storage area • One loading tower and spout • Electric belt-conveyor	Shipment of wood chips	City of Warrenton/ Warrenton Fiber Co.
Pacific Coast Seafoods Warrenton Wharf	46°10'10"N., 123°54'52"W.	390	16	15	• Two ½-ton mast-and-boom derricks • Tank storage (475 barrels)	Receipt of seafood	Pacific Coast Seafood, Inc.
Port of Astoria Pier No. 2	46°11'21"N., 123°51'44"W.	425 (face) 1,307 (lower) 1,250 (upper)	35-40 35 22	16	• Tank storage (101,500 barrels) • Open storage (10.8 acres) • Covered storage (46,000 square feet) • One 250-ton mobile crane • One 50-ton crawler crane	• Receipt and shipment of conventional general cargo • Shipment of logs and lumber • Receipt of petroleum products	Port of Astoria/ Cavenham Forest Industries; McCall Oil and Chemical Co.; Marine Spill Response Corp.
Port of Astoria Pier No. 1 (West Side)	46°11'23"N., 123°51'34"W.	1,100	40	16	• Open storage (5 acres) • Cranes are available from reference No. 1	• Receipt and shipment of conventional general cargo and logs • Shipment of wood chips	Port of Astoria/ Cavenham Forest Industries
Port of Astoria Pier No. 1 (Face)	46°11'26"N., 123°51'31"W.	875	40	16	• Open storage (5 acres) • Cranes are available from reference No. 1	• Receipt and shipment of conventional general cargo and wood chips • Shipment of logs	Port of Astoria
Astoria Warehousing Wharf	46°11'35"N., 123°50'40"W.	320	40	16	• Covered storage (121,000 square feet) • Eleven 2½-ton forklifts	Receipt of canned salmon	Astoria Warehousing, Inc.
Fishhawk Fisheries Astoria Wharf	46°11'33"N., 123°50'18"W.	45	40	16	Two ¼-ton electric hoists	Receipt of seafood	Fishhawk Fisheries, Inc.
Ocean Foods of Astoria Wharf	46°11'30"N., 123°49'58"W.	260	30	15	One 2-ton derrick and two 1-ton derricks	Receipt of seafood	Ocean Foods of Astoria, Inc.
Tongue Point Piers 3,4, and 5	46°12'00"N., 123°45'28"W.	2,300 (Pier 3) 2,300 (Pier 4) 2,300 (Pier 5)	12-24	15	Open storage (4.5 acres)	• Shipment of steel products • Mooring vessels for construction and shipbreaking	State of Oregon/ Cresmont Inc., Pacific Marine and Steel Inc., The Ogilvie Co.
James River Corp. Wauna Mill Transit Shed Dock	46°09'38"N., 123°24'20"W.	1,090	30	11	• Open storage (25,000) • Covered storage (120,000 square feet)	Shipment of paper products and wood pulp	James River Corp.
James River Corp. Wauna Mill Peco Wharf	46°09'25"N., 123°24'01"W.	762	20-40	15	• Open storage area • One electric crane • Belt-conveyor system	Receipt of wood chips and sawdust	James River Corp.

Dimensions are given in feet
* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

in advance by ships' agents. Barges of various size and application are available with prior arrangement.

(140)

Quarantine, customs, immigration and agricultural quarantine

(141) Astoria is a customs port of entry. (See Vessel Arrival Inspections, chapter 3.)

(142) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(143)

Coast Guard

(144) Two Coast Guard cutters are stationed at Astoria. A Coast Guard Air Station is at Warrenton-Astoria Regional Clatsop County Airport.

(145)

Harbor regulations

(146) Harbor regulations are prescribed by the Port of Astoria Board of Commissioners. The direct operation of the port is controlled by a port manager who is appointed by the Board.

(147)

Wharves

(148) The Port of Astoria is a municipal corporation embracing all of Clatsop County as a port district. The district extends from the mouth of the Columbia River to Westport (46°07'55"N., 123°22'07"W.), and includes the towns of Hammond, Warrenton and Astoria. The port owns a substantial part of the waterfront at Smith Point and operates a well-equipped modern terminal with three

piers. The port offices are at the head of Pier 2. For the latest information about depths alongside the piers, contact port authorities at 503–325–4521. Water and electrical shore power connections are available at most of the berths. General cargo at the port is usually handled to and from vessels by ships' tackle. Additional equipment, if available, is listed under *Mechanical Handling Facilities* in the table.

(150)

Supplies

(151) Most marine supplies and services are available at Astoria. Facilities for bunkering ocean-going vessels are maintained at Pier 2, about 0.3 mile east of the bridge. Bunkering is available at anchorage; arrangements can be made at least 12 hours in advance through the ships agent or Brix Maritime on VHF-FM Channel 10. Fishing vessels are fueled at Carmichael-Columbia Oil Inc. wharf, about 0.5 mile east of the bridge.

(152)

Repairs

(153) The largest marine railway in the Astoria area can handle vessels to 400 tons. Complete hull, engine and electronic repairs can be made. Complete salvage equipment is available in Astoria.

(154)

Small-craft facilities

(155) Two mooring basins for small craft and fishing vessels are maintained by the Port of Astoria. The West Basin, 0.3 (0.3) mile west of the south end of the Astoria Bridge, has 15 feet reported through the entrance and depths of about 5 feet at the floats. The entrance to the basin is marked by private lights. Berths with electricity, gasoline, diesel fuel, water, ice and some marine supplies are available. All types of repairs can be made at several private firms on the basin. A 10 ton hoist at a packing company just west of the basin can handle small craft in emergencies. The East Basin, 2 (2.3) miles east of the Astoria Bridge, has berths and a launching ramp; however, no services are available. Reported depths of 15 feet through the entrance and 10 feet at the floats are available. West Basin has wet winter storage, and East Basin has wet and dry winter storage.

(156)

Communications

(157) U.S. Highway 101 extends north and south from Astoria, and U.S. Highway 30 extends inland to Portland, OR. Astoria is served by a Class I railroad. The Clatsop County Airport, south of Youngs Bay, is served by a charter airline that handles passengers and freight.

(158) **Tongue Point**, at Mile 16 (18) on the Oregon side, is a bold, rocky peninsula, 308 feet high, covered with trees and connected with the south bank by a low, narrow neck; it projects into the river for 0.8 mile. A buoy depot of the Coast Guard is on the west side of the peninsula near its inner end. On the east side are the concrete piers of the former naval base.

(159) **Cathlamet Bay** is east of Tongue Point and south of the main ship channel. The bay is subject to frequent change with shifting shoals and channels. There are many islands that are covered with tule in the summer, but in the winter they are almost indiscernible. Protected anchorage for small craft can be found in the area between Mott Island and Lois Island in 12 to 17 feet. A submerged obstruction with a least depth of 5 feet is close to the middle of this area in about 46°11'24"N., 123°44'18"W. The **John Day Channel** extends between Tongue Point and **John Day Point**. At the junction with the **John Day River**, just north of the point, the name changes to **South Channel**, which follows the shore closely to and around **Settler Point** to **Svensen**; these channels are marked by lights and daybeacons. A railroad swing bridge crosses John Day River near the mouth and has a reported clearance of 8 feet. (See **33 CFR 117.1** through **117.59** and **117.881**, chapter 2, for drawbridge regulations.) Several power cables cross the river and have a least clearance of 30 feet at mean lower low water. Many houseboats are moored along John Day River. The east part of Cathlamet Bay is used mostly for logging operations and log storage.

(160) **Grays Bay** on the Washington side extends from **Grays Point** to **Harrington Point** north of the Main Ship Channel. Extensive mud flats are in the northeast section of the bay and are subject to frequent change. A dangerous submerged rock is off Rocky Point in 46°17'15"N., 123°43'40"W. **Deep River** flows into the north part of the bay. The channel is marked and follows the shore from Grays Point around **Portuguese Point** and **Rocky Point**. This river is used only by small pleasure craft and sport fishermen and for logging operations. Depths of about 6 feet are available for about 2 miles above the mouth, above which it is shoal and probably good for no more than 2 feet.

(161) **Grays River**, entered just east of Deep River, is another small stream used only by pleasure craft. Depths are not more than 2 feet, and much of the stream is blocked by snags and sunken logs.

(162)

Cathlamet to Bradbury Slough

(163) Between **Harrington Point**, Mile 20.5 (23.6), and **Crims Island**, Mile 47.5 (54.6), Columbia River main channel follows the north bank to **Three Tree Point**, thence swings around the bend, holding to the northeast shore as far as **Hunting Islands**, where it swings along the south shore until off the southeast end of **Puget Island**; thence it follows the north bank from **Cape Horn** past **Abernathy Point** and north of Crims Island and **Gull Island**.

(164)

Currents

(165) In this section the current velocity is about 1 knot. Because of the river flow, which combines with the current, the upstream flow is weak or nonexistent and the downstream flow attains velocities of 2 to 3 knots.

(166)

Local magnetic disturbance

(167) Differences of as much as 3° from the normal variation have been observed along this section of the river.

(168) Steamboat Slough, northeast of Price Island at Mile 29.3 (33.7) on the Washington side, and Elochoman Slough, on the east side of Hunting Islands at Mile 31.3 (36), are used by fishing boats and tugs and for log storage. A channel leads northeast from the Columbia River to the confluence of Skamokawa Creek and Brooks Slough at the town of Skamokawa. The channel turns eastward into Brooks Slough before terminating at the bridge. Gasoline and diesel fuel are available at Skamokawa. A small marine railway, owned by a private packing firm, can be used if prior arrangements are made. In 2004, the depths in the channel were very shallow with several bare spots.

(169) At Mile 35 (39.9), a power cable with a least clearance of 230 feet crosses the main channel to Puget Island. The tower on the east side of the channel on Puget Island is prominent.

(170) **Cathlamet Channel** joins the main channel at Mile 32.3 (37.2) on the Washington side. It is used by fishing boats, tugs, log rafts and barges and for some log storage above the city of **Cathlamet**. A mooring basin is at Cathlamet with its entrance on Elochoman Slough; 190 berths (some with electricity), gasoline, diesel fuel, water, ice, wet and dry winter boat storage, a pumpout station, a launching ramp and marine supplies are available. A fixed highway bridge crosses the channel from Cathlamet to Puget Island; the clearance is 75 feet for the north span. A power cable, 0.5 mile above the bridge, has a clearance of 310 feet.

(171) Three wharves, owned and operated by Fort James, are at **Wauna**, on the Oregon side at Mile 36.2 (41.7). The wharves are in line and together provide a total of 3,000 feet of continuous berthing space. Depths alongside are 20 to 50 feet and deck heights are 11 to 15 feet. A clamshell bucket unloads wood chips into a receiving hopper served by a conveyor system. Wood chips, sawdust and fuel oil are received, and paper products are shipped.

(172) **Westport Slough**, at Mile 37.4 (43) on the Oregon side, leads to a ferry dock at the village of **Westport**. A lumbermill wharf, in ruins, is just east of the ferry slip. The ferry operates between Westport and the ferry landing 0.5 mile north of **Pancake Point** on Puget Island and carries passengers and automobiles. Above Westport the slough was used for log storage; decaying and submerged piling may present hazards to vessels operating close to shore. About 7 feet can be carried to **Kerry**, 2.4 miles above the mouth. Overhead power cables 0.8 and 1 mile above the mouth of the slough have clearances of 74 and 76 feet, respectively.

(173) **Wallace Slough**, at Mile 41 (47) south of Wallace Island, is used by fishing boats and house floats. A depth of 4 to 5 feet can be carried through the slough.

(174) **Beaver Slough** enters Wallace Slough near the southeast end of Wallace Island. The slough is used by fishing boats and house floats. A fixed bridge with a 30 foot span and clearance of 8 feet crosses the west arm of the slough near its mouth. An overhead power cable with a clearance of 68 feet crosses the slough about 2 miles above the mouth.

(175) **Clatskanie River** is a tributary of Beaver Slough. A railroad swing bridge, about 0.6 mile above the mouth, has a clearance of 16 feet through the east draw. (See **33 CFR 117.1** through **117.59** and **117.865**, chapter 2, for drawbridge regulations.) There is a wharf at Clatskanie. Gasoline, diesel fuel, and water are available in cans from the town; mariners supplies, ice, and a launching ramp are also available. Several sawmills once operated along the river. Logs were stored throughout the area, and remnants of piling and related structures may present hazards close to shore. In 1998, depths of about 2 feet could be carried through Beaver Slough to the mouth of Clatskanie River; thence 2 feet could be carried in the river to the town of Clatskanie; local knowledge is advised. Numerous shoals and snags have been reported in Beaver Slough and Clatskanie River.

(176) **Port Westward**, a former Army ammunition terminal, is the site of a general cargo terminal. The main wharf, just west of the entrance to Bradbury Slough, is 1,200 feet long, has 40 feet reported alongside and a deck height of 20 feet and can be used for shipment and receipt of general cargo.

(177) **Bradbury Slough**, at Mile 46.6 (53.6) southwest of Crims Island, has depths of 9 feet as far as the upper end where it shoals to 3 feet. There once was extensive log storage along the Crims Island shore. Remnants of pilings and log storage related structures may present hazards close to shore.

(178)

Coal Creek Slough to Austin Point

(179) Between Crims Island and Saint Helens, Mile 75 (86), the main channel starts its southeast swing, passing south of **Fisher Island** and **Hump Island**, and north of **Walker Island** and **Lord Island**; thence, under the Longview fixed bridge, thence west of **Cottonwood Island**, east of **Sandy Island**, and west of **Martin Island** and **Burke Island**. Numerous jetties along this stretch are usually marked by lights or daybeacons.

(180)

Currents

(181) In this section, the average velocity on the ebb is 2.0 knots. Flood currents can be experienced at low river levels after spring freshet and until the fall rainy season.

(182)

Local magnetic disturbance

(183) Differences of as much as 8° from the normal variation have been observed along this section of the Columbia River.

(207)

Facilities at Longview

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Reynolds Metals Company Longview Reduction Plant Alumina Dock	46°08'08"N., 123°00'03"W.	700	38	15	• Tank storage (64,000 tons) • One traveling electric unloading tower and belt-conveyor	Receipt of alumina	Reynolds Metals Co.
Weyerhaeuser Company Longview Plant Salt Dock	46°07'44"N., 122°59'20"W.	1,160	32	26	• Tank storage (100,000 barrels) • Open storage (23,000 tons of salt)	Receipt of salt	Weyerhaeuser Co.
Weyerhaeuser Company Longview Plant Lumber Barge Dock	46°07'40"N., 122°59'10"W.	200	35	20	Open storage (2½ acres)	Shipment of lumber and newsprint	Weyerhaeuser Co.
Weyerhaeuser Company Longview Plant Wood Pulp Export Dock	46°07'32"N., 122°58'57"W.	1,185	35	26	• Covered storage (93,000 square feet) • Open storage (250,000 square feet)	Shipment of lumber, paper products, and wood pulp	Weyerhaeuser Co.
Weyerhaeuser Company Longview Plant Barge Slip	46°06'49"N., 122°57'48"W.	320	13	20	Open storage (12 acres)	Receipt of wood chops by barge	Weyerhaeuser Co.
Weyerhaeuser Company Longview Plant Log Export Dock	46°06'33"N., 122°57'40"W.	1,320	35	21	Open storage (20 acres)	Shipment of logs	Weyerhaeuser Co.
Port of Longview Berth No. 1	46°06'23"N., 122°57'23"W.	792	40	30	• Open storage (28 acres) • Covered storage (637,000 square feet) • One 50-ton gantry crane • One bulk loading spout and belt-conveyor	Receipt and shipment of conventional general cargo and dry bulk materials	Port of Longview
Port of Longview Berths Nos. 2 and 3	46°06'21"N., 122°57'17"W.	845	40	30	• Open storage (2.8 acres) • Covered storage (11,000 tons of dry bulk) • One 600-ton shear-leg derrick • One loading spout and belt-conveyor	• Receipt and shipment of conventional general cargo and heavy lift items • Shipment of dry bulk materials	Port of Longview
Port of Longview Petroleum Coke Wharf Berth No. 5	46°06'12"N., 122°56'52"W.	722	40	20	• Tank storage (44,000 tons) • One electric-hydraulic shiploader	Shipment of petroleum coke and logs	Port of Longview
Port of Longview Berth Nos. 6 and 7	46°06'08"N., 122°56'41"W.	1,500	40	29	• Open storage (38 acres) • One 33-ton electric traveling crane	• Receipt and shipment of general cargo and logs • Receipt of miscellaneous bulk materials	Port of Longview
International Paper Co. Longview Wood Chip Export Dock	46°06'01"N., 122°56'20"W.	1,440	35	29	• Open storage (144,000 tons of wood chips) • One 15-ton derrick • Telescopic pipeline and loading spout	Shipment of wood chips	International Paper Co.
Longview Fibre Co. Wood Chip Dock	46°05'58"N., 122°55'16"W.	2,360	12	20	• Open storage area • Two fixed unloaders with belt-conveyors	Receipt of wood chips and hogged fuel	Longview Fibre Co.

Dimensions are given in feet
* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

(184) **Coal Creek Slough**, at Mile 48.9 (56.3) on the Washington side, empties into the river at **Stella**. The slough is used for moorage of small craft. It was also used for log storage, and piling and related structures present hazards close to shore. Power cables over the deeper part of the slough have a least clearance of 65 feet.

(185) **Fisher Island Slough**, north of Fisher Island, is used as the Longview Yacht Basin, by small fishing vessels and as log-storage grounds. A depth of 7 feet may be carried through the channel. Remnants of log storage grounds may still be found throughout the transit.

(186) Power cables over the main channel at Mile 54.2 (62.4), at Lord Island, have a least clearance of 216 feet.

(187) The channel between Walker Island and the Oregon shore is used for log-raft storage. The power cables south of Lord Island have a least clearance of 115 feet.

(188) The **Lewis and Clark Bridge**, at Mile 57.3 (66.0) between Longview and Rainier, has a fixed span with a clearance of 187 feet. The bridge piers are marked by buoys.

(189) **Longview**, at Mile 57.3 (66) on the Washington side, is a major river port. Paper mills, lumber mill, and an aluminum plant are in the city. Waterborne commerce includes lumber and wood products, flour, alumina and aluminum ingots and general cargo.

(190)

Prominent features

(191) The Lewis and Clark Bridge with its high towers is easily the most prominent feature in approaching Longview from either up or down the river.

(192)

Anchorages

(193) Deep-draft vessels may anchor northwest of Lewis and Clark Bridge adjacent to the main ship channel (Slaughters Channel); depths in this anchorage are 30 to 41 feet. A secondary anchorage, southeast of the bridge and just south of the main ship channel, may also be used. Depths in this anchorage are 35 to 40 feet off Rainier and 18 to 35 feet opposite Cottonwood Island. Care should be exercised not to obstruct the dredged channels. (See **33 CFR 110.1** and **110.228**, chapter 2, for limits and regulations.)

(194)

Currents

(195) Average current velocity, on the ebb, at Longview is 2.0 knots.

(196)

Pilotage, Longview

(197) See Pilotage, Columbia River and Bar, indexed as such, early this chapter.

(198)

Towage

(199) Tugs to 3,600 hp are available at Longview.

(200)

Quarantine, customs, immigration and agricultural quarantine

(201) Longview is a customs port of entry. (See Vessel Arrival Inspections, chapter 3.)

(202) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(203)

Harbor regulations

(204) The Port of Longview is a municipal corporation governed by a board of commissioners and administered by a port manager.

(205)

Wharves

(206) The deep-draft facilities at Longview include six berths owned and operated by the Port of Longview and the privately owned and operated facilities of two large paper companies and an aluminum plant. Only the deep-draft facilities are listed in the table. Depths alongside the port-owned wharves are reported to be maintained at 40 feet; for information on the latest depths contact the port authorities or private operators. All the facilities described have direct highway connections and plant trackage with direct railroad connections. The port-owned properties have a total covered storage area of 1 million square feet and open storage area of 75 acres. Water and electrical shore power connections are available at the port wharves and some of the private facilities. Special handling equipment, if available, is mentioned under *Mechanical Handling Facilities* in the table.

(208) The Weyerhaeuser facilities northwest of the Lewis and Clark Bridge are reached by a side channel. The channel is marked by a **117.5°** private lighted range.

(209)

Supplies

(210) Provisions and some marine supplies and services are available. Fuel oil and water are available at the wharves.

(211)

Repairs

(212) There are no facilities for major repairs to large oceangoing vessels in Longview; the nearest such facilities are in Portland. Some above-the-waterline repairs can be made, and there are several machine shops in the city. The Port of Longview has cranes to 65-ton capacity that can be used to lift private craft if prior arrangements are made.

(213)

Communications

(214) Longview is served by Interstate Highway 5 and U.S. Highway 30 and by three transcontinental railroads.

(215) **Cowlitz River** flows into Columbia River at Mile 59 (68), just east of Longview. The mouth of the river is heavily silted as a result of the volcanic eruptions of Mount Saint Helens in 1980. Mariners are advised to use extreme caution and seek local knowledge prior to entering Cowlitz River. The former mouth of the Cowlitz River is just west of the current mouth and runs along the waterfront of Longview at the southeast end. A dredged channel with a project depth of 8 feet leads to the wharves along the west side of the channel—surveys and channel condition reports are available through the USACE hydrographic survey website listed in Appendix A. The tide varies from 4 feet at the mouth to zero at **Ostrander**, 7.8 miles above the mouth. At Kelso a stage of 20 feet is reached during ordinary freshets and a stage of 25 feet at extreme floods.

(216) Five fixed bridges and several overhead power/television cables cross the river between the mouth and Ostrander; least clearances for the bridges are 10 feet and for the cables are 67 feet. A bascule bridge, 1.4 miles above the mouth of the river, has a clearance of 25 feet. (See **33 CFR 117.1** through **117.59** and **117.1037**, chapter 2, for drawbridge regulations.)

(217) At **Kelso** there are several private wharves including a sand and gravel wharf, a public landing and several small craft floats, at one of which gasoline is available.

(218) **Rainier** is on the Oregon side opposite Longview. The town of Rainier operates a small-craft basin; berths, gasoline, water, ice, a launching ramp, a pumpout station, wet winter boat storage and marine supplies are available.

(219) **Carrolls Channel**, between Cottonwood Island and the Washington shore of Columbia River, is used for log storage and fishing boats.

(220) Two state fish hatcheries are on **Kalama River** at Mile 63.5 (73.1). **Kalama**, on the east bank about 3 (3.5)

(221)

Facilities at Kalama

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Port of Kalama Bulk Materials Dock	46°02'36"N., 122°52'36"W.	800	40	-	Open storage (100 acres)	Receipt and shipment of bulk materials and steel products	Port of Kalama/ BHP Steel
Peavy Company Kalama Grain Elevator Wharves	46°01'36"N., 122°52'05"W.	800	40	25	• Silo storage (2 million bushels) • Electric belt-conveyors • One electric bucket-type marine leg	Receipt and shipment of grain	Peavy Co.
Kalama Chemical Kalama Wharf	46°01'17N., 122°51'38"W.	680	40	23	Tank storage (5 million gallons)	Receipt of toluene	Kalama Chemical, Inc.
RSG/Forest Products Kalama Wharf	46°00'55"N., 122°51'13"W.	300	25	16	Open storage (40 acres)	Shipment of lumber	Port of Kalama/ RSG/Forest Products, Inc.
Harvest States Cooperatives, Kalama Grain Elevator Wharf	45°59'03"N., 122°50'05"W.	840	40	25	• Silo/Tank storage (6.4 million bushels) • Seven vessel loading spouts • Electric belt-conveyors • One electric bucket-type marine leg	Receipt and shipment of grain	Port of Kalama/ Harvest States Cooperative

Dimensions are given in feet
* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

miles above Cottonwood Island, is the site of two lumber mills.

(222) A marina and mooring basin are at Kalama. Berths with electricity, gasoline, diesel fuel, water, a launching ramp, a pumpout station and wet and dry winter boat storage are available at the marina.

(223) The channel circling the west side of **Sandy Island** is used by tugs hauling log rafts and barges.

(224) **Martin Slough**, between Martin Island and Burke Island and the Washington shore, formerly a booming and log storage area, as was **Burke Slough** between Burke Island and the Washington shore. Mariners are cautioned that submerged piling and hazardous structures may exist throughout the area close to shore.

(225) **Columbia City** is a municipality at Mile 73 (84) on the Oregon side. The main channel follows along the waterfront.

(226) At the south end of **Deer Island Slough**, about 1.5 miles north of Columbia City, is the pier of a chemical plant.

(227) **Saint Helens**, at Mile 75 (86) opposite the mouth of Lewis River, is the site of a pulp and paper mill.

(228) Berths with electricity, gasoline, water, ice and some marine supplies are available at the marina at Saint Helens. Engine repairs can be made. There are a large number of houseboats and boathouses in the vicinity of the marina. A launching ramp and wet winter boat storage are available at the marina.

(229) A dredged channel, marked by private daybeacons, leads to a marina in **Scappoose Bay**, southwest of Saint Helens. The marina is owned by the Port of Saint Helens and can provide berths with electricity, gasoline, water, ice, marine supplies, a launching ramp and wet winter storage.

(230) **Lewis River** enters Columbia River at **Austin Point**, Mile 75.7 (87.0), on the Washington side. Depths are about 3 feet over the mouth, but just below the first bridge a bar reduces the depth to less than 1 foot. Some recreational traffic moves up to **Woodland**, 5.7 miles above the mouth, at high water. The railroad swing bridge 1.8 miles above the mouth remains in the closed position and has a clearance of 28 feet. (See **33 CFR 117.1053**, chapter 2, for drawbridge regulations.) The other bridges, all fixed, have clearances of 34 feet or more.

(231) From Saint Helens, Columbia River follows a south course to the mouth of the Willamette River, Mile 88 (101.2), and then turns southeast to Vancouver, Mile 92 (106).

(232)

Multnomah Channel to Lake River

(233) **Multnomah Channel** is a 19-mile waterway separated from the Columbia River near Saint Helens and from the Willamette River near Portland by **Sauvie Island**. A power cable about midway through the channel has a clearance of 100 feet. A fixed highway bridge, near the south end, has a clearance of 77 feet. There are several full service marinas and yacht clubs along the channel. Covered berths, electricity, gasoline, diesel fuel, water, ice, marine supplies, launching ramps and pump-out stations are available. Hull, engine and electronic repairs can be made and an 80-ton marine lift and 60-ton marine railway are available. There are several houseboats along the channel, and most of the channel south of **Coon Island** is designated a **no wake zone**.

(234) **Warrior Rock**, the point on the east side of **Warrior Point** at the north end of Sauvie Island, is marked by a light. In thick fog vessels seldom attempt to pass the light; they anchor either above or below the point until the weather clears.

(241)

Structures Across the Willamette River *(statute miles 0 through 15)*

Name	Type	Location	Clearances (feet) Horizontal	Clearances (feet) Vertical*	Information
Overhead cables	power	45°36'54"N., 122°47'20"W.		230	Three cables
St. Johns bridge	fixed	45°35'07"N., 122°45'51"W.	1068	205	
Burlington Northern Railroad bridge	vertical lift	45°34'37"N., 122°44'50"W.	499	54 (down) 200 (up)	Bridgetender monitors VHF-FM channel 16 and works on channel 13; call sign KQ-9050.
Fremont bridge	fixed	45°32'17"N., 122°41'00"W.	928	163	
Broadway bridge	bascule	45°31'55"N., 122°40'27"W.	251	90	Bridgetender monitors VHF-FM channels 16 and 13 and answers on channel 13; call sign KLU-724. **(Note 1)**
Steel bridge	vertical lift	45°31'39"N., 122°40'09"W.	205	26 (down) 161 (up) 71 (up, lower deck only)	Bridgetender monitors VHF-FM channel 16 and works on channel 13; call sign KQU-534. **(Note 1)**
Burnside bridge	bascule	45°31'23"N., 122°40'03"W.	205	64	Bridgetender monitors VHF-FM channels 16 and 13 and works on channel 13; call sign KTD-520. **(Note 1)**
Morrison bridge	bascule	45°31'05"N., 122°40'12"W.	209 (185 open)	69	**(Note 1)**
Hawthorne bridge	vertical lift	45°30'47"N., 122°40'15"W.	200	49 (down) 159 (up)	Bridgetender monitors VHF-FM channels 16 and 13 and works on channel 13; call sign KTD-521. **(Note 1)**
Marquam bridge	fixed	45°30'29"N., 122°40'08"W.	350	(see information)	Clearances: 120 feet for central 220 feet 102 feet for central 350 feet
Tilikum Crossing/TriMet bridge	fixed	45°30'18"N., 122°40'01"W.	651	63	77 feet for central 150 feet
Ross Island bridge	fixed	45°30'04"N., 122°39'51"W.	490	(see information)	Clearances: 120 feet for central 100 feet 90 feet for central 330 feet
Overhead cables	power	45°29'50"N., 122°39'50"W.		(see information)	Clearances: 123 feet (main channel) 83 feet (east channel)
Overhead cables	power	45°29'25"N., 122°39'27"W.		75	Cable crosses east channel

* Vertical clearances are referenced to Columbia River Datum
Note 1 – See **33 CFR 117.1 through 117.59 and 117.897**, chapter 2, for drawbridge regulations.

(235)

Local magnetic disturbance

(236) Differences of as much as 6° from the normal variation have been reported between Warrior Rock and Duck Club Light 6 off **Duck Club**, 1.5 miles south.

(237) **Lake River**, the outlet for **Vancouver Lake**, flows north for 9.5 miles to its junction with Columbia River at the north end of **Bachelor Island**, Mile 76 (88). The reported controlling depth was 6 feet in 1973 to the small-craft harbor at **Ridgefield**, 2.5 miles above the mouth. A marina is at Ridgefield; berths, water, ice, a launching ramp and some marine supplies are available. The town of Ridgefield operates a public small-craft dock and launching ramp just south of the marina. Wet winter boat storage is at the marina.

(238) A marina, in the channel behind the elongated island west of Shillapoo Lake, has berths with electricity, gasoline, water, ice, a launching ramp and marine supplies. A 2½-ton hoist is available for launching small craft. Reported depths of 5 feet can be carried through the channel and to the river north of the marina; however, the channel south of the marina is closed by shoals by continually changing shoals.

(239)

Portland

(240) At Mile 88 (101.2), Columbia River is joined by **Willamette River**, its largest tributary below the Cascade Mountains. The Willamette drains a large territory and is important as the site of the city of Portland, 9 (10.4) miles above its mouth.

(242) The federal project depth in Willamette River is 40 feet to the Broadway Bridge in Portland, thence, maintained by the Port of Portland, 30 feet between Broadway Bridge and Ross Island. (See Notice to Mariners and latest editions of charts for controlling depths on the Willamette River to the Broadway Bridge.) Additional information can be obtained from the Corps of Engineers, Portland, OR. (See Appendix A for address.) Contact the Port of Portland for the controlling depths of the section of the channel maintained by the port.

(243) (See **33 CFR 162.225**, chapter 2, for navigation regulations on Willamette River.)

(244) From the entrance of the Willamette River to the Willamette Falls Locks at Oregon City, overhead clearances and depths are at Columbia River Datum. Above the Willamette Falls Locks depths of the Willamette River are at **Willamette River Datum** and clearances are at the datum of **Newburg Pool**.

(245) **Kelley Point Junction Light** (45°39'11"N., 122°45'46"W.), 39 feet above the water, is shown from a pile structure with a red and green triangular daymark on the end of the dike extending from **Kelley Point** on the east side of the entrance to the river.

(246) **Columbia Slough**, a narrow back channel roughly parallel to Columbia River, empties into the Willamette about 0.4 (0.5) mile above its mouth. Least depth in the slough is usually less than 2 feet. A dam has been constructed across the slough about 7.3 miles above the mouth.

(247) The fixed bridges over the slough have a least clearance of 15 feet. The least clearance of the overhead power and telephone cables is 42 feet.

(248) In the vicinity of **Post Office Bar Range**, 2 (2.4) miles above the mouth of Willamette River, deep-draft vessels favor the west side of the river, while smaller vessels and tows usually hug the east side because of lesser current. Overhead power cables with a least clearance of 230 feet cross the river 0.3 mile above the junction with Multnomah Channel. The twin towers supporting the cables are the most conspicuous features in this area.

(249) **Portland**, on Willamette River about 9 (10.4) miles from its mouth, is the principal city of the Columbia River system and one of the major ports on the Pacific coast. The port has several deep-draft piers and wharves on both sides of the Willamette River between its junction with the Columbia and Ross Island. In addition there are extensive facilities for small vessels and barges south of Hawthorne Bridge and at North Portland Harbor, south of Hayden Island. It has extensive commerce, both foreign and domestic, and is the port of call for many lines of coastwise, intercoastal and transpacific vessels.

(250) The **Port of Portland**, created by the state in 1891, is controlled by a Port Commission and administered by an executive director. The port owns several marine terminals, Port of Portland Ship Repair Yard, and dredges the channel between Broadway and Ross Island Bridges; it also assists the Corps of Engineers with other dredging in the Willamette and Columbia Rivers. The port also operates an international airport and three general aviation airports. A 30-inch hydraulic pipeline dredge is owned by the port. In addition to dredging the port waterfront and river channel, the port conducts hydrographic surveys periodically along all port-owned piers and wharves.

(251)

Anchorages

(252) The anchorage areas that are generally used in the Columbia River are Kelley Point Anchorage, east of Kelley Point and on the southwest side of Vancouver Lower Channel and Hayden Island Anchorage, between the north end of Hayden Island and Vancouver Range (See **33 CFR 110.1** and **110.228**, chapter 2, for limits and regulations.) Hayden Island anchorage has three anchor buoys for use by bulk carriers/large vessels.

(253) A **special anchorage** in the Columbia River is between Tri-Club Island (Sand Island) and Lemon Island about 6.5 miles above the railroad bridge. (See **33 CFR 110.1** and **110.128**, chapter 2, for limits and regulations.)

(254)

Regulated navigation areas

(255) Regulated navigation areas have been established in the waters of the Willamette River along both sides of the river. These areas encompass sediment caps that have been placed over contaminated soil on the river bed. Anchoring, dredging or trawling in these areas is prohibited. See **33 CFR 165.1** through **165.13**, **165.1322**, **165.1323**, **165.1326, 165.1337**, and **165.1343**, chapter 2, for limits and regulations.

(256)

Caution

(257) There are several cable and pipeline areas along the length of the Willamette River, the bulk of them being between Mile 2.6, near Multnomah Channel, through Mile 16.6, near the Sellwood Bridge. These areas are typically concentrated around bridge crossings; however, there are a few exceptions. A large cable and pipeline area, the northern limit of which is at Mile 11.4, extends southward to Mile 13.7, near the Ross Island Bridge. Not all submarine pipelines and cables are required to be buried, and those that were originally buried may have become exposed. Mariners are urged to use extreme caution in these areas. If anchorage is necessary, it is requested that vessel operators contact the Port of Portland before anchoring or performing construction activities.

(258)

Weather, Portland and vicinity

(259) The coast range provides limited shielding from the maritime influence of the Pacific Ocean. The Cascade Range provides a steep high slope for the lifting moisture-laden westerly winds, which produces heavy rainfall in the western Cascade piedmont region. They also form the barrier for the Columbia River basin region and dry continental air masses. Airflow is usually northwest in Portland in spring and summer and southeast in fall and winter, interrupted occasionally by outbreaks of dry continental air east through Cascade passes and across ridge tops. When such an outbreak occurs, extreme high or low temperatures are usually experienced in the Portland area.

(260) Portland has a very definite winter rainfall climate. About 88 percent of the annual total occurs in October through May, nine percent in June and September, while only 3 percent comes in July and August. The average annual precipitation is 37.33 inches (948.2 mm). December is the wettest month, and July, the driest. Precipitation is mostly rain; on the average only 17 days each year have snow. Snowfall is seldom more than a couple of inches, and it generally lasts only a few days. The annual average is only seven inches (178 mm) with January having the most. Snowfall has fallen in every month from November through May. The greatest measured snowfall in 24 hours

(277)

Facilities at Portland

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Facilities on the Willamette River							
Port of Portland Terminal 5 (Berth 501) Grain Terminal Dock	45°38'33"N., 122°46'20"W.	900	40	25	• Three loading towers • One marine leg • Electric belt-conveyors • Silo/Tank storage (4.1 million bushels)	Receipt and shipment of grain	Port of Portland/ Columbia Grain, Inc.
STC Submarine Systems Dock	45°38'25"N., 122°46'31"W.	680	35-40	32	• Steel roller conveyors	Shipment of fiber optic cable	Port of Portland/ STC Submarine Systems, Inc.
Unocal Rivergate/ Portland Agricultural Terminal Dock	45°37'33"N., 122°47'18"W.	1,164	35	35	• Covered storage • Tank storage: (7.8 million gal./ammonia) (19,200 gal./caustic soda) (15,600 gal./sulfuric acid)	• Receipt of granulated bulk urea • Receipt and shipment of anhydrous ammonia • Shipment of caustic soda and sulfuric acid	Unocal Petroleum Products & Chemicals Division, Unocal Corp.
Ash Grove Cement Co. Rivergate Plant Dock	45°37'22"N., 122°47'18"W.	230	25	30	• One 90-ton pedestral crane • Electric belt-conveyor • Open storage (80,000 tons of limestone)	Receipt of limestone	Ash Grove Cement Co.
James River Corporation Western Transportation Rivergate Barge Wharf	45°37'14"N., 122°47'18"W.	1,587	20-30	33	• Three 7-ton elevators and electric transfer system • Open storage (1.1 acres) • Covered storage (600,000 square feet)	• Receipt and shipment of general cargo • Receipt of starch and woodpulp • Shipment of paper products	James River Corp., Western Transportation
Time Oil Company Rivergate Terminal Wharf	45°36'54"N., 122°47'10"W.	750	40	26	• One 10-ton pedestal crane • Tank storage (750,000 barrels)	Receipt and shipment of petroleum products	Time Oil Co.
Premier Edible Oils Corporation Dock	45°36'47"N., 122°47'08"W.	670	42	32	• One ½-ton hose-handling derrick • Tank storage (7 million gallons)	• Receipt of crude palm, coconut and palm kernal oil • Occasional shipment of coconut oil	Schnitzer Steel Products Co./Premier Edible Oils Corp.
Georgia-Pacific Corp. Linnton Wood Chip Dock	45°36'45"N., 122°47'27"W.	1,200	36	28.5	• Tower on platform with shiploading chute • Electric belt-conveyor system • Open storage	Shipment of wood chips	Georgia-Pacific Corp.
International Terminals Berths 1, 2 and 3	45°36'39"N., 122°46'46"W.	1,900	35-40	25	• Three 60-ton gantry cranes • Two crawler cranes • Six 40-ton locomotive cranes • One 25-ton mobile crane • Open storage (20 acres) • Covered storage (65,000 square feet)	• Shipment of scrap metal • Receipt and shipment of steel products and miscellaneous dry bulk materials (pig iron, magnesite)	Schnitzer Steel Products Co./ International Terminals
International Terminals Berth 4 Bulk Loader Dock	45°36'26"N., 122°46'50"W.	700	35	25	• Electric belt-conveyor system with loading spout • Open storage area	Shipment of miscellaneous bulk commodities (scrap metal, ore, sand, petroleum coke)	Schnitzer Steel Products Co./ International Terminals
Port of Portland Terminal 4 (Berth 401) Grain Elevator	45°36'19"N., 122°46'47"W.	950	40	35	• Two traveling gantry towers with loading spouts • Electric belt-conveyor system • Covered storage (44,886 square feet)	Shipment of grain	Port of Portland/ Cargill, Inc.
GATX Tank Storage Terminals Corporation Portland Dock	45°36'15"N., 122°47'09"W.	740	32	28	• Four electric hose-handling derricks • Tank storage (484,000 barrels)	Receipt and shipment of liquid bulk commodities and petroleum products	GATX Tank Storage Terminals Corp.
Port of Portland Terminal 4, Pier 1 (Berths 403, 404 and 405)	45°36'16"N., 122°46'36"W.	1,500	35	35	• Steel tower with marine leg • Electric belt-conveyor system • Silo/Tank storage (7.6 million bushels) • Tank storage (5 million gal.) • Covered storage	• Receipt and shipment of molasses and liquid fertilizer • Receipt of grain	Port of Portland/ PM Ag Products, Inc. and Cargill, Inc.
Port of Portland Terminal 4 (Berths 406, 407 and 408)	45°36'16"N., 122°46'36"W.	1,500	35	30	• One 35½-ton container crane • Open storage (13 acres)	Receipt and shipment of conventional and containerized general cargo	Port of Portland/ Oregon Terminal Co.

Facilities at Portland

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Port of Portland Terminal 4 (Berths 411 and 410)	45°36'04"N., 122°46'31"W.	1,140	40	33	• One traveling tower crane • One fixed loading tower • Covered storage (33,600 tons of soda ash)	• Receipt and shipment of miscellaneous bulk commodities (coal tar pitch and alumina) • Shipment of soda ash, bentonite clay, talc, sodium sulphite and soybean meal	Port of Portland/ Hall-Buck Marine, Inc.
Port of Portland Terminal 4 (Berths 414 and 415)	45°35'50"N., 122°46'27"W.	1,344	40	25	• One 36-ton gantry crane • Open storage (38 acres) • Covered storage (205,000 square feet)	Receipt and shipment of conventional general cargo, steel and lumber	Port of Portland/ Oregon Terminal Co.
ARCO Products Co. Linnton Terminal Wharf	45°35'40"N., 122°46'41"W.	830	35	32	• One hose-handling derrick • Tank storage (497,000 barrels)	Receipt and shipment of petroleum products	ARCO Products Co.
Mobil Oil Corporation Linnton Terminal Wharf	45°35'34"N., 122°46'37"W.	672	36	32	Tank storage (675,000 barrels)	• Receipt and shipment of petroleum products • Loading barges for bunkering vessels at berth	Mobil Oil Corp.
Time Oil Company Linnton Terminal Wharf	45°35'22"N., 122°46'21"W.	450	35	30	• One pedestal crane • Tank storage (350,000 barrels)	Receipt and shipment of petroleum products	Time Oil Co.
Port of Portland Terminal 4 (Berth 416) Automobile Unloading Dock	45°35'38"N., 122°46'18"W.	1,014	40	14	Open storage (73 acres)	Receipt of automobiles	Port of Portland/ Toyota Vehicle Processors, Inc.
Pacific Northern Oil Corp. Portland Terminal Wharf	45°34'50"N., 122°45'33"W.	750	40	30	• One 9-ton pedestral crane • Tank storage (270,000 barrels)	Receipt and shipment of petroleum products	Northwest Natural Gas Co./Pacific Northern Oil Corp.
Elf Atochem North America Portland Plant Dock 2	45°34'20"N., 122°44'36"W.	410	30	30	• One hose-handling derrick • Tank storage: (8 million gal./caustic soda) (300,000 gal./sodium chlorate) (124,800 gal./chlorine)	Shipment and occasional receipt of liquid caustic soda, chlorine and sodium chlorate solutions	Elf Atochem North America, Inc.
Elf Atochem North America Portland Plant Dock 3	45°34'12"N., 122°44'24"W.	900	30	30	• Hopper and belt-conveyor • Open storage (90,000 tons of salt)	Receipt of salt	Elf Atochem North America, Inc.
GATX Terminals Corp. Willbridge Plant Pier	45°34'03"N., 122°44'19"W.	1,008	33	32	• Four hose-handling derricks • Tank storage (834,000 barrels)	Receipt and shipment of petroleum products	GATX Terminals Corp.
Chevron U.S.A. Willbridge Terminal Pier	45°34'01"N., 122°44'17"W.	1,312	40	32	• Two hose-handling derricks • Two hose-handling cranes • Tank storage: (1.6 million barrels) (1.3 million barrels/crude oil)	• Receipt and shipment of petroleum products • Receipt of crude oil	Cheveron U.S.A., Inc.
Unocal Petroleum Products and Chemicals Division Portland Terminal Pier	45°33'58"N., 122°44'14"W.	1,152	34-37	32	• Four hose-handling derricks • Tank storage (760,000 barrels)	Receipt and shipment of petroleum products	Unocal Petroleum Products and Chemicals Division, Unocal Corp.
McCall Oil and Chemical Company Portland Terminal Wharf	45°33'54"N., 122°44'02"W.	922	37	30	• Two pedestal cranes • Tank storage (930,000 barrels)	• Receipt and shipment of petroleum products • Loading barges for bunkering vessels at berth	McCall Oil and Chemical Co.
Lone Star Northwest Front Avenue Plant Pier	45°33'48"N., 122°43'56"W.	225	20	28	• Hopper and belt-conveyor • Open storage (60,000 tons of aggregate)	Receipt of sand and gravel	Lone Star Northwest, Inc.
Texaco Refining and Marketing Portland Terminal Wharf	45°33'25"N., 122°43'16"W.	670	31	29	• Two ½-ton hose-handling derricks • Tank storage (580,000 barrels)	Receipt and shipment of petroleum products	Texaco Refining and Marketing, Inc.
Waterway Terminals Co. Portland Front Avenue Wharf	45°33'01"N., 122°42'13"W.	1,540	35	33	• Seven freight elevators • Covered storage (1 million square feet)	Receipt and shipment of conventional general cargo	Waterway Terminals Co.
Port of Portland Terminal 2 (Berth 203)	45°32'43"N., 122°42'02"W.	400	25	20	• One 36-ton gantry crane • Covered storage (39,000 square feet)	Receipt and shipment of wood pulp and paper products	Port of Portland/James River Corp., Western Transportation Division
Port of Portland Terminal 2 (Berths 204, 205 and 206)	45°32'56"N., 122°42'01"W.	2,295	40	26	• Two 50-ton container cranes • Open storage (27½ acres) • Covered storage (261,000 square feet)	• Receipt and shipment of conventional, containerized, roll-on/ roll-off general and refrigerated cargo • Shipment of lumber and wood pulp	Port of Portland/ Stevedoring Services of America, Inc.

was just under 11 inches (279 mm) recorded in January 1971.

(261) Each season is clearly marked. Winter is mild, cloudy and wet with southeast surface winds predominating. Summer is marked by mild temperature, with prevailing northwest winds and very little precipitation. Fall and spring are transitional in nature, with frequent periods of ground fog. An average of 18 days during October record foggy conditions while only three days during July can expect fog. At all times, incursions of marine-tempered air are a frequent moderating influence. Outbreaks of continental air from east of the Cascade Mountains flow through the Columbia Gorge at near sea level and spread into the Portland area associated with the movement of Pacific storms offshore on a northeast storm track. In winter this brings the coldest weather, and the extremes of low temperature are registered in the cold airmass. Freezing rain and ice glaze often are transitional effects. In summer the hot, dry, continental air brings the highest temperatures. Extreme temperatures below zero are very infrequent. The absolute lowest ever reached is 3°F below zero (-19.4°C) recorded in February 1950. Extreme temperatures above 100°F (37.8°C) have occurred during each month from May through September; the absolute highest temperature is 107°F (41.6°C) recorded in July 1942, July 1965 and August 1981. Temperatures 90°F (32.2°C) or higher are reached every year, but seldom persist for more than 2 or 3 days before the warm spell is broken by a flow of cool, moist air from the ocean. The average annual temperature for Portland is 53.9°F (12.1°C). The average maximum is 63°F (17.2°C) while the average minimum is 45°F (7.2°C).

(262) Destructive storms are infrequent in the Portland area. Surface winds seldom exceed gale force. Thunderstorms are infrequent, occurring, on average, only seven days each year. Tornadoes with the funnel cloud reaching the ground are rare and there are rare occurrences of heavy rain even though winter rains may persist for days at a time.

(263) Ice forms occasionally, but it is seldom heavy enough to affect navigation seriously, although navigation by small craft may be difficult.

(264)

Pilotage, Portland

(265) See Pilotage, Columbia River and Bar, indexed as such, earlier this chapter.

(266)

Towage

(267) Dock assist tugs to 3,600 hp are available in Portland. No lighterage is necessary, but occasionally lumber is transferred by barge from lumbermills to vessels.

(268)

Quarantine, customs, immigration and agricultural quarantine

(269) Portland is a customs port of entry. (See Vessel Arrival Inspections, chapter 3.)

(270) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(271)

Coast Guard

(272) A marine safety unit and station are located in the Swan Island Industrial Park at Portland. (See Appendix A for address.)

(273)

Harbor regulations

(274) The regulations are enforced by the City of Portland **harbormaster** and Multnomah County Sheriff River Patrol; copies of the regulations (Title 19) may be obtained on the Internet at *portlandoregon.gov* or, for a nominal fee, by contacting the City Auditors Office at 1221 SW 4th Avenue, Room 140, Portland, OR 97204. The harbormaster may be contacted by phone 503–823–3767 or by writing Portland Fire Bureau, Attn: Harbormaster, 55 SW Ash Street, Portland, OR 97204.

(275)

Wharves

(276) The Port of Portland operates several modern marine terminals. In addition to the port-owned piers and wharves there are many privately owned deepwater facilities and many barge wharves in the harbor. Only the deep-draft facilities are listed in the facilities table. The alongside depths are reported depths. (For information on the latest depths contact the port authorities or the private operators.) All the Port of Portland operated facilities have rail trackage, water and electrical shore power connections, as well as many of the privately operated facilities. All wharves have highway connections. Floating and shore-based mobile cranes of up to 65-ton capacity are available, but most general cargo is handled by ship's tackle. Special handling equipment, if available, is mentioned under Mechanical Handling Facilities in the table.

(278)

Supplies

(279) Marine supplies of all kinds are available in Portland. Bunker fuel, diesel oil and lubricants are available. Most large vessels are bunkered at their berths by barge. Water is available at most of the berths.

(280)

Repairs

(281) Portland is a major ship repair center on the Pacific coast. The Port of Portland, Swan Island Ship Repair Yard, on **Swan Island** on the east side of Willamette River, is the major repair facility at the Port of Portland. There are three floating drydocks here with a maximum lift capacity of 87,000 tons. Complete repair facilities and services are available at the yard, including construction, conversion and above and below waterline repairs. The yard has over 9,500 feet of ship repair berths to a maximum alongside draft of 40 feet (depending on river stage). There is a

Facilities at Portland

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Columbia Aluminum Portland Wharf	45°32'59"N., 122°41'38"W.	1,350	40	27	• Traveling ship unloader • Hopper and belt-conveyor • Silo storage (46,000 tons)	Receipt of alumina	Columbia Aluminum Corp.
Ash Grove Cement Co. Portland Plant Wharf	45°32'42"N., 122°41'17"W.	250	20	31	• Two pneumatic pipelines • Silo storage (19,500 tons of cement)	Receipt of bulk cement	Ash Grove Cement Co.
Port of Portland Terminal 1 (Berths 101, 102 and 103)	45°32'29"N., 122°41'27"W.	1,650	22-35	29	• Open storage (5.3 acres) • Covered storage (125,900 square feet)	Receipt and shipment of wood pulp and paper products	Port of Portland/James River Corp., Western Transportation Division
Lone Star Northwest River Street Terminal Dock	45°32'12"N., 122°40'39"W.	600	34	30	• Two pneumatic pipelines • One 10-ton mobile crane • Silo storage (58,000 tons of bulk cement)	Receipt of bulk cement	Lone Star Northwest, Inc.
Cargill Portland Wharf	45°32'07"N., 122°40'32"W.	950	40	30	• Grain gallery with five loading spouts served by belt-conveyor • Silo storage (1.5 million bushels)	Shipment of grain	Cargill, Inc.
Cargill Portland Barge Dock	45°32'03"N., 122°40'27"W.	240	17	30	• One marine leg served by a belt-conveyor • Silo storage (See Ref. No. 36)	Receipt of grain	Cargill, Inc.
Louis Dreyfus Corporation Portland Barge Dock	45°31'46"N., 122°40'12"W.	200	40	20	• One marine leg served by a belt-conveyor • Silo storage (See Ref. No. 39)	Receipt of grain	Louis Dreyfus Corp.
Louis Dreyfus Corporation. Portland Wharf	45°31'43"N., 122°40'09"W.	750	40	31	• Grain gallery with six loading spouts served by two belt-conveyors • Silo storage (1.8 million bushels)	Shipment of grain	Louis Dreyfus Corp.
James River Corporation Lake Oswego Wood Chip Transfer Dock	45°25'11"N., 122°39'22"W.	840	16	30	• One barge loading spout and electric belt-conveyor • Open storage (15 acres)	Shipment of wood chips	Port of Portland/ James River Corp.
Facilities at North Portland							
Port of Portland Terminal 6 (Berth 601) Automobile Unloading Dock	45°38'51"N., 122°45'29"W.	1,000	12	12	Open storage (75 acres)	Receipt of motor vehicles	Port of Portland/ Hyundai Motor America
Port of Portland Terminal 6 (Berths 603, 604 and 605)	45°38'26"N., 122°44'54"W.	2,850	40	26	• Seven traveling container cranes to 85 tons • Open storage (68.2 acres)	Receipt and shipment of containerized general cargo and heavy-lift items	Port of Portland
Port of Portland Terminal 6 (Berth 607) Automobile Unloading Dock	45°38'02"N., 122°44'22"W.	1,014	35	12	Open storage (50 acres)	Receipt and shipment of automobiles	Port of Portland/ American Honda Motor Co.

Dimensions are given in feet
* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

157,050-barrel ballast treatment plant for the offloading of oily slops.

(282) Several firms are available for undertaking outfitting and repair work. Marine railways with hauling capacities to 1,000 tons and cranes to 70 tons are available for full repairs and to any type of vessel.

(283)

Communications

(284) Portland is served by several major railroads and airlines. Portland International Airport is about 2 miles north of the city. Many barge lines provide service up the Columbia River to Richland, WA., 214 (246) miles from Portland; barge service is also available on the Willamette River to Salem, OR, 73.6 (84.7) miles above the mouth, and on the Snake River to Lewiston, ID, 324 (373) miles from Portland.

(285)

Small-craft facilities

(286) Most of the small-craft facilities, including practically all of the moorage, is in North Portland Harbor and along the south bank of the Columbia River between Interstate 5 highway bridge and the west end of Government Island. Complete facilities are available. Berths with electricity, gasoline, diesel fuel, water, ice, marine supplies, launching ramps, pumpout stations and wet and dry winter boat storage can be obtained at many marinas. Hull, engine and electronic repairs can be made. Drydocks to 70 tons, 55 feet long and 16 feet wide are available in North Portland Harbor.

(287)

Milwaukie to Corvallis

(288) Navigation of Willamette River above Portland is hazardous due to the rocks, shoaling bars and strong

currents. Local knowledge and midchannel courses are recommended. Present chart coverage extends only to Newberg, 43.4 (50) miles above the mouth. Many of the daybeacons in the Willamette River are seasonal. The navigational aids above Newberg are not maintained. Navigation should be with local knowledge only. The Portland Coast Guard should be contacted for the latest information concerning navigation of Willamette River above Salem.

(289) Below the falls at Oregon City, ordinary fluctuation of stage of water is 15 feet and extreme fluctuation due to flood conditions is 30 to 50 feet. Above Oregon City, ordinary fluctuation is 12 to 20 feet and extreme is 20 to 27 feet.

(290) Depths and clearances of bridges and cables are at **Columbia River Datum** below the Willamette Falls Locks. Above the Willamette Falls Locks depths of the Willamette River are at **Willamette River Datum** and clearances are at the datum of **Newberg Pool**.

(291) The minimum clearances of the overhead power cables crossing the river from Portland to Newberg are 77 feet to Willamette Falls Canal, 72 feet over Willamette Falls Canal and 75 feet to Newberg.

(292) Between Portland and Willamette Falls most of the terminals are privately owned mill wharves and oil-receiving facilities. Above the falls are small privately owned wharves or natural landings.

(293) A public launching ramp is on the west side of the river at a park about 13.5 (15.7) miles above the entrance.

(294) Sellwood fixed highway bridge, 14.5 (16.7) miles above the mouth, is an arched structure with a vertical clearance of 75 feet at the center and 45 feet at the margins. A public mooring is on the east side of the river at a park just north of the bridge. A repair facility is directly across the river from the park; gasoline, water, and a launching ramp are available. A lift to 7 tons are available for all types of repairs to light- draft boats.

(295) A launching ramp is at **Milwaukie**, 16.2 (18.6) miles above the mouth. Minor engine and hull repairs can be made on light-draft boats. Dry winter boat storage is available.

(296) A fixed railroad bridge, 17.4 (20) miles above the mouth, has a clearance of 74 feet.

(297) A wharf on the west bank of the river, 0.3 (0.3) mile above the railroad bridge, has 840 feet of berthing space with a depth of 16 feet alongside; the deck is 30 feet high and marked by private lights. Electric belt conveyors serve barge-loading spouts and a 15-acre open storage area in the rear. The wharf ships wood chips by barge and is owned by the Port of Portland and operated by James River Corporation.

(298) The channel passes east of **Hog (Rocky) Island**, 1.6 (1.8) miles above the railroad bridge. **Copeleys Rock**, 150 yards east of the south end of the island, is covered 10 feet and should be avoided.

(299) **Oregon City**, on the east bank 22.6 (26) miles above the mouth, is connected with **West Linn** by two fixed highway bridges; one, about 0.2 (0.2) mile below the Willamette Falls canal locks, has a vertical clearance of 74 feet. The second, 0.6 (0.7) miles below the north end of the locks, has a clearance of 76 feet.

(300) A marina, on the east bank just above the lower highway bridge, has about 350 berths, electricity, gasoline, water, ice, provisions, wet winter storage, a launching ramp and marine supplies. Engine repairs can be made.

(301) A large papermill is on each bank of the river at Willamette Falls Canal.

(302) **Willamette Falls Canal**, on the west bank 22.8 (26.2) miles above the mouth, has four locks with a total lift of 50 feet; usable lock dimensions are 175 feet long, 37 feet wide and 5 feet deep over the miter sills at low water. The locks are currently closed and non-operational. A bascule highway bridge across the canal has a vertical clearance of 27 feet closed. The least clearance of the power cables and pipelines that cross the canal is 67 feet.

(303) A warehouse and other buildings of a papermill are on the west bank alongside the canal locks. An 850-foot timber wharf is on the east side of the canal.

(304) From the entrance to **Tualatin River**, 24.8 (28.5) miles above the mouth, for over 4 miles, Willamette River is shallow and winding; buoys and unlighted ranges mark the channel.

(305) **Walnut Eddy** is on the east bank 29.4 (33.8) miles above the mouth.

(306)

Cable ferry

(307) The Canby ferry crosses the river about 1.1 (1.3) miles above Walnut Eddy. The ferry carries passengers and vehicles and operates from 0645 to 2115 daily except during periods of high water. When the ferry is underway, the cable is suspended below the water surface at varying depths. When the ferry is docked, the cable is dropped to the bottom. DO NOT ATTEMPT TO PASS A MOVING CABLE FERRY.

(308) Near **Wilsonville**, 33.7 (38.8) miles above the mouth, there are twin fixed highway bridges and a fixed railroad bridge, with clearances of 74 feet and 76 feet, respectively. A marina, on the south bank under the railroad bridge, has about 115 berths, with electricity, gasoline, water, ice and marine supplies. The marina has a launching ramp and can make hull and engine repairs. Marine towing service for small craft is also available at this marina.

(309) A quarry is on the north side of the river about 300 yards west of the railroad bridge. Mariners are advised to exercise caution because barges and tugs may be operating in the area.

(310) Near **Butteville**, 37.3 (43.0) miles above the mouth, there is a small-craft marina with about 35 berths, electricity, gasoline, water, ice, a launching ramp and some marine supplies available. Minor engine repairs can be made. The fixed highway bridge, 42.1 (48.4) miles above the mouth, has a clearance of 68 feet at the main span. At **Newberg**, 43.4 (50.0) miles above the mouth,

there is a fixed highway bridge with a clearance of 88 feet. An overhead power cable with a clearance of 55 feet crosses the river 44.9 (51.7) miles above the mouth.

(311) From Newberg to Corvallis, Willamette River is more tortuous and turning and can be difficult for the small craft; the stretch contains numerous gravel bars, pools and snags. Mariners should exercise due caution for shallow water transits. The tributary Yamhill River empties into Willamette River about 3 miles above Newberg. Depths in Yamhill River of about 3 feet are reported to Dayton, 4 miles above its mouth.

(312)

Cable ferry

(313) The Wheatland ferry crosses Willamette River about 63 (72.5) miles above the mouth. The ferry carries passengers and vehicles and operates between 0530 and 2145 daily except when the river level exceeds 16 feet. Warning signs and warning lights mark the crossing. The ferry is guided by two cables. The upper cable, 80 feet above the river level, controls the ferry during normal conditions. The low water cable, near the bottom at all times, controls the ferry when the river level drops below 12 feet. The low water cable is dropped to the bottom when the ferry is not operating. DO NOT ATTEMPT TO PASS A MOVING CABLE FERRY.

(314) Salem, capital of the State of Oregon, is 74.4 (85.6) miles above the mouth. Several moorings and floats for log-rafts and small craft are here; berths, gasoline, diesel fuel, water, ice, launching ramps and marine supplies are available at several small marinas. Hull, engine and electronic repairs can be made in Salem.

(315) A power cable at the north city limits of Salem has a clearance of 86 feet. Minimum clearance of the bridges is 64 feet at the fixed highway bridges and 42 feet down and 87 feet up at the railroad lift bridge. The railroad lift bridge is maintained in the closed position. (See **33 CFR 117.89**7, chapter 2, for bridge regulations.)

(316) At **Independence**, 83 (95.5) miles above the mouth, there is a small-craft launching ramp, but no facilities.

(317) The town of **Buena Vista** is 92 (106) miles above the mouth of the river.

(318)

Cable ferry

(319) A cable ferry crosses the river near Buena Vista. The self-propelled ferry carries passengers and vehicles and operates from 0700 to 1700 (Wednesday–Friday), 0900 to 1900 (Saturday and Sunday), and is closed Monday and Tuesday. The ferry is seasonal and operates between April and October. Both when the ferry is underway and when docked the guide cables are suspended approximately 80 feet above the water. When underway, the ferry shows the required navigation lights. DO NOT ATTEMPT TO PASS A MOVING CABLE FERRY.

(320) The river is crossed at **Albany**, 104 (119.8) miles above the mouth, by three bridges: a railroad swing bridge with a clearance of 40 feet, a fixed highway bridge with a clearance of 55 feet and a fixed highway bridge with a clearance of 60 feet in the center of the north span and 58 feet in the center of the south span. The railroad swing bridge is maintained in the closed position. (See **33 CFR 117.1** through **117.59** and **117.897**, chapter 2, for drawbridge regulations.)

(321) **Corvallis**, 114.6 (131.9) miles above the mouth, is the limit of the **federal project** of the river. Navigation above Corvallis is dangerous and should not be attempted.

(322) There are small-craft finger piers, ramps and marginal facilities at Corvallis; gasoline and water are available. A highway bridge has a swing span with a clearance of 35 feet. (See **33 CFR 117.1** through **117.59** and **117.897**, chapter 2, for drawbridge regulations.)

(323)

Vancouver

(324) The main channel of the Columbia River favors the Washington shore, north of **Hayden Island** and **Tomahawk Island**, from **Mathews Point** to Ryan Point. Overhead clearances are at **Columbia River Datum**. Overhead power cables with a least clearance of 220 feet cross at Mile 90.6 (104.2). The Burlington Northern Railroad swing bridge at Mile 91.8 (105.7) has a clearance of 39 feet. The bridgetender monitors VHF-FM channels 13 and 16 and works on channel 13 (call sign KQ-9049.) The Interstate 5 highway bridge at Mile 92.5 (106.5) has twin spans that cross three separate channels. The clearances are: lift spans across the Tomahawk Bar Channel, 39 feet down and 178 feet up; fixed spans across the barge channel, 46 feet (58 feet at the center); fixed spans across the alternate barge channel, 72 feet. The bridgetender monitors VHF-FM channels 13 and 16 and works on channel 13; call sign, KBM Interstate. (See **33 CFR 117.1** through **117.59** and **117.869**, chapter 2, for drawbridge regulations.)

(325) **North Portland Harbor** is that portion of the river channel between the Oregon shore and Hayden Island. The lower or west entrance is at Mile 89.0 (102.5); the upper or east entrance is at Mile 94.5 (108.8).

(326) A **federal project** provides for a 40-foot turning basin at the west entrance to North Portland Harbor, a 40-foot channel for about 1.3 miles above the west entrance, and thence a 20-foot channel to the project limit about 2 miles farther upstream. The **federal project** for the east entrance to North Portland Harbor provides for a channel 10 feet deep from the main channel in Columbia River southwest to just south of the east end of Tomahawk Island. Lights mark the east entrance channel for about 0.6 mile from the junction with Columbia River. Two bridges cross North Portland Harbor. The railroad bridge, 2.6 miles east of the west entrance, has a swing span with a clearance of 39 feet. (See **33 CFR 117.1** through **117.59** and **117.887**, chapter 2, for drawbridge regulations.) A fixed highway bridge (Interstate 5) about 0.8 mile east has a clearance of 35 feet.

(327) **Vancouver** is on the Washington side of the Columbia River at Mile 92 (106). The port is a water

(339)

Facilities in the Port of Vancouver

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Vanalco, Vancouver Alumina Dock	45°38'44"N., 122°43'57"W.	840	40	30	Tank storage (70,000 tons)	Receipt of alumina	Alumina Co. of America/Vanalco, Inc.
Terminal 4 (Berth 10)	45°38'26"N., 122°42'56"W.	1145	40	-	Open storage (45 acres)	Receipt of automobiles	Port of Vancouver
Terminal 3 (Berths 8 and 9)	45°38'18"N., 122°42'30"W.	1350	40	28-30	• Open storage (34 acres) • Covered storage (289,900 sq ft)	Receipt and shipment of conventional and containerized general cargo	Port of Vancouver
Dry Bulk Materials Wharf (Berth 7)	45°38'14"N., 122°42'21"W.	960	40	34	• Covered storage (55,000 tons) • Electric belt conveyor	Shipment of dry bulk materials	Port of Vancouver
Oil Terminal Dock (Berth 5)	45°38'05"N., 122°42'06"W.	450	40	30	Tank storage: (gallons) • Chemical (3.3 million) • Petroleum (560,000) • Ethanol (336,000) • Fertilizer (2.3 million)	• Receipt and shipment of petroleum products • Receipt of liquid fertilizer	Port of Vancouver/ GATX Terminals, Tesoro Refining, and CENEX
Terminal 2 (Berths 1-4)	45°37'58"N., 122°41'52"W.	2035	40	30	• Open storage (35 acres) • Gantry cranes (two)	Receipt and shipment of conventional and containerized general cargo, dry bulk commodities and automobiles	Port of Vancouver
Vancouver Grain Elevator Wharf	45°37'49"N., 122°41'34"W.	1678	40	34.5	• Silo storage (5 million bushels) • Gantry spout • Belt conveyors	Receipt and shipment of grain	Port of Vancouver/ United Grain Corperation
Boise Cascade Vancouver Dock	45°37'25"N., 122°40'49"W.	275	25	-	Tank storage (480 tons)	Receipt of wood pulp	Boise Cascade Corperation

Dimensions are given in feet
* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

outlet for a large lumber-producing section in southwest Washington as well as a distributing point for a fair share of the grain produced in the interior of Washington and Oregon. Bulk bentonite clay, paper, petroleum products, fertilizer and general merchandise are also shipped. Steel, wood products, chemicals and automobiles are the major imported items at Vancouver.

(328) The Port of Vancouver is controlled by a board of three commissioners and a general manager.

(329)

Anchorages

(330) Anchorages for Vancouver are the same as those used for Portland. (Refer to that section under the discussion of the Port of Portland.)

(331)

Pilotage, Vancouver

(332) See Pilotage, Columbia River and Bar, indexed as such, earlier this chapter.

(333)

Towage

(334) Tugs to 3,600 hp are available at Vancouver.

(335)

Quarantine, customs, immigration and agricultural quarantine

(336) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(337)

Wharves

(338) The Port of Vancouver owns and operates three deep-draft terminals; a grain wharf and oil dock, owned by the port, are managed by private companies. There are several private facilities which, with two exceptions, handle barge traffic only. Only the deep-draft facilities are listed. The alongside depths given in the table are reported—for information on the latest depths contact the port authorities or the private operators. Most of the piers and wharves have shore connections (electrical/water). All the facilities described have direct highway connections and plant trackage with direct railroad connections.

(340)

Supplies

(341) Complete marine supplies and services are available from Portland. Fuel oil must be delivered by barge. Small-craft supplies are available in North Portland Harbor and at other places on the Columbia River east of Vancouver.

(342)

Repairs

(343) Complete repairs for large and small vessels are available at Portland. Vancouver has a fabrication, fit weld and assembly repair facility with access to rail, truck and barge loading for efficiant transit of large items. Small-craft repairs on craft up to 70 tons or 55 feet can be made in North Portland Harbor.

(344)

Communications

(345) Vancouver is served by Interstate Highway 5 and by several state routes. Three major railroads have connections to the city. Portland International Airport is on the south side of the river about 3.5 miles east-southeast of Vancouver.

(346)

Ryan Point to Eagle Creek

(347) From Vancouver to Bonneville, Mile 126 (145), Columbia River passes through the impressive **Columbia River Gorge**, flanked on each side by railroads and highways. Commerce on the river in this section consists mostly of pleasure craft and barges.

(348) There are more than 35 dike dolphins along this portion; some are marked with lights at their ends. All the dikes are completely covered at higher stages but bare about 6 feet at datum level.

(349) **Ryan Point**, 1.4 miles east-southeast of the Interstate 5 highway bridge, is the site of a former shipyard and is now an industrial park. A public launching ramp is at the park.

(350) There are many full-service marinas, yacht clubs, and moored houseboats along the Oregon shore from Interstate 5 highway bridge to the west end of Government Island.

(351) At Mile 97.9 (112.7), the river is crossed by a fixed highway bridge with a clearance of 136 feet (144 feet for the center 300 feet) over the channel.

(352)

Anchorage

(353) A special anchorage is between **Tri-Club Island** (**Sand Island**) and **Lemon Island**, the west end of **Government Island**. (See **33 CFR 110.1** and **110.128**, chapter 2, for limits and regulations.)

(354) **Camas**, at Mile 104.3 (120.0) on the Washington side, has a large papermill that maintains its own wharf on **Camas Slough**, north of **Lady Island**. About 8 feet can be taken from the Columbia River through the west entrance to the papermill wharf near the east end of the slough; the channel is marked by a light, buoys and a lighted range. The east entrance to the slough is foul and bares at low water. Most of the traffic in the slough is for the papermill, which barges its products to Portland for reshipment. At high flood stages a current of as much as 5 knots prevails in the slough.

(355) Two fixed highway bridges cross Camas Slough from the mainland to Lady Island; the west bridge has a vertical clearance of 69 feet, and the east bridge has a vertical clearance of 37 feet.

(356) A marina at mile 105.7 (121.6) just east of Camas, has about 250 berths, open and covered and with electricity, gasoline, water, a launching ramp and complete marine supplies. A marine sales and repair facility adjacent to the marina has a 12-ton hoist that can handle craft to 42 feet for hull and engine repairs. A sawmill is just east of the marina.

(357) There are five power cables crossing at **Ione Reef**, south of Lady Island. The least clearance is 133 feet.

(358) The entrance to **Sandy River**, on the Oregon side opposite Camas, bares at low water. At higher flood stages, passage up Sandy River as far as **Troutdale** is possible.

(359)

Local magnetic disturbance

(360) Differences of as much as 8° from the normal variation have been observed between **Tunnel Point** and **Point Vancouver**, east of **Reed Island.**

(361)

Dangers

(362) In this section of the river, the principal hazards to navigation are the strong currents, rocks and rocky banks, winds and an accumulation of ice.

(363)

Currents

(364) In general, currents run fair with the main channels with considerable intensity, increasing in regions upstream toward Bonneville. Exceptions are the turn in the channel at Washougal Light 50, where a northwest set prevails; southwest of **Cape Horn**, where a west set is experienced; and the region between Fashion Reef and Multnomah Falls, where a south set is experienced.

(365)

Weather, Corbett

(366) Between **Corbett**, Mile 110.3 (127), and The Dalles, Mile 165 (189.8), the river flows between the bold mountains of the **Cascade Range**. In this stretch, winds of considerable force prevail during much of the time; generally they blow upstream in summer and downstream in winter. Daily peak velocities vary from 6 to 42 knots, but Corps of Engineers officials at Bonneville Dam measured gusts as high as 76 knots during 1960–62.

(367) Near **Warrendale**, Mile 123 (141.5), the river becomes very constricted within less than a mile and continues so almost to the approach to the locks of Bonneville Dam, at the lower end of **Bradford Island**.

(368) **Beacon Rock**, 840 feet high and 300 yards inshore, is on the Washington side opposite Warrendale. It is a prominent dark gray rock outcropping of volcanic origin. A state park of the same name surrounds the rock. The park maintains a mooring float just inside the entrance to the channel west of **Pierce Island**; moorage is restricted to pleasure boats and to periods not to exceed 5 nights. Water, electricity and pump-out facility are available at the park.

(369) **Bonneville**, on the Oregon side at Mile 126 (145), is the headquarters of the U.S. Army Corps of Engineers in charge of the Bonneville Lock and Dam.

(370) **Bonneville Lock** and **Dam**, 126.3 (145.3) miles above the mouth of the Columbia River, is in four parts. Powerhouse No. 2 is between the Washington shore and Cascade Island; the spillway is between Cascade Island

and Bradford Island; Powerhouse No. 1 and the old lock are between Bradford Island and Robins Island; and the new lock is between Robins Island and the Oregon shore. The new navigation lock has a vertical lift of about 59 feet, a width of 86 feet and a length of 675 feet. Overhead power cables over the lock have a clearance of 210 feet. The old lock has been placed in mothball status. Restricted areas are above and below the spillway and powerhouse. (See **33 CFR 207.718**, chapter 2, for information concerning use, administration and navigation of Bonneville Lock and Dam.)

(371) The strong current toward the powerhouse makes it difficult to approach Bonneville Lock from upstream, particularly if the lock is approached at an angle and if a turn is to be executed in time to avoid an accident. Therefore, all craft approaching the lock from the east and pushing one or more barges should steer as close to the Oregon mainland shore as safety will permit, should be in line with the lock upon reaching the east end of the guide wall and should continue at a steady but reduced speed if the lock is prepared for entrance and the signal for entrance has been given.

(372) From Bonneville to The Dalles, the channel is through the pool created by Bonneville Dam, which extends 40 (46) miles to The Dalles Dam. Depths and overhead clearances are at **normal pool level**.

(373) Although there is deep water in much of the pool, the controlling depth to The Dalles Dam navigation lock is about 20 feet. The channels are marked by aids to navigation.

(374) An overhead power cable with a clearance of 190 feet crosses the river 1 (1.1) mile above the dam.

(375) Tugs use the dolphins on the south side of the river 1.2 (1.5) miles above the lock for mooring and shifting barges and log rafts. Small craft can find refuge in the mouth of **Eagle Creek**, 0.6 (0.7) mile above the lock, if the creek is not in flood.

(376)

Currents

(377) From the lock at Bonneville through Cascade Rapids, constant piloting is necessary because of the strong currents. From Cascade Rapids east, a set of 1° to 3° may be experienced depending on the angle that the course makes with the general direction of the river, the strength of the current and the direction and strength of the wind.

(378)

Local magnetic disturbance

(379) Differences of as much as 6° from normal variation have been observed along this section of Columbia River.

(380)

Bridge of the Gods to The Dalles

(381) **Bridge of the Gods**, 2.6 (2.8) miles above the Bonneville Dam, has a fixed span with a clearance of 135 feet over a middle width of 284 feet.

(382) **Cascade Locks**, 3 (3.3) miles above the Bonneville Dam, have been drowned out. At normal stages of pool level the sides of the old chamber of the lock bare about 3 feet. A strong current flows through the lock. A submerged jetty, covered 6 feet, extends southward 300 yards, from the south tip of the island that borders the west side of the lock; caution is advised. A marina, just east of the lock, has berths, gasoline and a launching ramp.

(383) Along this section are several inlets or rivers, generally used for log storage, where small craft may find refuge. Most are behind fixed bridges. These places and their distances above the Bonneville Dam are:

(384) **Rock Creek** at **Stevenson**, WA, 4.2 (4.8) miles—the bridge clearance is 19 feet. **Government Cove**, on the Oregon side, 5.6 (6.4) miles. **Wind River** at **Home Valley**, WA, 8.1 (9.3) miles—the minimum bridge clearance is 21 feet. **Drano Lake**, near **Cook**, WA, 14.5 (16.7) miles—the minimum bridge clearance is 15 feet and the railroad brige is under construction. **Ruthton**, OR, 17.8 (20.4) miles. **White Salmon River** at **Underwood**, WA, 20.9 (24) miles—the bridge clearance is 26 feet.

(385) Rock Creek, Wind River and Drano Lake have log rafts and booms used by nearby sawmills.

(386) **Hood River**, OR, 21.7 (25) miles above the Bonneville Dam, is a town at the junction of Columbia and Hood Rivers. There are two boat basins at Hood River; the west basin is privately owned and is used by a repair yard for building and repairing steel barges and tugs. The east basin, operated by the Port of Hood River Commission, has about 55 berths; gasoline and water are available. A large shoal area extends northwest from the east basin around the mouth of the Hood River to about 0.2 mile north of the west basin.

(387) The highway bridge over Columbia River just above the small-craft basin has a lift span with a clearance of 67 feet down and 148 feet up. Bridge openings can be made by contacting 541–386–3500, a minimum of 12 hours in advance of the requested opening. (See **33 CFR 117.1** through **117.59** and **117.869**, chapter 2, for drawbridge regulations.)

(388) There are power cables with clearance of 155 feet over the river at **Stanley Rock**, 22.9 (26.4) miles above Bonneville Dam, and at **Crates Point**, 13 (15) miles above Stanley Rock.

(389) At **Bingen**, on the Washington side 23 (26.4) miles above the Bonneville Dam, there are two barge basins with adjacent sawmills. A light and a daybeacon mark the entrance to the east basin, which has a launching ramp and about 20 berths for small craft. In 1976, the controlling depth was 7 feet at midchannel in the entrance to the east basin with 5 to 10 feet in the basin, except for shoaling along the edges. The entrance to the west basin is unmarked; reported depths of 10 feet are in this basin.

(390) **The Dalles** is on the Oregon side of Columbia River, 39 (44.8) miles above the Bonneville Dam. River traffic, between the town and Vancouver, consists mainly of petroleum products and general freight bound upstream, and wheat, wool and rafted logs bound downstream.

(391) A small-boat mooring basin with a breakwater and sheer boom protection is just east of the city wharf. Depths inside are 4 to 8 feet. The basin has a small-craft launching ramp. Gasoline, ice and marine supplies are available. Engine repairs can be made.

(392) The city wharf is over 1,000 feet long and has two warehouses; depths alongside are about 20 feet. A dock marked by private aids is close west of the wharf. There are also private facilities for handling petroleum products, bulk grain and fresh fruit.

(393)

The Dalles Lock and Dam to Biggs Bridge

(394) **The Dalles Lock and Dam**, 40 (46) miles above Bonneville Dam, has a single lift lock with a vertical lift of about 87.5 feet. **Restricted areas** are above and below the dam. (See **33 CFR 207.718**, chapter 2, for information concerning use, administration and navigation of The Dalles Lock and Dam.) **Lake Celilo**, the pool created by The Dalles Dam, provides slack water navigation with a controlling depth of about 14 feet for 22 (25.3) miles upstream to the John Day Dam. Depths and overhead clearances are at **normal pool level.**

(395) Traffic above The Dalles Dam consists mostly of grain and petroleum products.

(396)

Ice

(397) Ice occasionally interferes with navigation for 2 weeks or more, usually in January or February.

(398) A fixed highway bridge across the downstream approach to the lock at The Dalles Dam has a clearance of 100 feet.

(399) A railroad bridge, 7 (8.1) miles above The Dalles Dam, has a lift span with clearance of 20 feet down and 79 feet up. The bridgetender monitors VHF-FM channel 16 and works on channel 13; call sign KQ-9048. (See **33 CFR 117.1** through **117.59** and **117.869**, chapter 2, for drawbridge regulations.)

(400) The Celilo Park basin 7.7 (8.9) miles above The Dalles Dam offers shelter to small boats, but there are no facilities except a launching ramp. The entrance to the basin is marked by a light.

(401) At **Miller Island**, 10.5 (12) miles above The Dalles Dam, the north and south channels are marked by ranges. The main channel is along the north side of the island; however it is reported that the south channel is more frequently used. In 1994, submerged obstructions with depths of 1 to 3 feet were reported in the south channel in about 45°38'17"N., 120°54'56"W. and 45°38'14"N., 120°54'54.5"W.

(402) On the Oregon side just south of Miller Island is **Deschutes River**, crossed by a highway bridge with clearance of 20 feet. Small craft occasionally seek shelter here during unfavorable weather. A highway and a railroad bridge close south have a clearance of 17 feet.

(403) A grain elevator with a barge loading chute extending to the river is at **Biggs**, OR.

(404) The **Biggs Bridge**, 13.6 (17) miles above The Dalles Dam, has a clearance of 88 feet at the center of the fixed highway span. The bridge joins **Maryhill**, WA, and **Biggs Junction**, OR.

(405)

John Day Dam to Umatilla

(406) **John Day Dam**, 188 (216.3) miles above the mouth of the Columbia and 21 miles above The Dalles Dam, has a single lift lock with a vertical lift of about 105 feet. **Restricted areas** are above and below the dam. (See **33 CFR 207.718**, chapter 2, for information concerning use, administration and navigation of John Day Dam.) Depths and overhead clearances are at **normal pool level**.

(407) The rock awash near the east approach to John Day Locks in 45°43'25"N., 120°41'20"W. is marked by a light and sign; mariners are urged to exercise caution when passing north of Lake Umatilla Lighted Buoy 2, so as to avoid being carried to the northwest and striking the rock awash.

(408) **Lake Umatilla**, the pool created by John Day Dam, extends 65 (75) miles to McNary Dam. Depths are generally great, but there are many shoals. The winding channel through the lake has a controlling depth of about 19 feet and is marked by aids to navigation. The chart is the best guide. An overhead power cable with a clearance of 95 feet is about 41 (47.2) miles above John Day Dam.

(409) **John Day River** is 2.3 miles above John Day Dam on the south side of the Columbia. Just south of the highway bridges over the entrance to the river is the **John Day River Recreation Area**. There are floats here for about 40 craft and a launching ramp. The fixed highway bridges have a clearance of 19 feet.

(410) A grain elevator with barge-loading facilities is at **Arlington**, OR, 21.5 (24.7) miles above John Day Dam. A loading tower for the elevator is marked by a light. Small-craft moorage and a launching ramp are available at Arlington.

(411) At **Boardman**, 45.6 (52.5) miles above the John Day Dam, there is a small-craft basin protected by a stone breakwater and a jetty. Berths and a launching ramp are available here.

(412) There are two woodchip docks, a general cargo dock and a grain elevator dock at a port about 1.2 miles northeast of the small-craft basin at Boardman.

(413) A grain elevator dock and barge loading pier is on the Oregon side of the river, about 3 miles northwest of Irrigon, OR.

(414) **Umatilla** is on the Oregon side 62 (71.3) miles above the John Day Dam.

(415) There is a small-craft basin about 500 yards west of the highway bridge. The east side of the entrance is marked by a light. About 125 covered and uncovered berths, electricity, gasoline, diesel fuel, water and ice are available. A concrete launching ramp is at the basin.

(416) The fixed parallel highway bridges across the river, 63 (72.5) miles above the John Day Dam near Umatilla,

have two navigational spans with a least clearance of 71 feet. The north openings are generally used during high water because there is less current; during low water it is unsafe. The power cables east of the fixed parallel highway bridges have a least clearance of 82 feet.

(417)

McNary Lock and Dam to Walla Walla River

(418) **McNary Lock and Dam**, 254.5 (292.9) miles above the mouth of the Columbia River and just above Umatilla, has a single lift lock with a vertical lift of about 75 feet. A **restricted area** is above the dam. (See **33 CFR 207.718**, chapter 2, for information concerning use, administration, and navigation of McNary Lock and Dam.) Depths and overhead clearances are at **normal pool level.**

(419) **Lake Wallula**, the pool created by McNary Dam, provides slack-water navigation from McNary Dam to the junction with the **Yakima River**, a distance of about 37 (43) miles. Depths in the lake are generally deep, however; there are several isolated shallow spots and rocky areas along the length of the lake. The channel through the lake is marked by aids to navigation from the Walla Walla River to Richland, 40 (46) miles above McNary Dam.

(420) The **Port of Umatilla**, on the Oregon side, about 0.4 mile above the McNary Lock and Dam, owns a 230-foot port wharf with 800 feet of berthing space; reported depths of 20 feet are available alongside; a private company operates the wharf. A grain elevator, owned and operated by Pendleton Grain growers, Inc., has a loading rate of 20,000 bushels per hour; the grain elevator is just east of the port wharf. A barge wharf, used for receipt and shipment of petroleum products and liquid fertilizer, is just east of the grain elevator; the oil wharf is owned and operated by the Tidewater Barge Lines.

(421) **Hat Rock State Park**,on the south side about 5.5 (6.3) miles above McNary Dam, has a public launching ramp and offers gasoline and excellent protection for small craft.

(422) **Port Kelley**, on the east side of Columbia River, 16 (19.5) miles above McNary Dam, has a large grain elevator and facilities for handling bulk grain by rail, truck or water. The elevator loading rate is 30,000 bushels per hour. Unlighted ranges lead clear of the rock and shoal area in the middle ground 0.4 mile west of the facility.

(423) A small boat moorage is in the bight just northeast of Port Kelley. Berths, electricity, gasoline and water are available.

(424) **Walla Walla River** enters Columbia River on the east side 18.4 (21.2) miles above McNary Dam. There is a public launching ramp on the south side of the river just east of the highway bridges at the entrance.

(425) A grain wharf, at **Wallula Junction** just south of the Walla Walla River, has a grain elevator and barge loading spout with a loading rate of 20,000 bushels per hour; a reported depth of 20 feet is alongside the wharf. The wharf is owned and operated by Walla Walla Grain Growers, Incorporated. A barge wharf, at the **Port of Walla Walla** just south of **Attalia**, is owned and operated by Boise Cascade Corporation. The wharf ships wood pulp and receives caustic soda. A reported depth of 12 feet is alongside.

(426) About 1.9 miles south of the Snake River mouth, on the west side of Lake Wallula, is the Unocal Corporation chemical plant; anhydrous ammonia and urea are received here by barge. The dock has 480 feet of berthing space and has a reported depth of 30 feet alongside. Two white ammonia storage tanks at this plant are prominent.

(427) The Union Pacific Railroad bridge crossing Columbia River, 27 (31) miles above McNary Dam, has a vertical lift span with a clearance of 11 feet down and 72 feet up. A racon is at the center of the bridge span. The bridgetender monitors VHF-FM channel 16 and works on channel 13; call sign KTD-561. (See **33 CFR 117.1** through **117.59** and **117.1035**, chapter 2, for drawbridge regulations.)

(428)

Snake River

(429) **Snake River**, 283 (325.2) miles above the mouth of Columbia River, rises in Yellowstone National Park, from which it winds south past the Grand Tetons, and thence for some 868 miles to its junction with the Columbia at Pasco, WA.

(430) From that junction for 119 (137) miles to Lewiston, ID, there are few small-craft facilities. There are several marinas along the river at **Clarkston**, WA, and **Lewiston**, ID, where berths, gasoline, diesel fuel, water, ice and marine supplies may be obtained. The Ports of Clarkston and Lewiston at the confluence of the Snake and Clearwater Rivers are the primary ports along the Snake River and serve the inland agricultural and logging communities of Washington, Idaho and Oregon. Barge loading facilities and grain terminals are available at both ports.

(431) Near its mouth, at the village of **Burbank**, Snake River is crossed by the Burlington Northern Railroad lift bridge with a clearance of 14 feet down and 60 feet up. The bridgetender monitors VHF-FM channel 16 and works on channel 13; call sign KQ- 9047. About 0.6 (0.7) mile above the railroad bridge, there are dual spans of a fixed highway bridge with a least clearance of 61 feet. Numerous overhead cables with a reported minimum clearance of 43 feet cross Snake River between the fixed highway bridge and Ice Harbor Lock and Dam.

(432) **East Pasco**, on the north side of Snake River 1 mile above the mouth, has privately owned facilities for receipt and shipment of petroleum products and liquid fertilizer. Burbank, on the south side of the river, has two grain facilities owned by the Port of Walla Walla and operated by private companies. From East Pasco to Lewiston there are several facilities used for shipment of grain and wood chips. Other facilities along the river specialize in the

receipt and shipment of logs, general cargo, petroleum products, anhydrous ammonia and liquid fertilizer.

(433) **Ice Harbor Lock and Dam**, 8.4 (9.7) miles above the mouth of the Snake River, has a single lift lock with a vertical lift of about 100 feet. A **restricted area** is above and below the dam; the area is marked by buoys above the dam. (See **33 CFR 207.718**, chapter 2, for information concerning use, administration and navigation of Ice Harbor Lock and Dam.) **Lake Sacajawea**, the lake formed by the waters behind Ice Harbor Dam, provides depths at slack water of 10 feet or more for a distance of 27.8 (32) miles to Lower Monumental Dam.

(434) **Lower Monumental Lock and Dam**, 27.6 (31.8) miles above Ice Harbor Dam and about 36 (41.5) miles above the mouth of the Snake River, has a single lift lock with a vertical lift of about 100 feet. A **restricted area** is above and below the dam; the area is marked by buoys above the dam. (See **33 CFR 207.718**, chapter 2, for information concerning use, administration and navigation of Lower Monumental Lock and Dam.)

(435) The Snake River between Lower Monumental Dam and Little Goose Dam, 25 (28.8) miles above Lower Monumental Dam, is crossed by three fixed bridges with a least clearance of 52 feet; overhead power cables crossing the river between the two dams have a least clearance of 90 feet.

(436) **Little Goose Lock and Dam**, about 25 (28.8) miles above Lower Monumental Dam and about 61.1 (70.3) miles above the mouth of the Snake River, has a single lift lock with a vertical lift of about 98 feet. A **restricted area** is above and below the dam; the area is marked by buoys above the dam. (See **33 CFR 207.718**, chapter 2, for information concerning use, administration and navigation of Little Goose Lock and Dam.)

(437) **Lake Bryan**, the pool formed by Little Goose Dam is crossed by a fixed highway bridge with a clearance of 60 feet about 10.7 (12.3) miles above the dam. Overhead power cables with a least clearance of 80 feet cross the lake between Little Goose Dam and Lower Granite Dam.

(438) **Lower Granite Lock and Dam**, about 31.5 (36.8) miles above Little Goose Dam and about 93.4 (107.5) miles above the mouth of the Snake River, has a single lift navigation lock 675 feet long and 86 feet wide. The dam, completed in 1975, permits navigation to **Lewiston**, ID, 120 (138) miles above the mouth of the Snake River. A **restricted area** is above and below the dam; the area is marked by buoys above the dam. (See **33 CFR 207.718**, chapter 2, for information concerning use, administration and navigation of Lower Granite Lock and Dam.)

(439) A fixed highway bridge with a clearance of 60 feet crosses Snake River about 1.5 miles below its junction with Clearwater River. A highway lift bridge with clearances of 7 feet down and 60 feet up crosses **Clearwater River** about 0.35 mile above the junction with Snake River (See **33 CFR 117.1** through **117.59** and **117.381**, chapter 2, for lift bridge regulations.) A fixed highway bridge, about 1.15 miles above the lift bridge, has a clearance of 21 feet. A vertical lift highway bridge with a clearance of 10 feet down and 42 feet up crosses the Snake River between Lewiston, ID and **Clarkston**, WA. (See **33 CFR 117.1** through **117.59** and **117.385**, chapter 2, for drawbridge regulations.) A fixed highway bridge with a clearance of 60 feet is about 1.5 miles above the lift bridge. Overhead power cables with a minimum clearance of 80 feet cross the river between the dam and Lewiston.

(440)

Pasco to Priest Rapids Dam

(441) **Pasco**, on the north side of the Columbia River 286 (329) miles above its mouth, is 32 (36.8) miles above McNary Dam. The Port of Pasco Marine Terminal Wharf (46°13'10"N., 119°05'52"W.), operated by Continental Grain Company, has reported depths of 16 to 20 feet alongside with a total berthing space of 970 feet. A grain elevator, with a capacity for 450,000 bushels, serves the wharf and can load barges at a rate of 15,000 bushels per hour. The port also owns a Container Terminal Wharf at the barge slip in about 46°12'50"N., 119°04'14"W. The wharf is used for receipt and shipment of containerized general cargo and has a total berthing space of 840 feet; depths alongside the wharf are reported to be 20 feet. The Port of Pasco is a municipal corporation consisting of a Board of Commissioners and a General Manager. In addition to the marine terminals, the port operates an airport. The Pasco-Kennewick-Richland area is the most important commercial barging center above Portland.

(442) The Pasco Yacht Basin, on the east side just below the railroad lift bridge, has berths, gasoline, diesel fuel and marine supplies; engine and electronic repairs can be made. An 8-ton hoist and a launching ramp are available at the basin.

(443) **Kennewick**, on the south side of Columbia River opposite Pasco, has a grain elevator dock with 500 feet of berthing space and a reported depth of 14 feet alongside. At **Clover Island**, there is a large small-craft harbor. About 80 berths with electricity, gasoline, diesel fuel, water and marine supplies are available; hull, engine and electronic repairs can be made. A 12-ton crane is at a marina occupying the center section of the island. A private yacht club is on the south side of the island.

(444) A railroad lift bridge crosses the Columbia River between Pasco and Kennewick, about 0.4 mile below Clover Island, and has a clearance of 18 feet down and 70 feet up. (See **33 CFR 117.1** through **117.59** and **117.1035**, chapter 2, for drawbridge regulations.) The fixed highway bridge just southeast of Clover Island has a clearance of 56 feet and another fixed bridge, 0.9 mile above Clover Island, has a clearance of 61 feet. Interstate Route 182 fixed bridge crosses the Columbia River at Richland and has a clearance of 73 feet. Overhead cables cross the Columbia River just above the junction with Snake River and at the east end of Clover Island; clearances are 85 and 54 feet, respectively.

(445) **Columbia Park Recreation Area**, just above the upper fixed highway bridge at Pasco, has a small-craft marina at which berths, electricity, gasoline, water, a launching ramp and marine supplies are available. Engine repairs can be made. Diesel fuel is available in the town of **Richland**, just above the recreation area.

(446) The **Hanford Works**, a huge U.S. Department of Energy reservation, is on the south and west sides of the Columbia River about 13 (15) miles above Richland. The facility is devoted to energy research, development and demonstration; production of nuclear materials; management of defense nuclear waste; and commercial nuclear fuel cycle research. The original site was created in 1943 under the direction of the Manhattan District of the U.S. Army Corps of Engineers for the production of materials for nuclear weapons such as those that helped to end World War II.

(447) **Priest Rapids Dam**, 68 (78.3) miles above McNary Dam and 353 (407) miles above the mouth of Columbia River, completed and dedicated in 1962, is the head of navigation, although in its construction provision was made for later building of a navigational lock if needed. However, Richland is the present practical head of navigation.

(448)

Franklin D. Roosevelt Lake, WA

(449) **Franklin D. Roosevelt Lake**, WA, is a National Recreation Area on the upper Columbia River impounded by the **Grand Coulee Dam** (47°57.5'N., 118°59.0'W.). Information about facilities and services is available at the recreation area headquarters in the town of Coulee Dam, the visitors' center at Fort Spokane and the ranger station at Kettle Falls.

(450) A **restricted area** has been established in the discharge channel of the Grand Coulee Dam, and extending about 2.5 miles downstream from the dam. (See **33 CFR 162.230**, chapter 2, for limits and regulations.)

(451)

Lake Pend Oreille

(452) **Lake Pend Oreille** (48°10'N., 116°25'W.), ID, is a recreation area nearly surrounded by the Kaniksu National Forest. The charted depths are based on a lake level of 2,048.15 feet above mean sea level. Normal winter and summer lake levels are about 3 feet and 14 feet above the charted depths, respectively. Lake level information, corrected daily, can be obtained by calling the U.S. Army Corps of Engineers, Albeni Falls Dam, telephone 208–437–3133.

(453) Marina services at **Sandpoint**, on the north side of the **Pend Oreille River** at its junction with Lake Pend Oreille, include berthing, gasoline, a launching ramp, winter storage, hull and engine repairs. The drawspan of the railroad bridge across the Pend Oreille River, at the river and lake junction, is in the permanently closed position. (See **33 CFR 117.1** through **117.59** and **117.383**, chapter 2, for drawbridge regulations.) U.S. Route 95 fixed highway bridge crosses the river just above the railroad bridge; the least clearance for both bridges is 14 feet. At **Bayview** (47°59'N., 116°34'W.), at the southwest end of the lake just west of Scenic Bay, has several marinas that can provide transient berthing, gasoline, diesel fuel, launching ramps, winter storage, marine supplies, water and pump-out stations; complete marine services are available. Additional information about facilities and services may be obtained from the Sandpoint Chamber of Commerce, Sandpoint, ID 83864.

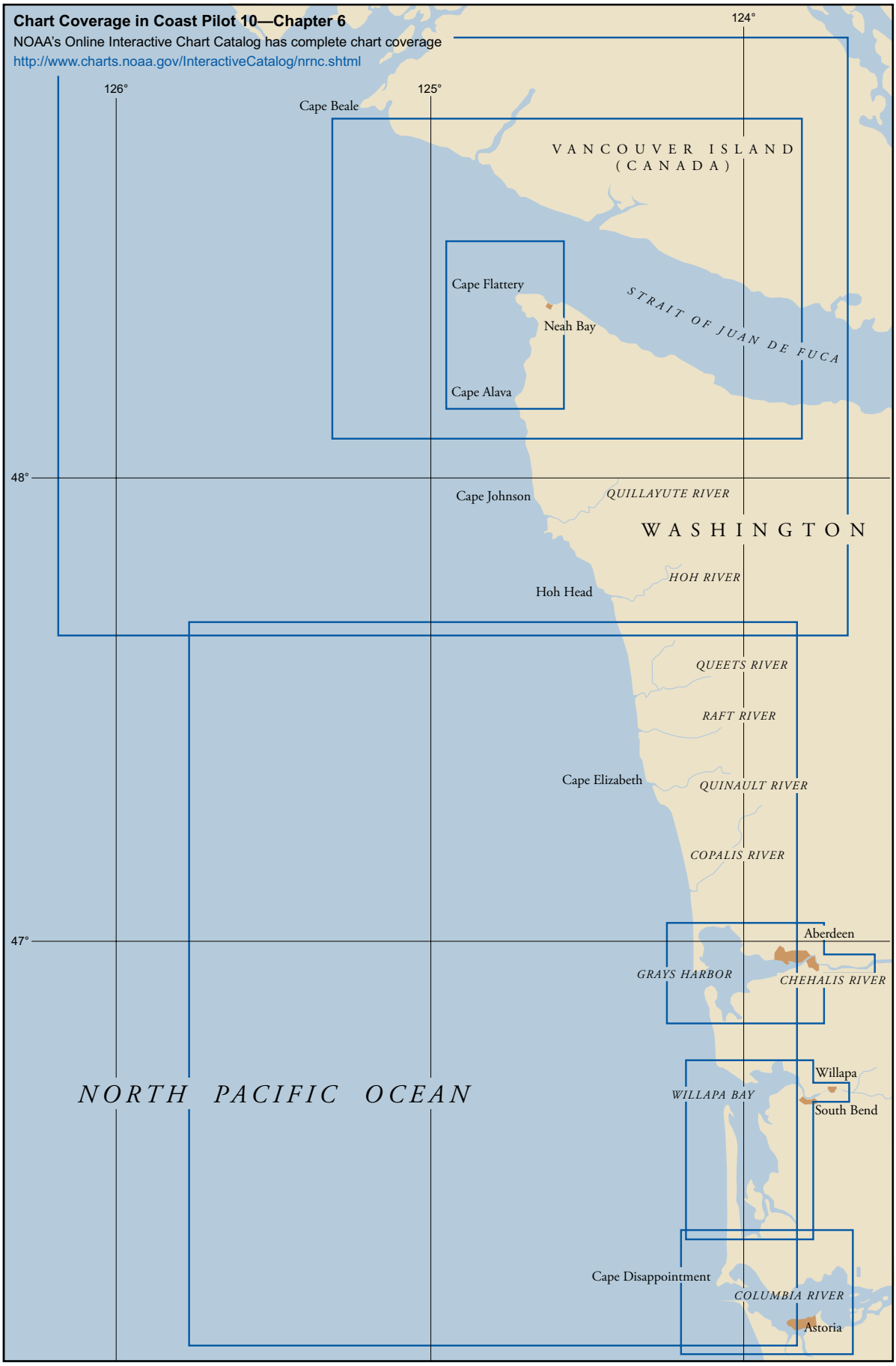
Chart Coverage in Coast Pilot 10—Chapter 6
NOAA's Online Interactive Chart Catalog has complete chart coverage
http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml
126°
125°
124°
48°
47°
Cape Beale
VANCOUVER ISLAND
(CANADA)
Cape Flattery
Neah Bay
Cape Alava
STRAIT OF JUAN DE FUCA
Cape Johnson
QUILLAYUTE RIVER
WASHINGTON
HOH RIVER
Hoh Head
QUEETS RIVER
RAFT RIVER
Cape Elizabeth
QUINAULT RIVER
COPALIS RIVER
Aberdeen
GRAYS HARBOR
CHEHALIS RIVER
Willapa
WILLAPA BAY
South Bend
NORTH PACIFIC OCEAN
Cape Disappointment
COLUMBIA RIVER
Astoria

Columbia River to Strait of Juan De Fuca, Washington

(1) This chapter describes the Pacific coast of the State of Washington from the Washington-Oregon border at the mouth of the Columbia River to the northwesternmost point at Cape Flattery. The deep-draft ports of South Bend and Raymond, in Willapa Bay, and the deep-draft ports of Hoquiam and Aberdeen, in Grays Harbor, are described. In addition, the fishing port of La Push is described. The most outlying dangers are Destruction Island and Umatilla Reef. A U.S. Navy operating/exercise area parallels the coastline from about 10 miles north of Point Brown to Cape Alava, extending from 3 miles offshore to about 50 miles offshore.

(2) The Olympic Coast National Marine Sanctuary, off the Olympic Peninsula of Washington State, including the waters of the Strait of Juan de Fuca, extends from Koitlah Point due north to the international boundary seaward to the 100 fathom isobath, thence southward to a point due west of the mouth of the Copalis River cutting across the heads of Nitnat, Juan de Fuca and Quinault Canyons. (See **15 CFR 922**, chapter 2, for limits and regulations.)

(3)

Area to be Avoided, Washington Coast

(4) The International Maritime Organization (IMO) has adopted the waters off the Washington Coast as an area to be avoided. (See IMO SN circular 309.) In order to reduce the risk of a marine casualty and resulting pollution and damage to the environment of the Olympic Coast National Marine Sanctuary, all ships and barges that carry oil or hazardous materials in bulk as cargo or cargo residue and all ships 400 gross tonnage and above solely in transit should avoid the area bounded by a line connecting the following points:

(5) 48°23.30'N., 124°38.20'W.
(6) 48°24.17'N., 124°38.20'W.
(7) 48°26.15'N., 124°44.65'W.
(8) 48°26.15'N., 124°52.80'W.
(9) 48°24.67'N., 124°55.71'W.
(10) 47°51.70'N., 125°15.50'W.
(11) 47°07.70'N., 124°47.50'W.
(12) 47°07.70'N., 124°11.00'W.

(13)

COLREGS Demarcation Lines

(14) The lines established for this part of the coast are described in **33 CFR 80.1370** through **80.1380**, chapter 2.

(15)

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(16) From Cape Disappointment, the coast extends north for 22 miles to Willapa Bay as a low sandy beach, with sandy ridges about 20 feet high parallel with the shore. Back of the beach, the country is heavily wooded. Numerous summer resorts and cottages are along the beach. Landmarks along this section of the coast are few. The 10–fathom curve averages a distance of about 2.5 miles from the shore. There are no known offlying dangers south of the Willapa Bay entrance bar.

(17)

Weather, Columbia River to Strait of Juan De Fuca

(18) The weather along this coast is usually mild, windy and rainy in winter and cool and pleasant in summer, with some periods of fog. Close to shore, and particularly in Willapa Bay and Grays Harbor, wind and fog conditions are often local and different from conditions offshore. Radiation fog often blankets these bodies of water, as well as rivers and shore points, in fall and winter. It can form any time when nights are clear and calm.

(19) Storms that move along this coast or a distance out to sea bring cloudy days with highs in the mid-forties (6.1° to 8.3°C) and lows in the middle to upper thirties (3.3° to 3.9°C). In winter, they cause rain on about 15 to 25 days per month and significant snow on 2 or 3 days. They are responsible for predominantly east to southeast winds from October through March; these winds reach gale force 3 to 6 percent of the time. In the intermittent periods of settled weather, sound becomes an early morning hazard over rivers and protected bays. Visibilities drop below 0.5 mile (0.9 km) on 3 to 4 days per month, from October to February.

(20) With the coming of spring, conditions improve. Storms become less frequent. Winds diminish and blow more from a west direction. Temperatures often rise into the low to middle fifties (11° to 13°C) during the day and fall to the low forties (5.0° to 5.6°C) at night. Visibilities are usually good, and rain falls on just 8 to 15 days per month.

(21) Summer is the true fog season along these shores. In general, advection fog reduces visibilities to below 0.5 mile (0.9 km) on 3 to 10 days per month; up to 16 days per month at Tatoosh Island. Sound signals blow 15 to 30 percent of the time. Conditions are worst in Grays Harbor and near the entrance to the Strait of Juan de Fuca. Temperatures are often in the sixties (16.1° to 20.6°C) during the day and around 50°F (10°C) at night. Winds

(23)

METEOROLOGICAL TABLE – COASTAL AREA OFF ASTORIA, OR
Between 46°N to 48°N and 122°W to 127°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	5.1	4.9	3.9	1.4	0.7	0.3	0.1	0.3	0.5	2.4	5.1	6.6	2.3
Wave Height > 9 feet [1]	8.0	6.9	5.9	3.4	1.9	1.7	1.3	0.9	1.3	4.0	8.7	9.3	4.0
Visibility < 2 nautical miles [1]	8.0	7.0	5.8	3.6	4.5	4.7	5.7	8.7	6.7	7.5	5.7	7.8	6.3
Precipitation [1]	21.1	19.7	17.6	13.1	10.9	8.6	5.1	6.5	7.8	12.5	20.0	22.0	13.0
Temperature > 69° F	0.0	0.0	0.0	0.0	0.2	0.6	2.1	2.0	1.2	0.2	0.0	0.0	0.6
Mean Temperature (°F)	45.6	47.0	47.7	49.6	52.9	56.4	59.5	60.3	59.8	56.1	50.9	47.6	53.4
Temperature < 33° F [1]	2.3	0.6	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.4	0.4
Mean RH (%)	84	84	82	82	84	84	85	87	85	84	83	84	84
Overcast or Obscured [1]	46.4	43.7	38.4	35.0	36.3	41.5	42.1	41.9	32.3	35.4	41.7	45.6	39.9
Mean Cloud Cover (8^{ths})	6.0	5.9	5.6	5.6	5.7	6.0	5.6	5.5	4.8	5.2	5.8	6.0	5.6
Mean SLP (mbs)	1017	1016	1016	1018	1018	1018	1019	1018	1017	1017	1016	1017	1017
Ext. Max. SLP (mbs)	1045	1041	1058	1040	1050	1043	1038	1037	1049	1040	1042	1050	1058
Ext. Min. SLP (mbs)	970	975	974	978	985	988	991	991	978	980	964	963	963
Prevailing Wind Direction	S	S	S	NW	NW	NW	NW	NW	N	S	S	S	NW
Thunder and Lightning [1]	0.2	0.3	0.3	0.1	0.2	0.1	0.1	0.2	0.3	0.3	0.5	0.3	0.2

[1] Percentage Frequency

are from a west to northwest direction and usually less than 17 knots; calms occur up to 12 percent of the time. It rains on about 5 to 10 days per month.

(22) Fog remains a problem in autumn, although it is less frequent. Temperatures drop slowly with daytime readings often in the low to midsixties (16.1° to 19.4°C), dropping to the upper forties (8.9° to 9.4°C) at night. Rain falls more often. Winds become stronger and return to an east direction.

(25)

Willapa Bay

(26) **Willapa Bay** entrance is 24 miles north of the Columbia River entrance. The bay is used primarily by fishing and oyster boats. No deep-draft vessels have entered Willapa Bay since 1976. Oyster beds cover much of the shoaler areas of the bay. Lumber, fish and other sea foods are shipped by rail and truck from South Bend and Raymond.

(27)

Prominent features

(28) **Leadbetter Point**, the north extremity of **North Beach Peninsula**, is the south point of the entrance to Willapa Bay. It is low and sandy and has no distinctive feature to mark its extremity; the chart limit of the trees is 2.2 miles south.

(29) **Cape Shoalwater**, the north point at the entrance, terminates in a low bluff about 50 feet high. The cape is sandy and the north portion is covered with trees to within 300 yards of the point.

(30) The north shore of the entrance to the bay is marked by timbered bluffs and ridges, several hundred feet high. In the daytime, scars on the cliffs often are visible before the light can be seen. The termination of the tree line on Leadbetter Point is sharply defined.

(31) The entrance is in the north part of the bay and has two arms; the south arm is 18 miles long and the east is 10 miles long. Both arms are filled with extensive shoals; large areas that bare at low water. The south arm is separated from the ocean by a strip of low sand and sand dunes, averaging 1.5 miles in width and covered with trees until within 2.2 miles of Leadbetter Point. Numerous cottages and summer resorts are along the seaward face of the narrow peninsula. The shore of the bay elsewhere is composed of low, rolling hills, 100 to 200 feet high and covered with dense growths of timber.

(32) **Willapa Bar** extends about 3 miles outside of a line joining Cape Shoalwater and Leadbetter Point. The bar channel is continually shifting and depths over it vary from season to season. The buoys marking the channel over the bar are non lateral and moved from time to time because of the shifting sands and changing channel. Dredging range lights are temporarily established at the entrance at times during dredging operations. The entrance buoys and the dredging range lights do not necessarily mark the best water. The major channels in the bay are marked by aids to navigation.

(33) **Willapa River** flows into the east arm of the bay. Lights, daybeacons and a lighted range mark the channel through the east arm and Willapa River to South Bend and Raymond.

(34)

COLREGS Demarcation Lines

(35) The lines established for Willapa Bay are described in **33 CFR 80.1370**, chapter 2.

(36)

Regulated navigation area

(37) A regulated navigation area surrounds the entrance of Willapa Bay. See **33 CFR 165.1325**, chapter 2, for limits and regulations.

(24)

Washington State Requirements—Reporting Oil Spills and Vessel Emergencies
All vessels must report oil spills or potential oil spills to both Washinton State (800–258–5990) and the National Response Center (800–424–8802). Tank vessels and cargo and passenger ships 300 gross tons or larger must make notifications to Washington State for vessel emergencies, including a loss or serious degradation of propulsion, steering, means of navigation, electrical generating capability and seakeeping capability constituting a substantial threat of pollution affecting Washington state natural resources. In addition to any notifications to the USCG, the owner or operator must notify the state of any vessel emergency that results in the discharge or substantial threat of a discharge of oil to state waters or that may affect the natural resources of the state within one hour of the onset of the emergency.

Emergency Response Tug at Neah Bay
An industry-funded emergency response tug is located at Neah Bay at the entrance to the Strait of Juan de Fuca. The tug is available 24 hours a day and can be underway within twenty minutes of a decision to deploy. The purpose of the tug is to assist vessels having propulsion and steering failures or that are directed by either the US or Canadian Coast Guards to obtain towing assistance. Among other capabilities, the tug is intended to be able to make up to, stop, hold, and tow a drifting or disabled vessel of 180,000 metric dead weight tons in severe weather conditions. The tug can be contacted through the USCG VTS or the Puget Sound Marine Exchange.

Washington State Vessel Inspections
The Washington State Department of Ecology regulates cargo and passenger vessels and tank vessels operating in Washington waters. A cargo vessel is any self-propelled vessel in commerce that is 300 gross tons or more. A passenger vessel is any vessel 300 gross tons or more with a fuel capacity of at least 6,000 gallons that carries passengers for compensation. A tank vessel is a ship that is constructed or adapted to carry, or that carries, oil in bulk as cargo or cargo residue. Washington State Ecology inspectors may conduct vessel inspections on regulated cargo, passenger, and fishing vessels when in Washington waters. Additional information—
www.ecology.wa.gov/regulations-permits/guidance-technical-assistance/guidance-for-oil-industry/vessel-information.

Oil Transfer Requirements
Safe bunkering procedures must be followed during fueling operations. For vessels 300 gross tons or greater, Washington State Ecology inspectors may conduct inspections of these regulated oil transfers on vessels receiving fuel for propulsion within Washington waters. Details can be found in state regulations at Washington Administrative Code (WAC) 317-40. Additional information—
www.ecology.wa.gov/regulations-permits/guidance-technical-assistance/requirements-for-bunkering.

Tank vessels delivering oil in bulk to a non-recreational vessel or facility within Washington waters must meet state oil transfer requirements. They may also be subject to Washington State oil transfer inspections for these regulated oil transfers. Details can be found in WAC 173-184. Additional information—
www.ecology.wa.gov/regulations-permits/compliance-enforcement/oil-transfers.

For a transfer of more than 100 gallons of bulk oil to a facility or non-recreational vessel, the delivering vessel must submit an Advance Notice of Transfer (ANT) report to Ecology. This ANT must be submitted 24 hours prior to the transfer for facilities or within the timeframe required by local USCG Captain of the Port. The ANT report can be made either: online using the State website at: *https://secureaccess.wa.gov/ecy/ants*, by e-mail to *OilTransferNotifications@ecy.wa.gov*, or by fax to 360–407–7288 or 800–664–9184.

Contingency Plan Requirements
Tank vessels and cargo and passenger ships 300 gross tons or larger transiting Washington waters must either have a Washington State Department of Ecology approved oil spill contingency plan or be a member of a non-profit cooperative that provides oil spill response capabilities consistent with their Washington State approved contingency plan. The non-profit cooperative for the Columbia River is the Maritime Fire & Safety Association (MFSA) and for Puget Sound and Grays Harbor is Washington State Maritime Cooperative. Also available is the National Response Corporation, a multiple vessel plan. Additional information—
www.ecology.wa.gov/regulations-permits/plans-policies/contingency-planning-for-oil-industry.

(38)

Channels

(39) A **federal project** provides for a 26-foot channel over the bar at the mouth of Willapa Bay and a 24-foot channel from deep water in Willapa Bay to just above both forks of Willapa River at Raymond. The channel over the bar into Willapa Bay is subject to frequent change.

(40)

Anchorage

(41) Anchorage with good holding ground may be had at almost any point inside the bay. The anchorage generally used is off Toke Point in 30 to 40 feet.

(42)

Dangers

(43) An underwater dike, 18 feet below the surface, extends about 800 yards into the North Channel from a rock groin along the shore between Cape Shoalwater and North Cove in about 46°43'35"N., 124°03'30"W.

(44)

Currents

(45) In the entrance the current velocity is about 2.5 knots. Currents of 4 to 6 knots occur at times; the velocity is greatest on the ebb, particularly with south wind.

(46) In the channel at South Bend, the velocity is about 1.2 knots on the flood and 1.4 knots on the ebb. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area, including South Bend. Links to a user guide for this service can be found in chapter 1 of this book.

(47)

Routes

(48) Approaching from any direction in any weather, great caution is essential. The currents are variable and uncertain. Velocities of 3 to 3.5 knots have been observed between Blunts Reef and the Swiftsure Bank, and velocities considerably in excess of these amounts have been reported. From seaward in clear weather, the lights at the entrance of Grays Harbor, 14 miles north, and at North Head, 22 miles south, are distinguishing marks for fixing a vessel's position and the subsequent shaping of the course. Navigators should bear in mind the changeable nature of the bar. Strangers should not navigate the bay in thick weather.

(49) **South Bend** is on the south bank of Willapa River, 8 miles above Toke Point. The principal industries are lumbering, oystering and fishing; two canneries operate here. Willapa Harbor Airport is on the north bank of the river about 2.5 miles northwest of South Bend. **Raymond**, the principal town, is on the south bank of Willapa River at the junction of the South Fork, 3 miles above South Bend. There are sawmills here and large quantities of lumber are shipped out.

(50)

Bridges

(51) There are no bridges over the main channel. The Burlington Northern railroad swing bridge across South Fork, 0.3 mile above its mouth, has a clearance of 8 feet. (See **33 CFR 117.1** through **117.59** and **117.1063(b)**, chapter 2, for drawbridge regulations.) Two fixed highway bridges over South Fork about 0.5 mile above the railroad swing bridge have a least clearance of 15 feet. The fixed highway bridge over North Fork at Raymond has a clearance of 20 feet. A railroad fixed bridge over **Ellis Slough** has a clearance of 24 feet.

(52) At The Narrows, 1 mile below the Port of Willapa Harbor wharf, the river is crossed by power cables with a minimum clearance of 165 feet.

(53)

Pilotage

(54) **Pilotage** for Grays Harbor, discussed later in this chapter, also pertains to Willapa Bay.

(55)

Towage

(56) Tugs to 2,200 hp are available at Hoquiam in Grays Harbor. Arrangements should be made in advance through ships' agents or through the pilots.

(57)

Quarantine, customs, immigration and agricultural quarantine

(58) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1, for details.)

(59)

Supplies

(60) Diesel oil, gasoline, water, ice and some marine supplies are available in South Bend and Raymond. Both South Bend and Raymond have small-craft moorages operated by the respective towns.

(61)

Repairs

(62) The largest of two marine railways at South Bend can handle vessels 60 feet long and 19½ feet wide for hull repairs. A nearby machine shop and foundry does some engine repair work.

(63) **Tokeland** on **Toke Point**, is a summer resort. There is a dredged entrance channel and small-craft basin on the north side of the point. A light is on the outer end of a jetty on the south side and a daybeacon is on the north side of the entrance. In 2002, the controlling depth was 13.1 feet in the entrance channel to the basin; thence in 2000, the basin had depths of 9 to 13 feet, except for lesser depths along the southwest edge. Berths, gasoline, diesel fuel, water and ice are available either at the basin or nearby; a launching ramp is at the basin.

(64) **North River**, which enters the east arm 2 miles east of Toke Point, is navigated by small logging launches. The channel is marked by private daybeacons and is

navigable at high water to **Eatons Ranch**, 3 miles above the last daybeacon.

(65) The south part of Willapa Bay is used by light-draft vessels. **Bay Center** is a village just south of **Goose Point** (46°38.2'N., 123°57.5'W.). It is one of the many oyster places in this bay with some fishing and crabbing. There are floats here for mooring fishing vessels; gasoline is available.

(66) The channel to Bay Center leads from deep water in Willapa Bay about 1.4 miles west-northwest of Goose Point, thence north of Goose Point, thence south into Palix River to the basin at Bay Center. The channel is marked by lights and daybeacons and is subject to continual change.

(67) **Palix River**, on the east side of the bay, is navigable for small logging tugboats and fishermen for about 1 mile up each of the three forks above their junction. The fixed highway bridge, about 1 mile below the forks, has a clearance of 25 feet.

(68) **Nemah River Channel**, 5 miles south of Goose Point, is marked by private aids. Controlling depths are about 4 feet to Daybeacon 20, thence 2 feet to Lynn Point, thence 1 foot to the junction of South and Middle Nemah Rivers.

(69) **Nahcotta Channel**, about 4.5 miles south of Goose Point, leads south between North Beach Peninsula on the west and Long Island Shoal and Long Island on the east to Shoalwater Bay. The channel is well marked and has depths greater than 20 feet.

(70) **Stanley Channel** leads from Nahcotta Channel at Long Island Junction Light, thence east of Long Island and **Stanley Peninsula** to the mouth of Naselle River. Shallow-draft boats with local knowledge can cross **Long Island Shoal.**

(71) **Long Island**, 5.5 miles long in a northwest direction and of irregular width, lies in the south arm of the bay near the head. The island is wooded and rises to over 100 feet in elevation. The waters surrounding Long Island encompass the Willapa National Wildlife Refuge, the boundary of which is marked by numerous piles.

(72) **Nahcotta**, on the east side of North Beach Peninsula, is a small village 9 miles south of Leadbetter Point. There are several large oyster plants here. The boat basin at Nahcotta has floats for small craft; diesel fuel and dry winter boat storage are available. In 2004, the channel leading from deep water in Nahcotta Channel to the basin had a controlling depth of 5 feet, thence depths of 4 to 6 feet were available in the basin except for lesser depths along the north edge and shoaling to bare in the northwest corner. The entrance to the basin is marked by lights.

(73) **Naselle River**, on the east side of the bay, is navigable by boats of 5 feet or less draft, at half tide or higher water, as far as the bridge at the village of **Naselle**, 10 miles above the mouth. This bridge marks the head of tide water at ordinary high tides. The river has numerous snags and submerged logs and is crossed by power cables with least clearance of 60 feet; passage should not be attempted without local knowledge. Small logging and fishing boats operate on the river.

(74) **Bear River** enters at the southeast corner at the head of **Shoalwater Bay**. A long, tortuous, unmarked channel across the flats makes entrance to the river difficult. Vessels of 5-foot draft or less can make the fixed bridge about 1.5 miles above the mouth at half tide.

(75)

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(76) From Cape Shoalwater to Point Chehalis, the south point at the entrance to Grays Harbor, the coast extends for 11 miles as a low sand beach, backed by a heavy growth of timber.

(77)

Grays Harbor to Wishkah River

(78) **Grays Harbor** entrance is about 40 miles north of Cape Disappointment and 93 miles south of Cape Flattery. The bay and its tributaries furnish an outlet to an extensive timber area. Grays Harbor is an important lumber port in the foreign and domestic trade. Oil is delivered by tanker; logs, lumber, pulpwood, woodchips and biodiesel are shipped out.

(79) The bay at the entrance is about 1 mile wide, but shoals extending south from Damon Point and north from Westport reduce the navigable channel to a width of 0.6 mile. From its entrance the bay extends east for 15 miles to the mouth of Chehalis River. The bay is filled by shoals and flats that bare at low water and are cut by numerous channels.

(80) **Point Chehalis** is low and sandy and is bare of trees for 1.5 miles south of its extremity. A jetty extends 2 miles seaward from the end of the point, the outer mile of it being submerged. A seasonal sound signal is mid-length of the visible part of the jetty. A Coast Guard lookout tower is prominent on the point.

(81) **Grays Harbor Light** (46°53'18"N., 124°07'01"W.), 123 feet above the water, is shown from a 107-foot white truncated octagonal pyramidal tower on the seaward side of Point Chehalis.

(82) **Point Brown**, the north entrance point, is 1.8 miles northwest of Point Chehalis. The point is low, rounding and sandy, with shoals extending south and west which, together with those extending west from Point Chehalis, form the bar at the entrance. The point is wooded to within 0.5 miles of the extremity. A jetty extends west from the point. A wreck covered 24 feet is about 1.1 miles west of the jetty at 46°55'38"N., 124°12'30"W.

(83) A small-craft basin is northeast of the point. The entrance to the basin is marked by lights; the approach channel is marked by a line of lighted and unlighted dolphins. A submerged jetty extends about 0.6 mile northeast from the north side of the basin entrance. Reported depths of 5 feet are available through the natural channel leading to the basin with depths of 3 feet or less inside the basin due to silting.

(94)

Structures Across the Hoquiam, Chehalis and Wishkah Rivers

Name	Type	Location	Clearances (feet) Horizontal	Clearances (feet) Vertical*	Information
Hoquiam River					
Overhead cables	power	46°58'19"N., 123°52'35"W.		85	
Puget Sound and Pacific Railroad bridge	swing	46°58'20"N., 123°52'36"W.	125	11	**Note 1**
Simpson Avenue bridge	bascule	46°58'32"N., 123°52'38"W.	125	25	**Note 1**
Riverside Avenue bridge	vertical lift	46°58'47"N., 123°53'05"W.	150	4 (down), 65 (up)	**Note 1** Bridge is stuck in down position (2004)
Overhead cables	power/tv	46°58'57"N., 123°52'44"W.		54	
Railroad bridge	swing	46°59'41"N., 123°53'02"W.	105	5	
Overhead cables	power	46°59'41"N., 123°53'04"W.		43	
Chehalis River					
US 101 bridge	bascule	46°58'21"N., 123°48'33"W.	150	35	**Note 2**
Overhead cable	power	46°57'29"N., 123°45'47"W.		125	
Overhead cables	power/tv	46°57'40"N., 123°36'26"W.		76	
Highway bridge	fixed	46°57'45"N., 123°36'12"W.	300	29	
Overhead cables	power/tv	46°57'45"N., 123°36'10"W.		54	
Wishkah River					
Puget Sound and Pacific Railroad bridge	swing	46°58'30"N., 123°48'35"W.	125	8	**Note 3**
Heron Street bridge	swing	46°58'34"N., 123°48'41"W.	75	8	**Note 3**
Wishkah Street bridge	bascule	46°58'38"N., 123°48'42"W.	125	11	**Note 3**
Overhead cable	power	46°59'05"N., 123°48'16"W.		30	
Second Street bridge	fixed	46°59'05"N., 123°48'18"W.	75	15	
Overhead cable	power	46°59'05"N., 123°48'20"W.		75	

* Vertical clearances are referenced to Low Water Datum
Note 1 – See **33 CFR 117.1 through 117.59 and 117.1047**, chapter 2, for drawbridge regulations.
Note 2 – See **33 CFR 117.1 through 117.59 and 117.1031**, chapter 2, for drawbridge regulations.
Note 3 – See **33 CFR 117.1 through 117.59 and 117.1065**, chapter 2, for drawbridge regulations.

(84)

Prominent features

(85) The country about Grays Harbor is flat and featureless, with few conspicuous objects. **Saddle Hill**, about 310 feet high, 8 miles north of the entrance and 2 miles inshore, is the most conspicuous feature.

(86) Grays Harbor Light shows prominently on a closer approach to the entrance. A micro tower, painted a red and white checkerboard pattern, is 3.6 miles north-northeast of the north jetty and a large rust-colored standpipe, lighted at night by floodlights, is 2.5 miles south-southeast of Point Chehalis. Both these objects are prominent on a closer approach and the standpipe is reported to be visible for a considerable distance at night. In clear weather, **Brackenridge Bluff**, on the north shore 6 miles inside the entrance, is quite prominent. It is a reddish cliff about a mile long, rising in two places to a height of 80 feet; from seaward it is visible only through the entrance.

(87) In clear weather **Neds Rock**, off Brackenridge Bluff, shows prominently from inside the entrance; it is reddish.

(88)

COLREGS Demarcation Lines

(89) The lines established for Grays Harbor are described in **33 CFR 80.1375**, chapter 2.

(90) Grays Harbor is served by the Marine Exchange of Puget Sound. (See Marine Exchange of Puget Sound, chapter 13, for details).

(91)

Channels

(92) A dredged channel leads northeast and then east between two jetties at the mouth of Grays Harbor. The channel continues in a generally east direction through the flats of Grays Harbor and into the Chehalis River to the city of Cosmopolis. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through the USACE hydrographic survey website listed in Appendix A. The entrance to Grays Harbor is marked by two lighted ranges and lighted whistle buoys. The channel inside is marked by lighted ranges, lights and lighted buoys to Cosmopolis. There is no deep-draft navigation above Cosmopolis.

(93) The jettied entrance has a tendency to shoal at the curve on the Point Chehalis side. Submerged sections of the north and south jetties extend seaward about 0.2 and 0.9 mile, respectively, from the visible sections. Both north and south jetties should be given a wide berth during periods of heavy weather due to hazardous

breakers. A seasonal sound signal is about mid-length of the visible section of the south jetty.

(95)

Anchorage

(96) The best anchorage is north of Westport and southeast of **Damon Point** in 30 to 60 feet. The holding ground is good, and there is more swinging room here than elsewhere in the harbor.

(97)

Currents

(98) In the entrance, the average current velocity is about 1.9 knots on the flood and 2.8 knots on the ebb, but velocities may reach 5 knots. In the channels through the bay, the velocities seldom exceed 3 knots. It was reported that currents in the vicinity of the bar are very erratic, setting north close inshore and south offshore. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area, including the entrance to Grays Harbor. Links to a user guide for this service can be found in chapter 1 of this book.

(99)

Routes

(100) From north or south, the course should be shaped to make the entrance buoy. From seaward in clear weather, Saddle Hill, 8 miles north of the entrance, and Grays Harbor Light on Point Chehalis will be seen.

(101) Approaching from any direction in thick weather, great caution is essential. The currents are variable and uncertain. Velocities of 3 to 3½ knots have been observed between Blunts Reef and Swiftsure Bank, and velocities in excess of these amounts have been reported. Because of the possibility of a strong onshore set, especially in southwest weather, vessels should not shoal the depths to less than 20 fathoms unless sure of the position.

(102) The bar channel is subject to change. Deep-draft vessels should not enter without knowledge of conditions at the time of entering. The deepest water is not always on the range. Information concerning conditions on the bar can be obtained from the Grays Harbor Pilots Association or from the Coast Guard on VHF-FM channel 16. The bar channel and harbor should not be attempted in thick weather.

(103)

Pilotage, Grays Harbor

(104) Pilotage is compulsory for all foreign vessels, and U.S. vessels under enrollment and registered in foreign trade.

(105) Grays Harbor Bar Pilots serve Grays Harbor, Chehalis River and Willapa Bay, and maintains an office at Aberdeen, WA, and a station at Westhaven Cove, Westport, WA.

(106) The office address is: Port of Grays Harbor, P.O. Box 660, 111 S. Wooding Street, Aberdeen, WA 98520; telephone 360–533–9564.

(107) The station and pilot boat monitor VHF-FM channels 12 and 16 and use 12 as working channel. The pilot boat, CHEHALIS, is 65 feet long and has an orange and green hull. The word "PILOT" is displayed on both sides of the boat, and the standard day and night signals are used when vessels are approaching from seaward.

(108) Arrangements for pilots can be made by ships' agents by telephone or radiotelephone. A 24-hour advance notice of arrival is requested; any change in the estimated time of arrival requires a 4-hour advance notice to the pilots via the Marine Exchange, Seattle, WA or radiotelephone.

(109) Pilots board vessels near Grays Harbor Approach Lighted Whistle Buoy GH (46°51'55"N., 124°14'26"W.). To assist pilots in boarding from the bow of the pilot boat, the ship is requested to maintain a speed of 6 knots. A pilot ladder should be rigged amidships on the leeward side clear of the gangway or other obstructions and about 3 meters above the water with no manropes. In rough weather, pilots may board during daylight.

(110) **Westhaven Cove**, on the inner side of the north tip of Point Chehalis, is protected by breakwaters marked by lights. The harbor is a large sport and commercial fishing center operated by the Port of Grays Harbor.

(111) **Grays Harbor Coast Guard Station** is on the south side of Westhaven Cove. The town of **Westport**, a summer resort and fishing town, is about a mile south of Westhaven Cove.

(112) Westhaven Cove has about 1,000 berths, with electricity, about 20 transient berths, gasoline, diesel fuel, water, ice, a launching ramp, pump-out facilities and marine supplies. Dry winter boat storage is available in the cove. A boatyard at the south end of the harbor has a mobile lift that can handle craft to 60 tons for hull or engine repairs; the yard includes a ship chandlery. Electronic repair service is available at the harbor. The Grays Harbor pilot boat is berthed at Westhaven Cove.

(113) The Coast Guard has established Grays Harbor Regulated Navigation Area Warning Sign, a **rough bar advisory sign**, 20 feet above the water, visible from the channel looking seaward, on the north side of Westhaven Cove, to promote safety for small-boat operators. The sign is diamond shaped, painted white with an international orange border and with the words "Rough Bar" in black letters. The sign is equipped with two quick flashing amber lights that will be activated when hazardous conditions exist and the bar is restricted to recreational and uninspected passenger vessels. Boaters are cautioned, however, that if the light is not flashing, it is no guarantee that sea conditions are favorable.

(114) The Coast Guard displays **heavy weather warning flags**, square RED flags with square BLACK centers, at two locations in Grays Harbor; one flag is on the Coast Guard lookout tower 70 feet above the water on the south side of Point Chehalis and the other is on the northwest side of the Coast Guard station boat house 50 feet above the water. These displays will be based on current weather warnings issued in the following National Weather Service forecast areas; Cape Flattery to Cape

(130)

Facilities in Grays Harbor (Hoquiam, Aberdeen, Cosmopolis)

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Port of Grays Harbor Terminal 3	46°58'11"N., 123°54'44"W.	600	38-40	18	• Open storage (150 acres) • Rail access	Receipt and shipment of general cargo	Port of Grays Harbor
Port of Grays Harbor Terminal 1	46°57'59"N., 123°51'19"W.	450	30	18	• Open storage (5 acres) • Electric belt conveyor (500 tons/hour)	Shipment of wood chips by barge	Port of Grays Harbor/ Olympic Fibre, Inc. (360–533–6588)
Port of Grays Harbor Terminal 2	46°57'53"N., 123°51'08"W.	900	41	18	• Open storage (51 acres) • 50,000 square foot storage building	Receipt and shipment of bulk agricultural commodities	Port of Grays Harbor/ AGP Inc. (360–533–9513)
Port of Grays Harbor Terminal 4	46°57'39"N., 123°50'19"W.	1400	41	18	• Open storage (100 acres) • Two 50-ton gantry cranes	Receipt and shipment of logs, lumber, and conventional general cargo	Port of Grays Harbor (360–533–9513)
Willis Enterprises, Aberdeen Wharf	46°57'57"N., 123°49'19"W.	650	20	16	• Open storage (17 acres) • Electric belt conveyor (510 tons/hour)	Shipment of wood chips	Quigg Bros., Inc./Willis Enterprises (360–249–5244)
Sierra Pacific Industries, Junction City Wharf	46°58'20"N., 123°46'39"W.	825	27-28	19.5	• Open storage (45 acres)	Shipment of wood chips; receipt and shipment of logs	Sierra Pacific Industries (360–532–2323)
Weyerhaeuser Co., Bay City Log Export, Berths 1 and 2	46°58'01"N., 123°46'43"W.	725	35	16	• Open storage (27 acres)	Shipment of logs and occasional shipment of lumber	Weyerhaeuser Co. (360–537–8216)
Weyerhaeuser Co., Aberdeen Saw Mill, Wood Chip Wharf	46°58'30"N., 123°47'38"W.	480	21-24	-	• Open storage (20,000 tons of wood chips) • Electric conveyor (400 tons/hour)	Shipment of wood chips	Weyerhaeuser Co. (360–537–8216)
Weyerhaeuser Co., Aberdeen Saw Mill, Lumber Wharf	46°58'26"N., 123°47'57"W.	900	24-33	16	• Open storage (16 acres)	Shipment of lumber	Weyerhaeuser Co. (360–537–8216)

Dimensions are given in feet
* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

Shoalwater. Display of flags are required from one hour before sunrise to one hour after sunset. Weather flags are flown at select Coast Guard stations to supplement other weather notification sources. Light signals corresponding to these flags are not displayed at night. (See illustration chapter 1.) In all cases mariners should rely upon National Weather Service broadcasts as their primary source of government-provided weather information.

(115) **Bay City**, 3.7 miles southeast from Westhaven Cove, on the east shore of **South Bay** formerly was a whaling station. The wharf, built originally for the old fertilizer factory, is now in ruins, and there are no marine facilities now at Bay City. The fixed highway bridge at Bay City has a clearance of 39 feet.

(116) For the rest of the 2.6-mile distance, South Bay is crooked and full of shoals to the mouth of **Elk River**, which is used some for logging.

(117) **Markham** is the site of a large cranberry plant and a small seafood company. It is on the south side of the bay at the mouth of **Johns River**. The river, nothing more than a shallow stream, is crossed by a fixed highway bridge near the entrance and has a clearance of 33 feet. Above the bridge, the stream is navigable only for rowboats.

(118) **Hoquiam** and **Aberdeen** are twin cities about 14 miles above the harbor entrance. Hoquiam is on the river of that name, and Aberdeen is on Chehalis River. South Aberdeen is across the river but is part of the city of Aberdeen.

(119) **Cosmopolis** is a small town on the south side of Chehalis River just above South Aberdeen. There is a large pulpmill here.

(120) **Chehalis River** enters at the east end of Grays Harbor and is marked by lights to Cosmopolis. It is navigable by small boats to **Elma**, 24 miles above the mouth. The upper portion of the river, for a distance of about 45 miles above Elma, is used for floating logs.

(121) **Montesano**, about 14 miles above Aberdeen, has several mills. This stretch of the river is used only by log tows and outboard motorboats. A small-boat moorage is on the north bank of the river just west of the highway bridge at South Montesano; a launching ramp is near the moorage.

(122)

Towage

(123) Tugs up to 2,200 hp are available at Hoquiam. Arrangements for a tug should be made in advance either through the Grays Harbor Pilots Association or ships' agents. Tugs monitor and use as working frequency VHF-FM channel 9.

(124)

Quarantine, customs, immigration and agricultural quarantine

(125) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1, for details.)

(126)

Harbor regulations

(127) The Port of Grays Harbor Commission appoints a port manager who directs the facilities and port affairs of the harbor district, which is coextensive with Grays Harbor County. The Port of Grays Harbor general offices are at 111 South Wooding Street, about 500 yards from the inshore end of Terminal Pier 1.

(128)

Wharves

(129) The Port of Grays Harbor operates four marine terminals. In addition to the port-operated facilities listed in the table, there are several private deep-draft piers and wharves in the Hoquiam, Aberdeen and Cosmopolis area. Only the major deep-draft facilities are listed. The alongside depths given in the table are reported. For information on the latest depths contact the port authorities or the private operators.

(131)

Supplies

(132) Bunker fuel, diesel oil, lubricants, water and some marine supplies are available for large vessels at Grays Harbor. Complete service and repair facilities for small craft are available at Westhaven Cove, Aberdeen and Hoquiam.

(133)

Repairs

(134) There are no facilities for major repairs to large oceangoing vessels in Grays Harbor; the nearest such facilities are in Portland, OR. There are several marine railways in Grays Harbor, the largest of which is at a shipyard on the west bank of the Hoquiam River 1 mile above its mouth. This railway can handle vessels to 400 tons, 80 feet long or 34 feet wide for hull repairs. Machine shops and foundries are nearby and can make some engine repairs. Electronic repair service is available.

(135)

Communications

(136) Grays Harbor is served by two Class I railroads. Two U.S. highways serve Aberdeen and Hoquiam. Bowerman Airport, owned and operated by the Port of Grays Harbor, is on an extensive filled area just west of Hoquiam; there are flights to Seattle, Portland, Astoria and points beyond.

(137) **North Bay**, immediately east of Point Brown, is a shallow bight about 6 miles long. It is filled with shoals and flats that bare at low water. There is some oyster culture in the bay, which is used considerably by small oyster boats. The entrance to the bay is marked by buoys.

(138) **Hoquiam River** empties into Grays Harbor about 2 miles west of the mouth of Chehalis River. It is practically a tidal slough 11 miles long. In 1980, the midchannel controlling depth was 6 feet from the mouth of Hoquiam River to the junction with the East Fork of the Hoquiam River, a distance of about 2.5 miles. An obstruction (cement dock debris) is between the Simpson Avenue and Riverside Avenue Bridges on the west side of the river in position 46°58'41"N., 123°52'57"W. The obstruction is marked by a buoy. Traffic on the river consists primarily of tugs and fishing vessels.

(139) The **Wishkah River** empties into the north side of Chehalis River in the east part of Aberdeen.

(140)

Copalis Head to Destruction Island

(141) From Point Brown the coast extends north for 23 miles to Point Grenville as a low, sandy beach, broken occasionally by small streams and in some places by bluffs. A few small towns and settlements, connected by roads or trails, are scattered along this stretch.

(142) **Copalis Head**, 13 miles north of Point Brown, is a bright yellow bluff 2 miles long and 200 feet high. It is 1.5 miles north of **Copalis River**. **Copalis Rocks**, two small rocks the larger 34 feet high, lie 500 yards off the head, and a rock awash is about 0.5 mile west-southwest of the head.

(143) Two small bluffs mark the mouth of **Joe Creek**, 3.5 miles north of Copalis Head.

(144) **Moclips River** entrance is 6 miles north of Copalis Head. The south point at the mouth is bare and sandy; on the north bank is a bright yellowish bluff 50 feet high. **Moclips**, near the mouth of this river, is connected by a branch of the Burlington Northern Railroad with Hoquiam on the north shore of Grays Harbor. A triangular-shaped yellowish bluff about 110 feet high on the south bank of **Wreck Creek**, which empties about 2.5 miles north of Moclips, is prominent from offshore.

(145) **Point Grenville**, 10 miles north of Copalis Head, is a broken rocky promontory with nearly vertical whitish cliffs over 100 feet high. Numerous rocks extend for some distance off the point. **Grenville Arch**, dark in color, 83 feet high, is the outer and more prominent of two rocks lying west of the point; it is over 0.5 mile southwest of the inner extremity of the point. The arch lies east and west. A rock that uncovers is 400 yards northwest of Grenville Arch. The west rock, off the west end of the point, is 200 yards off the cliff and 92 feet high. There are several rocks inside of it, but none outside. Two rocks, over 90 feet high, are 400 yards south of the south extremity of the point.

(146) An indifferent anchorage in northwest weather may be had under Point Grenville by vessels of moderate draft, but the depths compel anchoring at such a distance from the beach that little shelter is afforded. The anchorage is in 4 fathoms, sandy bottom, with the inner extremity of the point bearing **338°**, and Grenville Arch bearing **239°**. This anchorage is not recommended for ordinary use.

(147) North of Point Grenville is a series of cliffs; the upper part appears light gray, the lower part dark, separated by a well-defined line of demarcation. This formation disappears near the south end of the cliffs where they are broken up and present a stratified appearance. To the north of the cliffs is a shingle beach followed by irregular bluffs and cliffs terminating near Taholah in white cliffs

of uniform height, which from offshore do not present the stratified appearance noticeable to the south.

(148) **Quinault River** breaks through the cliffs about a mile southeast of Cape Elizabeth. **Taholah** is an Indian village on the banks of the river. The shoreline in this section is low. The river is navigable only by skiffs and outboard motorboats. Some gasoline and supplies are available. A piling dike has been built along the spit in front of the village. In the background is a ridge with three long, flat summits. The road serving the beach settlements, and connecting them with Hoquiam, terminates at Taholah.

(149) From Taholah to Cape Elizabeth the cliffs present an almost unbroken face seaward and in places are about 200 feet high. They appear either white or bright yellow, and from offshore present a very noticeable stratification, sloping downward to the south; an important difference from the direction of slope around Point Grenville.

(150) **Sonora Reef** extends south-southeast from Cape Elizabeth for over 2 miles, its south end lying 1.1 miles offshore.

(151) **Cape Elizabeth** projects about a mile from the general trend of the coast, and when seen from seaward appears as a bright yellow, rocky cliff reaching in places a height of 200 feet. There are no high or large rocks off the cape; numerous rocks awash extend to the south. The houses of the Quinault Indian Reservation are at the east end of the cliffs.

(152) From Cape Elizabeth for 20 miles to Destruction Island, the coast is nearly straight, with low shores and rocky cliffs heavily wooded to the edges. Numerous rocks lie offshore, but these are inshore of the usual track of vessels.

(153) **Flat Rock**, low and black, is 1.6 miles northwest from Cape Elizabeth and 0.9 mile offshore. A covered rock that breaks in ordinary weather is 400 yards south of it. A small rock is halfway between Flat Rock and Cape Elizabeth, with a smaller one inside halfway to the beach.

(154) **Pratt Cliff**, 3 miles north of Cape Elizabeth, is a sharp point backed by cliffs, 139 feet high. **Split Rock**, 70 feet high, is 1 mile offshore, abreast of the north end of Pratt Cliff. It is split in two, and the division shows when seen from west to northwest. A small, low, black rock is 0.5 mile south of it, and a larger one is 0.4 mile south of Split Rock.

(155) **Willoughby Rock**, 120 feet high, 0.4 mile northeast of Split Rock, is nearly round with an abrupt seaward face. A cluster of rocks is between Willoughby and Split Rock and a little south of them; one is black and conical, with a rock awash 200 yards southwest from it.

(156) **Sea Lion Rock**, 8 feet high, small and black, is 3 miles northwest of Split Rock and 2.6 miles offshore.

(157) From Pratt Cliff to **Raft River**, 3.5 miles, the coast consists of broken cliffs over 100 feet high bordered by rocks extending over 0.5 mile offshore. Midway between these points are three rocky heads covered with trees to the edges projecting beyond the cliffs and almost detached from them.

(158) **Tunnel Island**, 157 feet high, is in the entrance to Raft River and at low water is connected with the south point of the river. A vertical pillar, 108 feet high, stands 150 yards north-northwest of the rock, and a cluster of rocks is close-to under its southeast point.

(159) From Raft River to Queets River, 4.5 miles, the coast consists of cliffs about 80 feet high, broken occasionally by small streams.

(160) **Queets River** is the largest stream between Grays Harbor and Cape Flattery. The south point is a low, sandy spit about 0.1 mile long, projecting from an abrupt cliff, 80 feet high, and densely wooded. The north point is 1.3 miles long, low, and sandy, with some trees at the mouth of the river and a narrow lagoon between it and the bluff.

(161) From Queets River for 10 miles to abreast Destruction Island, the coast is rather low and is broken by cliffs about 50 feet high with broad low-water beaches. **Kalaloch Rocks** are about 4.5 miles north of the river, close inshore.

(162) A **U.S. Navy Underwater Tracking Range** is west of the mouth of Queets River, about 6 to 10 miles offshore. Underwater cables, several feet above the ocean bottom and over an area about 1 mile wide, extend northeast from the upper east side of the tracking range, at about 47°32.5'N., 124°30'W., to the shore at about 47°36.3'N., 124°22.5'W. Mariners are cautioned against anchoring or dragging in these areas.

(163) **Destruction Island**, 90 feet high, is 20 miles north-northwest of Cape Elizabeth and 3 miles offshore. It is flat-topped and covered with brush, with a few clumps of trees. The island is 0.5 mile long and 300 yards wide at its south part. From the north end rocks and ledges extend about a mile from the cliffs; these are bordered by a line of kelp on the inshore side.

(164) An indifferent anchorage, affording shelter from northwest winds, may be had off the southeast face of the island in 10 fathoms, sandy bottom, with the light bearing between **293°** and **315°**. Vessels must leave if the wind hauls west or south. During the fishing season many small fishing boats anchor for the night under Destruction Island; it is the only shelter from offshore winds between Grays Harbor and Cape Flattery.

(165)

Abbey Islet to White Rock

(166) For 5.5 miles from Destruction Island to Hoh Head, the coast trends in a general northwest direction. The cliffs are 50 to 100 feet high, and many rocks and ledges extend 1.2 miles offshore in some places.

(167) **Abbey Islet**, 3.5 miles northeast of Destruction Island, is over 100 feet high and covered with trees. It is 200 yards off the cliffs. Many rocks are close south of it, the most distant of which is **South Rock**, 46 feet high, 1 mile south, and 0.5 mile offshore.

(168) At the mouth of **Hoh River**, 2 miles southeast of Hoh Head, is a broad sand beach; the absence of cliffs for 0.5 mile is noticeable for a considerable distance offshore. In

smooth weather the river can be entered by canoes, but the channel shifts. An Indian village is on the south bank at its mouth.

(169) **Hoh Head**, 200 feet high, is a bright yellow cliff covered with a dense forest. It projects a little over 0.5 mile from the general trend of the coast. A large cluster of rocks is off the south cliff of the head and covered rocks extend to about 1.6 miles offshore between the head and North Rock. A rock covered 2¼ fathoms lies 1.8 miles west-northwest of Hoh Head.

(170) **Middle Rock**, **North Rock** and **Perkins Reef** are other dangers within 1.5 miles off Hoh Head. Middle Rock, 65 feet high and black with vertical sides, is 0.8 mile off the mouth of Hoh River. North Rock, a mile south of Hoh Head, is 107 feet high and grayish in color, with steep sides; in the afternoon sun this rock shows white, which makes it a very distinct landmark. Perkins Reef is a long, bold, and jagged islet, 1.1 miles west of Hoh Head. This area has numerous other rocks, covered and bare.

(171) The coast continues rugged and rocky from Hoh Head to La Push, 11 miles to the northwest. The cliffs are 100 to 120 feet high, broken here and there by small streams. Several rocky islets 25 to 120 feet high and covered ledges extend in some places as much as 2 miles offshore.

(172) **Alexander Island**, 121 feet high, is 2 miles north-northwest of Hoh Head and 1 mile offshore. It is covered with low vegetation and is flat-topped with steep sides. The island is prominent in hazy or smoky weather. A small clump of trees in its center makes it easily distinguishable from the other rocks and islands in the area. A covered rock, 1.8 miles west-northwest of Alexander Island, is the outermost known danger in this vicinity.

(173) **Toleak Point**, 4.7 miles northwest of Hoh Head, is a narrow point terminating in a small knob with an abrupt seaward face. A high wooded islet lies 400 yards west of the point, to which it is connected by an extensive bare reef. **Rounded Islet**, a grassy rock 130 feet high with rounded top and steep sides, is 0.3 mile seaward of Toleak Point. A low black rock is 0.7 mile south of the islet.

(174) **Giants Graveyard**, 1.5 miles north of Toleak Point, consists of very irregular rocks; the largest are up to 210 feet high. The farthest offlying rock is about 0.8 mile from shore.

(175) **Teahwhit Head**, 8 miles northwest of Hoh Head and 2.4 miles south-southeast of La Push, is a jagged double point 100 feet high and heavily wooded. **Strawberry Bay**, on the southeast side of the head, is a small bight in which fishing boats find shelter from northwest winds. There are numerous rocks in and around the bight.

(176) **Quillayute Needle**, 103-foot high pinnacle, 1.3 miles west-northwest of Teahwhit Head, is the outermost of many rocks, visible or covered, that are within a mile of the shore. Some are as high as 100 to 195 feet, and many are awash or covered by a fathom or less. The foul area continues to within 1 mile south of James Island, at the entrance to La Push.

(177) **James Island**, 15 miles north-northwest of Destruction Island on the north side of Quillayute River mouth, is 183 feet high, bold and wooded, and joined to the beach at low water. Numerous smaller wooded islands, immediately north, are prominent. An indifferent anchorage affording some shelter from northwest winds may be had close southeast of James Island, in 5 to 6 fathoms, sandy bottom, about 600 yards from the beach. Sea swell makes this anchorage unsafe.

(178) **James Island Light** (47°54'17"N., 124°38'51"W.), 150 feet above the water, is shown from a white house on the south part of the Island.

(179) **La Push**, an Indian village on the east bank and about 0.4 mile above the entrance of **Quillayute River**, is an important sport fishing center.

(180) The river channel is protected by a jetty on the southeast side and a dike on the northwest side; a lighted whistle buoy is about 1.8 miles southwest from the outer end of the jetty. About 250 feet of the outer end of the jetty is awash at high water.

(181)

COLREGS Demarcation Lines

(182) The lines established for the Quillayute River are described in **33 CFR 80.1380**, chapter 2.

(183) The river channel leads from the sea to a small-craft basin at La Push. The entrance channel is marked by a sector light. The channel to the basin is marked by a light and seasonal buoys. Buoys are not charted because they are frequently shifted in position; local knowledge is advised. The north and south sides of the entrance to the basin are marked by lights.

(184) The channel, which passes close to the southeast shore of James Island, is sometimes dangerous, especially in heavy south weather. Weather conditions that make the entrance hazardous normally occur only in the winters, usually in December and January. When there are breakers of any size making across the entrance, it should not be attempted except at better than half tide and with a well-powered boat. Mariners unfamiliar with the area may contact **Quillayute River Coast Guard Station** on Channel 16 VHF-FM or via telephone at 360–374–6469 for assistance.

(185) In late summer and fall mariners are advised to use caution when transiting the channel because fish nets may be present.

(186)

Weather, Quillayute and Tatoosh Island

(187) Maritime air from over the Pacific has an influence on the climate throughout the year. In the late fall and winter, the low-pressure center in the Gulf of Alaska intensifies and is of major importance in controlling weather systems entering the Pacific Northwest. At this season of the year, storm systems crossing the Pacific follow a more south path striking the coast at frequent intervals. The prevailing flow of air is from the southwest and west. Air reaching this area is moist and near the temperature of the ocean water along the coast, which ranges from

45°F (7.5°C) in February to 57°F (13.9°C) in August. The wet season begins in late September to October. From October through January, rain may be expected on about 22 days per month; from February through March, on 21 days; from April to June, on 20 days; and from July to September, on 15 days. Precipitation falls an average of 239 days each year.

(188) As the weather systems move inland, rainfall is usually of moderate intensity and continuous, rather than heavy downpours for brief periods. Gale force winds are not unusual. Most of the winter precipitation over the coastal plains falls as rain; however, snow can be expected each year. Snow is seldom deeper than 10 inches (254 mm) or remains on the ground longer than 2 weeks. The average annual snowfall is only 13 inches (330 mm) but snow has fallen during every month except June, July, and August. Annual precipitation increases from about 90 inches (2,286 mm) near the coast, to more than 120 inches (3,048 mm) over the coastal plains, to 200 inches or more (>5,080 mm) on the wettest slopes of the Olympic Mountains. The average annual precipitation at Quillayute airport is nearly 102 inches (2,591 mm). December is the wettest month averaging nearly 15 inches (381 mm) and July is the driest with an average of only 2.37 inches (61 mm).

(189) During the rainy season, temperatures show little diurnal or day to day change. Maximums are in the forties (5.0° to 9.4°C) or minimums in the mid-thirties (0.6° to 2.8°C). A few brief outbreaks of cold air from the interior of Canada can be expected each winter. Clear, dry, cold weather generally prevails during periods of east winds. Maximum temperatures range from 25°F (-3.9°C) to 35°F (1.7°C) and minimums from 10° to 25°F (-12.2° to -3.9°C). The coolest temperature on record is 5°F (-15°C) recorded November 1985. Every month except June, July and August has seen below freezing (<0°C) temperatures.

(190) In the late spring and summer, a clockwise circulation of air around the large high-pressure center over the North Pacific brings a prevailing northwest and west flow of cool, comparatively dry, stable air into the northwest Olympic Peninsula. The dry season begins in May with the driest period between mid-July and mid-August. The total rainfall for July is less than 0.5 of an inch (13 mm) in 1 summer out of 10; also, it exceeds 5.0 inches (127 mm) in 1 summer out of 10. During the warmest months, afternoon temperatures are in the upper sixties and lower seventies (20.0° to 22.2°C), reaching the upper seventies and the lower eighties (25.6° to 27.8°C) on a few days. Occasionally, hot, dry air from the east of the Cascade Mountains reaches this area and maximum temperatures are in the mid- or upper-nineties (34° to 38°C) for 1 to 3 days. Minimum temperatures are in the upper forties and the lower fifties (8.9° to 11.1°C). The lowest relative humidity and greatest danger of forest fires occur with east winds. The warmest temperature on record is 99°F (37°C), recorded in August 1981. Each month, May through September, has recorded temperatures in excess of 90°F (32.2°C).

(191) In summer and early fall, fog or low clouds form over the ocean and frequently move inland at night but generally disappear by midday. In winter, under the influence of a surface high-pressure system, centered off the coast, fog, low clouds and drizzle occur daily as long as this type of pressure pattern continues. Fog occurs an average of 236 days each year. It is fairly evenly distributed throughout the year, but the months of October through January have a slightly greater occurrence. The average frost-free season is from the last of April until mid-October.

(192) In the vicinity of **Tatoosh Island** (see Tatoosh Island further on, this chapter), gales occur frequently with December and January being the favored months. Rainfall is moderate, averaging nearly 80 inches (2,032 mm) each year. December is the rainiest month, followed closely by January and February. July is the driest. An average of 251 days each year record measurable precipitation. Snowfall is light due to the extreme maritime influence and averages only 13.5 inches (343 mm) each year. It is most likely in January. The daily range in temperature is narrow, seldom exceeding ten degrees (-12.2°C). The average temperature on Tatoosh Island is 49°F (9°C). The average maximum is 53°F (11.7°) while the average minimum is 45°F (7.2°C). January is the coolest month and August the warmest. Extremes on Tatoosh Island include an extreme maximum temperature of 82°F (27.8°C) recorded in June 1955 and an extreme minimum of 14°F (-10°C) recorded in January 1950 and December 1964.

(193) The Coast Guard has established Quillayute River Regulated Navigation Area Warning Sign, a **rough bar advisory sign**, 34 feet above the water, visible from the channel looking seaward, on the northwest corner of the old Coast Guard boathouse, to promote safety for small-boat operators. The sign is diamond shaped and painted white with an international orange border and with the words "**Rough Bar**" in black letters. The sign is equipped with two quick flashing amber lights that will be activated when hazardous conditions exist and the bar is restricted to recreational and uninspected passenger vessels. Boaters are cautioned, however, that if the lights are not flashing, it is no guarantee that sea conditions are favorable.

(194) About 96 berths, electricity, gasoline, diesel fuel, water, ice, a launching ramp and some marine supplies are available at the basin at La Push. A good highway connects La Push with U. S. Highway 101 north of Forks.

(195) From James Island north-northwest for 16.4 miles to Cape Alava, the rugged coast continues, with rocks and foul ground extending as much as 2 miles offshore; the land side consists of steep wooded bluffs and narrow beaches. The cliffs, however, are not continuous. The once densely timbered country ascends gradually east to the snow-capped mountains of the Olympic Range, which can be seen for many miles in clear weather. In 1974, areas of heavy logging activity were in evidence inland for many miles from this coastal area.

(196) **Cake Rock**, 116 feet high, is 2 miles northwest of James Island and 1.5 miles offshore. This rock, about 200 yards long, has steep sides, and its flat top is surmounted by a 20-foot mound. There are several other visible rocks between Cake Rock and the shore.

(197) **Cape Johnson**, small and not particularly prominent, projects less than 0.5 mile from the coastline, terminating in a vertical cliff 100 feet high.

(198) **Sea Lion Rock**, 78 feet high, 2.6 miles northwest of Cape Johnson, is large, brown, covered with guano, and irregular in outline. A low black rock is 200 yards east of Sea Lion Rock. **Carroll Island**, 225 feet high, is 0.8 mile north of Sea Lion Rock. It has vertical whitish sides and a grassy top. A pillar rock, 134 feet high, lies 200 yards west, and a low black rock is 200 yards off the southeast side. Carroll Island and the pillar rock are quite prominent, especially in the sunlight.

(199) **Jagged Island** is the larger of two high bare rocks, inside of Sea Lion Rock and Carroll Island, about 0.8 mile offshore. It is 320 feet high with steep sides. The smaller rock is 183 feet high. They are 200 yards apart, and between them are two pinnacle rocks close together. Many other rocks are shoreward of the island.

(200) **Hand Rock**, 33 feet high, is 1.5 miles north of Carroll Island and 1.5 miles offshore. So named from its shape, the rock is black with a white cap of guano on top. A larger rock lies 0.5 mile toward shore and is sometimes mistaken for Hand Rock.

(201) **White Rock**, 161 feet high, 1.7 miles south of Cape Alava and about 0.8 mile offshore, has nearly vertical sides and a rounded top; it is whitish and in the sunlight is visible for a long distance. A group of large, low, black rocks lie 0.8 mile south-southeast of White Rock and 0.8 mile offshore.

(202)

Cape Alava to Cape Flattery Light

(203) **Cape Alava**, the westernmost point of the State of Washington, is 13 miles south of Cape Flattery. The seaward face is about 0.6 mile in extent. **Tskawahyah Island**, a steep rocky island, 142 feet high and with trees on top, is off its northwest extremity. The shore is bordered by numerous rocks and covered ledges.

(204) **Flattery Rocks** and Umatilla Reef are rocks and islets extending west from Cape Alava for 2.3 miles. **Ozette Island**, 236 feet high, is 0.8 mile southwest of the cape. The island, 0.5 mile long, is flat-topped with steep sides. About 0.3 mile off the south and southeast sides are low, black rocks. **Bodelteh Islands**, 1.2 miles west-northwest of the north end of Cape Alava, have high bold seaward faces. The outer one is 198 feet high.

(205) In season, a few fishermen find shelter in an anchorage off the southeast end of Ozette Island. The area is small and requires local knowledge to enter. It affords fair protection from the prevailing northwest wind.

(206) **Umatilla Reef**, 2.3 miles northwest of Cape Alava, the greatest danger to navigation off this section of the coast, is 0.7 mile west of the outer Bodelteh Island. It extends for 200 yards in a west direction and is about 75 yards wide. The reef consists of small, low, black rocks and some breakers. A rock covered 4½ fathoms is north of the reef at 48°11'44"N., 124°46'57"W., and a rock covered 2½ fathoms is south of the reef at 48°10'18"N., 124°47'02"W. There is a rock covered ½ fathom, 0.3 mile east of Umatilla Reef, which endangers passage inside, sometimes used by small boats. Umatilla Reef is difficult to make out, especially in thick weather.

(207) Between Cape Alava and Cape Flattery, the coast curves slightly in a series of bights but continues as rugged as before. There are alternate stretches of wooded bluffs and high rocky cliffs. The country immediately back of the beach is not high, but it is densely wooded.

(208) **Point of Arches**, 5 miles north-northeast of Cape Alava, is the north point of the cliffs that extend some 1.5 miles south. Numerous rocks and ledges are offshore as far as about a mile.

(209) **Father and Son**, two rocks connected by a low reef, lie 0.6 mile offshore abreast the south end of the cliffs. The outer rock is 167 feet high and the inner one is 65 feet high. Several exposed rocks are between the outer rock and Spike Rock.

(210) **Spike Rock**, 35 feet high, sharp and bare, is 0.8 mile northwest of the Point of Arches. It is the outermost of a chain of rocks, the largest of which is 185 feet high; there are three arches in these rocks. A rock that uncovers 5 feet is 0.3 mile west-southwest of Spike Rock.

(211) **Portage Head**, 2.5 miles north of Point of Arches, has a mile-long seaward face of bold irregular cliffs over 410 feet high. **Anderson Point**, at the north end of the cliffs, has a height of about 270 feet. A reef extends from the point toward Cape Flattery for 1.5 miles showing several low, black rocks awash and one small rock 45 feet high. A rock covered 5 feet is 1.3 miles northwest of Portage Head.

(212) **Makah Bay** is a shallow bight included between Portage Head and Waatch Point. It affords indifferent shelter in north and east weather and a smooth sea but is little used. The shores are low and sandy. **Waatch River** enters in the north part of the bight immediately east of Waatch Point. It is a tidal slough, and the valley through which it runs extends about 2 miles to Neah Bay on the Strait of Juan de Fuca. This low depression is one of the features for recognizing Cape Flattery.

(213) **Waatch Point**, 3 miles southeast of Cape Flattery, is the southeast extremity of the cliffs extending to the cape. This stretch is bordered by numerous rocks and ledges.

(214) **Fuca Pillar**, 0.2 mile south of the west point of Cape Flattery, is a rocky column 157 feet high and 60 feet in diameter, leaning slightly northwest. It is 150 yards off the face of the cliff and is more prominent from north than from south.

(215) **Cape Flattery**, a bold, rocky head with cliffs 120 feet high, rises to nearly 1,500 feet about 2 miles back from the beach. From south it looks like an island because of the low land in the valley of Waatch River. Numerous

rocks and reefs border the cliffs east and south of the cape. Tide rips are particularly heavy off Cape Flattery.

(216) A large radar dome, highest and most prominent structure in the area, is on **Bahokus Peak**, the part of Cape Flattery about 2 miles back from the beach that rises to nearly 1,500 feet. This inflated plastic dome, about 50 feet in diameter, is on top of a tower and was reported to be a very good landmark over low dense fog for vessels coming from the south.

(217) **Tatoosh Island**, 0.4 mile northwest of Cape Flattery, is about 0.2 mile in diameter, 108 feet high, flat-topped, and bare. It is the largest of the group of rocks and reefs making out about 0.9 mile northwest from the cape. The passage between Tatoosh Island and the cape is dangerous and constricted by two rocks awash near its center. Although sometimes used by local small craft, it cannot be recommended. The currents are strong and treacherous. Breakers may be in the area, especially during maximum currents.

(218) **Cape Flattery Light** (48°23'31"N., 124°44'13"W.), 112 feet above the water, is shown from a 35-foot skeleton tower, adjacent to the old white conical tower lighthouse on the west end of Tatoosh Island.

(219) A rocky patch, covered 7½ fathoms, on which the sea breaks occasionally in a west swell, is 1.4 miles southwest of the light.

(220) **Duncan Rock** and **Duntze Rock**, the two principal dangers north-northwest of Tatoosh Island, are respectively, 1 mile and 1.3 miles from the light. Duncan Rock is small, low and black; Duntze Rock is covered 2¾ fathoms. A V-AIS is ¾ mile northwest of Duntze Rock. Ledges and rocks constrict the passage between Duncan Rock and Tatoosh Island to less than 0.5 mile, and strong currents and tide rips make it hazardous.

(221)

Strait of Juan de Fuca

(222) **Swiftsure Bank**, about 3.5 miles in extent, is off the mouth of the Strait of Juan de Fuca, northwest of the submarine valley making into the strait. The bank has a least depth of 18 fathoms.

(223) During the summer, large numbers of fishing vessels may be trolling or at anchor on Swiftsure Bank. During periods of low visibility, which are not uncommon in this vicinity, extreme caution must be exercised to avoid collision with fishing boats; most of these craft tend to defy radar detection.

(224) U.S. Navy operating areas are southwest of the entrance to the Strait of Juan de Fuca. Mariners should exercise caution when navigating in this vicinity while exercises are in progress.

(225)

Carmanah Point to Amphitrite Point, Canada

(226) The coast from Carmanah Point to Cape Beale is very dangerous and, except during fine weather and offshore winds, should be given a wide berth.

(227) **Carmanah Point** is on the Vancouver Island shore, 13 miles north of Tatoosh Island. A light, 175 feet above the water, is shown from a white octagonal concrete tower on the point.

(228) **Clo-oose**, an abandoned village, is 4 miles northwest of Carmanah Point in the small cove at the mouth of the Cheewhat River, east of the entrance to Nitinat Lake.

(229) A reef 0.8 mile long in a northwest direction, with a rock awash in its center, is off this cove. It is marked by a lighted whistle buoy 0.8 mile southwest of the rock.

(230) **Tsusiat Lake** is 8.5 miles northwest of Carmanah Light. At the seaward end of the lake is a conspicuous waterfall that is visible far off even in hazy weather and may help fix a vessel's position as it is the only waterfall on this part of the coast. Behind Tsusiat Lake the mountains rise to more than 2,000 feet.

(231) **Pachena Point**, 25 miles northwest of Cape Flattery, is marked by a light.

(232) **Seabird Rocks** are off the entrance to Pachena Bay, 3 miles northwest of Pachena Point. The largest is about 48 feet high, bare and of small extent; it is marked by a light. There is no safe passage between Seabird Rocks and the shores northeast; the rocks should not be approached closer than 1.5 miles.

(233) **Cape Beale** is a bold rocky point, 120 feet high. A reef with rocks above and below water extends about 0.8 mile southwest from it. **Cape Beale Light** (48°47'12"N., 125°12'48"W.), 167 feet above the water, is shown from a red skeleton tower with white slatwork daymark on 3 sides, near the west extremity of the cape.

(234) **Barkley Sound**, an extensive arm of the sea 35 miles northwest of Cape Flattery, lies between Cape Beale and Amphitrite Point. It is 15 miles wide at its entrance, and though encumbered by numerous islands and rocks, it maintains a breadth of 13 miles for 8 miles inland, above which it separates into several narrow inlets. The shores are low, except in the north part and among the inlets, where they become high, rugged and mountainous.

(235) In the west part of the sound are innumerable rocks and islands with navigable channels between them. Entrance should not be attempted without local knowledge or a pilot. **Imperial Eagle Channel** is the easiest of access.

(236) **Amphitrite Point** is the west entrance point of Barkley Sound. A light, 49 feet above the water, is shown from a white rectangular tower on the end of the point; a sound signal is at the light. A lighted whistle buoy is 0.6 mile south of the point.

(237) A more detailed description of Canadian waters is given in Pub. No. 154, Sailing Directions (Enroute) for British Columbia, published by the National Geospatial-Intelligence Agency, and the Sailing Directions, British Columbia Coast, (South Portion) Vol. I, published by the Canadian Hydrographic Service.

(238)

Routes

(239) In clear weather no difficulty will be experienced in approaching the entrance to the Strait of Juan de Fuca from any direction, as the land on both sides is high and Cape Flattery is readily distinguished, particularly from south, owing to the low land between Makah and Neah Bays. Lights are available on both sides of the strait to assist in obtaining a fix.

(240) In thick weather soundings will assist in estimating the distance from shore. Vessels should pick up the 100-fathom curve and be guided by the soundings. The relationship between the 100- and 50-fathom curve is a good indication for fixing the position; vessels should not proceed inside the 50-fathom curve until a fix has been obtained. The mountain peaks in the interior sometimes can be seen when the coast is obscured by fog.

(241)

Depths

(242) The depths in the approaches to the Strait of Juan de Fuca are very irregular, especially outside the 50-fathom curve. There is a deep submarine valley with depths of over 100 fathoms and a width of 2 to 4 miles, between the 100-fathom curves, which leads from about 37 miles south-southwest of Cape Flattery, rounds this cape at a distance of 2 miles and extends about 32 miles into the strait. The 100-fathom curve on the west side of this submarine valley is very irregular, but on the east side it is more regular. Within the strait the curve is regular on both sides of the valley.

(243)

Currents

(244) Information on the current at Swiftsure Bank is available from the Tidal Current prediction service at *tidesandcurrents.noaa.gov*. Links to a user guide for this service can be found in chapter 1 of this book. Off the entrance of the Strait of Juan de Fuca the coastal current is influenced by the flow into and out of the strait. On the flood there is a set into all the sounds on the Vancouver Island shore, and this, combined with the prevailing northwest current and light south winds, with possibly some swell from the same direction, makes the coast in the vicinity and west of Carmanah Light dangerous, especially for small vessels. Many strandings have occurred on the Vancouver Island shore.

(245) The flood current entering the Strait of Juan de Fuca sets with considerable velocity over Duncan and Duntze Rocks, but instead of running in the direction of the channel there is a continued set toward the Vancouver Island shore, which is experienced as far as Race Rocks. The flood current also has more velocity on the north shore of the strait than on the south.

(246) The ebb current is felt most along the south shore of the strait, and between New Dungeness Light and Crescent Bay there is a decided set south and west, especially during large tides. With wind and swell against the current, a short choppy sea is raised near the entrance to the strait. (For additional information on currents in the Strait of Juan de Fuca, see chapter 7.)

(247) Sailing craft approaching the strait should keep well off the mainland coast south of Cape Flattery, unless working to windward against a fine north wind, which is frequently found during the summer. In this case the coast may be approached to within 3 miles. At other times there is no inducement to hug the coast, on which a long rolling swell frequently sets, and this swell, meeting the southeast gales of winter, causes a confused sea. The cape and its offlying dangers should be given a berth of at least 3 miles, as the tidal current sometimes sets with great velocity toward Duncan and Duntze Rocks. It is equally necessary when entering or leaving the strait to avoid the coast of Vancouver Island between Port San Juan and Bonilla Point, when there is any appearance of bad weather.

(248) Sailing vessels making the strait during the winter, especially during November and December, and experiencing the east and southeast winds prevalent at that season, should endeavor to hold a position south or southwest of Cape Flattery and should on no account open the entrance of the strait until an opportunity offers of getting well inside. It is also important to remember that, though it may be blowing strongly from the south or south-southwest outside, on rounding Cape Flattery, an east wind may be found blowing out of the strait, and a vessel would then find the Vancouver Island coast a dangerous lee shore.

(249) Coming from the west with a heavy west or northwest gale and thick weather, vessels uncertain of their positions should lie-to on soundings at not less than 30 miles from the entrance or on the edge of the bank. These gales seldom last more than 12 hours, and if they veer toward the southwest the weather will clear and vessels may bear up for the strait.

(250)

Fog

(251) The fog is generally heavier near the entrance, decreasing in density and frequency up the strait. Near the entrance the fog sometimes stands like a wall, and vessels entering the strait run out of it into clear bright weather, even before passing Tatoosh Island. The fog frequently extends a long distance seaward. The wind gradually works the fog into the strait, and it will follow the north shore past Port San Juan to the Sombrio River; occasionally it will reach as far as Sooke Inlet and at times to Race Rocks. As a rule, however, the fog moves farther into the strait along the south shore, at times reaching Port Townsend; frequently the north shore is clear when the south shore is enveloped in fog.

(252) During the spring, fog is frequent in the strait. With the west wind it often stops at the headland between Crescent and Freshwater Bays, the fog then extending west while it is clear to east. When fog extends past Freshwater Bay the small area about the west bight will often be clear.

(253)

Weather, Strait of Juan de Fuca and vicinity

(254) In summer, the prevailing northwest winds draw into the strait, increasing toward evening and at times blowing 25 knots before midnight. This occurs, however, only when the winds are strong outside. In light winds, sailing vessels may be a week from Cape Flattery to Admiralty Inlet, and vice versa.

(255) In winter, southeast winds draw out of the strait, causing a confused cross-sea off the entrance, the heavy southwest swell meeting that coming out. Under these conditions small outboard vessels, especially sail, often make Neah or Clallam Bays and await more favorable weather. The weather off the entrance as a rule is exceptionally severe, and wrecks are of frequent occurrence. The heavy broken seas are probably due to the shoaling off the entrance, the irregularity and velocity of the currents and the conflict between the wind drawing out of the strait and that along the outer coast.

(256) The rainfall in the vicinity of the entrance is considerable, even during the summer, although the heaviest rains occur between December and March.

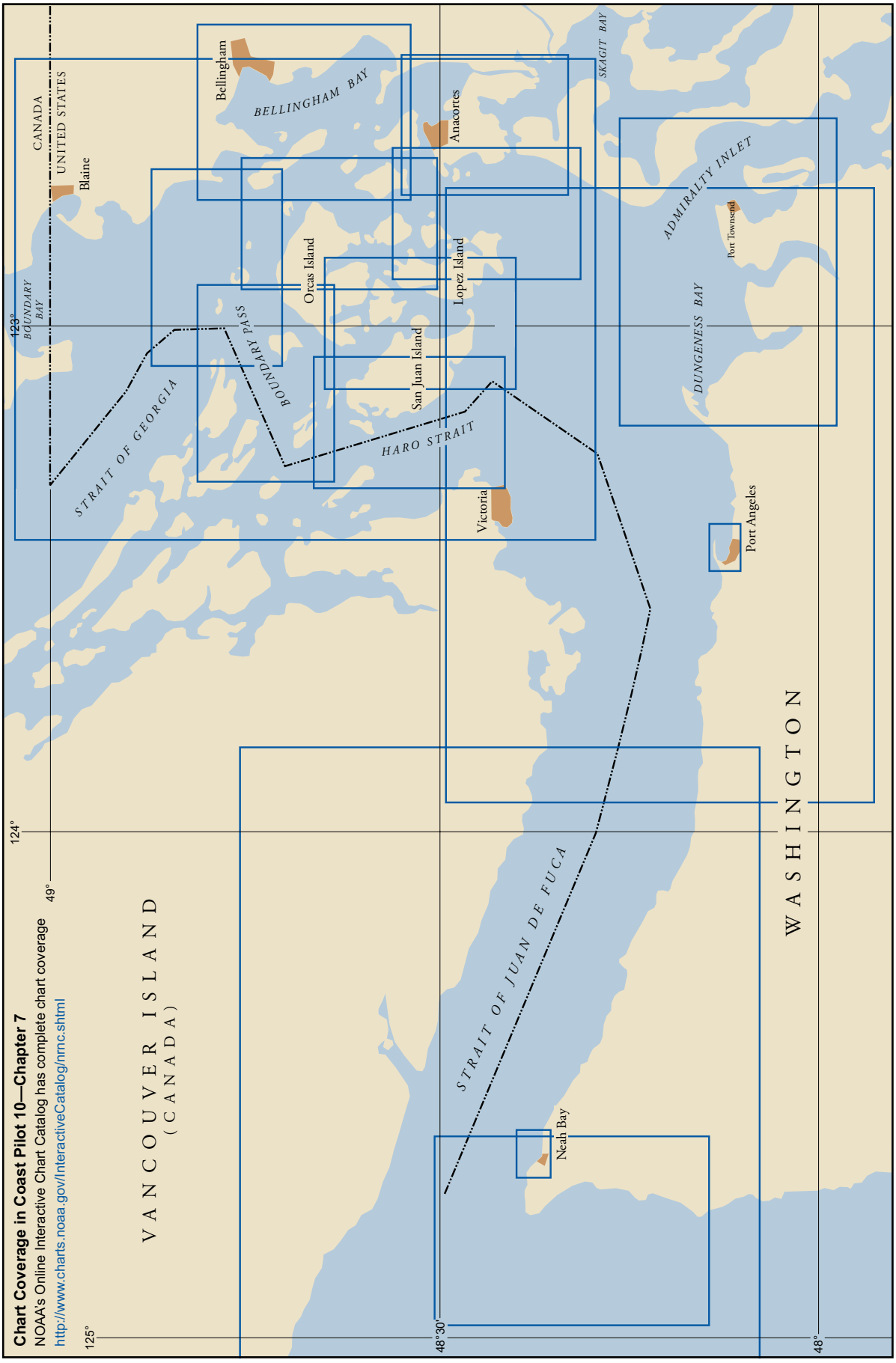
Chart Coverage in Coast Pilot 10—Chapter 7
NOAA's Online Interactive Chart Catalog has complete chart coverage
http://www.charts.noaa.gov/InteractiveCatalog/nmc.shtml
CANADA
UNITED STATES
Blaine
Bellingham
BELLINGHAM BAY
Anacortes
SKAGIT BAY
ADMIRALTY INLET
Port Townsend
DUNGENESS BAY
Orcas Island
Lopez Island
San Juan Island
BOUNDARY PASS
HARO STRAIT
STRAIT OF GEORGIA
BOUNDARY BAY
Victoria
Port Angeles
VANCOUVER ISLAND
(CANADA)
WASHINGTON
STRAIT OF JUAN DE FUCA
Neah Bay
123°
124°
125°
49°
48°30'
48°

Strait of Juan De Fuca and Georgia, Washington

(1)

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(2) This chapter includes the Strait of Juan de Fuca, Sequim Bay, Port Discovery, the San Juan Islands and its various passages and straits, Deception Pass, Fidalgo Island, Skagit and Similk Bays, Swinomish Channel, Fidalgo, Padilla, and Bellingham Bays, Lummi Bay, Semiahmoo Bay and Drayton Harbor and the Strait of Georgia as far north as Burrard Inlet. The more important U.S. harbors described are Neah Bay, Port Angeles, Friday Harbor, La Connor, Anacortes, Bellingham and Blaine Harbor. Deep-draft vessels use the harbors at Port Angeles, Anacortes, and Bellingham, the principal cities in the area. The Canadian coasts are only briefly described. (See **Pub. 154, Sailing Directions (Enroute) for British Columbia**, published by the National Geospatial-Intelligence Agency, and the **Sailing Directions PAC 201, Juan de Fuca Strait and Strait of Georgia**, published by the Canadian Hydrographic Service, for detailed information on Canadian waters.)

(3) **Strait of Juan de Fuca** separates the south shore of Vancouver Island, Canada, from the north coast of the State of Washington. The entrance to the strait lies between parallels 48°23'N., and 48°36'N., on the meridian of 124°45'W. This important body of water is the connecting channel between the ocean and the interisland passages extending south to Puget Sound and north to the inland waters of British Columbia and southeastern Alaska.

(4) The commerce of this region is extensive, both foreign and domestic. Vast quantities of lumber, fish, grain and general merchandise are exported, while the manufacturing and shipbuilding industries are important. Several transcontinental railroads have their terminals on Puget Sound. There are many steamer lines, foreign and domestic, operating from this area to places across the Pacific or through the Panama Canal, in addition to the coastal vessels.

(5) At its entrance and for 50 miles east to Race Rocks, the strait is about 11 miles wide and then widens to about 16 miles for 30 miles east to Whidbey Island, its east boundary. The waters as a rule are deep until near the shore with few outlying dangers, most of which are in the east part. The shores on both sides are heavily wooded, rising rapidly to elevations of considerable height, and, except in a few places, are bold and rugged.

(6) The navigation of these waters is relatively simple in clear weather. The aids to navigation are numerous. In thick weather, because of strong and irregular currents, extreme caution and vigilance must be exercised. Navigators not familiar with these waters should take a pilot.

(7)

COLREGS Demarcation Lines

(8) The International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS) apply on all the waters of the Strait of Juan de Fuca, Haro Strait, and Strait of Georgia. (See **33 CFR 80.1385** and **80.1390**, chapter 2.)

(9)

Traffic Separation Scheme

(10) There are traffic separation schemes in the approaches and within the Strait of Juan de Fuca, Puget Sound, Haro Strait, Boundary Pass and the Strait of Georgia. See **33 CFR 167.1** through **167.15**, chapter 2, for general regulations on the schemes. Limits and regulations detailing specific schemes can also be found in chapter 2 (reference the following table.)

(11)

Traffic Separation Scheme Regulations	
Strait of Juan de Fuca (approaches to)	33 CFR 167.1300 through 167.1303
Strait of Juan de Fuca	33 CFR 167.1310 through 167.1315
Puget Sound	33 CFR 167.1320 through 167.1323
Haro Strait, Boundary Pass, Strait of Georgia	33 CFR 167.1330 through 167.1332

(12) A V-AIS marks the precautionary area west-northwest of Cape Flattery and a lighted buoy marks the precautionary area between Race Rocks and Port Angeles and is equipped with a RACON. These ATONS assist in the separation of inbound and outbound vessels transiting the Strait of Juan de Fuca and eliminating, as much as possible, the cross-vessel traffic that can occur between the entrance to the Strait of Juan de Fuca at Cape Flattery and the pilot stations at Port Angeles and Victoria, British Columbia. It is recommended that all vessels navigate so as to leave these buoys to port.

(13) Vessels so desiring may while transiting the Strait of Juan de Fuca contact the Puget Sound Vessel Traffic Service by calling SEATTLE TRAFFIC on VHF-FM channel 5A to receive desired information on known traffic, aids to navigation discrepancies and locally hazardous weather conditions. In Admiralty Inlet, south of a line between Nodule Point on Marrowstone Island and Bush Point on Whidbey Island, vessels should use VHF-FM channel 14 to contact SEATTLE TRAFFIC. VHF-FM channel 13 should be used to make passing

(19)

Washington State Requirements—Reporting Oil Spills and Vessel Emergencies
All vessels must report oil spills or potential oil spills to both Washington State (800–258–5990) and the National Response Center (800–424–8802). Tank vessels and cargo and passenger ships 300 gross tons or larger must make notifications to Washington State for vessel emergencies, including a loss or serious degradation of propulsion, steering, means of navigation, electrical generating capability and seakeeping capability constituting a substantial threat of pollution affecting Washington State natural resources. In addition to any notifications to the USCG, the owner or operator must notify the state of any vessel emergency that results in the discharge or substantial threat of a discharge of oil to state waters or that may affect the natural resources of the state within one hour of the onset of the emergency.

Tug Escorts for Laden Tankers
Any laden oil tanker, whether enrolled or registered, proceeding east of a line extending from Discovery Island Light (British Columbia, CN) south to New Dungeness Light (Washington State, US) must be escorted by a tug or tugs with an aggregate shaft horsepower equivalent to five percent of the deadweight tons of that tanker. For additional details see Washington state law at 88.16 Revised Code of Washington (RCW).

Emergency Response Tug at Neah Bay
An industry-funded emergency response tug is located at Neah Bay at the entrance to the Strait of Juan de Fuca. The tug is available 24 hours a day and can be underway within twenty minutes of a decision to deploy. The purpose of the tug is to assist vessels having propulsion and steering failures or that are directed by either the U.S. or Canadian Coast Guards to obtain towing assistance. Among other capabilities, the tug is intended to be able to make up to, stop, hold, and tow a drifting or disabled vessel of 180,000 metric dead weight tons in severe weather conditions. The tug can be contacted through the USCG VTS or the Puget Sound Marine Exchange.

Washington State Vessel Inspections
The Washington State Department of Ecology regulates cargo and passenger vessels and tank vessels operating in Washington waters. A cargo vessel is any self-propelled vessel in commerce that is 300 gross tons or more. A passenger vessel is any vessel 300 gross tons or more with a fuel capacity of at least 6,000 gallons that carries passengers for compensation. A tank vessel is a ship that is constructed or adapted to carry, or that carries, oil in bulk as cargo or cargo residue. Washington State Ecology inspectors may conduct vessel inspections on regulated cargo, passenger, and fishing vessels when in Washington waters. Additional information—
www.ecology.wa.gov/regulations-permits/guidance-technical-assistance/guidance-for-oil-industry/vessel-information.

Oil Transfer Requirements
Safe bunkering procedures must be followed during fueling operations. For vessels 300 gross tons or greater, Washington State Ecology inspectors may conduct inspections of these regulated oil transfers on vessels receiving fuel for propulsion within Washington waters. Details can be found in state regulations at Washington Administrative Code (WAC) 317-40. Additional information—
www.ecology.wa.gov/regulations-permits/guidance-technical-assistance/requirements-for-bunkering.

Tank vessels delivering oil in bulk to a non-recreational vessel or facility within Washington waters must meet state oil transfer requirements. They may also be subject to Washington State oil transfer inspections for these regulated oil transfers. Details can be found in WAC 173-184. Additional information—
www.ecology.wa.gov/regulations-permits/compliance-enforcement/oil-transfers.

For a transfer of more than 100 gallons of bulk oil to a facility or non-recreational vessel, the delivering vessel must submit an Advance Notice of Transfer (ANT) report to Ecology. This ANT must be submitted 24 hours prior to the transfer for facilities or within the timeframe required by local USCG Captain of the Port. The ANT report can be made either: online using the state website at: *https://secureaccess.wa.gov/ecy/ants*, by e-mail to *OilTransferNotifications@ecy.wa.gov*, or by fax to 360–407–7288 or 800–664–9184.

Contingency Plan Requirements
Tank vessels and cargo and passenger ships 300 gross tons or larger transiting Washington waters must either have a Washington State Department of Ecology approved oil spill contingency plan or be a member of a non-profit cooperative that provides oil spill response capabilities consistent with their Washington State approved contingency plan. The non-profit cooperative for the Columbia River is the Maritime Fire & Safety Association (MFSA) and for Puget Sound and Grays Harbor is Washington State Maritime Cooperative. Also available is the National Response Corporation, a multiple vessel plan. Additional information—
www.ecology.wa.gov/regulations-permits/plans-policies/contingency-planning-for-oil-industry.

arrangements in U.S. waters and is Seattle Traffic's secondary frequency; however, because channel 13 is not used in Canadian waters as the primary bridge-to-bridge radiotelephone channel, vessels are encouraged to use channel 5A to make passing arrangements in the Strait of Juan de Fuca. Preliminary calls to SEATTLE TRAFFIC on VHF-FM channel 16 are not required or desired. (See Traffic Separation Schemes, chapter 1, for additional information.)

(14) The Canadian Government recommends that ships conduct themselves in accordance with the navigational procedures set forth in the Ship Routing Regulations when navigating in or near the traffic separation scheme in Canadian waters. Mariners are advised that the Canadian Ship Routing Regulations are based upon the International Maritime Organization's "General Principles of Ships' Routing," except for a relaxation that permits vessels engaged in fishing to proceed in any direction in or near traffic lanes and on the high seas. (Canadian Ship Routing Regulations are published in the Annual Edition of Canadian Notices to Mariners.)

(15) Complete details of the traffic separation schemes and the vessel traffic management and information system for the coastal waters of southern British Columbia are given in the following:

(16) Pub. No. 154, Sailing Directions Enroute, British Columbia, published by the National Geospatial-Intelligence Agency;

(17) Sailing Directions PAC 201, Juan de Fuca Strait and Strait of Georgia, published by the Canadian Hydrographic Service, and

(18) Annual Edition of Canadian Notices to Mariners, published by the Canadian Coast Guard.

(20)

Vessel Traffic Service

(21) The U.S. Coast Guard operates **Puget Sound Vessel Traffic Service (PSVTS)** in the U.S. waters of the Strait of Juan de Fuca and the Strait of Georgia, Rosario Strait, Puget Sound, Hood Canal, Possession Sound, the San Juan Islands Archipelago and navigable waters adjacent to these areas; the system is mandatory. Vessel operating procedures and designated radiotelephone frequencies are published in **33 CFR 161**, chapter 2, and/or the **Puget Sound Vessel Traffic Service User Manual**, available online at *uscg.mil/d13/psvts*. Mariners should consult these sources for applicable rules and reporting requirements. The PSVTS is a full-service VTS providing Information Service, Traffic Organization Service and Navigation Assistance Services to vessels operating in the VTS area. The system is designed to prevent collisions and groundings and to protect the navigable waters concerned from environmental harm resulting from such collisions and groundings.

(22) A **Cooperative Vessel Traffic Service (CVTS)** has been established in the Strait of Juan de Fuca region, based on an agreement between the United States and Canada. Operated by the U.S. Coast Guard and the Canadian Coast Guard, the system is intended to enhance safe and expeditious vessel movement and to minimize risk of pollution to the marine environment; the system is mandatory. Regulations which apply to the CVTS can be found in **33 CFR 161.1** through **161.23** and **161.55**, chapter 2. The CVTS exchange lines delineating the service boundaries and frequency change lines between Vessel Traffic Center management authorities are detailed in the **Puget Sound VTS User's Manual** which can be found at *www.pacificarea.uscg.mil/VTSPugetSound/*.

(23) Mariners are advised that **Ferry Routes** may differ from the established Vessel Traffic Services, Traffic Separation Schemes and Cooperative Vessel Traffic Management Systems for the entire Strait of Juan de Fuca and Puget Sound area.

(24) In accordance with the Cooperative Vessel Traffic Service, the United States and Canada, in cooperation with industry and the British Columbia Coast Pilots have established a **Special Operating Area (SOA)** at the intersection of Haro Strait and Boundary Pass in the vicinity of Turn Point Light (48°41'20"N., 123°14'15"W.). This area enhances order and predictability and the efficient and safe movement of goods and services and further reduces the risk of accidents with respect to vessels transiting the boundary waters of Haro Strait and Boundary Passage in the vicinity of Turn Point on Stuart Island, Washington. Complete information on this special operating area can be found in the **Puget Sound Vessel Traffic Service User's Manual**.

(25)

Regulated navigation area

(26) Due to heavy vessel concentrations, the waters of the Strait of Juan de Fuca, the San Juan Islands, the Strait of Georgia and Puget Sound, and all adjacent waters, are a regulated navigation area. (See **33 CFR 165.1** through **165.13** and **165.1301**, chapter 2, for regulations.)

(27)

Caution

(28) Since logging is one of the main industries of the region, free-floating logs and submerged deadheads or sinkers are a constant source of danger in the Strait of Juan de Fuca and Puget Sound. The danger is increased during freshets and after storms and unusually high tides. **Deadheads** or **sinkers** are logs that have become adrift from rafts or booms, have become waterlogged and float in a vertical position with one end just awash, rising and falling with the tide.

(29)

Currents, Cape Flattery to Race Rocks

(30) The currents may attain velocities of 2 to 4 knots, varying with the range of tide, and are influenced by strong winds. East of Race Rocks, in the wider portion of the strait, the velocity is considerably less. At Race Rocks and Discovery Island the velocity may be 6 knots or more.

(31) The **flood current** entering the Strait of Juan de Fuca sets with considerable velocity over Duncan and

(40)

METEOROLOGICAL TABLE – COASTAL AREA OFF SEATTLE, WA
Between 48°N to 50°N and 122°W to 129°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	3.6	2.8	2.3	1.2	0.8	0.6	0.3	0.3	0.5	1.7	3.1	3.4	1.6
Wave Height > 9 feet [1]	17.4	18.0	16.8	15.0	6.7	6.1	1.9	2.1	4.7	16.0	24.0	30.5	12.3
Visibility < 2 nautical miles [1]	11.4	10.4	8.1	7.1	6.6	6.7	9.2	14.0	12.0	13.2	11.7	12.1	10.3
Precipitation [1]	24.4	24.4	19.6	16.7	13.5	10.8	7.5	5.8	9.2	16.6	24.0	24.9	15.6
Temperature > 69° F	0.0	0.0	0.0	0.1	0.5	1.6	3.0	2.8	1.2	0.3	0.0	0.0	0.9
Mean Temperature (°F)	44.0	45.3	46.1	48.7	52.8	56.3	58.8	59.3	58.2	53.7	48.3	45.5	52.1
Temperature < 33° F [1]	3.3	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.9	0.4
Mean RH (%)	84	84	82	82	82	82	84	85	84	84	83	84	83
Overcast or Obscured [1]	46.3	43.3	34.5	32.8	32.7	33.1	32.6	32.9	30.6	36.5	38.4	41.3	35.8
Mean Cloud Cover (8^{ths})	6.2	6.0	5.5	5.5	5.4	5.5	5.1	5.0	4.7	5.4	5.9	6.0	5.5
Mean SLP (mbs)	1014	1015	1014	1016	1017	1017	1018	1017	1017	1016	1014	1014	1016
Ext. Max. SLP (mbs)	1041	1057	1041	1060	1044	1042	1048	1040	1050	1041	1043	1048	1060
Ext. Min. SLP (mbs)	951	974	967	977	987	988	993	990	973	967	966	964	951
Prevailing Wind Direction	SE	SE	SE	NW	NW	NW	NW	NW	NW	SE	SE	SE	NW
Thunder and Lightning [1]	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.2

[1] Percentage Frequency

Duntze Rocks, but, instead of running in the direction of the channel, it has a continued set toward the Vancouver Island shore which is experienced as far as Race Rocks. The flood current velocity is greater on the north shore of the strait than on the south.

(32) The **ebb current** is felt most along the south shore of the strait, and between New Dungeness Light and Crescent Bay there is a decided set south and west, especially during large tides. With the wind and swell against the current, a short choppy sea is raised near the entrance to the strait.

(33) The current movement is complicated by a large daily inequality. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(34) **Tide rips** occur off the prominent points and in the vicinity of the banks. These are particularly heavy off Cape Flattery, Race Rocks, Dungeness Spit and Point Wilson, at times becoming dangerous to small vessels.

(35)

Weather, Straits of Juan De Fuca and Georgia

(36) Winds are strongest from October through March. This results from the numerous winter storms that move through these waters; this is also an area where storms tend to intensify. As low-pressure systems approach the coast, winds strengthen and back to the southeast quadrant, sometimes reaching gale force. After the storm passes, winds veer to the southwest or northwest. Gales usually last less than 1 day, whereas the interval between storms normally varies from 1 to 5 days or up to 2 weeks when a strong high-pressure system settles in. These systems can also present local wind problems in the Georgia Strait. The mountainous terrain of this region plays an important part in determining the direction and speed of the wind. There are normally two wind seasons; winter lasts from October through March, while a summer regime covers the other 6 months.

(37) From October through March, winds at the Pacific entrance to the Strait of Juan de Fuca blow mostly out of the southeast through southwest. Gales blow on 4 to 6 days per month. They can come from any direction; however, southeast winds are consistently the strongest, averaging about 18 knots. Strong southeast winds raise dangerous confused seas off Cape Flattery, when they meet the long, rolling southwest swells that frequent these waters. The frequent strong winds from a south quarter make the Vancouver coast between Cape Cook and Port San Juan a dangerous lee shore. When gales blow from the southwest through west, it is usually safer inside the Strait than out. In general, winds are strongest and gales more frequent in the west end of the Strait. In the open water of the middle of the Strait, winter winds blow mostly out of the east through southeast. Gales occur on about 2 to 4 days per month in the east half. The south shore is protected from the southeast gales; Port Angeles provides good shelter. An approaching storm often sets up strong east winds in the central part of the Strait. This, in turn, sets up a drainage of air from the Georgia Strait, so that winds near the east entrance are frequently from the north through northeast. As the storm moves inland, it produces a reversal of this flow. Winds blow from the west through most of the strait, backing to the southwest in the east. Winds near the west entrance have reached 65 knots with gusts to 90 knots. In the strait, 50-knot winds and 80-knot gusts have been reported.

(38) Summer winds at sea blow mainly from the southwest through northwest around the subtropical Pacific high. Heating of the North American continent helps draw air into the Strait of Juan de Fuca. This sea breeze reinforces the prevailing flow and results in winds up to 30 knots in the late afternoon. The land breeze opposes the normal

flow, and calms are often the rule in early morning. Southwest through west winds are most frequent in the Strait of Juan de Fuca.

(39) In few parts of the world is the vigilance of the mariner more called upon than when entering the Strait of Juan de Fuca from the Pacific in fog. Sea fog is the most common type, and it is at its worst from about July through October. Local land fog extends the visibility hazard into the winter. Fog is most frequent at the west end of the Strait. Here, visibilities drop to less than 0.75 mile (1.4km) on about 55 days annually, compared to about 35 days in the east end. Dense fog sometimes hangs over the ocean entrance to the Strait for days at a time; this is most likely during calms or light breezes. It gives the appearance of a wall, and ships entering often run into clear, bright weather before they pass Tatoosh Island. Often the fog is carried east on the west sea breeze. When this happens, the fog usually penetrates farther east along the south shore. It is much more likely to reach Port Angeles or Port Townsend than Victoria. In spring, the east penetration of an infrequent fog is usually limited to Crescent or Freshwater Bays. Often when thick weather prevails in the Strait of Juan de Fuca, skies are clear north of Race Rocks.

(41)

Pilotage, Strait of Juan de Fuca and Puget Sound

(42) Pilotage is compulsory for all foreign vessels and U.S. vessels engaged in foreign trade. Pilotage is optional for U.S. vessels engaged in the coastwise trade with a federally licensed pilot on board.

(43) Puget Sound Pilots serve all U.S. ports and places east of 123°24'W., including Port Angeles, Puget Sound, and adjacent inland waters. The office address is Puget Sound Pilots, 2003 Western Avenue, Suite 200, Seattle, WA 98121; telephone, 206–448–4455 (24 hours), 206–728–6400; Fax 206–448–3405. Pilot station address is 305 Ediz Hook Road, P.O. Box 788, Port Angeles, WA 98362; telephone, 800–221–0234, 360–457–7944; fax 360–452–8566.

(44) Port Angeles has been designated as the pilotage station for all vessels enroute to or from the sea. The pilot station is located on Ediz Hook about 0.7 mile west of Ediz Hook Light. There are two pilot boats; both are 22 meters in length with white hulls and orange houses. The standard day and night signals are displayed. The pilot station and pilot boats are equipped with radar to locate and track vessels; radio communication can be made by calling “Puget Sound Pilots” on VHF-FM channel 13.

(45) Pilotage should be arranged between 0800 and 1700 at least 24 hours in advance of inbound ETA through the vessel’s agent, by direct telephone communication with Puget Sound Pilots at the previously mentioned telephone numbers or the Marine Exchange of Puget Sound (telephone: 206–443–3830 or Telex 6734358 “Matex”). If subsequent conditions make it necessary, an amended estimated time of arrival should be made. Inbound vessels are requested to reaffirm their estimated time of arrival to the pilot boarding station when they are passing Cape Flattery and again when they are one hour away.

(46) Loaded petroleum tankers requiring a pilot should proceed to position 48°09'54"N.,123°24'19”W., (1.5 miles north of the east end of Ediz Hook); all other vessels to position 48°09'24"N.,123°24'00"W., (1.0 mile north of the east end of Ediz Hook). A pilot ladder should be rigged in compliance with SOLAS regulations on the leeward side about 1 meter above the water. When approaching the boarding area, vessels are requested to monitor VHF-FM channel 13 and maintain a steady course and speed of about 6 knots when the pilot boat comes alongside.

(47)

Towage

(48) Tugs are stationed at Port Angeles. Arrangements are usually made in advance through ships’ agents.

(49)

Quarantine, customs, immigration and agricultural quarantine.

(50) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(51) Quarantine is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(52)

Strait of Juan de Fuca (Canada)

(53)

Strait of Juan de Fuca (Canada)

(54) Carmanah Point is described in the previous chapter. **Bonilla Point**, the north entrance point at the west end of the strait, is about 1.8 miles east-southeast from Carmanah Light. Inland of Bonilla Point, which slopes gradually to the sea, the mountains attain heights of over 3,500 feet and are heavily wooded. A reef extends 0.5 mile off the point, and the shores should be given a berth of at least 1.5 miles.

(55) From Bonilla Point the coast trends in a southeast direction for 9.5 miles to Owen Point. It is nearly straight, rocky, and bluff, with high mountains rising immediately behind it; all are heavily wooded.

(56) **Port San Juan** offers the first anchorage on the north shore within the entrance to the Strait of Juan de Fuca. The port is conspicuous from seaward, appearing as a deep gap between two mountain ranges.

(57) The entrance between **Owen Point** and **San Juan Point**, 1.7 miles wide and 3.5 miles long, is 13 miles northeast of Cape Flattery Light. It is marked by a lighted whistle buoy.

(58) The port is open to southwest winds, and a heavy sea rolls in when a moderate gale is blowing from that direction. Though it is possible that a vessel with good ground tackle could ride out a gale if anchored in the most sheltered part, it is recommended that with any indication of southwest gales a vessel should weigh

anchor immediately and, if the vessel's draft is 16 feet or less, seek shelter in Neah Bay; vessels of deeper draft should proceed to Port Angeles.

(59) Anchorage may be had in 6 to 9 fathoms anywhere in Port San Juan; a good position is in 5½ fathoms about 1 mile from the beach at the head of the port.

(60) **Cerantes Rocks**, about 300 yards southwest from San Juan Point, include several high pinnacle rocks with a few trees growing on them. About 800 yards north of these rocks and 300 yards from shore is another reef partly uncovered.

(61) **Port Renfrew** is a settlement on the southeast side of Port San Juan, about 2 miles northeast of San Juan Point. A T-head pier has depths of 15 feet alongside.

(62) From Port San Juan the coast trends southeast for 23.5 miles to Sheringham Point. This stretch of coast presents no prominent features. The country is thickly wooded, and the land rises to a considerable elevation. The points, some of which are bare on their extremities, are not prominent nor are they easily identified, except from close inshore.

(63) A Canadian Armed Forces **firing** and **practice exercise area** is established in the vicinity of Sheringham Point and San Simon Point about 8 miles to the west. (See Annual Edition of Canadian Notices to Mariners for area limits, types of practices, warning signals, etc.)

(64) Between Port San Juan and Race Rocks, fish traps and broken piles are reported to extend 0.5 mile offshore in places.

(65)

Sheringham Point to Discovery Island

(66) **Sheringham Point** is marked by a light. Victoria marine radio station VAK is at Sheringham Point.

(67) From Sheringham Point the coast continues in a series of bays and inlets for 16.5 miles to Race Rocks.

(68) **Beechey Head**, 11.5 miles east-southeast of Sheringham Point, is bold, wooded and steep-to. Vessels bound up the strait and passing outside Race Rocks should give Beechey Head a berth of 2 miles.

(69) **Race Rocks**, 5 miles east of Beechey Head, are a cluster of bare low rocks from 0.5 mile to almost 1.5 miles from shore. Foul ground extends for 0.5 mile in all directions from the light; dangerous overfalls and races occur during bad weather. A light and sound signal are on the largest rock of the group, and a lighted buoy marks the southeast rock of the group. The tidal currents in Race Passage and in the vicinity of Race Rocks attain a velocity of 4 to 6 knots at times, and dangerous tide rips are formed.

(70) **Firing practice** and **exercise areas** of the Canadian Armed Forces are east of Race Rocks in the approaches to Esquimalt and Victoria Harbors. (See the Annual Edition of Canadian Notices to Mariners.)

(71) Foul ground, due to dumping of heavy steel wire mesh material, is 3.2 miles west from Race Rocks Light.

(72) East of Race Rocks the Strait of Juan de Fuca expands to a width of about 16 miles and extends for 30 miles east-northeast to the entrance to Admiralty Inlet on the south and Rosario Strait on the north.

(73) A 25-fathom bank lies 8.5 miles southeast of Race Rocks along the steamer track from Race Rocks Light to Point Wilson Light. The west edge of this bank is sometimes sharply defined by a line of ripples with glassy calm water to the east.

(74) **Bentinck Island**, 1 mile northwest of Race Rocks Light, is fringed with kelp on its south and east sides. **Pedder Bay, Parry Bay** and **Royal Roads**, separated by William Head and **Albert Head**, form the coast between Bentinck Island and the west entrance to Esquimalt Harbor.

(75) A **027°43'–207°43' measured nautical mile** has been established on the northwest shore of Parry Bay. Range beacons, consisting of fluorescent orange diamond-shaped daymarks, mark the northeast and southwest ends of the measured course.

(76) A **prohibited area** has been established in Parry Bay by the Canadian Government. No vessel may anchor in the area without permission.

(77) **William Head** is a comparatively low promontory extending about 0.5 mile northeast of **Ned Point**. Close west of William Head is **Quarantine Cove**, on the east shore of which are the conspicuous red brick buildings of the former quarantine station, now used as a penitentiary. Unauthorized vessels should not approach William Head within 200 yards.

(78) Anchorage affording protection from west weather may be had in 7 fathoms about 0.5 mile north of William Head and about 1,200 yards from the mainland.

(79) **Constance Bank**, 6.8 miles east of William Head Light, has general depths of 8 to 13 fathoms. It is about 2 miles long and 1 mile wide, within the 20-fathom curve. The bottom is rocky, and tide rips form in this vicinity. Vessels should not attempt to anchor on the bank.

(80) **Albert Head** is 3.3 miles northeast of William Head. **Fisgard Island**, on the west side of the entrance to Esquimalt Harbor, is marked by a light. Its red sector covers **Scroggs Rocks** off the east entrance point. Scroggs Rocks are marked by a light.

(81) **Esquimalt Harbor**, about 3 miles north-northeast of Albert Head, affords safe and ample anchorage and can be entered at any time. The entrance channel has general depths of 8 fathoms. Depths within the entrance gradually decrease for 1.5 miles north to **Cole Island**, above which the head of the harbor dries.

(82) **Victoria Harbor**, landlocked and well protected, is about 2 miles east-southeast of Esquimalt Harbor and can accommodate large vessels. A U.S. Immigration station is in Victoria.

(83) Victoria Harbor is entered between **Macaulay Point** on the west and the breakwater extending from **Ogden Point** on the east; the breakwater is marked by a light. Vessels requiring a pilot are requested to notify **"Pilots Victoria"** by radio station **VAK** at least 6 hours

in advance of their estimated time of arrival. The harbor extends for more than 0.5 mile north to **Shoal Point** on the east side, and thence trends east to **James Bay**. From the north part of James Bay, the upper harbor, which is crossed by three bridges, extends about 0.8 mile north-northwest to **Selkirk Water**, the west extremity of which is connected to **Portage Inlet**.

(84) **Brotchie Ledge**, the only outlying danger, about 200 yards long within the 5-fathom curve, lies 0.6 mile south of Ogden Point. The ledge has a least depth of 12 feet and is marked by a light.

(85) **Clover Point**, 2 miles east-southeast of the entrance to Victoria Harbor, is low, bare of trees, and steep-to. Strong tide rips form off the point.

(86) **Trial Islands**, 4 miles east of Victoria Harbor, are bare and rocky; from most directions the two islands appear as one. The islands are marked by a light. The south and larger island is 80 feet high, and from **Staines Point**, its south extremity, a rocky ledge that uncovers 2 feet extends about 100 yards. Severe tide rips form off Staines Point, especially on the flood tidal current, which attains a velocity of 3 to 6 knots during large tides. The point should be given a wide berth.

(87) **Discovery Island**, 2 miles east-northeast of **Gonzales Point**, lies off the junction of Haro Strait and the Strait of Juan de Fuca. The island is wooded, and near its southeast tip, **Pandora Hill** attains a height of about 125 feet. The island is marked by a light on the east side. The shores on all sides of the island are fringed with rocks in some places extending as far as 600 yards offshore.

(88)

Strait of Juan de Fuca (east end)

(89)

Strait of Juan de Fuca (east end)

(90) **Hein Bank**, with a least depth of 2½ fathoms, lies 8.5 miles southeast of Discovery Island; it is about 2 miles long in a north direction, within the 10-fathom curve, and 0.8 mile wide. The shoalest part of the bank is covered with thick kelp in the summer. It is marked by a lighted buoy.

(91) **Smith Island**, 5 miles west of Whidbey Island and 8 miles east-southeast of Hein Bank, is irregular in shape and about 0.5 mile long. The east end is low but rises abruptly to an elevation of 55 feet at its west end, terminating in a white perpendicular cliff composed of sand and gravel. A rocky bank, covered with kelp, extends about 2 miles west of the island over depths of 3 to 6 fathoms. A rock that bares at lowest tides is about 0.3 mile west of Smith Island. Strong currents set in and around the shoal area, especially on the flood, and deep-draft vessels should keep well outside the 10-fathom curve to avoid being set into danger. **Smith Island Light** (48°19'14"N., 122°49'51"W.), 55 feet above the water, is shown from a 50-foot skeleton tower on a multi-pile structure with a white and black dayboard. The light is obsured from 068° to 084°.

(92) A **restricted area** of an air-to-surface weapon range is west of Smith Island. (See **33 CFR 334.1180**, chapter 2, for limits and regulations.)

(93) **Minor Island**, small, low, and rocky, lies 1 mile northeast of Smith Island and at lowest tide is connected with it by a gravel and boulder spit.

(94) The northernmost part of the western shore of **Whidbey Island** forms the east end of the Strait of Juan de Fuca. This part of the island has a uniform sandy shore backed by low and rolling upland of farm and wooded areas. A marina at Oak Harbor, on the east side of the island, has electricity, gasoline, diesel fuel and pumpout facility.

(95) **Naval restricted areas** are adjacent to the northernmost part of the west shore of Whidbey Island. (See **33 CFR 334.1200**, chapter 2, for limits and regulations.)

(96) The aerolight (48°20.9'N., 122°40.2'W.) at Ault Field is conspicuous.

(97)

Neah Bay

(98) On the south side of the Strait of Juan de Fuca the coast trends east for 4 miles from Cape Flattery to **Koitlah Point**, the west point of Neah Bay. The shores are rugged, and the country is heavily timbered.

(99) **Neah Bay**, about 5 miles east of Cape Flattery, is used extensively by small vessels as a harbor of refuge in foul weather. Its proximity to Cape Flattery and ease of access at any time make the anchorage very useful. It is protected from all but east weather.

(100) **Baada (Baadah) Point**, the east entrance point to Neah Bay, is rocky and grass covered for some distance back from the shore. **Waadah Island**, 0.3 mile north of Baada Point, is 0.5 mile long, high, and wooded. A light marks the north and south end of the island. A stone breakwater extends from the west side of the bay to about the middle of Waadah Island. A reef and foul ground extend 0.2 mile from the southwest side of the island. A reef that bares, marked by a lighted bell buoy, extends 500 yards northwest from **Dtokoah Point**, southeast of the entrance.

(101) The buildings of **Neah Bay Coast Guard Station**, 0.4 mile southwest of Baada Point, are prominent from the entrance.

(102) The entrance to the bay is between Waadah Island and Baada Point. A depth of 17 feet can be carried into the bay. Anchorage is in 20 to 35 feet, mud bottom.

(103) The west shore of Neah Bay is high and precipitous and bordered by craggy rock outcroppings. The shore east of the village of Neah Bay is a low sand beach to Baada Point.

(104) The village of **Neah Bay**, on the southwest shore of the bay, is the site of considerable sport fishing.

(105) The Makah Indian T-head pier with a 300-foot face, and the ruins of a T-head pier no longer visible, are about 375 and 500 yards southwest of Baada Point.

Caution is advised in the vicinity of the pier in ruins, as submerged piles may exist. The Coast Guard pier is 0.5 mile southwest of Baada Point.

(106) Two cooperative fish piers, 1 mile and 1.2 miles southwest of Baada Point, have facilities for icing and supplying fishing boats. Limited berthage, electricity, gasoline, diesel fuel, water and ice are available. Both piers have reported depths of 12 feet off the ends. There are many small-craft floats extending along the south shore of the bay. A marina is about 1 mile southwest of Baada Point on the south shore and has 200 slips; gasoline, diesel fuel, water, electricity, pump-out and a launching ramp are available.

(107) A paved highway extends along the Strait of Juan de Fuca to Port Angeles; telephone service is available.

(108)

Seal Rock to Twin Rivers

(109) From Neah Bay to Clallam Bay, the coast for more than 14 miles is rugged and the back country high and heavily wooded.

(110) **Seal Rock** and **Sail Rock**, about 2 miles east of Neah Bay and about 600 yards offshore, are very prominent. Seal Rock, the westerly of the two, is 100 feet high with a flat top showing east, light in color. Sail Rock, 0.2 mile east of Seal Rock, is lower and more pointed. Covered rocks extend from Seal Rock to shore, and there are patches of kelp in this area.

(111) A marina is along the shore near Sail Rock. Berths, gasoline, water, ice provisions, and a 3-ton lift are available. Mariners are advised to exercise caution in approaching the marinas because of the numerous rocks and ledges. The floats at the marina bare at low water. **Sail River** empties near Seal and Sail Rocks. **Sekiu River**, about 6.5 miles southeast of Sail River, has some logging operations. The bridge over the river shows prominently through the trees.

(112) **Clallam Bay**, about 15 miles southeast of Neah Bay, is a broad open bight about 2 miles long and 1 mile wide. It affords anchorage in 6 to 10 fathoms, sandy bottom, and is used to some extent in south or thick weather.

(113) **Slip Point**, the east point of the bight, is high and wooded; there is a light-colored streak like a landslip down its face, which is visible for a long distance. A reef, extending 0.2 mile west of the point, is marked by a bell buoy.

(114) **Sekiu** is a resort and sport fishing town on the west end of Clallam Bay and south of Sekiu Point. The town has berths, gasoline, water, ice, launching ramps and limited marine supplies. A marine railway that can handle craft to 24 feet long is at the town. **Clallam Bay**, a small town on the east side of Clallam Bay, has no waterfront facilities.

(115) In entering Clallam Bay, give Slip Point a berth of more than 0.2 mile to avoid the reef projecting west of it. Storm-bound vessels generally anchor abreast the rocky point near the middle of the long semicircular beach on the south shore of the bay.

(116) **Pillar Point**, 6.7 miles east-southeast of Slip Point, is bold, 700 feet high, wooded up to its summit, with a dark pillar-shaped rock more than 100 feet high lying close under its east face. The rock shows prominently from west. Good anchorage may be had in 9 to 12 fathoms, sticky bottom, about 0.8 mile southeast of Pillar Point. This anchorage offers good shelter from the heavy west swell but gives no protection from the brisk east and northeast winds that prevail in winter.

(117) **Twin Rivers** are two small streams that flow into the strait about 7 miles east of Pillar Point. An earthfilled barge-loading facility, 0.3 mile west of West Twin River, has a reported depth of 15 feet alongside. The facility is owned by a cement company and used for barging clay to Seattle.

(118)

Low Point to Angeles Point

(119) Shoal water makes out a considerable distance from **Low Point** (48°09.6'N., 123°49.5'W.), 5 miles east of Twin Rivers, and vessels should not approach this point closer than 0.8 mile. Many boulders that uncover are west of the point. A salmon pen, about 2.4 miles west of the point and 0.6 mile from the nearest shore, is marked by two private lighted buoys.

(120) **Agate Bay**, 3.5 miles east of Low Point, is clear and deep; 10 fathoms can be carried to within 0.2 mile of the shore.

(121) **Crescent Bay**, 4.2 miles east of Low Point, is a small semicircular bight 1 mile in diameter. The east part is shoal, and near the west shore the remains of a wharf should be avoided. This is not a good landing place in north weather. The anchorage is of limited extent and suitable only for small vessels. **Crescent Rock**, covered ¼ fathom and marked by a buoy, is 0.4 mile north of the west entrance point of Crescent Bay. The rock extends 0.4 mile in east direction, with a narrow channel between it and the point. The channel has a reported depth of 10 fathoms and is not recommended without local knowledge. A reef extends about 400 yards northwest from **Tongue Point**, the east entrance point of Crescent Bay. A shoal, covered 1¼ fathoms, is about 0.3 mile west of Tongue Point. Except for crabs and fish, the 1¼-fathom shoal is a marine sanctuary for other shellfish and sealife. A wreck is off the entrance about 0.3 miles north of Tongue Point.

(122) **Observatory Point** is 3 miles east of Tongue Point. Between these points is a wooded ridge which, because of the lower land behind it, makes this area appear as an island when raised from east or west. The ridge attains an elevation of 1,135 feet and is known as **Striped Peak**. A rock, 20 feet high, is close off Observatory Point; the rock and the point are almost joined at low water.

(123) **Freshwater Bay**, about 4 miles east of Crescent Bay, is a broad open bight, affording anchorage in 6 to 10 fathoms. The bay and adjacent waters are designated

as an **emergency explosives anchorage**. (See **33 CFR 110.1** and **110.230 (a)(1)** and **(b)**, chapter 2, for limits and regulations.) A park with a launching ramp is along the southwest shore of Freshwater Bay.

(124) **Angeles Point**, on the east side of Freshwater Bay, is low, sandy, and covered with alders. The **Elwha River** empties into the strait at this point.

(125) A microwave tower, marked by aircraft warning lights and a good landmark by day and night, is on Angeles Point.

(126)

Caution

(127) The U.S. Navy advises that the precautionary area, located within a 1-mile radius centered around a point in about 48°15'36"N., 123°15'48"W., approximately 9 miles north-northeast of Ediz Hook, is used by naval vessels to conduct equipment calibration tests. Surface vessels or submerged submarines will occasionally be maneuvering in circles in this area for several hours or days. When these operations are in progress, the test facility located on the east end of Ediz Hook will be manned and reference lights consisting of a lazy "T" bar, 1 sec flashing yellow, 2/sec flashing red, and a high intensity spot will be lit. The group of lights is visible from the north side of Ediz Hook with the "T" bar to the west and spot light to the east. The naval vessels will be participating in the Seattle Vessel Traffic System on VHF-FM channel 5A. The Navy Test Facility Port Angeles will monitor VHF-FM channels 16 and 69. Mariners transiting this area are requested to proceed with caution.

(128) A **Vessel Traffic Service** has been established in the Strait of Juan de Fuca, east of Port Angeles, and in the adjacent waters. (See **33 CFR 161.1** through **161.55**, chapter 2, for regulations, and the beginning of this chapter for additional information.)

(129)

Port Angeles

(130) **Port Angeles**, 6.5 miles east of Freshwater Bay and 56 miles from Cape Flattery, is entered between **Ediz Hook**, a low and narrow sandspit 3 miles long, and the main shore to the south. The harbor, about 2.5 miles long, is easy of access by the largest vessels, which frequently use it when refueling, making topside repairs, waiting for orders or a tug and when weather-bound.

(131) The harbor is protected from all except east winds, which occasionally blow during the winter. During southeast winter gales, the wind is not usually felt but some swells roll in. The depths are greatest on the north shore and decrease from 30 to 15 fathoms in the middle of the harbor; from the middle, the depths decrease regularly to the south shore, where the 3-fathom curve in some places in the east part is nearly 0.2 mile from the beach. A rock covered 5 fathoms is at 48°07'22"N., 123°13'18"W. A shoal with a least depth of 2¼ fathoms is 330 yards northwest of the northwest corner of the easternmost pier on the waterfront; a buoy is 200 yards east of the shoal.

(132) Extra caution in navigating the waters inside Ediz Hook should be exercised because of the large number of submerged deadheads or sinkers in the area. Deadheads or sinkers are logs that have become adrift from rafts or booms, have become waterlogged and float in a vertical position with one end just awash, rising and falling with the tide.

(133)

Anchorage

(134) Puget Sound Vessel Traffic Service requires advance notification of watch supervisor for all vessels using Port Angeles anchorage; telephone 206–217–6050. The best anchorage is off the wharves, in 7 to 12 fathoms, sticky bottom.

(135) A **non-anchorage area** has been established in the east part of Port Angeles Harbor. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.)

(136) Extensive log booming grounds in the north part of the harbor extend more than 1 mile from the west shore. Care must be taken when anchoring at night to avoid the rafted logs; the booming grounds are charted.

(137) **Ediz Hook Light** (48°08'24"N., 123°24'09"W.), 50 feet above the water, is shown from a skeleton tower, 0.3 mile west of the east extremity of Ediz Hook; a mariner-radio-activated sound signal is at the light, initiated by keying the microphone five times on VHF-FM channel 81A. A 170-foot Coast Guard VTS radar tower is about 0.1 mile west-southwest of the light. Shoals extend to about 75 yards east of the east extremity of Ediz Hook. A lighted buoy is about 150 yards east of the outer limits of the shoals. A Coast Guard radio station (NOW) is at the air station. A shoal, with a least depth of 7 fathoms and marked by a lighted buoy, is about 3.4 miles west-northwest of Ediz Hook Light. An aquaculture site, marked by private lights, is off the south side of Ediz Hook about 800 yards west-southwest of the light.

(138) **Port Angeles** is on the south shore of the harbor. Logs, lumber, plywood, newsprint, pulp, shakes and shingles and petroleum products are the principal commodities handled.

(139)

Pilotage, Port Angeles

(140) Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the west coast of the continental United States (including Alaska) and/or British Columbia. Pilotage for Port Angeles is provided by the Puget Sound Pilots. They monitor VHF-FM channel 13. (See Pilotage, Strait of Juan de Fuca and Puget Sound, indexed as such, early this chapter.) The pilot station is about 0.7 mile west from Ediz Hook Light. A pier for berthage of the pilot boats is on the south side of Ediz Hook, adjacent to the pilot station.

(141)

Towage

(142) Tugs to 1,200 hp are stationed at Port Angeles, and tugs to 5,000 hp are available from Seattle with advance notice.

(143)

Quarantine, customs, immigration and agricultural quarantine

(144) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(145) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(146) Port Angeles is a **customs port of entry**.

(147)

Coast Guard

(148) Port Angeles Coast Guard Air Station/Sector Field is on Ediz Hook, about 0.3 mile west of the east extremity.

(149)

Harbor regulations

(150) The Port of Port Angeles Terminal Manager's office is in Port Angeles at the foot of Cedar Street.

(151)

Wharves

(152) The major piers described, both private and port operated, extend along the south and west sides of the harbor. The alongside depths of the facilities described are reported depths—for information on the latest depths contact the port authorities or the private operators.

(153)

Port-operated facilities

(154) Port Terminal No. 1 (48°07'30"N., 123°26'24"W.): 956-foot berthing space on north side with an additional 425 feet to dolphins; 610 foot berthing space on south side, 42 feet at the end; deck height, 17 feet; 17,000 square feet covered storage; 96,000 square feet open storage; shipment of general cargo, lumber, logs, pulp and other forest products; berthing space for top side repair of large ocean going vessels.

(155) Port of Port Angeles, Terminal No. 3 (W of Port Terminal 1): 480-foot berthing space; 41 to 45 feet alongside; deck height, 17 feet; receipt and shipment of general cargo, shipment of logs and lumber.

(156)

Privately operated facilities

(157) Black Ball Ferry Transport (48°07'21"N., 123°25'45"W.): Terminus of passenger and automobile ferry connecting Port Angeles and Victoria, BC; ferry makes two trips daily from March to May and October to January. From May to October it makes 4 trips daily. Visit *northolympic.com* for the current schedule. Operated by Black Ball Transport, Inc.

(158) Diashowa America, Port Angeles Mill Dock (48°07'57"N., 123°27'33"W.): 640-foot total berthing space with dolphins; 28 feet alongside; deck height, 10 feet; shipment of lumber; owned and operated by Merrill and Ring, Inc. **Note:** Vessels moor portside-to at this wharf; a tug is recommended for both docking and undocking.

(159) Diashowa America, Port Angeles Barge Dock (48°08'08"N., 123°27'37"W.): 570-foot berthing space with dolphins; 36 to 40 feet alongside; deck height, 17½ feet; approximately 28,000 square feet covered storage; receipt of fuel oil for plant consumption; shipment of paper products; owned by Diashowa; operated by Diashowa America and BP Marine Americas. A 25-foot shoal is charted about 100 feet east of the face of the Wharf; a tug is recommended when undocking.

(160) In addition to the facilities mentioned, there are several small piers and wharves at which tugs and other floating equipment moor. Many log dumps are in the harbor.

(161)

Supplies

(162) Water, ice and marine supplies are available. Groceries are nearby. Diesel oil and gasoline are available at the port boat haven. Bunkering is available by barge.

(163)

Repairs

(164) Port Angeles has several companies and facilities to perform major topside repairs to large oceangoing vessels; the nearest drydocking facilities are in Seattle/Tacoma or Bellingham.

(165)

Small-craft facilities

(166) **Port Angeles Boat Haven**, operated by the port, is a large, well-equipped small-craft basin in the southwest part of the harbor that can accommodate a large fleet of fishing boats and pleasure craft. The basin is marked by lights. In 2007, the controlling depth in the entrance and basin was 16 feet with 12 feet alongside the berths. About 660 berths, electricity, gasoline, diesel fuel, water, ice, a pump-out station, launching ramps, marine supplies and winter wet storage are available. A boatyard at the east end of the basin has a marine railway that can handle craft to 100 tons; a 225-ton lift is also available. Hull and engine repairs can be made at the yard, and electronic repair work can be arranged. The **harbormaster** controls the moorings in the basin (360–457–4505).

(167) A **121°16'-301°16'** 200-yard **measured course** is in the southwest part of the harbor close north of Port Angeles Boat Haven.

(168)

Communications

(169) Port Angeles is served by U.S. Highway 101. It is connected by ferry to Victoria, BC. The airport is 2.5 miles west of the city.

(170)

Dungeness Bay to Partridge Bank

(171) From Port Angeles the coast trends east for 13 miles to the end of **Dungeness Spit**, which borders the west

side of **Dungeness Bay**. This bay affords shelter in west winds, but is open east; in north weather, the protection afforded is only fair. It is a dangerous place in winter gales, especially from the southeast. The bay is formed by a sandspit extending northeast 4 miles and forming, in addition to Dungeness Bay, a small lagoon at the head of the harbor that can be entered by light-draft vessels with local knowledge.

(172) A **075°–255° measured nautical mile** has been established on the strait side of Dungeness Spit; the range markers are in the small lagoon at the head of the harbor.

(173) **New Dungeness Light** (48°10'54"N., 123°06'37"W.), 67 feet above the water, is shown from a 63-foot white conical tower on a dwelling on the outer end of the spit.

(174) From the end of the spit a shoal extends northeast for 0.8 mile from the light. This has been reported as extending farther north, and it should be passed with caution. A lighted buoy marks the shoal but it may be submerged during periods of strong current; vessels should not pass between the buoy and the light. A shoal makes out about 1 mile from the south side of the bay.

(175) The best anchorage is in 5 to 9 fathoms, sticky bottom, about 1 mile southeast of the light, clear of the cable area.

(176) **Dungeness** is a small town on the south shore of the bay. The ruins of a former wharf extend about 1,000 yards out across the flats.

(177) **Sequim Bay**, 6 miles southeast of Dungeness Bay, is a landlocked bay 3.8 mile long. The bay is separated from the Straits by **Travis Spit**, a sandspit that extends west from the northeast corner of the bay almost to the west shore. A narrow channel marked by daybeacons and a light at the entrance leads around Travis Spit and west of a shoal area called The Middle Ground into the bay. Depths in the marked channel are about 9 feet; local knowledge is advised. The area between the light at the entrance and Gibson Spit on the west shore reportedly bares at minus tide and several groundings are known to occur; caution is advised. Strong currents that tend to follow the channel have also been reported. Anchorage inside Sequim Bay can be had anywhere in 6 to 21 fathoms, muddy bottom.

(178) A marina is located on the west side of the bay just north of **Pitship Point**. Lights mark the breakwater entrance. Depths in the entrance are reported to be 12 feet, with 7 feet alongside the piers. Services include transient berths, electricity, gasoline, diesel fuel, water, ice, launching ramp and a pump-out station. The harbormaster controls moorage in the basin and can be contacted at 360–417–3440; VHF-FM is not monitored. A marine research center of the Battelle Memorial Institute, is on the west side of the entrance to the harbor abreast the sandspit. Some log rafts are made up in the bay. **Sequim Bay State Park** is at the southwest end of the bay. A seasonal mooring float is at the park.

(179) **Protection Island**, a prominent feature in approaching Discovery Bay, is 200 feet high near its western extremity, 1.5 miles long and sparsely wooded; its north shore consists of bare, light bluffs. The east end and south shore are clear of dangers, but off **Kanem Point**, its southwest end, a shoal extends southwest for over 0.2 mile, and depths of 5 fathoms and less are found 0.5 mile west of the point. **Dallas Bank** extends north from Protection Island; the 10-fathom curve lies about 2.5 miles from the north point. North of the 10-fathom curve the bank drops off abruptly to depths of over 20 fathoms. **Miller Peninsula**, about 6 miles long and 3 to 5 miles wide, separates Sequim Bay and Discovery Bay.

(180) **Discovery Bay** is 2 miles south-southeast of Protection Island. The bay trends in a southeast direction for about 8 miles. The entrance is masked from seaward by Protection Island, which protects it from northwest winds. Strong southeast gales have been observed and can have winds higher than outside the bay. There are no outlying dangers, and the depths are great. There is good anchorage with excellent holding ground at the head of the bay in 20 fathoms. **Cape George** is at the east entrance point of Discovery Bay. A private marina is also located at Cape George. The nearest marinas to Discovery Bay providing electricity and fuel are in Sequim Bay and Port Townsend.

(181) **Diamond Point** is the west point at the entrance to Discovery Bay. A wharf in ruins is just inside the point.

(182) The shore from Cape George for 3 miles to **McCurdy Point** consists of high, bare, clay bluffs, wooded on top, attaining a height of 400 feet near the northeast end. A shoal covered 11 feet extends 0.6 mile northwest of McCurdy Point; it is marked by a buoy. Vessels are cautioned not to pass between the buoy and the point.

(183) From McCurdy Point, the shore trends east for 3.5 miles to **Point Wilson**, the west point at the entrance to Admiralty Inlet, and consists of high, bare, clay bluffs, sparsely wooded on top, decreasing in height near McCurdy Point, and ending abruptly close west to Point Wilson.

(184) **Point Wilson Light** (48°08'39"N., 122°45'17"W.), 51 feet above the water, is shown from a white octagonal tower with a black top on a white building with a red roof, on the east extremity of the low point.

(185) Shoals extend 0.5 mile northwest of Point Wilson to the 5-fathom curve over irregular bottom; these are generally indicated by kelp. The east edge of the shoals rises rather abruptly from deep water. Heavy tide rips extend north of these shoals, being especially heavy with a west wind and ebb current. A lighted buoy marking the shoals is about 0.7 mile northwest of Point Wilson Light.

(186) In approaching Point Wilson in thick or foggy weather, soundings should be taken continuously.

(187) **Point Partridge**, the Westernmost point of Whidbey Island, has a yellow face and is prominent from the north or south; it is rounding and not easily identified from the west. **Point Partridge Light** (48°13'29"N., 122°46'10"W.), 105 feet above the water, is shown from a skeleton tower on the west extremity of the point. A rocky ledge, marked by a lighted bell buoy, extends 0.5 mile west from the point. In the summer, the ledge is usually marked by kelp.

(188) The west shore of Whidbey Island, between Admiralty Head and Point Partridge, is mostly a sandy beach rising sharply to bluffs 100 to 250 feet high, backed by pine trees. The shoreline is generally strewn by logs.

(189) **Admiralty Head**, 80 feet high, on Whidbey Island, is the east entrance point of Admiralty Inlet and the southeast extremity of a succession of light bare bluffs that extend north of Point Partridge, where they attain their highest elevation. About 0.5 mile north of Admiralty Head an abandoned lighthouse tower 39 feet high stands on top of a bluff.

(190) From Point Partridge the northwest coast of Whidbey Island extends north-northeast for 11.5 miles to Deception Pass. It is free of offlying dangers but should not be approached closer than 1 mile.

(191) A **Small Arms Safety Zone** operated by Naval Air Station Whidbey Island is located about 5 miles north-northeast of Point Partridge. The zone is in operation 7 days a week; red flashing lights and flags are displayed during live exercises. Mariners should exercise extreme caution when transiting the area.

(192) **Partridge Bank**, within the 10-fathom curve, is about 3 miles long and 1.5 miles wide; the southeast end reaches within 2 miles of Point Partridge. The north and east sides fall off abruptly to 20 and 30 fathoms. The shallowest part, 2½ fathoms, is near the north side about midway between the ends; it is marked by a buoy. A lighted bell buoy is about 0.6 mile south-southeast of the 2½ fathom spot. A considerable part of the bank is covered with kelp, which is usually drawn under by currents. The kelp generally extends to the 7-fathom curve, except toward the east end where the shoal narrows, and no kelp exists beyond a depth of 4 fathoms; kelp density varies by season.

(193)

San Juan Islands

(194) The waters of the **San Juan Islands** embrace the passages and bays north of the east end of the Strait of Juan de Fuca. These passages are used extensively by pleasure craft, especially in July, August and September. Some tugs and barges use the larger passes. Automobile ferries, operated by the State of Washington, are on regular round-trip runs from Anacortes through Thatcher Pass, Cayou Channel, Wasp Passage, San Juan Channel and Spieden Channel and across Haro Strait to Sidney, BC. The island ferry landings are at Upright Head, Lopez Island; on the east side of the entrance to Blind Bay, Shaw Island; Orcas, Orcas Island; and Friday Harbor, San Juan Island. Oceangoing vessels normally use Haro and Rosario Straits and do not run the channels and passes in the San Juan Islands. Many resorts and communities have supplies and moorage available for the numerous pleasure craft cruising in these waters. Well-sheltered anchorages are numerous.

(195) The directions that follow are intended for use only in clear weather; in thick weather or at night strangers should take a pilot for large vessels. Small craft should not attempt navigation under these conditions without local knowledge. Sailing craft should not attempt the passages against the current unless the wind is fair and fresh. A reliable auxiliary engine for sailboats is an absolute necessity. The tidal currents have great velocity in places, causing heavy tide rips that are dangerous. Because of the variable direction and velocity of the currents, compass courses are of little value, and, where followed, allowance must be made for the set of the current.

(196) **Haro Strait** and **Boundary Pass** form the westernmost of the three main channels leading from the Strait of Juan de Fuca to the southeast end of the Strait of Georgia; it is the one most generally used. Vessels bound from the west to ports in Alaska or British Columbia should use the Haro Strait/Boundary Pass channel, as it is the widest channel and is well marked. Vessels bound north from Puget Sound may use Rosario Strait or Haro Strait; the use of San Juan Channel by deep-draft vessels is not recommended.

(197) A **Vessel Traffic Service** has been established in the Strait of Juan de Fuca, east of Port Angeles, and in the adjacent waters. (See **33 CFR 161.1** through **161.55**, chapter 2, for regulations, and the beginning of this chapter for additional information.)

(198) Haro Strait extends north from the south end of San Juan Island for about 18 miles to Turn Point Light on Stuart Island, thence Boundary Pass leads northeast for 13 miles to its junction with the Strait of Georgia between East Point, the east end of Saturna Island, BC, and the west end of Patos Island, the small United States island; both of which are marked by lights. These waterways have widths from 1.5 to 5 miles, and the depths are generally great.

(199) No difficulty will be experienced in navigating Haro Strait and Boundary Pass in clear weather; strangers should take a pilot in thick weather.

(200) The east shore of the passage will be described in detail, with only a brief general description of the west shore. More complete detail of the west shore is contained in Pub. 154, Sailing Directions (Enroute) for British Columbia, published by the National Geospatial-Intelligence Agency Hydrographic/Topographic Center, and the Sailing Directions, British Columbia Coast (South Portion) Vol. 1, published by the Canadian Hydrographic Service.

(201) The International Boundary between the United States and Canada passes through Haro Strait and Boundary Pass.

(202) In accordance with the Cooperative Vessel Traffic Service, the United States and Canada, in cooperation with industry and the British Columbia Coast Pilots, have established a **Special Operating Area** at the intersection of Haro Strait and Boundary Pass in the vicinity of Turn Point Light (48°41'18"N., 123°14'12"W.). This special area will help reduce the risk of incidents between both commercial and recreational vessels transiting the

boundary waters of Haro Strait and Boundary Pass. For the boundaries and rules regarding the **Special Operating Area**, see **Cooperative Vessel Traffic Service (CVTS)** at the beginning of this chapter.

(203)

Tidal currents

(204) In Haro Strait and Boundary Pass, the flood current sets north; the ebb current sets in the opposite direction. The ebb usually runs longer and has a greater velocity. At the north entrance to Boundary Pass, the flood sets east along the north and south sides of Sucia Islands and across Alden Bank; the velocity is about 1 to 2 knots. The Current has moderate velocity between Sucia and Orcas Islands. There is a large, daily inequality in the current. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book. Heavy, dangerous tide rips occur between East Point on Saturna Island and Patos Island and for two miles north in the Strait of Georgia. Tide rips also occur on the ebb between Henry Island and Turn Point, as well as around Turn Point where the ebb may attain a velocity of 6 knots during large tides. The flood current sets east from Discovery Island across the south end of Haro Strait until close to San Juan Island. This east set is especially noticeable during the first half of the flood. Heavy tide rips occur north of Middle Bank as well as on the Bank and around Discovery Island.

(205) **Middle Bank**, with a least depth of 10 fathoms, is in the south approach to Haro Strait. The bank is about 3.5 miles long, and the least depth is in its northeast part and 5.7 miles southwest of Cattle Point Light on the southernmost tip of San Juan Island. Heavy tide rips, dangerous to small craft, form in the vicinity of this bank in bad weather.

(206) **Beaumont Shoal**, covered 9 fathoms, lies 3 miles northwest of the northwest corner of Middle Bank and is marked by a lighted buoy. A second small bank with a least depth of 7 fathoms lies 1 mile to the north. In bad weather, heavy tide rips form over these banks.

(207) **San Juan Island**, the largest of the group, is about 13 miles long, rugged, and partly wooded. **Mount Dallas**, the highest of several hills on the island, rises abruptly from the middle of the west side to a height of 1,080 feet. In most places the shores are free of outlying dangers. The north end of the island is indented by several small bays that, with the exception of Roche Harbor, are shoal and of no commercial importance.

(208) From **Eagle Point**, the west shore of San Juan Island trends northwest and forms the east side of Haro Strait. This shore is steep-to and rocky, and beyond 400 yards offshore it is free of danger; however, the depths off this shore are too great for anchoring.

(209) **Kanaka Bay**, a small cove used by fishing boats, is 2.5 miles northwest of Eagle Point.

(210) **Lime Kiln Light** (48°30'57"N., 123°09'09"W.), 45 feet above the water, is shown from a 31-foot white octagonal tower with a black cupola and red roof, attached to a square white building on the west side of San Juan Island. Two dwellings are about 150 yards southeast of the light. Rocks awash lie close inshore about 1 mile southeast of the light.

(211) **Smallpox Bay** and **Andrews Bay**, 1.5 miles northwest of Lime Kiln Light, offer protection for small craft from north and east weather.

(212)

Local magnetic disturbance

(213) Differences from the normal variation of as much as 4° have been observed in the vicinity of **Bellevue Point**, 1 mile north of Lime Kiln Light.

(214) During the June–October fishing season, many purse seiners operate in this area. At night these vessels anchor close inshore, generally between Cattle Point and Pile Point.

(215) **Hanbury Point** (48°34.7'N., 123°10.3'W.), 3.8 miles north of Lime Kiln Light, is the north entrance point to **Mitchell Bay**, one of a series of well-sheltered bays on the northwest coast of the island. A small islet 3 feet high is in the center of the bay about 350 yards southeast of the entrance. A rock about 100 yards west of the islet uncovers 6 feet. The only safe passage into the bay is north of the islet. **Snug Harbor**, a resort and yacht haven on the south side of Mitchell Bay, has about 70 berths with electricity, gasoline, water, ice and limited marine supplies. A launching ramp is available; engine repairs can be made to small craft. **Mosquito Pass**, available only to small craft with local knowledge, leads north from Hanbury Point to **Garrison Bay, Westcott Bay** and Roche Harbor.

(216) A large aquaculture facility, covered 3 feet and consisting of clam beds and suspended oyster racks, is in the middle of Westcott Bay about 1 mile above the entrance. Mariners should use caution in the area.

(217) **Henry Island** is close west of the north point of San Juan Island, from which it is separated by Mosquito Pass and Roche Harbor.

(218) **Kellett Bluff**, at the south end of Henry Island, is steep and rocky and prominent from either south or north. It is marked by a light. **Open Bay**, east of Kellett Bluff, offers good holding ground and protection for small boats from west, north and east weather.

(219) **Roche Harbor** has its main entrance between the north end of Henry Island and the west end of **Pearl Island**, which is marked by a light. Sandspits covered 17 and 18 feet extend into the channel from the islands on each side of the entrance. Entrance to the harbor can also be made from the south through Mosquito Pass between Henry Island and Bazalgette Point. The harbor has depths of 4 to 9 fathoms. It affords good anchorage and in the summer is used extensively by yachts. The harbormaster can be contacted on VHF-FM channel 78A.

(220) A large resort is on the east side of Roche Harbor. The resort operates a wharf with shed, floats with berths for over 450 craft, including over 150 transient berths, a hotel, cabins, a general store and restaurant. Electricity, gasoline, diesel fuel, water, ice, a launching ramp, pump-out station and marine supplies are available. The site was once the largest lime works west of the Mississippi, and quarry tunnels and the ruins of the old mill are still prominent.

(221) A **customs office** is on the north side of the main dock. Two to three customs officers are here full time in the summer and on call from Friday Harbor in the winter to inspect visiting Canadian yachts. The customs officer also performs **immigration** and **agricultural quarantine** inspections. Weekend and after-hours custom service can be obtained from Blaine; a toll-free phone number is posted. Roche Harbor has a paved and lighted airstrip; daily air service is available year round to Seattle. A paved road leads to Friday Harbor.

(222) **Battleship Island**, small and 30 feet high, is about 0.2 mile west-northwest of McCracken Point, the north extremity of Henry Island, and is the west point in the approaches to Roche Harbor.

(223) **Danger Shoal**, with a least depth of 1 fathom, is in the fairway to Spieden Channel about midway between Battleship Island and Spieden Bluff. A lighted buoy is close southwest of the shoal, which is marked by kelp.

(224) A rock, marked by kelp and covered 11 feet, is about 200 yards northwest of **Barren Island**, 0.7 mile east of McCracken Point; it is marked by a buoy. Another rock (48°37'27"N., 123°09'31"W.), marked by kelp and covered 9 feet, is about 350 yards east.

(225) **Spieden Channel** leads east between Spieden Island on the north and Battleship, Henry and San Juan Islands on the south; the channel leads from Haro Strait to President Channel and San Juan Channel. The east entrance, the narrowest part, is 0.6 mile wide, and for 2 miles west of it the channel is free of danger. However, in the west entrance, which has an irregular bottom, are several dangers, but the fairway is deep throughout. The meeting of the flood currents, which flow east from Haro Strait and west from San Juan Channel, cause heavy tide rips and eddies. This channel is not recommended for sailing craft.

(226) **Spieden Island** lies with **Spieden Bluff**, its northwest end, 1.6 miles north-northeast of Battleship Island. The island is 2.5 miles long in an east direction with an extreme width of 0.5 mile. **Green Point**, the east end of which is marked by a light, is low and grassy. The south side of the island has few trees, but the north face is well wooded.

(227) There are several dangers southeast of Spieden Bluff. **Center Reef**, which bares, is 0.7 mile south of the bluff; it is marked off its south side by a buoy. **Sentinel Rock** and **Sentinel Island** are closer inshore; a rock midway between them is covered 5 feet.

(228)

Stuart Island to Fisherman Bay

(229) **Stuart Island** is northwest of Spieden Island and has two prominent hills near the middle, 640 feet high. **Turn Point** is the west extremity of Stuart Island. It is bold, steep-to and marked by **Turn Point Light** (48°41'20"N., 123°14'15"W.), 44 feet high on a 16-foot white concrete tower.

(230) **Reid Harbor** indents the southeast shore of Stuart Island and trends northwest about 1.5 miles. The harbor, which is landlocked and 400 yards wide, affords good anchorage in 4 to 5 fathoms, soft bottom. The State Parks and Recreation Commission maintains a small-craft pier and floats here. The harbor is free of danger, but from the east entrance point foul ground extends about halfway across the entrance. Enter in midchannel and anchor anywhere in the middle of the wider portion of the harbor. In 1996, a visible wreck was reported in the harbor entrance in about 48°40'12"N., 123°11'19"W.

(231) **Prevost Harbor**, on the north shore of Stuart Island about 1.5 miles east of Turn Point, affords good shelter and anchorage. A pier used by the Coast Guard and the county is on the west shore of the harbor. Mail is delivered to the island by air. The State Parks and Recreation Commission maintains a float landing for small boats.

(232) **Satellite Island** lies within Prevost Harbor, with reefs and shoals extending off its southeast extremity. Vessels should not pass east of the island. Enter in midchannel west of Satellite Island and anchor in 6 to 7 fathoms, muddy bottom, in the middle of the wider portion just within the entrance, keeping clear of a rock that uncovers 6 feet, 200 yards off the south shore.

(233) **Johns Pass**, between Stuart Island and **Johns Island** close east, is much used by fishing vessels and small boats. At the south end of the pass foul ground extends about 0.6 mile southwest from Stuart Island.

(234) **Waldron Island**, 6.5 miles east of Turn Point, is steep and rocky on the east side but flat with sandy beaches on the north and west sides. It is irregular in shape and 3 miles long. The highest point, 612 feet, is near **Point Disney**, its south end. On the north and east sides of the island is a high yellow sand bluff, terminating abruptly in **Point Hammond**.

(235) **Cowlitz Bay**, which indents the southwest shore of Waldron Island, is a broad, open bight affording anchorage in fair weather. Shoal water extends 0.5 mile south of **Sandy Point**, the west end of the island. **Mouatt Reef**, with a least depth of 3 feet and marked by kelp, is 0.4 mile offshore and 0.5 mile north of Point Disney. A wharf built out to a depth of 7 feet is on the shore northeast of Mouatt Reef.

(236) **Bare Island**, small, grassy, and bare of trees, is 0.5 mile north-northwest of Point Hammond, and **Skipjack Island**, 120 feet high and wooded, is about 1.2 miles northwest of Point Hammond. The passage between them should be avoided because of its high current velocity.

A small, bare rock is off the east end of Skipjack Island, and a group of rocks awash are about midway between it and Bare Island. **Skipjack Island Light** (48°43'58"N., 123°02'21"W.), 18 feet above the water, is shown from a steel tower on the west side of the island.

(237) A rocky shoal with a least depth of 6 fathoms is about 2 miles north-northeast of Skipjack Island and is marked by an isolated danger lighted bell buoy.

(238) **Patos Island**, 4.3 miles north-northeast of Point Hammond, is 60 feet high and wooded except at its west end, toward which it gradually decreases in height; the island is a state park. **Active Cove**, between Patos Island and Little Patos Island, is reported to be a good anchorage for small vessels. There are several public mooring buoys available in the cove. Vessels without local knowledge should enter Active Cove from the west, as the southern-facing entrance experiences strong, swirling currents at almost all stages of tide. **Patos Island Light** (48°47'20"N., 122°58'17"W.), 52 feet above the water, is shown from a 38-foot white square frame tower on **Alden Point**, the west point of the island.

(239) **Sucia Islands**, consisting of one large and several smaller islands, are southeast of Patos Island and 2.5 miles north of Orcas Island. The heavily wooded large island is a marine state park and is 200 feet high. The west side is a series of steep, wooded cliffs broken by **Shallow Bay**. The entrance to the bay is marked by buoys. The bay is an excellent anchorage with mooring buoys available in the north part. **Echo Bay** indents the east side of the island. In west weather small vessels with local knowledge can find good anchorage in 4 to 5 fathoms near the head of the bay. At the head of **Fossil Bay**, on the south side of **Sucia Island**, there is a State Parks and Recreation Commission small-craft anchorage and float pier; water is available. The bays and coves around Sucia Island have been designated as Sensitive Eelgrass Areas. Vessels are encouraged to avoid anchoring in less than 30 feet of water. Numerous mooring buoys are available for recreational vessels.

(240) Reefs extend about 1.5 miles west of Sucia Islands to **West Bank**, which has a minimum depth of 8 feet. Strong tidal currents exist between West Bank and the Sucia Islands; only vessels with local knowledge should transit the area.

(241) **Clements Reef**, 0.5 mile north of Sucia Islands, is about 1.2 miles long and 0.3 mile wide. The northwest end and the southeast end of the reef are marked by buoys.

(242) The tidal currents are particularly strong and dangerous between Patos Island and East Point on Saturna Island, BC, and for 2 miles north in the Strait of Georgia. Tidal currents between Patos Island and Sucia Islands are less extreme and more regular than Boundary Pass.

(243)

Haro Strait, SW approach (Canada)

(244) The several channels and passages leading between the islands and dangers off the coast of British Columbia from Gonzales Point to **Cadboro Point**, 2.8 miles north-northeast, constitute the southwest approach to Haro Strait. These passages and channels should be used only by vessels with local knowledge.

(245) The side of Haro Strait west of the international line is bordered by several islands and reefs, the most important of which are, from south to north: **Kelp Reefs**, marked by a light, about 7 miles north of Discovery Island; **Sidney Island**, about 3 miles northwest of the light on Kelp Reefs; **Moresby Island**, marked by a light, about 16 miles north of Baynes Channel and Discovery Island, and the smaller islands and reefs in between.

(246) **Swanson Channel**, used sometimes as an alternate route by vessels bound for Alaska points, extends northwest between Moresby Island and the **Pender Islands** and connects ultimately with Active Pass to reach the Strait of Georgia in 48°53'N.

(247) **Active Pass** is deep but tortuous and in its narrowest part is about 600 yards wide. The dangers do not extend over 200 yards from shore. Vessels should enter the pass at slack water, if possible, but a vessel with a speed of 10 knots can always get through. A vessel with local knowledge can take advantage of the eddies and variations of the tidal currents, but others should keep in midchannel. Great care should be taken to avoid the shoals on either side of the north entrance to the pass.

(248) **Enterprise Reef**, in the south approach to Active Pass, consists of two rocky heads about 400 yards apart. The west head uncovers 3 feet, and the east head is awash. Foul ground extends between the heads and 200 yards west of the west head. A light is on the west head, and a buoy marks the east head.

(249) **South Pender Island**, 3 miles north of Stuart Island, is marked by a light on **Gowlland Point**, its southeast extremity. The last of the Canadian lights in this stretch is on **East Point**, the east point of **Saturna Island**, 6.2 miles east-northeast of Gowlland Point.

(250) **Rosenfeld Rock**, 1.2 miles north-northeast of East Point, is marked by a lighted buoy. The rock is covered by 1¼ fathoms, and rocks that bare are within 900 yards of it. Close east of the rock, overfalls and dangerous tide rips are formed.

(251) (See Pub. 154, Sailing Directions (Enroute) for British Columbia, published by the National Geospatial-Intelligence Agency, and Sailing Directions, British Columbia Coast, (South Portion) Vol. 1, published by the Canadian Hydrographic Service for more details of the islands and features on the Canadian side.)

(252) **San Juan Channel**, the middle one of three principal channels leading from the Strait of Juan de Fuca to the Strait of Georgia, separates San Juan Island from the islands east. It is 13 miles long from its south end to its junction with President Channel at the north end. San Juan Channel is deep throughout and, except near its south entrance, has few off-lying dangers.

(253)

Currents

(254) In the south end of San Juan Channel, between Goose Island and Deadman Island, the average current velocity is 2.6 knots on the flood and ebb; however, maximum flood currents of 5 knots or more cause severe rips and eddies. Daily current predictions for this location may be obtained from the Tidal Current prediction service at *tidesandcurrents.noaa.gov*. Links to a user guide for this service can be found in chapter 1 of this book.

(255) **Cattle Point** is the southeast extremity of San Juan Island and forms the west point at the south entrance to San Juan Channel. **Cattle Point Light** (48°27'02"N., 122°57'48"W.), 94 feet above the water, is shown from a white octagonal tower on the point. Cattle were once loaded here for shipment to and from Victoria.

(256) **Salmon Bank**, south of Cattle Point and on the west side of **Middle Channel**, is an extensive shoal covered 1½ to 3 fathoms; it is marked by a lighted gong buoy. Kelp grows on the rocks. **Whale Rocks**, two dark rocks about 5 feet high, are on the east side of Middle Channel 0.6 mile northwest of Long Island. A reef, with a least depth of 8 feet, extends 0.4 mile south of Whale Rocks.

(257) **Long Island**, 1.5 miles northwest of Iceberg Point, is the largest of a group of islands on the east side of the entrance to San Juan Channel.

(258) **Lopez Island** is the southeasternmost one of the San Juan Islands; **Lopez Hill**, 488 feet high, is near the south midsection of the island. **Iceberg Point**, 3.3 miles southeast of Cattle Point, is at the west extremity of the south part of Lopez Island and is marked by **Iceberg Point Light 2** (48°25'19"N., 122°53'39"W.), shown from a white square concrete house with red daybeacon, 35 feet above the water.

(259) **Richardson** is a small settlement on the north shore of the cove north of Iceberg Point and close north of **Charles Island**. Four tanks are prominent from seaward. A wharf in ruins is directly below the tanks.

(260) **Mackaye Harbor**, north of Iceberg Point, affords good shelter in 5 to 6 fathoms, soft mud. A pier and launching ramp, for day use only, is at the northeast corner of the harbor. Small craft with local knowledge can obtain excellent shelter in **Barlow Bay**, on the south side of the harbor. Vessels approaching Mackaye Harbor or Richardson should pass at least 0.3 mile south and east of the off-lying islands and islets. Local vessels, by keeping close to the north shore to avoid rocks near midchannel, use a small passage between Lopez and Charles Islands, but this should not be attempted without local knowledge. **Twin Rocks**, in midchannel of this small passage, are marked by a daybeacon.

(261) **Davis Point**, the southwest end of Lopez Island, is on the east side of the south entrance to San Juan Channel. **Deadman Island** is close off the east side of the entrance, and several rocks are within 600 yards north of the island. **Goose Island**, small and low, is about 0.5 mile north of Cattle Point and close off the west side of the entrance to San Juan Channel.

(262) **Shark Reef**, awash, is over a mile north of Deadman Island and close off some white cliffs on the east side of San Juan Channel.

(263) From Goose Island north to **Pear Point**, the west side of San Juan Channel is foul with many rocks covered and awash within 0.7 mile of the shore. However, good anchorage for small vessels can be had west of **Harbor Rock**, at the south end, between the 10 and 20-fathom curves.

(264) **North Bay** is entered between Pear Point and **Dinner Island**. Gravel is barged from pits on the northwest shore of the bay to Vancouver Island. **Little Island**, at the head of North Bay, is connected to the mainland by a narrow spit. Just north of Little Island, on the west side of the spit, is a park with a launching ramp. The bay affords fair anchorage in 7 to 10 fathoms, about 800 yards north of Dinner Island. Two dangers are in the approaches to the bay; a rocky shoal covered ¾ fathom 0.7 mile east of Dinner Island and another rock shoal covered ¾ fathom 0.4 mile southeast of Dinner Island. In 2005, a shoal with a depth of 7 feet was reported inside the bay in about 48°31'01"N., 123°00'08"W. The passage west of Dinner Island should not be attempted.

(265) **Fisherman Bay**, on the east side of San Juan Channel abreast North Bay, is a shallow lagoon entered by a marked, narrow, and tortuous channel. A rock awash is on the east side of the channel at the mouth of the bay. Good anchorage with shelter from all winds may be had in 10 to 12 feet, soft bottom, for small craft with local knowledge. The tidal currents have considerable velocity. The village of **Lopez**, located near the entrance, is the largest community on Lopez Island. A resort in the bay has a pier and floats with berths for about 66 craft; electricity, gasoline, diesel fuel, water, ice and overnight facilities are available. A marina adjacent to the resort has 100 berths, water, electricity and marine supplies, and a 15-ton lift is available.

(266)

Turn Island to Gull Rock

(267) At **Turn Island**, off the east side of San Juan Island, San Juan Channel turns northwest for about 7.5 miles and connects at its north end with Spieden Channel and President Channel.

(268) **Turn Rock**, about 0.2 mile east of Turn Island, is a ledge bare at half tide; it should be given a berth of at least 100 yards. A light is on the rock. **Reid Rock**, 1.4 miles northwest of Turn Rock, is in midchannel off the entrance to Friday Harbor. The rock, covered 2¼ fathoms, rises abruptly from deep water and is marked by a lighted buoy.

(269) **Friday Harbor**, 1.4 miles west of Turn Island, is a small cove about 1 mile long and nearly as wide. **Brown Island**, locally known as Friday Island because of the housing development here, occupies the middle of the harbor, with shoals nearly 200 yards wide off both its east and south shores. A shoal, covered 3¼ fathoms, extends nearly into midchannel from the west shore of the island.

Shoals off the southeast end of the island are marked by a daybeacon. The harbor may be entered either east or west of Brown Island. Anchorage may be had between Brown Island and the harbor waterfront in 6 to 7 fathoms, taking care to avoid the cable and pipeline area and the wrecks just to the northwest. City floats provide berthing space for pleasure craft.

(270) **Friday Harbor**, the town on the west shore of the cove, is the county seat and the population center of San Juan Island, which has some farming in the interior of the island. Commercial fishermen and recreational boaters frequent Friday Harbor, especially in the summer months.

(271) The University of Washington maintains a marine biological laboratory 0.4 mile north-northwest off the north end of Brown Island. Private floating docks in the area are sensitive to wakes and may be used only with permission. SCUBA divers may be present in the vicinity; use caution and approach slowly. The UW property extends east-northeast, 0.25 mile from the pier, which marks the northern entrance to Friday Harbor. Approach this area with caution, as seawater pipes extend off the pumphouse building; experiments and divers are common.

(272) Friday Harbor is a **customs port of entry**. The customs office is about 75 yards west of the port's office, at the yacht club building. The customs officer also performs **immigration** and **agricultural quarantine** inspections.

(273) The Interisland Medical Center at Friday Harbor is the only complete medical facility in the San Juan Islands. In addition, Orcas and Lopez Islands have small clinics with resident physicians and paramedics. Air ambulance service to Seattle, Anacortes or Bellingham is available on all the larger islands.

(274) The Port of Friday Harbor small-craft harbor is protected by floating breakwaters marked by lights. Berths with electricity for over 500 craft are available. At least 150 of this total capacity is used for transient berthing. Water and pump-out station are available. **Note:** Vessels should not anchor within 100 yards of the floating breakwater because of the danger of fouling with the breakwater's anchor cables. A seaplane float is near the customs float at the port's small-craft harbor. There are three amber strobe signal lights in the harbor. They are located at the northeast end of the Port of Friday Harbor Docks, on the University of Washington Laboratory shore, and at the northwest end of Brown Island, respectively. It is reported that when activated, these strobe lights signal the takeoff or landing of seaplanes in the harbor. Gasoline, diesel fuel, water, ice and marine supplies are available at Friday Harbor. Southeast of the Port of Friday Harbor are a charter dock and ferry slip. Southeast of the ferry slip are condominiums with private docks.

(275) A shipyard is at the south end of Friday Harbor. A 35-ton lift is available; complete hull and engine repairs can be made.

(276) Freight and passengers reach Friday Harbor by airplane or by state ferry. The town has an airport with surfaced and lighted runways; twin-engine aircraft can be accommodated. Mail is transported by air.

(277) **Point George**, the west point at the entrance to **Parks Bay**, is across the channel from Friday Harbor. Good anchorage for small craft in 6 to 8 fathoms, soft bottom, can be had in the bay. The head of the bay, however, is foul with submerged piles.

(278) **Wasp Islands** are in the west approach to West Sound between **Neck Point**, the northwest tip of Shaw Island, and **Steep Point**, the southwest extremity of Orcas Island. Several narrow channels lead between the islands; the channels in general use are the North and Pole Passes, close under the Orcas Island shore. The tidal currents have considerable velocity in the channels, which should be attempted only by vessels with local knowledge.

(279) **North Pass**, between Steep Point on Orcas Island and the Wasp Islands, leads east from San Juan Channel to Deer Harbor and into Pole Pass. The pass is about 0.2 mile wide between Steep Point and **Reef Island** and is free of outlying dangers, except for a rock covered 10 feet, 0.3 mile east of the north end of Reef Island.

(280) **Deer Harbor**, east of Steep Point, has good anchorage in 6 to 7 fathoms about 0.2 mile from the head. **Fawn Island** is near the entrance of the harbor and about 200 yards from the west shore; vessels may pass on either side. The east shore of Deer Harbor should be given a berth of at least 300 yards because of a shoal that in some places extends more than 200 yards off.

(281) **Deer Harbor**, on the east side of the harbor, is a village with stores, a marina and an inn. Pleasure boats call here frequently in the summer. The marina has about 100 berths, including 65 transient berths that can accommodate craft up to 100 feet. Services available include electricity, gasoline, diesel fuel, water, ice, pump-out facility, launching ramp, marine supplies and a 40-ton marine railway, and full repairs can be made.

(282) A private light is on the end of a pier about 0.8 mile south-southeast of the town of Deer Harbor.

(283) **Crane Island** is off the entrance to Deer Harbor and about 1 mile southeast of Steep Point. The north shore of the island is foul with bare and covered rocks within 250 yards of it. A shoal covered ½ fathom is 350 yards north of the center of the north side of the island, and a rock that uncovers 5 feet is 200 yards off the east point, with foul ground between it and the shore.

(284) **Pole Pass** leads from North Pass to West Sound and separates Crane Island from Orcas Island; the fairway is 75 yards wide in its narrowest part. A 7-knot speed limit is enforced through Pole Pass and should not be attempted without local knowledge. A light is on the northeast side of the pass at its narrowest part.

(285) **Wasp Passage** leads from San Juan Channel to West Sound and separates Crane Island from the north shore of Shaw Island. A light is on the rock 300 yards east of Bell Island at the east end of the pass and on Cliff Island and **Shirt Tail Reef**, at the west end of the pass.

(286) **Bell Island**, small and wooded, is about 0.3 mile east of Crane Island. When transiting Pole Pass, vessels

should pass Bell Island close-to in order to avoid the reef and shoals extending south from **Caldwell Point** on Orcas Island.

(287) **Cliff Island**, the southernmost of the Wasp Islands, is 0.4 mile southwest of Crane Island and is marked by a light on its south side. **Low Island**, small and 10 feet high, is about 700 yards west of Cliff Island, and **Nob Island**, 40 feet high, is close-to and northwest of Cliff Island. Local vessels bound from Friday Harbor to Deer Harbor use a clear deep channel about 70 yards wide through the rocks and shoals lying between Cliff Island and Low Island.

(288) **Yellow Island**, the westernmost of the Wasp Islands, is about 0.8 mile west-northwest of Neck Point and about 3.5 miles north-northwest of Friday Harbor. The island is small, grassy, and nearly bare of trees. A shoal extends 300 yards west of the island and terminates in a rock that uncovers 3 feet and is marked by kelp. This island should be given a berth of not less than 0.5 mile. **McConnell Island**, northeast of Yellow Island, is the largest of the group. **Coon Island** is close to and southeast of McConnell Island. **Bird Rock**, which uncovers, is between McConnell and Crane Islands and is marked by a light.

(289) **Jones Island**, 2 miles north of Wasp Passage, is on the east side of the north entrance to San Juan Channel; the island is wooded. Small pleasure craft anchor in the bights of the north and south shores. A state marine park in the bight of the north shore has a small seasonal pier, campground and mooring facilities; limited water is available. A daybeacon marks a rock on the northeast side of Jones Island near the entrance of the north bight. **Spring Passage** separates Jones Island from the southwest part of Orcas Island; in general, the passage is free of danger.

(290) **Rocky Bay** is an open bight in the east side of San Juan Island. **O'Neal Island**, surrounded by a shoal, is almost in the middle of the bay.

(291) **Limestone Point**, about 1.2 miles north-northwest of O'Neal Island, forms the west point of the north entrance to San Juan Channel and is the northeast portion of San Juan Island. Heavy tide rips and eddies form off Limestone Point and Green Point on Spieden Island, 0.7 mile north.

(292) **Lonesome Cove**, 0.2 mile west of Limestone Point, has a resort with cabins. Limited berthage and gasoline are available.

(293) **Flattop Island**, prominent in the north approaches to San Juan Channel, is 1 mile northeast of the east end of Spieden Island. It is about 174 feet high, flat on top and sparsely covered with underbrush and trees. **Gull Rock**, 33 feet high and bare, is about 0.3 mile northwest of the northwest shore of the island.

(294)

White Rock to Point Doughty

(295) **White Rock**, 35 feet high, is about 2.7 miles north of the junction of Spieden and San Juan Channels and about midway between Flattop and Waldron Islands. Rocks, bare and covered, marked by kelp, extend nearly 0.3 miles northwest from White Rock. **Danger Rock**, covered 3 feet and marked by kelp, is 0.3 mile southeast of White Rock.

(296) The northwest approach to San Juan Channel from Boundary Pass extends between Waldron Island on the east and Stuart Island, Johns Island and Spieden Island to the west and south.

(297) **President Channel**, between Waldron and Orcas Islands, is about 5 miles long. Depths are generally great, and the passage is free of dangers. The tidal currents have a velocity of 2 to 5 knots, and heavy swirls and tide rips, especially with an adverse wind, are off the north point of Waldron Island and between Waldron and Patos Islands. The rips are generally heaviest with the ebb current. Rips and swirls are also heavy off Limestone Point and the east end of Spieden Island.

(298) **Orcas Island** is wooded and mountainous. **Mount Constitution**, a 2,402-foot peak on the island's east side, is marked by a stone lookout tower and a lighted radio tower. **Turtleback Mountain (Turtle Back Range)** and **Orcas Knob**, conical and bare on the summit, in the west part of the island, are prominent and easily recognized.

(299) **Point Doughty**, the northwest tip of Orcas Island, is bare and terminates in a small knob on its outer end. A resort in the bight, 1.5 miles south-southwest of Point Doughty, has seasonal floats with about 40 berths, gasoline, water, ice, a concrete launching ramp and some marine supplies. In 2006, a reported depth of 3 feet at mean lower low water was at the gas dock floats.

(300)

Local magnetic disturbances

(301) Differences from the normal variation of 2° or more have been observed in the vicinity of Point Doughty.

(302) **Parker Reef**, marked by a light, is about 0.7 mile off the north shore of Orcas Island and uncovers. The rocky reef extends about 110 yards in all directions from the light, except on the east side, where it extends about 160 yards from the light. Kelp covers the reef and the area between it and the shore. There are several shoal spots of 1¾ to 2¾ fathoms in the area within the 10-fathom curve south-southwest and west of Parker Reef.

(303) A passage between Sucia Islands on the north and Orcas Island on the south connects the north end of President Channel with the junction of the Strait of Georgia and Rosario Strait.

(304)

Minor Passages, San Juan Islands

(305)

Minor passages, San Juan Islands

(306) **Upright Channel**, between Lopez Island and Shaw Island, is about 3 miles long. **Canoe Island**, opposite **Flat Point**, constricts the passage to a width of less than 400 yards—Flat Point is marked by a light. General depths in the channel range from 20 to 25 fathoms. There are two detached shoals south-southwest of Canoe Island. The two shoals have depths of 7½ and 8½ fathoms. A rock awash is 250 yards southwest of the southwest end of Canoe Island. Anchorages for small craft may be had in **Indian Cove**, west of Canoe Island, in 4 to 7 fathoms, soft bottom.

(307) **Cayou Channel**, between Shaw and Orcas Islands, is the approach to West Sound from the east. General depths in the channel range from 11 to 30 fathoms with a 9-fathom shoal 700 yards east of Broken Point, the northernmost extremity of Shaw Island.

(308) **Orcas**, a village located on the north shore in a cove at the west end of Cayou Channel, has a public wharf with about 9 feet alongside. Several year-round stores are located at Orcas; water, ice and some marine supplies are available. The ferry slip just east of the wharf serves the interisland ferry that operates from Anacortes. A rock, covered 2½ fathoms, is about 125 yards south of the wharf; deep water is between the rock and the shore.

(309) **Blind Bay**, a small cove indenting Shaw Island just opposite Orcas, has depths of 2 to 6 fathoms. There are several reefs at its northwest entrance and along the southwest side of the bay. **Blind Island** is in the entrance. A private daybeacon marks a rock that uncovers 3 feet on the east side of the entrance. **Shaw Island**, a village at the east entrance, is served by the ferry. **Broken Point**, 1.6 miles west of the Shaw Island landing, projects some 0.3 mile north from the north side of the island and is quite prominent.

(310) **West Sound** indents the west part of the south shore of Orcas Island for about 2.8 miles. **Massacre Bay** is in the north part. The depths range from 7 to 20 fathoms. Anchorage in 7 to 12 fathoms may be had anywhere north of **Double Island**. which consists of two small islands connected at low water; it is close to the west shore near the entrance.

(311) **West Sound**, a village on the east shore, is about 2 miles north of the entrance. A few pilings remain of an old sawmill wharf; care should be taken to avoid submerged pilings about 100 feet southwest of the wharf. A marina with the largest moorage facility on Orcas Island and largest repair facility in the San Juan Islands is at West Sound. The marina has 180 berths, and guest moorage is available on a 250-foot float on the south side of the marina. Gasoline, diesel fuel, water, pump-out station, a 30-ton travel lift, hull and engine repairs and marine supplies are available.

(312) **Picnic Island** is a low islet in the south part of the cove, close south from West Sound settlement. A shoal extends about 150 yards west from the island. In the bight east of the island is a marina with berths for about 80 small craft. An 11-ton hoist here can handle craft to 36 feet for hull and engine repairs. Marine supplies and a salvage and retrieval tug are available. In 1969, a channel with a depth of 1½ feet was reported to exist between Picnic Island and Orcas Island; local knowledge is advised.

(313) **Harbor Rock**, 4 feet high, lies in midchannel about 1.9 miles above the entrance to the sound; it is just inside Massacre Bay. The rocky patch marked by a daybeacon is of small extent and is surrounded by depths of 1¾ to 10 fathoms.

(314)

East Sound to Lawson Reef

(315) **East Sound** indents Orcas Island north-northwest for about 6 miles. Depths vary from 15 fathoms at the entrance to 9 fathoms less than 0.2 mile from the head. There are no outlying dangers, and the shores may be approached to within 0.2 mile; however, a shoal covered less than 5 fathoms extends some 700 yards off the west shore, 0.8 mile inside the entrance. Anchorage may be had anywhere in the sound.

(316)

Local magnetic disturbance

(317) Differences from the normal variation of about 2° have been reported in the upper end of East Sound.

(318) **Olga** is a village on the west shore of **Buck Bay**, a small cove on the east shore of the sound just inside the entrance.

(319) **Cascade Bay**, a small cove on the east side of the sound, about 3 miles north of the entrance, is the site of a large resort with floats having berths with electricity for about 60 craft. Gasoline, diesel fuel, water and ice are available. Depths of 15 feet are reported alongside the floats. The large white resort hotel on **Rosario Point**, the west point of the bay, is conspicuous.

(320) **Eastsound**, the largest village on Orcas Island, lies in the west of two small adjacent coves at the head of the sound. The wharf is built out to a depth of 7½ feet; gasoline and water are available. A medical clinic is at Eastsound; air ambulance service to Anacortes, Bellingham or Seattle is available.

(321) **Obstruction Pass**, with a least width of 350 yards, separates **Obstruction Island** from Orcas Island and leads west from Rosario Strait to the inner passages and sounds of the San Juan Islands. A launching ramp and float are on the north side of the pass about 0.6 mile northwest of Deer Point; depths alongside the float are about 4 feet. Caution is advised because of the numerous private pilings and moorings in the area. Obstruction Pass is marked by a light on the northeast side of Obstruction Island.

(322) **Peavine Pass**, safer and straighter than Obstruction Pass, separates Blakely Island from Obstruction

Island. The pass is a little over 200 yards wide at its narrowest part, and in midchannel the least depth is 6 fathoms. Peavine Pass Light 1, on the southwest point of Obstruction Island, marks the west entrance to the pass. **Spindle Rock**, marked by a daybeacon, lies about 0.2 mile offshore from Blakely Island at the east entrance to Peavine Pass.

(323)

Currents

(324) The currents through Obstruction and Peavine Passes have estimated velocities of 5.5 to 6.5 knots at times. Heavy tide rips occur east of Obstruction Island.

(325) **Blakely Island Shoal**, rocky and covered 11 feet, is 0.5 mile off the west side of Blakely Island and is marked on its south side by a lighted buoy. The passage between the shoal and Blakely Island is deep and clear.

(326) **Blakely Island**, east of Lopez and Shaw Islands, is privately owned and maintained but open to the public. At its north end, bordering on Peavine Pass, is a small-craft basin and channel. About 65 berths are at the cove dock and inside the basin. An airplane landing strip and lodging are nearby. Gasoline, diesel fuel, water, ice and some marine supplies are available.

(327) **Thatcher Pass**, between Blakely Island and **Decatur Island**, is about 0.5 mile wide in its narrowest part. The pass is deep and free of danger with the exception of **Lawson Rock**, in midchannel, 0.4 mile north of Fauntleroy Point. The south point of Blakely Island and Lawson Rock are marked by lights. Thatcher Pass serves as the primary route for ferries transiting from Anacortes to the San Juan Island terminals.

(328) **Fauntleroy Point**, the northeast end of Decatur Island, is marked by a light. With a south wind and ebb current, heavy rips will be encountered off the east entrance to Thatcher Pass.

(329) **Leo Reef**, in the entrance to **Swifts Bay** on the northeast end of Lopez Island, uncovers and is marked by a light.

(330) In 1981, a rock covered 3 feet was reported about 350 yards west-northwest of Leo Reef Light. **Port Stanley** is a small village on the shores of Swifts Bay.

(331) **Upright Head**, the northernmost point of Lopez Island, is a narrow peninsula that attains an elevation of 260 feet. A ferry slip is in the small cove at the tip of this peninsula. A private light is 50 yards out from the slip. There is daily ferry service with the other islands and the mainland.

(332) **Lopez Sound**, on the east side of Lopez Island, may be entered from Rosario Strait by Thatcher Pass. The depths in the greater part of the sound are 3 to 5 fathoms, muddy bottom, but a narrow and deeper channel is along the east shore.

(333) Fair protection in southeast weather can be had in the area west of Decatur Island and north of **Center Island** in 3 to 5 fathoms, mud bottom. Strong winds blow across the low neck at the south end of Decatur Island and may make the area west uncomfortable for small craft. Good anchorage in west weather can be had in the large bight on the west side of the sound.

(334) **Decatur** is a small village on the west side of Decatur Island. A wharf with depths of 8 feet at its end is here.

(335) **Lopez Pass**, south of Decatur Island, leads from Rosario Strait into Lopez Sound. The pass has depths of 9 to 12 fathoms but is very narrow and little used. A light is at the south end of Decatur Island.

(336) **Rosario Strait**, the easternmost of the three main channels leading from the Strait of Juan de Fuca to the Strait of Georgia, is 20 miles long and from 1.5 to 5 miles wide. The water is deep, and the most important dangers are marked. The strait is in constant use by vessels bound for Cherry Point, Bellingham, Anacortes and the San Juan Islands. Vessels bound for British Columbia or Alaska also frequently use it in preference to the passages farther west, when greater advantage can be taken of the tidal currents.

(337)

Tides and currents

(338) See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about the times, directions, and velocities of the current at numerous locations throughout the area, including Rosario Strait and vicinity. Links to a user guide for this service can be found in chapter 1 of this book. The currents in Lopez, Thatcher and Obstruction Passes are reported to attain velocities of 3 to 7 knots. This should be kept in mind when proceeding through Rosario Strait, particularly at night or in thick weather. On the ebb of a large tide off the entrance to the passes, a south wind causes tide rips that are dangerous to small craft. In the area northwest of Belle Rock (48°29'35".N, 122°45'10"W.), mariners may experience a strong set to the west during ebb currents flowing out of Guemes Channel.

(339) Small craft can get good protection from west and south weather by anchoring near the head of **Watmough Bay**, at the extreme southeast end of Lopez Island.

(340) **Colville Island**, 64 feet high, small and bare of trees, is off the southeast end of Lopez Island. Heavy kelp extends west of Colville Island. **Davidson Rock**, 0.3 mile east of Colville Island, bares and is marked by a light. Mariners should give Colville Island and Davidson Rock a good berth. The southbound lane of the Traffic Separation Scheme is close south and east of Davidson Rock.

(341) **Aleck Bay**, the west and largest of three small bays on the south shore of Lopez Island, affords good anchorage except in heavy southeast winds for small vessels in 4 to 7 fathoms, mud bottom. Rocks, awash and covered, and reefs are along the west extremity; caution is advised.

(342) A bank covered 10 to 20 fathoms extends across the south entrance to Rosario Strait. A shoal in the west part of the bank, 1.6 miles east of Davidson Rock, is covered 4 fathoms and marked by a lighted bell buoy on the west edge. **Lawson Reef**, 0.6 by 0.3 mile in extent, in the east part of the bank, is 1.7 miles west of Deception Island.

The reef has a least depth of 2.2 fathoms and is marked by a lighted bell buoy.

(343)

Deception Pass to Flounder Bay

(344) **Deception Pass**, the impressive 2-mile passage between Whidbey Island and **Fidalgo Island**, provides a challenging route that connects the north end of Skagit Bay with the south end of Rosario Strait. Near the middle of the pass, the width is reduced to 150 yards by **Pass Island**. A fixed highway bridge over the pass between Pass Island and Whidbey Island has a clearance of 144 feet at the center and 104 feet elsewhere. Overhead telephone and power cables 50 yards and 0.2 mile east of the bridge have clearances of 150 feet and 220 feet, respectively.

(345) Deception Pass is used frequently by local boats bound from Seattle to Anacortes, Bellingham and the San Juan Islands. The pass should be negotiated at the time of slack, since the velocity of the stream at other times makes it prohibitive to some craft; however, many fast boats run it at all stages of the tide. The pass is also used by log tows from the north bound to Everett or Seattle, which prefer this route to avoid the rough weather west of Whidbey Island.

(346) Currents in the narrows of Deception Pass attain velocities in excess of 8 knots at times and cause strong eddies along the shores. With west weather, heavy swells and tide rips form and make passage dangerous to all small craft. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(347) **Canoe Pass**, north of Pass Island, is not recommended except for small craft with local knowledge.

(348) **Deception Island**, 1 mile west of Pass Island, is 0.4 mile northwest of **West Point**, the northwest end of Whidbey Island. A shoal that bares at low water extends 175 yards (160 meters) south of Deception Island. Foul ground extends 262 yards (240 meters) northwest of West Point. The passage between these two hazards is 200 yards (183 meters) wide with a least depth of 2.5 fathoms and great care should be taken when navigating in this area. **Northwest Pass**, north of Deception Island, is the preferred route. The Northwest Pass channel is deeper but narrows and follows close to Lighthouse Point; a light is on the point.

(349) **Strawberry Island** lies almost in the middle of Deception Pass, 0.4 mile east of Pass Island. **Ben Ure Island** is 0.2 mile south of Strawberry Island at the entrance to Cornet Bay; a light is at the northeast end of the island.

(350) **Cornet Bay**, shallow and suitable for small craft only, indents the north end of Whidbey Island, in Deception Pass. A marina with a privately dredged entrance channel and mooring basin is in the bay; the channel is marked by private lights and daybeacons. The marina has about 85 open and covered berths at the floats and can provide gasoline, diesel fuel, electricity, water, ice and marine supplies. A marine service and repair facility is west of the marina. Deception Island State Park is east of the marina and has moorage floats, pumpout facility and launching ramps.

(351)

Routes

(352) From west the best water through Deception Pass will be found 0.3 mile west of **Rosario Head**, a point 0.5 mile north of Deception Island. Steer a southeast course to pass about 100 yards southwest of the light on Lighthouse Point; then follow an east course through the middle of the pass, being careful to guard against sets from the current when running partly across it. After passing under the bridge, favor slightly the north shore so as to avoid the pinnacle rocks and ledges making out from the south shore. After leaving Pass Island, steer to pass about midway between Ben Ure and Strawberry Island. Strawberry Island should not be approached within 125 yards because of a reef, marked by kelp, south of the island. From a position off Ben Ure Island Light 2, steer a northeast course to pass about midway between **Hoypus Point** and **Yokeko Point**. The flood current north and west of Strawberry Island sets northeast and should be guarded against.

(353) **Bowman (Reservation) Bay**, a small bight between **Reservation Head** and Rosario Head, offers anchorage for small craft in 2¼ fathoms, mud bottom. **Northwest Island**, between Rosario Head and Sares Head, is 28 feet high and grass-covered. **Sares Head**, 1 mile north of Deception Island, is steep-to and 480 feet high.

(354) **Burrows Bay** indents the west shore of Fidalgo Island between **Biz Point** and **Fidalgo Head**. Burrows Bay is a broad open bight affording anchorage in the north part, in 15 to 16 fathoms, soft bottom. Protection from west and north is afforded by **Burrows Island** and **Allan Island**, but the bay is exposed to south weather. In the southeast part, the depths are less than 6 fathoms, and in places shoals extend almost 0.4 mile off the east and south shores of the bay. East of the passage between Allan and Burrows Islands is a middle ground with a least depth of 5 fathoms. Small craft using Deception Pass, bound to or from points in the islands or from Bellingham Bay, pass through Burrows Bay and the passage north of Burrows Island.

(355) **Burrows Island Light** (48°28'41"N., 122°42'49"W.), 57 feet above the water, is shown from a 34-foot white square tower on a building at the west end of the island; a mariner-radio-activated sound signal at the station is initiated by keying the microphone five times on VHF-FM channel 83A.

(356)

Local magnetic disturbance

(357) Differences from normal variation of 4° have been observed on the east shore of Burrows Bay.

(358) **Williamson Rocks**, a group of small, grass-covered islets and rocks, are 0.5 mile south of Allan Island and are marked on the south side by a lighted gong buoy. **Dennis Shoal**, 500 yards off the south shore of Allan Island and 0.6 mile northwest of Williamson Rocks, bares and is marked on its west side by a buoy.

(359) **Flounder Bay**, a well-sheltered basin and popular yachting harbor at the north end of Burrows Bay, is the site of a large marina. The entrance channel is protected by jetties and marked by private lights. In 2007, a depth of 3 feet was reported in the entrance channel. The east side of the entrance is subject to shoaling. Gasoline, diesel fuel, water, ice, about 250 berths with electricity, transient berths, dry storage facilities, two 1½-ton hoists, a 24-ton lift and marine supplies are available at the marina. Hull, engine and electronic repairs can be made. A private company located at the west end of the marina provides heavy transport service to the islands. A road connects the bay with a highway, providing access to the state ferry terminal in Ship Harbor, the Anacortes airport and the city of Anacortes.

(360)

Bird Rocks to Alden Bank

(361) **Bird Rocks**, consisting of three rocks close together, are near the middle of Rosario Strait, about 2 miles west-northwest of Burrows Island Light. The southernmost and largest is 37 feet high. There is deep water close-to, and passage may be made on either side of the rocks.

(362) **Belle Rock**, bare at extreme low water and marked by a light, is about 0.5 mile northeast of Bird Rocks. Belle Rock can be passed about 0.6 mile to the east by keeping **Tide Point**, the west extremity of Cypress Island, and **Lawrence Point**, the east end of Orcas Island, in range on a bearing of about 359°.

(363) Rosario Strait is generally clear, with great depths, except for the following principal offshore dangers:

(364) **Kellett Ledge**, 2 miles north of Point Colville, extends 700 yards off **Cape St. Mary**, on the southeast part of Lopez Island. The ledge is marked by kelp and a buoy and uncovers at the lowest tides. In 2000, two shoal spots were reported east of the ledge. The first shoal was about 550 yards east in about 48°26'58"N., 122°47'13"W. with a depth of about 7 fathoms. The second shoal was about 700 yards east in about 48°26'57"N., 122°47'05"W. with a depth of about 8 fathoms.

(365) **James Island** is close off **Decatur Head**, the east end of Decatur Island. Between the two islands is a deep but narrow passage. James Island has two hills with heights of 260 and 219 feet.

(366) **Pointer Island**, 16 feet high, is 0.3 mile off the southeast shore of Blakely Island, and **Black Rock**, 4 feet high and marked by a light, is 0.5 mile off the east shore of the island.

(367) **Cypress Island**, 1,530 feet high, steep on the lower slopes and gently rounding at the top, is on the east side of Rosario Strait and opposite Blakely Island. From south the island appears to lie in the middle of Rosario Strait.

(368) A shoal extends about 0.4 mile south from **Reef Point**, the southwest tip of Cypress Island. A lighted buoy is about 0.7 mile south of Reef Point. Vessels rounding the point should not attempt to pass between the buoy and the point as submerged piles and heavy kelp may exist in that area.

(369) **Strawberry Island**, small, low, and wooded, is about 400 yards off the west shore of Cypress Island. Passage east of it is not recommended. An indifferent anchorage may be had in **Strawberry Bay** in 7 fathoms; it is seldom used.

(370) **Lydia Shoal**, covered 4 fathoms and marked on its south side by a lighted gong buoy, is 1 mile east of Obstruction Pass Light. **Peapod Rocks**, marked by a light on the largest rock of the group at the north end, are 1 mile south of Lawrence Point on Orcas Island. This group of islands extends about 1 mile in a northeast direction, some 0.5 mile from the Orcas Island shore, which is fringed with rocks and reefs.

(371) **Buckeye Shoal**, with a least depth of 3½ fathoms, is 1.2 miles south-southeast from **North Peapod** and is marked by a lighted bell buoy. Between this and the north end of Cypress Island are **Cypress Reef**, a dangerous rocky patch marked by a daybeacon at the south end, and **Towhead Island**, 0.3 mile to the southeast and about 400 yards north of the north end of Cypress Island. The passage between the two is used by local vessels, especially those plying between Obstruction Pass and Bellingham Bay.

(372) **Doe Bay** indents the southeast shore of Orcas Island abreast Peapod Rocks. **Doe Bay (Doebay)**, a village on the bay, has a wharf with 12 feet at its end; during strong south winds the wharf should not be approached. Doe Island, 0.6 mile south-southwest of Doe Bay, is a state park.

(373) **Sinclair Island**, north of Cypress Island, is wooded and comparatively low in places; dangerous reefs extend 0.8 mile off the north shore. Portions of **Boulder Reef**, the outermost danger, uncover at half tide; kelp marking the reef is frequently drawn under by the current. The outer end of the reef is marked by a lighted bell buoy. **Urban**, a village at the southwest end of the island, has a pier with depths of 12 feet at the end.

(374) **Lummi Island**, wooded and about 8 miles long, forms the east side of the north end of Rosario Strait, opposite Orcas Island. The north part is low, but in the south part **Lummi Peak** attains an elevation of over 1,600 feet.

(375) **Lummi Rocks** are off the southwest shore of Lummi Island about 3 miles northwest of **Carter Point**, the south tip. They are marked by a light.

(376) Shoals extend over 0.5 mile from **Point Migley**, the northwest extremity of Lummi Island; the northwest edge

of the shoals is marked by a lighted buoy. **Village Point** on the northwest side of Lummi Island is marked by a light. **Legoe Bay** is an open bight southeast of Village Point. A small seasonal marina and boat launch is located in Legoe Bay.

(377) **Clark Island** and **Barnes Island** and the several adjacent rocks and islets lie almost in the middle of Rosario Strait, about 2.5 miles north-northwest of Lawrence Point on Orcas Island. These islands may be passed on either side, giving them a berth of 0.5 mile. A light, 40 feet above water, is on the easternmost island.

(378) **Matia Island**, a wildlife refuge about 4 miles west of Point Migley, is 120 feet high and wooded. The mooring float of a State marine park is in **Rolfe Cove** on the northwest side of the island; water is available. **Puffin Island**, 40 feet high, is about 0.2 mile east of Matia Island. A reef, marked at its southeast extremity by a light, extends east from the southeast end of Matia Island to a point about 0.2 east of Puffin Island. Mariners should not attempt to pass between the islands.

(379) **Alden Bank**, 3 miles north of Matia Island, within the 10-fathom curve, is about 3 miles long in a southeast direction. The shallowest part is near the southeast end of the bank with depths of 2¼ to 4 fathoms covering a considerable area and marked by kelp. The bank is marked by a lighted gong buoy off its northwest end, a lighted bell buoy off its southeast end. Caution is advised due to the heavy concentrations of crab pots and marker buoys, especially in the southern part of the bank.

(380)

Skagit Bay to Bay View

(381) **Skagit Bay**, north part, between the north part of Whidbey Island and the mainland, is entered from the north through Deception Pass and from the south through Saratoga Passage. Skagit River, described in chapter 8, empties into the southeast part of the bay.

(382) The greater portion of Skagit Bay is filled with flats, bare at low water. Shoals extend 100 to 300 yards off the Whidbey Island shore.

(383) Along the shore of Whidbey Island, between it and the edge of the flats, is a natural channel varying in width from 0.2 to 0.5 mile, except at Hope Island, where it narrows to 150 yards. The channel is marked with lights and buoys from Deception Pass to the north entrance of Saratoga Passage. The main channel from Deception Pass south through Skagit Bay has depths of 6 fathoms or more.

(384) Velocity and direction of the current vary throughout this channel. The flood current enters through Deception Pass and sets in a generally south direction. The ebb flows in a general north direction. Southwest of Hope Island, the velocity is 2.3 knots on the flood and 2.0 knots on the ebb. South of Goat Island the velocity is 1.8 knots on the flood and 1.4 knots on the ebb. North of Rocky Point the velocity is 0.6 knot on the flood and 1.0 knot on the ebb. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.he Tidal Current Tables for predictions.

(385) **Similk Bay**, at the north end of Skagit Bay, is used for log-rafting operations and is unsafe for navigation due to numerous submerged piles. **Skagit Island** and **Kiket Island**, 111 feet and 194 feet high, respectively, are just south of Similk Bay opposite the east entrance to Deception Pass. **Hope Island**, 1 mile south of Skagit Island, is fringed with rocks off its east side and marked by a light on its west point. An aquiculture site, marked by private lights, is 0.4 mile north-northeast of Hope Island in about 48°24'28"N., 122°33'33"W. **Ben Ure Spit**, across the channel from Hope Island, is a low projecting point within a shoal extending about 350 yards east.

(386) Good anchorage may be had in **Kiket Bay**, North of Hope Island, and vessels at times make use of this anchorage area while waiting for slack water in Deception Pass.

(387) The narrow channel east of Hope Island is used by small craft with local knowledge. This channel, with a controlling depth of 5 fathoms, passes 130 yards off the Hope Island shore. The bottom is rocky and very irregular, and numerous dangers marked by heavy kelp are between the channel and the Fidalgo Island shore. A summer anchorage for pleasure craft is south of **Sneeoosh (Hunot) Point**.

(388) **Seal Rocks**, 1.4 miles south of Hope Island, are on the east side of the main channel. They are marked by a light.

(389) **Swinomish Channel** is a dredged channel that connects Skagit Bay and Padilla Bay. The entrance channel from Skagit Bay leads east-northeast between two jetties and north of **Goat Island**, thence through **Hole in the Wall**, at the south part of Fidalgo Island, and north to Padilla Bay. Goat Island is rocky, steep and timber covered. The south jetty, submerged except for a small section near Goat Island, extends about 0.6 mile west of the island and is marked by buoys. The north jetty, submerged and marked by a light off its west end, extends west about 1.1 miles from the south end of Fidalgo Island. The channel is marked with lights, daybeacons and lighted and unlighted buoys. A **251.9°** lighted range is on the Skagit Bay side.

(390) Several bridges and overhead power/telephone cables cross Swinomish Channel—minimum clearance of the cables is 72 feet. At the Padilla Bay entrance, the railroad swing bridge has a vertical clearance of 8 feet. The span is left in the open position until a train approaches. Twin fixed highway bridges 0.2 mile south of the swing bridge have a vertical clearance of 75 feet. Just south of La Conner, the highway fixed bridge has a vetical clearance of 75 feet for a center width of 275 feet.

(391) Most of the yachts going between Bellingham and Seattle prefer Swinomish Channel to Deception Pass because of the calmer water and shorter run. The channel

is used extensively for towing logs. Two floats and a launching ramp are under the east end of the highway bridge at the north end of Swinomish Channel.

(392) **La Conner**, near the south end of Swinomish Channel, is the center of a rich agricultural district and has several fish canneries. Many commercial fishing boats operate from here. Piers, wharves and mooring floats are along the entire waterfront, much of which is bulkheaded. A marina at La Conner operates a south and north basin along the east side of the channel about 0.6 and 0.8 mile north of the highway fixed bridge, respectively. The marina has 500 covered and uncovered berths, including about 60 transient berths, and can also provide dry storage. Services available include electricity, gasoline, diesel fuel, water, ice, pump-out facility, launching ramp, marine supplies and an 82-ton marine lift, and complete repairs (hull, engine, electrical) can be made. An extensive log storage and sorting yard is on the west side of the channel opposite the marina basins.

(393) **Guemes Channel**, between Guemes Island on the north and Fidalgo Island on the south, leads east from Rosario Strait to Padilla Bay. The channel, which is about 3 miles long and 0.5 mile wide at its narrowest point, has depths of 8 to 18 fathoms. Lighted buoys mark the channel at the west end.

(394)

Local magnetic disturbance

(395) Differences from normal variation of more than 2° have been reported off the southeast point of Guemes Island.

(396) **Shannon Point**, the south point at the west entrance of Guemes Channel, is low and rounding and marked by a light and a mariner-radio-activated sound signal, initiated by keying the microphone five times on VHF-FM channel 81A. A shoal extends to the northwest from the point.

(397) The current velocity in Guemes Channel exceeds 5 knots at times. It is reported that the flood (east current) is accompanied by an eddy between the east end of Guemes Island and Cap Sante with the west countercurrent extending about 200 yards from the shore along the north side of Fidalgo Island. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(398) **Ship Harbor** is a bight close east of Shannon Point, at the west entrance to Guemes Channel. Washington State ferries to the San Juan Islands and Sydney, BC, depart frequently from facilities on the west side of the bight. Vessels anchoring here in heavy weather should be cautious of dragging anchor because the bottom is not good holding ground.

(399) **City of Seattle Rock**, covered 1½ fathoms, is 200 yards offshore on the south side of the channel, 2 miles east of Shannon Point.

(400) **Anacortes** is on the south shore of Guemes Channel. The port is incorporated as the **Port of Anacortes**. Commerce includes logs and petroleum products.

(401) **Cap Sante Waterway** is a dredged channel leading to a boat basin on the east side of Anacortes. The basin is protected by breakwaters marked by lights on the outer ends. Vessels should give the south breakwater a berth of at least 40 feet to stay in good water. Another dredged channel extends about 0.7 mile southwest from the entrance of Cap Sante Waterway to the waterfront area of Anacortes Industrial Park. A marina is at the north end of the area. Private berthing with water, electricity, storage boxes and telephone connections are available. A haul-out and repair yard with a 35-ton lift is at the south end of the marina.

(402)

Anchorage

(403) General Anchorages have been established off Anacortes. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.)

(404)

Pilotage, Anacortes

(405) Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the west coast of the continental United States (including Alaska) and/or British Columbia. Pilotage is available from the Puget Sound Pilots. See Pilotage, Strait of Juan de Fuca and Puget Sound, indexed as such, early this chapter.

(406)

Towage

(407) Tugs may be arranged through the Marine Exchange of Puget Sound, which monitors radiotelephone VHF-FM channels 9 and 20.

(408)

Quarantine, customs, immigration and agricultural quarantine

(409) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(410) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(411) Anacortes is a **customs port of entry**,

(412)

Harbor regulations

(413) The port is controlled by a port commission and a manager, whose office is on the port wharf at the foot of Commercial Avenue.

(414)

Wharves

(415) The Port of Anacortes operates three deep-draft wharves. The alongside depths are reported depths—for information on the latest depths contact the port authorities. Water is available at the three port wharves.

(416) **Port of Anacortes, Pier No. 1** (48°31'20"N., 122°36'40"W.): wooden pilings, 540-foot berthing space;

33 feet alongside; deck height, 16 feet; forklifts; receipt and shipment of general cargo.

(417) **Port of Anacortes, Pier No. 2** (48°31'20"N., 122°36'24"W.): concrete piling with concrete surface, 1,113-foot berthing space with dolphins; 44 feet reported alongside; deck height, 16 feet; 13½ acres open storage; shipment of petroleum coke and logs; mooring vessels. The wharf is marked on each end by a private light.

(418) **Port of Anacortes, Curtis Wharf** (48°31'20"N., 122°37'00"W): steel piling with concrete surface, 313-foot berthing with dolphins; 28 feet reported alongside; deck height, 16 feet; one acre of unpaved open storage.

(419) **Note:** Considerable current sets along the faces of these wharves (east flood, west ebb); it is advisable to dock at slack water or against the current.

(420)

Supplies

(421) Gasoline, diesel fuel and other small-craft supplies may be obtained at the port boat haven. Ice and marine supplies are available in the city.

(422)

Repairs

(423) The largest repair facility in the area is on the south side of Guemes Channel (48°31'18"N., 122°36'35"W.) The yard has a 5,000-ton capacity lift, a 314-foot dry dock with a 9,000-ton capacity and a 600-ton marine railway. Machine and carpentry shops are also available, and complete hull and engine repairs can be made. A marina on the east waterfront of Anacortes, south of Cap Sante Boat Haven, can provide complete repairs (hull, engine, electrical) and has a 55-ton marine lift. A large boatyard about 1.5 miles east of Shannon Point (48°30'43"N., 122°38'44"W.) is also equipped for complete repairs with two marine railways having a maximum capacity of 2,000 tons. Complete repairs can also be found at a repair shop in the Cap Sante Boat Haven.

(424)

Small-craft facilities

(425) Cap Sante Marina, Port of Anacortes, has up to 200 permanent and transient berths. Services and supplies available include gasoline, diesel fuel, electricity, pumpout facility water, ice and a 13-ton marine lift. A harbormaster assigns berths and can be contacted on VHF-FM channel 66A.

(426)

Communications

(427) The port has an airport about five miles west of the city center. A private automobile ferry provides regular service to Guemes Island. Washington State Ferries provide service to the San Juan Islands and Sydney, BC, from facilities at Ship Harbor Bight.

(428) **Fidalgo Bay**, a shallow arm of Padilla Bay, extends south from the east end of Guemes Channel.

(429) **Padilla Bay**, between the mainland and the north part of Fidalgo Island, is largely occupied by drying flats, but deep water is east of Anacortes and Guemes Island. Entrance to the bay from Rosario Strait is through Guemes Channel; a passage east of Guemes Island leads into Padilla Bay from the north.

(430) **March Point** is a low peninsula between Fidalgo and Padilla Bays. The two long Tesoro and Shell Refinery piers extend north to deep water from the north end of the point. The west pier, owned by Shell Oil, has a 7,150-foot approach trestle and deck height of 22 feet and is marked at the east and west ends by private lights. The north side of the pier has 1,130 feet of berthing space with dolphins and depths of 45 feet alongside; the south side of the pier has 735 feet of berthing space with dolphins and depths of 45 feet reported alongside.

(431) The Tesoro Pier, 0.5 mile east of the Shell Pier, has a 3,466-foot approach trestle, deck height of 22 feet, and is marked at the east end by a private light and at the west end by a private light and sound signal. The north side of the pier has 974 feet of berthing space with dolphins and a depth of 45 feet reported alongside; the south side of the pier has 820 feet of berthing space with dolphins and a depth of 38 feet reported alongside.

(432) About 200 yards from the Tesoro Pier, when making a starboard landing, a vessel is set by the current onto the pier, and great care must be taken to avoid being set hard onto the pier. The use of an anchor in docking is advisable. The current is at times pronounced when docking at the inside berth, and care must be taken to avoid being set onto the shoal to the south. Range markers facilitate docking. Less current is generally experienced at the Tesoro Pier; however, the use of an anchor is recommended when making a starboard landing.

(433)

Local magnetic disturbance

(434) Differences from normal variation of 2° have been observed in the vicinity of March Point.

(435) **Bay View**, a village across the flats of Padilla Bay ESE from March Point, has no facilities except for a small boat repair shop.

(436)

William Point to Bellingham

(437) **William Point**, 100 feet high and marked by a light, is the west point of **Samish Island**, which forms the north side of Padilla Bay. The point is wooded and, because of the low land east of it, appears as an island although it is connected with the mainland. It is marked by a light.

(438) **Bellingham Channel**, deep between Cypress and Guemes Island, is the most direct route to Bellingham Bay from Anacortes. Between Cypress, Guemes and Sinclair Islands the tidal currents have considerable velocity; however, between Sinclair and Vendovi Islands the velocities are considerably less. Bellingham Channel Lighted Buoy 6, about 300 yards northwest of Clark Point, was reported to submerge during periods of strong currents. Lighted buoys mark the east side of Bellingham Channel and a light is on the west side of the channel off the east side of Cypress Island.

(439) **Clark Point**, at the northern end of Bellingham Channel, is a steep bluff forming the north point of Guemes Island. A reef extends 300 yards north from the point. A marina, about 1.6 miles southeast of Clark Point, has gasoline. A launching ramp and a hoist that can handle small craft to 18 feet is available. **Vendovi Island** is 1.8 miles northeast of Clark Point. Shoaling to 4 fathoms, 0.4 mile southwest of Vendovi Island, is marked by a buoy. A light marks the east side of the island. A private light is in a small cove on the northwest side of Vendovi Island.

(440) Deep-draft vessels approaching Bellingham Bay from north use the channel between Lummi and Sinclair Islands. With the exception of Viti Rocks and the dangers north of Sinclair Islands, this channel is free of danger. The fairway is deep and has a width of 0.6 mile at its narrowest part, between **Viti Rocks** and **Carter Point**, the south tip of Lummi Island. The northwesternmost Viti Rock is 35 feet high, 200 yards long, and marked by a light. A lighted bell buoy marks the shoal extending south-southeast from the southernmost rock.

(441) **Smugglers Cove**, on the east side of Lummi Island, is 2.5 miles north of Carter Point. A large stone quarry with mooring facilities for rock barges is prominent.

(442) **Hale Passage**, 6 miles long, separates Lummi Island from the mainland to the northeast. Depths in the passage vary from 2 fathoms on the bar near the northwest end to 20 fathoms in the southeast end of the channel.

(443) **Lane Spit**, on the west side of Hale Passage 1.5 miles southeast of Point Migley, is marked by a lighted buoy. A light is on the east side of Lummi Island 3 miles southeast of Lane Spit.

(444) **Lummi Island**, a village on the west side of Hale Passage, is 1 mile south of Lane Spit. The village and island are linked to the mainland at **Gooseberry Point** by an automobile ferry. The ferry dock at Lummi Island is marked by a private light. A pier, adjacent to the ferry slip at Gooseberry Point, has a 6-ton hoist that can handle craft 28 feet long; gasoline, water, ice, marine supplies and hull and engine repairs are available. Depths of 4 feet are reported off the end of the pier at the hoist.

(445) From **Point Francis**, the rounded high bluff on the southeast side of **Portage Island**, a shoal and broken ground extend south-southeast to Eliza Island. The depths range from 5 to less than 1½ fathoms about midway between the point and the island. A lighted buoy is about 300 yards south of the 1½ fathom spot.

(446) **Bellingham Bay**, from William Point to the head, is about 12 miles long and 4 miles wide. Anchorage may be obtained almost anywhere in the bay south of the flats; the depths, over the greater portion, range from 6 to 15 fathoms. Because of the mud bottom, vessels are apt to drag anchor in heavy weather. Recreational and commercial fishing is popular in this area. Numerous crab pots fill the bay during crabbing season.

(447) **Samish Bay**, separated from Padilla Bay by Samish Island, with flats bare for a considerable distance at low water, forms the southeast part of Bellingham Bay. Extensive oyster culture is carried on in the east portion of the bay.

(448) **Eliza Island**, low and partly wooded, is 1 mile northeast of Carter Point. The island is well populated with numerous private boat facilities along its shores. Shoals fringe most of the island, which should not be approached closer than about 400 yards. A rock covered 1 fathom is some 500 yards north of the west tip of the island.

(449) Vessels anchoring between Lummi Island and Eliza Island during heavy weather should be cautious of dragging anchor because of the poor holding ground.

(450) **Eliza Rock**, marked by a light, is off the south end of Eliza Island.

(451) **Chuckanut Bay**, which indents the east shore of Bellingham Bay, is a cove affording shelter to small craft. Relatively free of obstructions, the bay does include an island and a dangerous chain of rocks near the entrance. **Chuckanut Rock** is located in the north part of the bay and has rocks awash to the north and south. Shoal areas surround **Chuckanut Island** to the west and south; the island should not be approached closer than 200 yards. The small-craft launching ramp of **Larabee State Park** is at **Wildcat Cove**, 0.6 mile southeast of **Governors Point** at the southwest entrance to Chuckanut Bay.

(452) **Post Point**, on the northeast side of Bellingham Bay, is 1.5 miles north-northwest of the north entrance point of Chuckanut Bay. A shoal, marked by a lighted buoy, extends about 450 yards west from the point. Starr Rock, covered 1 fathom, is about 200 yards offshore and is marked by a buoy. Vessels should not pass inside the buoy.

(453) **Bellingham** is at the head of Bellingham Bay on the east shore. Debris and several submerged pilings and dolphins exist along the formerly industrialized areas of the Bellingham waterfront between Squalicum Creek Waterway and the piers of South Bellingham; mariners are urged to use caution when navigating in or around this area.

(454) The south terminal of the Port of Bellingham, on the north side of Post Point at South Bellingham, includes the Alaska State Ferry Terminal Dock and a boat ramp. Bornstein Seafoods is on the I and J Street Waterway; fishing boats unload at this wharf. There are several other light industry and commercial facilities around the harbor.

(455) **Whatcom Creek Waterway** at the southeast end of Bellingham Harbor, **Squalicum Creek Waterway** at the northwest end of the harbor and **I and J Street Waterway** in between provide dredged channel access to the port facilities at Bellingham. Bellingham Yacht Harbor is adjacent to and southeast of Squalicum Creek Waterway; the yacht harbor is described later in this chapter.

(456)

Prominent features

(457) Particularly prominent at night is the lighted sign HERALD on the newspaper building (48°44'51"N.,

122°28'44"W.) and the lighted sign ICE on the Bellingham Cold Storage building (48°45'28"N., 122°30'37"W.). Also prominent are the stack at the cement plant 1.5 miles northwest of I & J Street Waterway Light 1 and the stack 0.3 mile to the east and the church spire near the Bellingham waterfront.

(458)

Channels

(459) A **federal project** provides for a depth of 30 feet in Whatcom Creek Waterway Outer and Middle Reaches; thence 18 feet through the Inner Reach, 26 feet in Squalicum Creek Waterway, and 18 feet in I and J Street Waterway. Depths in Whatcom Creek Waterway are usually near project depth to the port wharf; the controlling depth for Middle and Inner Reach of this waterway may be considerably less than project depth. The controlling depth for Squalicum Creek Waterway and I and J Street Waterway may also be considerably less than project depth. (See Notice to Mariners and latest editions of the chart for controlling depths.)

(460) Squalicum Creek Waterway is marked by lighted buoys and a lighted range. I and J Street Waterway is marked by lights and buoys. Whatcom Creek Waterway is marked by a lighted range. The port authority maintains depths of more than 30 feet alongside the Whatcom Creek Waterway port wharf and also dredges the small-craft basin.

(461)

Anchorages

(462) The bottom mud is a thin accumulation over hardpan, and is not good holding ground in heavy weather. A **general anchorage** and an **explosives anchorage** are in the bay. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.) Good holding ground may be found just north of **Governors Point**, near the south end of Chuckanut Bay.

(463)

Pilotage, Bellingham

(464) Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the west coast of the continental United States (including Alaska) and/or British Columbia. Pilotage for Bellingham is provided by the Puget Sound Pilots. (See Pilotage, Strait of Juan de Fuca and Puget Sound, indexed as such, early this chapter.)

(465)

Towage

(466) Tugs to 4,000 hp are available at Bellingham and larger tugs at Seattle. Arrangements for tugs should be made in advance through ships' agents or through the Marine Exchange of Puget Sound. Tugs monitor and use as a working frequency VHF-FM channel 7.

(467)

Quarantine, customs, immigration and agricultural quarantine

(468) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(469) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(470) Bellingham is a **customs port of entry**.

(471)

Coast Guard

(472) Bellingham Coast Guard Station is on the I and J Street Waterway.

(473)

Harbor regulations

(474) The city fire chief is responsible for the prevention of hazardous fire conditions in the harbor. The Port of Bellingham directs the operation of the North Terminal on Whatcom Creek Waterway, the South Terminal at Post Point and the yacht harbor east of Squalicum Creek Waterway. The port's general offices are located north of the I and J Street Waterway near the boat ramp (360–676–2500).

(475)

Wharves

(476) The Port of Bellingham operates two deep-draft terminals, one at South Bellingham (Fairview) and one on Whatcom Creek Waterway. The alongside depths of the facilities described are reported depths. (Contact the Port of Bellingham or the private operator for the latest depths.)

(477) **Port of Bellingham, Whatcom International Shipping Terminal, Main Wharf** (48°44'43"N., 122°29'39"W.): berthing space, 1,370 feet; depth alongside, 31 feet; deck height, 15½ feet; owned by Port of Bellingham and operated by Port of Bellingham and Bellingham Stevedoring Co.

(478) **Note:** If a tug is not furnished, the use of anchor in docking is recommended when winds prevail. Vessels backing out of the Whatcom Creek Waterway channel must stay in the axis of the channel until abeam of Starr Rock Buoy to avoid shoal water on either side.

(479) Bellingham Cold Storage and several seafood facilities are on the east side of Squalicum Creek Waterway. Fishing boats and an occasional ship unload fish in the area. A plywood mill is on the west side of the waterway.

(480)

Supplies

(481) Complete marine supplies are available for small craft and some for large vessels. Fuel oil is available by truck from Seattle.

(482)

Repairs

(483) Facilities for oceangoing vessel repair are located in Seattle, WA, and Vancouver, BC. Complete repair

facilities are available for small craft. A propeller works, several machine shops, engine and deck-gear suppliers, and an electronic repair company are along the Bellingham waterfront. The larger of two repair yards is just west of the Port of Bellingham South Terminal. This yard has a machine shop and a marine railway that can handle vessels up to 700 tons, 120 feet long or 34 feet wide for hull repairs. Another repair yard at Squalicum Boat Harbor has a marine railway that can handle vessels up to 290 tons, 125 feet long or 24 feet wide for hull repairs. Several local machine shops in the area do engine repair work for the two repair yards.

(484) **Squalicum Boat Harbor**, adjacent to and southeast of the Squalicum Creek Waterway, is protected by breakwaters on its southeast and southwest sides. The harbor can be entered from the southeast between the two breakwaters or from the northwest from the Squalicum Creek Waterway. The ends of the breakwaters at the southeast entrance are marked by lights. The entrance from Squalicum Creek Waterway is marked by a light. Depths inside the harbor are 9 to 12 feet.

(485) Berths for about 1800 pleasure craft and fishing boats are in the harbor. A guest float is maintained near the **harbormaster's** office on the northeast side of the harbor (360–676–2542). Gasoline, diesel fuel, electricity, water, ice and marine supplies are available. Several marine equipment repair and fishing supply firms are in the area north of the southeast entrance to the harbor.

(486) A small-craft basin, protected by a breakwater on its south side, is north of I & J Street Waterway. The basin can be entered from I & J Street Waterway. Depths of 9 to 12 feet are in the basin. A boat ramp is on the east side of the basin.

(487)

Communications

(488) Bellingham is served directly by one major railway and has connections to another. It is on U.S. Interstate Highway 5 and is a hub for three state highways. The airport is about 2.5 miles northwest of the city.

(489)

Strait of Georgia

(490) The **Strait of Georgia** extends some 115 miles northwest from its south end, in the vicinity of Alden Bank, and is bordered on the west by Vancouver Island, BC, and on the east by the mainland of Canada. General depths are great and in many places exceed 200 fathoms.

(491) Vessels bound to the Strait of Georgia from Puget Sound should give the southwest shore, between Boundary and Active Passes, a berth of at least 2 miles because it is fringed with dangers. Point Roberts, on the north shore, affords an excellent landmark.

(492) A **Vessel Traffic Service** has been established in the Strait of Juan de Fuca, east of Port Angeles, and in the adjacent waters. (See **33 CFR 161.1** through **161.55**, chapter 2, for regulations, and the beginning of this chapter for additional information.)

(493)

Currents

(494) The tidal currents in the Strait of Georgia are not nearly as strong as those in the channels leading to it from the Strait of Juan de Fuca. The currents in the Strait of Georgia attain a velocity of 3 knots at times, particularly during the freshets of the summer, when the Fraser River discharges a large volume of freshwater. This fresh water, which has a peculiar milky color, flows across the banks at the mouth of the river and almost directly toward Active Pass. Frequently this water extends entirely across the strait and at times reaches into the inner channels along the shore of Vancouver Island; at other times, it reaches only to the middle of the strait and forms a striking contrast with the deep blue water of the Strait of Georgia.

(495) In the middle of the strait, north of Patos and Saturna Island, the velocity of the current varies from 1 to 3 knots, seldom exceeding the latter. The velocity is still less northwest of the mouth of the Fraser River, where the strait is about 15 miles wide. The tidal currents southeast of the mouth of Fraser River are slightly stronger off the south shore than off the north shore. The currents within a line joining Point Roberts and Sandy Point are scarcely felt, and vessels can take advantage of this, especially since good anchorage can be obtained in this vicinity.

(496) The tidal currents are stronger close to the south shore, which is swept by the rapid currents out of Active, Porlier and Gabriola Passes. The south-going tidal current in the Strait of Georgia sets strongly southwest into Active Pass. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(497)

Weather, Strait of Georgia

(498) In the open waters of the Georgia Strait, winds are usually either northwesterlies or southeasterlies. Southeasterlies are more frequent from October through March. Close to the British Columbia coast, they are often deflected and become easterlies. While the Georgia Strait is somewhat sheltered from the sea by the mountains of Vancouver Island, gales still occur three or four times per month. While some are associated with the intense storms of winter, particularly dangerous gales occur in clear weather. These are locally known as **Squamish winds**. They occur periodically in most of the main inlets in winter. They come up suddenly and may exceed 50 knots. Squamishes occur when a vast pool of very cold air accumulates on the interior plateau of British Columbia. A pressure fall at sea will trigger a movement of this air toward the coast. This flow is intensified by the direction and narrowness of the inlets. As the air reaches the mouths of these inlets, it spreads out over the strait and the wind speeds diminish. Winds rarely remain strong 15

to 20 miles away. Howe Sound, Jervis, Toba and Bute Inlets all experience squamishes each winter.

(499) In summer, winds in the Rosario and Haro Straits are usually southwesterlies. Summer breezes are variable and baffling in the San Juan Islands. North of Point Roberts, in the middle of the Georgia Strait, the prevailing winds are northwesterlies. Gales are uncommon, particularly in mid-summer, when storm activity reaches a lull.

(500) Georgia Strait is more affected by land fogs than sea fogs. These fogs form on cool nights under clear skies and light winds and usually dissipate by early afternoon. These conditions are most prevalent from September through February. During prolonged periods of cold, clear, calm weather, these fogs may persist for several days at a time. Land fog is more local than sea fog. Visibilities fall below 0.75 mile (1.4 km) on about 20 days annually, but this can increase to 60 days in preferred locations like the flat land in the delta of the Fraser River where the low water temperatures of the river help produce the fog.

(501)

Sandy Point to Blaine Harbor

(502) **Sandy Point**, about 2.5 miles north of Lummi Island and at the northwest side of **Lummi Bay**, is the site of an extensive housing development fronting a privately dredged basin. The entrance to the basin is marked by two lights.

(503) Between Sandy Point and **Cherry Point**, about 4.5 miles northwest, the shore of the mainland forms a bight in which there are no off-lying dangers. The piers of two large oil refineries and an aluminum smelter are in the bight. A **general anchorage** is off Cherry Point. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.)

(504) The 1,800-foot pier of the **Tosco Refining Company** is 2.4 miles north of Sandy Point. The L-shaped pier has 883 feet of berthing space and reported depths of 42 to 53 feet at the outer face and 722 feet of berthing space and depths of 35 feet at the inner face. Deck height is 18 feet. The pier is used for the receipt of crude oil and shipment of petroleum products and for bunkering vessels. The pier is marked by private lights and a sound signal. An oil refinery tower 0.8 mile inshore is prominent. A portside-to landing is preferred when docking at the outer berth during south winds and a flood tide; the use of an anchor is advisable.

(505) The long loading wharf and pier of the **Intalco Aluminum Corporation** is 0.8 mile north of the Tosco Refining Co. pier and 3.2 miles north of Sandy Point. The wharf has 950 feet of berthing space with dolphins and depths of 36 feet alongside. Deck height is 22 feet. The wharf is used for the receipt of alumina and liquified petroleum gas. Private lights and a sound signal are on the wharf, and two private lighted mooring buoys are just off the wharf. Vessels normally dock starboardside-to; however, a portside-to landing is required for vessels having their bridge forward of a cargo hold and with less than 30 feet between the hold and the rear of the pilothouse.

(506) The **BP pier**, with a 2,400-foot angular approach trestle, is at Cherry Point, about 4.5 miles north-northwest of Sandy Point. The pier has a north and south dock, each with 1,000 feet of berthing space and reported depths of 65 feet alongside; deck height is 22 feet. The face dolphins are marked by private lights. The facility is used for receipt of crude oil, shipment of petroleum products and bunkering vessels.

(507) The BP pier has rigid loading arms for the transfer of liquid cargo; chicksan rigs are not required on vessels. Tugs are available on advance notice from Bellingham, and a special gangway is provided in lieu of the ship's gangway. Each berth uses an oil boom deployment system that encircles a vessel after it is moored. This system includes the use of deployable buoys, which extend several hundred feet from the dock face and are anchored to the seabed—these buoys should be given a wide berth. Caution is necessary during flood currents as they tend to set vessels towards the pier face.

(508) **Point Whitehorn**, about 2.8 miles northwest of Cherry Point, is a conspicuous, bold bluff about 150 feet high; its seaward face is a steep cliff of white clay.

(509) **Birch Bay**, on the east side of the Strait of Georgia between Point Whitehorn and **Birch Point**, is an open bight. It affords some protection, in 4 to 5 fathoms, from north, but is open to the southwest. Flats that bare occupy a considerable area at the head of the bay. A number of resorts are along the shore. A mooring basin and private marina are on the north side of the bay; the basin entrance is marked by lights and daybeacons.

(510) The **International Boundary** between the United States and Canada is marked by a series of lights where it crosses Semiahmoo Bay and Boundary Bays.

(511) The **Peace Monument** on the boundary is a white masonry arch, facing north and south, about 28 feet above the ground. It is a distinctive landmark as it stands alone and shows offshore against a background of dark trees.

(512)

Caution

(513) The International Navigation Rules govern in all Canadian waters.

(514) **Point Roberts** is the prominent feature in approaching from either north or south. The east face is about 180 feet high and is composed of white, vertical bluffs. The point is well wooded, and because of the low land behind it, is usually made as an island, especially from south. The southwest extremity of the point is marked by a light. Extensive night drift-fishing in the area from Point Roberts to Blaine makes night navigation difficult. A marina at Point Roberts provides transient berths, gasoline, diesel fuel, ice and pump-out. An alongside depth of 6 feet was reported in 2010. Complete repair services with a 35-ton marine lift are available.

(515) Point Roberts is a **customs port of entry**.

(516) Temporary anchorage may be obtained west of Point Roberts in 8 fathoms, good holding ground, about 1 mile 321° from Point Roberts Light. The position is about 0.3 mile from the edge of Roberts Bank; vessels should not anchor any farther north.

(517) **Semiahmoo Bay** has its entrance between Birch Point and Kwomais Point, about 5 miles north-northwest. It is connected with Drayton Harbor by a narrow channel. The east part of the bay is shoal with extensive sand flats in the southeast part. Anchorage may be had in the bay in 3½ to 9 fathoms on the northwest side of Semiahmoo Spit, affording protection from south and southeast storms.

(518) **Drayton Harbor** is a small cove formed by **Semiahmoo Spit**, the extension of a sandspit north of Birch Point. It is about 2 miles long, but flats that bare at low water occupy a large area in the east and south parts of the harbor. A light and a buoy about 700 yards to the west-southwest are near the north end of the extensive sand flats off the northwest side of Semiahmoo Spit.

(519) The channel from Semiahmoo Bay to the cannery wharf on Semiahmoo Spit and to Blaine Harbor, east of the cannery wharf, has a controlling depth of about 21 feet; greater depths are possible with local knowledge. The 15-foot spot about 130 yards north of the cannery wharf, and the 9-foot spot about 300 yards east of the east end of the wharf should be avoided.

(520) **Blaine Harbor**, at Blaine, is a large and well-equipped small-boat basin near the entrance on the north shore of Drayton Harbor. The harbor is an active fishing center operated by the Port of Bellingham. A light marks the outer end of the breakwater that protects the basin on the south side. In 1981, depths through the entrance and in the basin were 11 feet except for shoaling along the edges. In 1999, the channel was reported as not being maintained. The harbor has berths for about 400 boats; 200 additional berths are being planned by the Port of Bellingham. A **harbormaster** is on duty in the harbor. Fish-processing plants and a fish reduction plant are in operation. Gasoline, diesel fuel, electricity, water, ice, launching ramp, dry storage facilities, marine supplies and pump-out facility are available in the harbor. A repair yard with a marine railway that can handle vessels to 300 tons, 80 feet long, or 21 feet wide is also available; hull repairs can be made. A depth of 2 feet has been reported at the entrance to the marine railway.

(521) **Blaine**, a small town on the northeast shore of Drayton Harbor, is a **customs port of entry.**

(522)

Quarantine, customs, immigration and agricultural quarantine

(523) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(524) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(525) The United States-Canadian boundary line passes through the north edge of town. The Burlington Northern Railroad serves the town.

(526)

Tides and currents

(527) The mean range of **tide** at Blaine is 5.9 feet, and the diurnal range of tide is 9.5 feet.

(528) The average velocity of the **current** in Drayton Harbor entrance is 1.0 knot. The flood sets southeast and the ebb northwest.

(529) Several buildings, an elevated tank and a small-boat basin, constituting the town of **Semiahmoo**, are at the north end of the sandspit.

(530) To enter Drayton Harbor and Blaine Harbor from Semiahmoo Bay, pass about 300 yards north of Semiahmoo Bay Light 4, and steer a course about midway between the cannery wharf and the Blaine Harbor boat basin taking care to avoid the 15-foot spot about 130 yards north of the cannery wharf. After passing the cannery wharf, favor the north side of the channel to avoid the 9-foot spot east of the east end of the cannery wharf and the spit east-southeast of the cannery, and make Blaine Harbor or anchor as convenient in Drayton Harbor. Anchoring in the shoal water of Drayton Harbor is not recommended because the floating debris and vegetation may clog a vessel's underwater intakes.

(531) The depths in Drayton Harbor and its entrance are subject to change.

(532)

Strait of Georgia, East Shore

(533)

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(534) Additional detailed descriptions for this area are given in the **Canadian Hydrographic Service Sailing Directions, Juan de Fuca Strait and Strait of Georgia (PAC 201)** and **Pub. No. 154, Sailing Directions (Enroute) for British Columbia**, published by the National Geospatial-Intelligence Agency.

(535) **Boundary Bay** indents the mainland between **Kwomais Point**, the north entrance point of Semiahmoo Bay, and Point Roberts. The greater portion of the bay is filled with flats, bare at low water.

(536) Anchorage in 5 fathoms with good holding bottom is available about 1 mile east-northeast of the southeast point of Point Roberts, affording protection from west and northwest storms.

(537) Except for **English Bluff** about 1.5 miles north of **Boundary Bluff**, the coast north to Point Grey is low, featureless and barely discernible from the Strait of Georgia.

(538) A causeway extends about 1.8 miles southwest from English Bluff and terminates in a ferry landing; a light and sound signal are at the landing. A detached breakwater, about 0.2 mile long and marked by a light at its west end, is just south of the ferry landing. Just northwest of the ferry landing are the long pier and facilities used for

bulk loading and export of coal by bulk carriers. These facilities, although operated by private interests, are owned by the Port of Vancouver.

(539) **Roberts Bank** and **Sturgeon Bank** are formed by the alluvial deposits of the Fraser River. These banks dry in patches and in places extend 4.5 miles offshore. They are steep-to: soundings of 50 fathoms will be found very close to the edge of the bank. Vessels proceeding along the edge of Roberts Bank should not bring the south extremity of Point Roberts to bear more than 114°.

(540) The cooperation of ships' masters is requested to avoid navigating their vessels between the charted traffic separation scheme and Sturgeon Bank. This is in the interest of the fishing industry and the reduction of damage to nets and fishing vessels by ships passing close to the fishing ground.

(541) **Fraser River** enters the Strait of Georgia about 10 miles northwest of Point Roberts. The main entrance to river is between two lighted buoys west of Sand Heads Light, which is near the outer end of Steveston Jetty—a shorter jetty is on the south side of the main entrance. The channels in Fraser River are constantly changing, and the aids to navigation that mark them are moved accordingly.

(542) **Pilotage** for the Fraser River is compulsory for vessels with a gross registered tonnage greater than 350 tons. For specific details on pilotage, please consult the **Canadian Hydrographic Service Sailing Directions, Jaun de Fuca Strait and Strait of Georgia**.

(543) **Steveston** on **Lulu Island**, about 1.0 mile north of **Pelly Point**, the south entrance point to Fraser River, extends along the bank of the river for about 1 mile. Several canneries and wharves are here.

(544) The tidal **currents** in Fraser River are affected by the weather in the Strait of Georgia, the rains and the amount of water in the river. In the channel above Pelly Point during freshets, the flow, which may be checked by the rise of the tide, is almost continuously toward the mouth of the river. During the freshets the greatest velocity occurs 2 to 3 hours before low water and may amount to 5.5 knots. After the freshets are over, the greater velocity occurs on the average about 1½ hours before low water and is reduced to 3 or 4 knots. During the low stage of the river there is a flood and ebb on all the larger tides; the flood begins soon after high water and commences first along the bottom.

(545) At New Westminster the flood current is unable to reverse the river current except in the autumn. The river is seldom frozen over here; loose pieces of ice, which do no damage to shipping, occasionally come down the river.

(546) **New Westminster** is on the north bank about 20 miles above the entrance. Several canneries and sawmills are here, and a conspicuous grain elevator stands about 1 mile below the city, which now has grown into the expanded Vancouver suburbs. New Westminster Harbor is a major Canadian port. The port is mainly used by bulkcarriers and cargo vessels. The principal exports are lumber, plywood, general cargo, concentrates, wheat, zinc, lead, fertilizer, paper products and salmon. There are many wharves; most of them have warehouses and rail connections. Depths alongside range from 25 to 35 feet.

(547) New Westminster is a **Canadian customs port of entry**.

(548) **North Arm** of Fraser River is entered 0.5 mile southwest of Point Grey. Depths of 15 feet are maintained from the mouth to the northeast extremity of Sea Island and 10 feet from this point to Poplar Island. From Poplar Island (49°12'N., 122°56'W.), to the main river channel the depth is again 15 feet.

(549) **Point Grey**, the south entrance point of **Burrard Inlet**, is a rounded bluff forming the west termination of a wooded promontory. The point is very conspicuous from south. The buildings of the University of British Columbia are conspicuous on the high land above the point. **Point Atkinson**, the north entrance point of Burrard Inlet, is comparatively steep-to. It is marked by a light.

(550) Tide rips occur frequently off Point Atkinson, caused by the meeting of the tidal currents from Burrard Inlet and Howe Sound.

(551) **Spanish Bank** extends 0.6 mile north from the west half of the promontory terminating in Point Grey. The bank, which dries and is marked by lights, is composed of hard sand and is steep-to. West winds when it is marked by a line of small breakers.

(552) **Vancouver Harbor** includes all the tidal waters in Burrard Inlet east of a line drawn from Point Grey to Point Atkinson. A secure, deep harbor, easily entered by the largest vessel, is formed between First and Second Narrows, and on its shores is the city of Vancouver, the third largest city of Canada and the commercial metropolis of British Columbia. A U.S. Immigration station is in the city. Vancouver is a **Canadian customs port of entry**. Complete marine supplies, repair facilities, and services for small craft and the largest ships are available.

(553) The three principal anchorages in Vancouver Harbor are English Bay, the outer anchorage; Vancouver, above the first narrows; and in Indian Arm.

(554)

Belle Chain Islets

(555) The coast between East Point and Active Pass should be given a berth of at least 2 miles because it is fringed with dangers.

(556) **Belle Chain Islets** is a narrow rocky ridge 2 miles long lying parallel with several islets and drying rocks along the northeast shore of **Samuel Island**. Foul ground extends about 0.3 mile southeast from **Edith Point**, the northeast extremity of **Mayne Island**. A rocky patch with two heads, each of which covers 4 feet, is about midway between Edith Point and the northwest end of Belle Chain Islets.

(557)

Salamanca Point to Ballenas Islands

(558) **Salamanca Point**, on the southeast side of **Galiano Island**, is conspicuous from both southeast and northwest. The point is rocky, and the trees on it grow down nearly to the highwater mark.

(559) **Porlier Pass**, 12 miles northwest of Salamanca Point, separates Galiano Island and **Valdes Island** and connects **Trincomali Channel** with the Strait of Georgia. The pass has a minimum width of about 800 yards, but the navigable channel is narrow and the tidal currents attain velocities up to 9 knots.See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book. It is advisable to employ a pilot on the first visit to this pass.

(560) **Gabriola Pass** is between the northwest end of Valdes Island and Gabriola Island, connecting the northwest end of **Pylades Channel** to the Strait of Georgia. This pass is not recommended for general navigation, but only for those with local knowledge. The velocity of the current in the pass is 4.0 knots, setting east on the flood and west on the ebb. The current may attain a velocity of 8 knots. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(561) The outermost danger off Gabriola Pass, **Thrasher Rock**, a detached steep-to rock that dries, is 2.3 miles northeast of the pass entrance. A light is on the rock. Shoreward of it are many rocks and reefs, including **Gabriola Reefs**; caution is essential.

(562) **Entrance Island**, 0.4 mile north of Orlebar Point, the northeast point of Gabriola Island, is marked by a light. It is the guide to the entrance to **Nanaimo**, a Canadian port of entry. **Fairway Channel**, the easternmost of the channels in the north approach to Nanaimo, is deep and has a navigable width of 0.8 mile.

(563) Off the entrance to **Nanoose Harbor**, 13 miles west-northwest of Entrance Island, there are many islets and reefs and, unless making for Nanoose, the navigator should keep 3 miles offshore until he raises the **Ballenas Islands** 5.5 miles northwest of the Nanoose Harbor entrance.

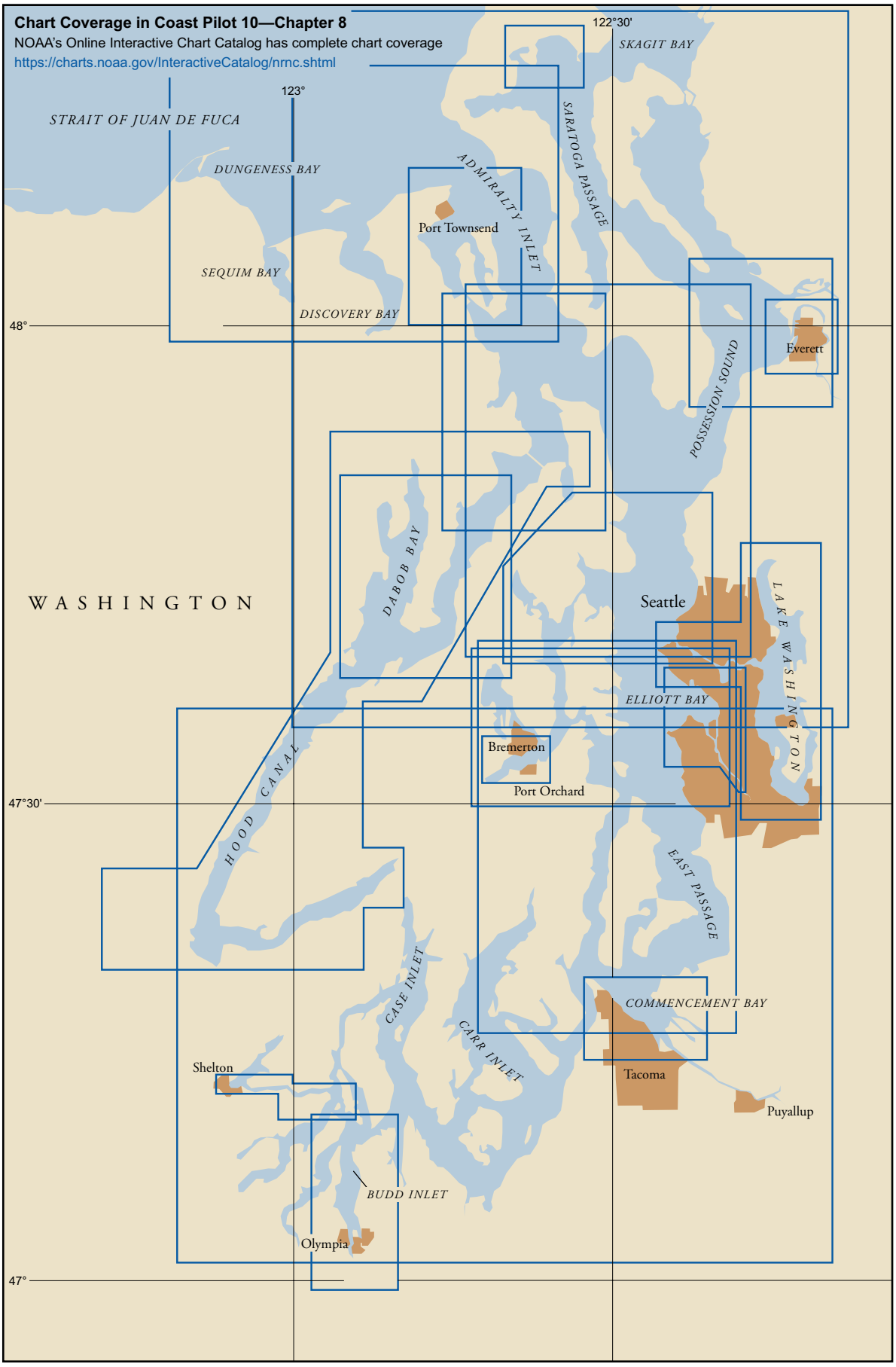
Chart Coverage in Coast Pilot 10—Chapter 8
NOAA's Online Interactive Chart Catalog has complete chart coverage
https://charts.noaa.gov/InteractiveCatalog/nrnc.shtml
122°30'
123°
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47°30'
47°
STRAIT OF JUAN DE FUCA
DUNGENESS BAY
SEQUIM BAY
DISCOVERY BAY
ADMIRALTY INLET
SARATOGA PASSAGE
SKAGIT BAY
Port Townsend
Everett
POSSESSION SOUND
DABOB BAY
WASHINGTON
Seattle
LAKE WASHINGTON
ELLIOTT BAY
Bremerton
Port Orchard
HOOD CANAL
EAST PASSAGE
CASE INLET
CARR INLET
COMMENCEMENT BAY
Shelton
Tacoma
Puyallup
BUDD INLET
Olympia

Puget Sound, Washington

(1) This chapter describes Puget Sound and its numerous inlets, bays and passages and the waters of Hood Canal, Lake Union and Lake Washington. Also discussed are the ports of Seattle, Tacoma, Everett and Olympia, as well as other smaller ports and landings.

(2)

COLREGS Demarcation Lines

(3) The International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS) apply on all the waters of Puget Sound and adjacent waters, including Lake Union, Lake Washington, Hood Canal and all tributaries. (See **33 CFR 80.1395**, chapter 2.)

(4)

Puget Sound

(5) **Puget Sound**, a bay with numerous channels and branches, extends about 90 miles south from the Strait of Juan de Fuca to Olympia. The north boundary of the sound is formed, at its main entrance, by a line between Point Wilson on the Quimper Peninsula and Point Partridge on Whidbey Island; at a second entrance between West Point on Whidbey Island, Deception Island and Sares Head on Fidalgo Island; at a third entrance, at the south end of Swinomish Channel between Fidalgo Island and McGlinn Island. Puget Sound was named by George Vancouver for Lieutenant Peter Puget, who explored the south end in May 1792. Deep-draft traffic is considerable in the larger passages, and small craft operate throughout the area. Unusually deep water and strong currents characterize these waters.

(6) Navigation of the area is comparatively easy in clear weather; the outlying dangers are few and marked by aids. The currents follow the general direction of the channels and have considerable velocity. In thick weather, because of the uncertainty of the currents and the great depths that render soundings useless in many places, strangers are advised to take a pilot.

(7) The **Marine Exchange of Puget Sound**, located in Seattle, has a Vessel Monitoring/Vessel Reporting service that tracks the arrival of a vessel from a time prior to arrival at the pilot station to a berth at one of the Puget Sound ports. Constant updates of the ship's position and estimated time of arrival are maintained through a variety of sources. This information is available to and is passed to the vessel's agents and to other interested activities. These services continue until the vessel passes the pilot station on her outbound voyage.

(8) Other services offered by the Marine Exchange include a daily newsletter about future marine traffic in the Puget Sound area, communication services, and a variety of coordinative and statistical information. The office monitors VHF-FM channels 20 for Grays Harbor traffic, 9 for Strait of Juan de Fuca traffic to Protection Island, and 20 for Puget Sound traffic from Protection Island, 24 hours a day. The Marine Exchange may also be contacted by phone, 206–443–3830 or toll free 800–562–2856.

(9) **Vessel Traffic Service Puget Sound**, operated by the U.S. Coast Guard, has been established in the waters of the Strait of Juan de Fuca, Rosario Strait, Admiralty Inlet, Puget Sound and the navigable waters adjacent to these areas. (See **33 CFR 161.1** through **161.23** and **161.55**, chapter 2, for regulations, and the beginning of chapter 7 for additional information.)

(10) The **U.S. Coast Guard** and the **Puget Sound Harbor Safety Committee** have developed and adopted a Harbor Safety Plan that formally establishes a set of Standards of Care for Puget Sound and surrounding waters. The standards and protocols contained in the **Puget Sound Harbor Safety Plan** complement and supplement existing federal, state and local laws. The Harbor Safety Plan is not intended to take the place of or otherwise intended to replace the good judgment of a ship's master in the safe operation of his/her vessel. These standards and protocols were developed and adopted by local experts for ensuring greater safety. Some sections of the plan provide important safety info for professional mariners transiting Puget Sound, while the Standards of Care formalize and document good marine practice. The Harbor Safety Plan can be obtained from the Marine Exchange of Puget Sound website at *pshsc.org* or contact 206–443–3830.

(11)

Regulated navigation area

(12) Due to heavy vessel concentrations, the waters of the Strait of Juan de Fuca, the San Juan Islands, the Strait of Georgia and Puget Sound and all adjacent waters, are a regulated navigation area. (See **33 CFR 165.1** through **165.13** and **165.1301**, chapter 2, for regulations.)

(13) Floating logs and **deadheads** or **sinkers** may be encountered anywhere in Puget Sound; caution should be exercised.

(14)

Anchorages

(15) General, explosives and foul weather anchorages have been established. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.)

(26)

Washington State Requirements—Reporting Oil Spills and Vessel Emergencies
All vessels must report oil spills or potential oil spills to both Washinton State (800–258–5990) and the National Response Center (800–424–8802). Tank vessels and cargo and passenger ships 300 gross tons or larger must make notifications to Washington State for vessel emergencies, including a loss or serious degradation of propulsion, steering, means of navigation, electrical generating capability and seakeeping capability constituting a substantial threat of pollution affecting Washington state natural resources. In addition to any notifications to the USCG, the owner or operator must notify the state of any vessel emergency that results in the discharge or substantial threat of a discharge of oil to state waters or that may affect the natural resources of the state within one hour of the onset of the emergency.

Tug Escorts for Laden Tankers
Any laden oil tanker, whether enrolled or registered, proceeding east of a line extending from Discovery Island Light (British Columbia, CN) south to New Dungeness Light (Washington State, US) must be escorted by a tug or tugs with an aggregate shaft horsepower equivalent to five percent of the deadweight tons of that tanker. For additional details see Washington state law at 88.16 Revised Code of Washington (RCW).

Emergency Response Tug at Neah Bay
An industry-funded emergency response tug is located at Neah Bay at the entrance to the Strait of Juan de Fuca. The tug is available 24 hours a day and can be underway within twenty minutes of a decision to deploy. The purpose of the tug is to assist vessels having propulsion and steering failures or that are directed by either the US or Canadian Coast Guards to obtain towing assistance. Among other capabilities, the tug is intended to be able to make up to, stop, hold, and tow a drifting or disabled vessel of 180,000 metric dead weight tons in severe weather conditions. The tug can be contacted through the USCG VTS or the Puget Sound Marine Exchange.

Washington State Vessel Inspections
The Washington State Department of Ecology regulates cargo and passenger vessels and tank vessels operating in Washington waters. A cargo vessel is any self-propelled vessel in commerce that is 300 gross tons or more. A passenger vessel is any vessel 300 gross tons or more with a fuel capacity of at least 6,000 gallons that carries passengers for compensation. A tank vessel is a ship that is constructed or adapted to carry, or that carries, oil in bulk as cargo or cargo residue. Washington State Ecology inspectors may conduct vessel inspections on regulated cargo, passenger, and fishing vessels when in Washington waters. Additional information—
www.ecology.wa.gov/regulations-permits/guidance-technical-assistance/guidance-for-oil-industry/vessel-information.

Oil Transfer Requirements
Safe bunkering procedures must be followed during fueling operations. For vessels 300 gross tons or greater, Washington State Ecology inspectors may conduct inspections of these regulated oil transfers on vessels receiving fuel for propulsion within Washington waters. Details can be found in state regulations at Washington Administrative Code (WAC) 317-40. Additional information—
www.ecology.wa.gov/regulations-permits/guidance-technical-assistance/requirements-for-bunkering.

Tank vessels delivering oil in bulk to a non-recreational vessel or facility within Washington waters must meet state oil transfer requirements. They may also be subject to Washington State oil transfer inspections for these regulated oil transfers. Details can be found in WAC 173-184. Additional information—
www.ecology.wa.gov/regulations-permits/compliance-enforcement/oil-transfers.

For a transfer of more than 100 gallons of bulk oil to a facility or non-recreational vessel, the delivering vessel must submit an Advance Notice of Transfer (ANT) report to Ecology. This ANT must be submitted 24 hours prior to the transfer for facilities or within the timeframe required by local USCG Captain of the Port. The ANT report can be made either: online using the State website at: *https://secureaccess.wa.gov/ecy/ants*, by e-mail to *OilTransferNotifications@ecy.wa.gov*, or by fax to 360–407–7288 or 800–664–9184.

Contingency Plan Requirements
Tank vessels and cargo and passenger ships 300 gross tons or larger transiting Washington waters must either have a Washington State Department of Ecology approved oil spill contingency plan or be a member of a non-profit cooperative that provides oil spill response capabilities consistent with their Washington State approved contingency plan. The non-profit cooperative for the Columbia River is the Maritime Fire & Safety Association (MFSA) and for Puget Sound and Grays Harbor is Washington State Maritime Cooperative. Also available is the National Response Corporation, a multiple vessel plan. Additional information—
www.ecology.wa.gov/regulations-permits/plans-policies/contingency-planning-for-oil-industry.

(16)

Dangers

(17) Restricted areas have been established. (See **33 CFR 334.1200**, chapter 2, for limits and regulations.)

(18) The large tides of Puget Sound are very complex and variable; use of the Tide prediction service available at *tidesandcurrents.noaa.gov* is advised. Links to a user guide for this service can be found in chapter 1 of this book.

(19)

Currents

(20) In Admiralty Inlet and Puget Sound, the tidal currents are subjected to daily inequalities similar to those of the tides. Velocities of 2 to 7 knots occur from Point Wilson to Point No Point. In the more open waters of the sound south of Point No Point the velocities are much less.

(21) At Point Wilson and at Marrowstone Point, slack water occurs from one-half to 1 hour earlier near shore than in midchannel.

(22) In the winter, when south winds prevail, there is generally a north surface drift that increases the ebb current and decreases the flood current. This effect is about 0.5 knot between Nodule and Bush Points.

(23) The tidal currents in the south entrance of Possession Sound are weak and variable.

(24) Between Foulweather Bluff and Misery Point, the tidal currents have a velocity of about 0.8 knot, while in the south part of Hood Canal, the velocity is only about 0.5 knot; at times of tropic tides, however, the greater ebbs may attain velocities more than double these values.

(25) The tidal currents have velocities up to about 6 knots or more in Agate Passage and in The Narrows. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(27)

Weather (Winds and Visibility), Puget Sound

(28) Puget Sound is open to the north and south and protected to the west and east by mountains. Winds are mainly southeast through southwest from September through April and northwest through north in late spring and summer. From fall through spring, lows moving through or near the Puget Sound are responsible for the mainly south flow. Intense storms can generate sustained winds of 40 knots with 50-knot gusts over the area. These strong winds are almost always from a south direction. In the Seattle area, sustained winds of 56 knots and gusts of 60 knots have been recorded. Winds are strongest in winter and early spring, on the average. Also, calm conditions are frequent in fall and winter, reflecting the lull between storm passages. In late spring and summer, winds flow into Puget Sound from the Pacific High. Often, winds are light and variable at night, then pick up to 8 to 15 knots during the afternoon, reflecting a sea breeze effect over the sound. Occasionally, a low or front will bring a return to a southerly flow during the summer, and these winds remain the strongest, on the average.

(29) Fog in the Puget Sound area causes visibility problems on about 25 to 40 days each year. It most likely hinders navigation in autumn and again during January and February. This fog is mainly a land type that forms on cool, clear, calm nights, drifts out over the water, then dissipates during the day. It can hang on for several days if a stagnant condition develops. Fog can form in any month but is least likely during May, June and July.

(30) Poor visibilities are encountered more often north and south of Puget Sound than in the sound itself. In Admiralty Inlet, fog lowers visibilities on this part of the coast to less than 0.5 mile (0.9 km) on about 4 to 8 days per month. South of Point Robinson, in the East Passage, the sound signals operate about 8 to 15 percent of the time in fall and mid-winter. In Puget Sound, sound signals, even during the heart of the season, blow less than 8 percent of the time; less than 5 percent in Elliot Bay. Waters of Point Wells and Three Tree Point are among the most fog free in the area; sound signals there operate just a few hours a month for most of the year. In the Seattle area, visibility falls below 0.5 mile (0.9 km) on about 3 to 6 days per month during the foggy season. Detailed information on heavy weather to Puget Sound ports may be found in the **Puget Sound Area Heavy Weather Port Guide** published by the Marine Meteorology Division, Naval Research Laboratory, Monterey, CA 93943 and available at *nrlmry.navy.mil/pubs.html.*

(31)

Point Wilson to Kilisut Harbor

(32) **Point Wilson** is the west point to Admiralty Inlet and Puget Sound.

(33) **Point Wilson Light** (48°08'39"N., 122°45'17"W.), 51 feet above the water, is shown from a white octagonal tower on a building on the east extremity of the low point.

(34) Shoals extend 0.5 mile northwest of Point Wilson to the 5-fathom curve over irregular bottom; these are generally indicated by kelp. The east edge of the shoals rises rather abruptly from deep water. Heavy tide rips extend north of these shoals, being especially heavy with a west wind and ebb current. A buoy marking the shoals is about 0.7 mile northwest of Point Wilson Light.

(35) In approaching Point Wilson in thick or foggy weather, vessels should obtain soundings constantly.

(36) **Fort Worden State Park**, formerly an Army base, is about 0.8 mile south-southwest of Point Wilson. The park has 120 feet of dock space and two launching ramps.

(37) **Port Townsend**, immediately south of Point Wilson, is entered between Point Hudson and Marrowstone Point. It extends in a general south-southwest direction for 2.5 miles and then turns south-southeast for 3 miles, with a reduced width to its head. Inside Point Hudson, depths generally range from 5 to 20 fathoms. It is an excellent harbor and is easily entered; however, mariners are warned to be aware of strong side currents that exist in

Admiralty Inlet. The prevailing winds in summer are from west to southwest and in winter are generally in the southeast quadrant.

(38) **Point Hudson**, on the west shore 1.7 miles south-southeast of Point Wilson, is low, sandy and marked by a light. The outer limits of the shoal making out from the point are marked by a lighted bell buoy northeast of the light.

(39) **Marrowstone Point**, the east point at the entrance to Port Townsend, is low at its extremity but rises abruptly to a bluff about 120 feet high. The buildings of the former Fort Flagler, now a recreation area of the Washington Parks system, are about 0.5 mile to the south. The fort pier, with depths of about 20 feet at its face, is in poor condition. A fish haven is near the pier in about 48°05'28"N. 122°41'23"W. **Marrowstone Point Light** (48°06'06"N., 122°41'16"W.), 28 feet above the water, is shown from a 20-foot white square structure on the east edge of the point. Pilings from former piers and anchor pilings for wartime submarine nets extend up to 500 yards offshore 0.6 and 1.6 miles west of the light.

(40) **Midchannel Bank**, covered 4¾ to 10 fathoms, extends northwest from Marrowstone Point about 2 miles toward Point Wilson. The bank has several submerged obstructions and large boulders on the bottom. Due to the nature of the bottom and the existence of cross-currents from Admiralty Inlet, the bank is unsuitable for safe anchorage.

(41) **Port Townsend**, the principal town, is on the west shore immediately west of Point Hudson. The depths at the wharves range from 8 to 30 feet along the faces. The only commercial traffic, other than fishing boats and ferries, is at Port Townsend Paper Corporation papermill southwest of the town at Glen Cove.

(42)

Anchorage

(43) The usual anchorage is about 0.5 to 0.7 mile south of the railroad ferry landing in 8 to 10 fathoms, muddy bottom. In south gales better anchorage is afforded closer inshore off the north end of Marrowstone Island or near the head of the bay in moderate depths, muddy bottom. Two **explosives anchorages** are in the bay. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.)

(44)

Pilotage, Puget Sound

(45) Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the west coast of the continental United States (including Alaska) and/or British Columbia. Pilotage for Puget Sound is provided by the **Puget Sound Pilots** (See Pilotage, Strait of Juan de Fuca and Puget Sound, indexed as such, chapter 12, for detail.)

(46)

Towage

(47) Tugs are not available at Port Townsend but may be obtained on advance notice from Port Angeles or Seattle through ships' agents.

(48)

Quarantine, customs, immigration and agricultural quarantine

(49) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(50) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(51) Port Townsend is a **customs port of entry**.

(52) The graystone Custom House-Post Office Building, built in 1893, is conspicuous on the bluff overlooking the waterfront. This building was the customs headquarters for Puget Sound until 1913, when headquarters was moved to Seattle. Deep-draft vessels and tugs are inspected alongside the pulpmill wharf. Small craft report their arrival by telephone (800–562–5943).

(53) **Point Hudson Harbor**, just west of Point Hudson, is protected by jetties at the entrance. Transient berths, electricity, water, ice and a launching ramp are available. A customs office is also in the harbor.

(54) The terminus of the Port Townsend-Keystone ferry is 0.4 mile west-southwest of Point Hudson Harbor.

(55) **Port Townsend Boat Haven**, 1.1 miles southwest from Point Hudson, is operated by the Port of Port Townsend; the entrance is marked by lights. There is space for 475 commercial and recreational vessels. The marina in the basin can provide gasoline, diesel fuel, transient berths, water, ice, marine supplies, launching ramp, winter storage and pump-out facility. A full-service boatyard adjacent to the marina has a 300-ton marine lift and can provide full repairs.

(56)

Supplies

(57) Gasoline and diesel are available at Port Townsend Boat Haven. Water, ice, groceries and marine supplies are available at these facilities and in the town.

(58)

Repairs

(59) Only minor above-the-waterline repairs can be made to large vessels. Travel lifts to 300 tons are available at Port Townsend Boat Haven; a 20-ton travel lift is at Point Hudson Harbor. Hull, engine and electronic repairs can be made.

(60)

Communications

(61) A passenger and automobile ferry operates between Port Townsend and Keystone Harbor, just east of Admiralty Head, Whidbey Island. Another ferryboat operates between Port Townsend, Victoria, BC, Friday Harbor and Seattle from late April through mid-October.

(62) **Glen Cove**, about 2.2 miles southwest of Point Hudson, is the site of the Port Townsend papermill, at the north end of the cove. The 480-foot-long pier has reported depths of 30 feet alongside and a deck height of 18 feet. A slight current may be encountered, and the use of an anchor is recommended in docking. Fuel oil tankers use the north side of the wharf; paper products

are shipped from the south side. The large white building and tall stacks of the mill are prominent, as is the smoke.

(63) A floating security barrier, marked by private lights, surrounds a naval restricted area in the east part of the harbor off **Walan Point** on **Indian Island** (48°04'18"N., 122°44'47"W.). (See **33 CFR 334.1270**, chapter 2, for limits and regulations.)

(64) **Irondale**, on the west shore about 1.5 miles from the head of the bay, is the site of a former iron foundry. Shoal water extends up to 0.3 mile from the shoreline near the town.

(65) **Port Hadlock**, a village at the head of the harbor, has landings with depths of 10 and 12 feet. The Port of Port Townsend maintains a mooring float during the summer. Gasoline is available in the town. Submerged pilings are in the vicinity of the mooring float, and local knowledge is necessary to avoid them.

(66) A marina is 0.4 mile southwest of the north entrance to Port Townsend Canal and can provide gasoline, diesel fuel, transient berths, electricity, water and pump-out facility.

(67) **Port Townsend Canal**, a dredged passage giving access to Oak Bay to the southeast, is marked by lights and daybeacons at both ends. The canal is crossed by a fixed highway bridge with a clearance of 58 feet. Power cables nearby have clearances of 90 feet. (See **33 CFR 162.235**, chapter 2, for rules, regulations, and use of the canal.)

(68) Currents through the canal are strong at times, although there is no particular danger from them as the channel is wide and straight; there are, however, strong eddies at the south end on the ebb current.

(69) **Kilisut Harbor**, between Indian Island on the west and **Marrowstone Island** on the east, is a narrow inlet extending about 4 miles in a south-southeast direction. The entrance to Kilisut Harbor is 2.5 miles west-southwest of Marrowstone Point. The entrance channel is winding. In 1981, a reported depth of 5 feet was in the entrance channel. A submerged pile is north of the entrance in about 48°05'13"N., 122°44'24"W.; caution is advised when approaching Kilisut Harbor from the north. **Fort Flagler State Park** is on the northeast side of the entrance channel. Two boat ramps and a small-craft float are at the park. Water is available. Inside the harbor is good anchorage in 4 to 5 fathoms. At the south end of the harbor the two islands are connected by an earth-filled causeway and narrow strip of beach. The village of **Nordland** is on the east side of **Mystery Bay**, a small shallow cove midway on the east side of Kilisut Harbor. A small-craft float is maintained in the cove by the Washington State Park System. Water and pump-out station are available. The short pier of an oyster company is just southeast of the state park float. The head of the cove is used as a log dump. Caution should be exercised to avoid two concrete blocks located 20 to 30 feet off the east end of the State Park pier.

(70)

Admiralty Inlet to Double Bluff

(71) **Admiralty Inlet** extends from the Strait of Juan de Fuca to Foulweather Bluff. A **naval restricted area** is at the north entrance of Admiralty Inlet, extending west and northwest from Admiralty Head. (See **33 CFR 334.1210**, chapter 2, for limits and regulations.)

(72) **Admiralty Head**, 80 feet high, on Whidbey Island, is the east entrance point of Admiralty Inlet and the southeast extremity of a succession of light bare bluffs that extend north of Point Partridge, where they attain their highest elevation. About 0.5 mile north of Admiralty Head an abandoned lighthouse tower 39 feet high stands on top of a bluff.

(73) **Admiralty Bay**, east of Admiralty Head, is used only occasionally as an anchorage as it is exposed to southwest winds and has a hard bottom and strong currents.

(74) **Keystone Harbor** is entered through a dredged channel just northeast of Admiralty Head. A state ferry landing is at the head of the harbor. This landing is the Whidbey Island terminus of the passenger and automobile ferry that operates to Port Townsend. A breakwater, marked by a light, protects the east side of the entrance. A private light on a concrete pile marks the west side of the entrance. A launching ramp is on the east side of the harbor.

(75) A tall, narrow, grayish green tank is prominent on **Lagoon Point**, 5.5 miles south-southeast of Admiralty Head. Dredged canals give access to private moorings.

(76) **Bush Point**, 8 miles south-southeast of Admiralty Head, is marked by a light at the end of a low sandspit. Back of the spit the land shows as a low timbered point from north or south. The flood current is reported to set strongly toward Bush Point. In 1983, Puget Sound Traffic Lane Separation Lighted Buoy SC, about 1.1 miles west of Bush Point, was reported to submerge during periods of strong currents. (See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.) Several rocks lie nearly 0.2 mile offshore 1.1 miles southeast of Bush Point.

(77) **Oak Bay** is a cove on the west side of Admiralty Inlet, west of the south ends of Marrowstone and Indian Islands. A 1½-fathom shoal, marked by a light, extends south from Kinney Point.

(78) **Mutiny Bay**, between Bush Point and Double Bluff, affords temporary anchorage near the center in 10 to 20 fathoms. This anchorage is useful if overtaken by fog. The extremities are clay bluffs, and the center is low with extensive flats. Several sport fishing resorts are in the bay. Some have marine railways and can make minor repairs to outboard engines, and most have gasoline, water and ice. Strong tide rips, at times dangerous for small craft, occur off Double Bluff, particularly on the ebb

with strong northwest winds. There is frequently an eddy in Mutiny Bay; see the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about the times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(79) **Double Bluff**, marked by a light, consists of bare, white cliffs, 300 to 400 feet high on its southeast face, but much lower on its northwest face. A lighted buoy marks the extremity of the shoals 600 yards west of the bluff. The shoals are usually marked by kelp.

(80)

Foulweather Bluff to Point No Point

(81) **Foulweather Bluff**, on the east side of the entrance to Hood Canal, is one of the most prominent cliffs in Puget Sound. The north face, which is bare, is 0.5 mile broad and consists of vertical, grayish sand and clay bluffs, 225 feet high, sloping off on the east side to a bluff 40 feet high, but on the Hood Canal side the point is steep and high. A marsh, enclosed by a sandspit and marked by a light, extends about 500 yards from the base of the bluff on the Hood Canal side. The top of the bluff is fir and underbrush. There are several boulders that bare within 100 yards north of the highest part of the bluff, and a shoal covered 2 to 18 feet extends 200 yards east from the extremity and in line with the face of the bluff. If overtaken by fog, a vessel can find temporary anchorage 0.5 mile north of Foulweather Bluff, in not less than 60 feet. A lighted bell buoy marks the shoal 0.4 mile north of the bluff.

(82) At times the tide rips north of and around Foulweather Bluff are sufficiently heavy to be dangerous to small craft and to break up log rafts. This is most dangerous when the ebb current from the main body of Puget Sound meets that of Hood Canal off the point, and particularly so with the ebb against a strong north or northwest wind.

(83) **Klas Rock**, 0.2 mile from the west shore and 0.7 mile south-southeast of **Olele Point**, marks the entrance to Mats Mats Bay to the west and to **Port Ludlow** to the south. It is of small extent and awash at high water. The rock, marked by kelp, is surrounded by deep water with depths up to 100 feet between it and the shore. Klas Rock is marked on the east side by a light.

(84) **Mats Mats Bay**, southwest of Klas Rock, is a small, nearly landlocked lagoon offering excellent protection from the wind to small craft. The entrance to the bay is about 100 yards wide at high water. A dredged channel, marked by a **261.3°** lighted range, buoys and lights leads from the entrance to the northeast corner of the bay. In 1977, the controlling depth in the entrance channel was 5 feet for a midwidth of 100 feet. Good anchorage may be had in the bay with general depths of 4 to 12 feet.

(85) A boat ramp and 200 feet of transient moorage, maintained by the Port of Port Townsend, are on the southeast side of the bay.

(86) The three **Colvos Rocks**, 0.7 mile south of Klas Rock and about 0.3 mile off the west shore, mark the north extremity of the bank covered by 7 to 28 feet that extends in an arc south to **Tala Point**. The northwest rock, 28 feet high and of small extent with deep water around it, is marked by a light. The southeast point of the shoal extending southeast from the rocks is also marked by a light. Tala Point is a bluff, wooded and about 310 feet high. A light is about 200 yards northeast of the point.

(87) **Snake Rock** is 0.4 mile southwest of the west Colvos Rock and 300 yards offshore.

(88) The entrance to **Port Ludlow**, in the west part of Admiralty Inlet, is just west of Colvos Rocks on the west side at the entrance to Hood Canal. From the broad entrance the bay extends in a general south direction 2.5 miles, terminating in a basin 0.5 mile in diameter. The basin affords good anchorage in 40 to 50 feet, soft bottom; the shores are fairly steep.

(89) **Burner Point**, marked by a light, is on the north side of the entrance to the inner portion of the bay. A **speed limit** of 5 knots is enforced southerly of a line extending due east from Burner Point to the east shore.

(90) The town of **Port Ludlow**, once a major Puget Sound lumber port, is on the north shore of the inner portion of the bay. The former Port Ludlow townsite is now occupied by a housing development and resort of the same name. A series of exposed piles are on the northwest side of the inner bay. Several private small-craft floats are in the bay.

(91) A marina is on the north side of the bay and just west of Burner Point. The marina can provide transient berths, gasoline, diesel fuel, electricity, water and ice. The entrance to the fuel dock is reported to shoal on the right side at low tide.

(92) **The Twins** are two islands at the extreme southwest end of Port Ludlow. The small bay south of The Twins is sometimes used as an anchorage for small craft in rough weather. A reported depth of 10 feet is in the entrance to the bay between the islands.

(93) **Hansville**, about 2.5 miles east-southeast of Foulweather Bluff, is a small village with a general store. Berthage and dock facilities are not available.

(94) **Norwegian Point**, low and rounding, is about 0.2 mile northwest of Hansville. A conspicuous privately owned lighthouse, 210 feet above the water and built from plans of the original lighthouse at Mukilteo, is about 1 mile west of Hansville.

(95) **Point No Point**, on the west shore of the sound about 3.5 miles southeast of Foulweather Bluff, is a low sandspit. **Point No Point Light** (47°54'44"N., 122°31'37"W.), 27 feet above the water, is shown from a 20-foot white octagonal tower on the end of the point.

(96)

Useless Bay to Cultes Bay

(97) **Useless Bay**, indenting Whidbey Island east of Double Bluff, is open to the southwest. The shores

are bluff, brush covered and low with a marshy area surrounding the bay. The north and southeast sides of the bay are spotted with homes. At night, the lighted antenna about 2 miles northeast of the head of Useless Bay is prominent.

(98) **Scatchet Head** and **Possession Point**, at the south end of Whidbey Island, are both prominent, especially from south; the white bluffs are visible for a considerable distance. A lighted bell buoy is 0.5 mile south of Possession Point. A fish haven is close west of the lighted bell buoy. Shoals extend 0.5 mile offshore immediately west of Scatchet Head and over 0.2 mile offshore from the head to Possession Point. A lighted gong buoy is about 0.5 mile off Scatchet Head. **Cultus Bay**, just west of Possession Point, is shoal; much of the bay bares at low water. A channel, marked by lights at the entrance, leads to a private mooring basin on the east side of the bay. The channel has a reported depth of 3 feet. A mooring float and launching ramp are just north of the mooring basin on the east side of the bay.

(99) Possession Sound and its tributaries are described later in this chapter.

(100)

Apple Point Cove to Richmond Beach

(101) **Apple Cove Point** is a low sandspit projecting 220 yards from the high, wooded land of the peninsula. The point is steep-to, but a shoal makes out nearly 0.5 mile southeast from it. Just off the point is a light. Heavy tide rips caused by strong northwest winds and a strong ebb current are encountered in the vicinity of the light.

(102) A microwave tower on the high ground about 0.6 mile southwest from Apple Cove Point Light is prominent from offshore.

(103) **Appletree Cove** is the open bight on the west side of the sound about 1.5 miles south of Apple Cove Point. It affords anchorage in 30 to 60 feet inside the line of the entrance points, with some shelter from winds drawing in or out of the sound, but not from north and southeast.

(104) **Kingston**, a town on the north side of the cove, has a large, well-equipped small-craft basin, a 420-foot long fishing pier, and a pier with a ferry slip at its end. The ferry runs between Kingston and Edmonds. The basin is used by tugs, fishing boats and pleasure craft. The harbor is protected by a stone breakwater that extends about 340 yards southwest from the ferry pier; the end of the breakwater is marked by a light. Services available include electricity, gasoline, diesel fuel, water, ice, pump-out facility, surfaced launch ramp and marine supplies. The marina has space for 262 small craft including about 49 transient berths.

(105) **Edwards Point** is a high, wooded point on the east side of Puget Sound 3.6 miles east-southeast of Apple Cove Point. It is a turning point for vessels running from Seattle north into Possession Sound and adjoining waters.

(106) **Edmonds** is an incorporated city 1 mile northeast of Edwards Point with a small boat basin and marina under the administration of the **Port of Edmonds**. The protected basin is entered from the northwest at about the midpoint of the marina; the entrance is marked by lights and a light is on the southwest corner. The reported depth is 9 feet alongside the piers. There are open and covered berths for about 600 craft up to 50 feet, including 20 transient moorings; berth assignments are made by the harbormaster. Services available include electricity, gasoline, diesel fuel, water, ice, marine supplies and pump-out station, and full repairs can be made. A 50-ton marine travel lift and 5-ton fork lift are also available at the marina. The marina monitors VHF-FM channel 69.

(107) Just north of the boat basin are a fish haven and fishing pier, the Edmonds and Kingston ferry landing and a scuba diving area north of the landing. The fish haven is marked by private buoys near the boat basin breakwater north section; private buoys also mark the west side of the scuba diving area.

(108) A **037°01'-217°01' measured nautical mile** is on the shoreline 1 mile northeast of Edmonds. The front markers are on short metal poles atop the seawall that protects the railroad tracks; the rear markers are about 20 yards southeast of the front markers. The bluff is 60 feet high behind the northeast pair of markers and 12 feet high behind the southeast pair of markers. All four markers are white wooden triangular daymarks.

(109) **Point Wells** is a low, sandy point projecting 450 yards from the high land 1.5 miles south of Edwards Point on the east side of the sound; it is distinguished by prominent oil tanks. A facility on the point is used as a marine fuel and asphalt distribution center, operated by Paramount Petroleum Corporation. The wharf is 1,054 feet long and has a deck height of 21 feet. Depths of 40 to 70 feet were reported alongside.

(110) The current at Point Wells is unpredictable, being inconsistent for similar tidal conditions; however, a vessel making a port landing on a flood tide may expect to be set off the pier. The use of an anchor is recommended when docking in high wind. Deep-draft vessels approaching the wharf for a starboard landing during a flood tide must guard against being set on to the shoal south of the wharf.

(111) **Richmond Beach** is a community on the east shore just south of Point Wells. A tall, charted radio tower (KCIS), marked by aircraft warning lights, is about 1.5 miles inshore from Richmond Beach; it is an excellent landmark, especially at night. A fish haven is off the mouth of **Boeing Creek**, about 1.9 miles south of Point Wells.

(112)

Bainbridge Island to Restoration Point

(113) **Bainbridge Island**, 9 miles long and heavily wooded, forms part of the west shore of Puget Sound. There are several towns on the island.

(114) **Port Madison** indents the west shore between the north end of Bainbridge Island and **Point Jefferson**. It is about 2.5 miles long and very deep; not until within 0.5

mile of the beach can anchorage be found in 90 to 100 feet, sticky bottom. Its southwest part connects with Port Orchard through Agate Passage.

(115) The north shore is formed by broken white bluffs, with low beaches between, and bordered by sand and shingle beaches that bare in some cases as much as 0.2 mile offshore. **Indianola**, a village on the north shore, has a long pier. The water east of the end of the pier is shoal. The bluffs on the west shore are moderately low; the buildings of the small town of **Suquamish** near the entrance to Agate Pass are prominent.

(116) **Miller Bay**, in the northwest part of Port Madison, is used by shallow-draft pleasure craft. The channel should not be used at low tide because of the very irregular bottom. In 2002, the reported depth in the channel along the docks at the south end of the bay was 5 feet.

(117) **Point Monroe**, the south point at the entrance of Port Madison, is a low, narrow sandspit, curving west and south. A small cove is between the sandspit and the shore to the south. The entrance dries at low water.

(118) The south shore of Port Madison is composed of broken bluffs, except where it is indented by the narrow arm extending 1 mile south. The entrance to this narrow arm is 0.7 mile west of Point Monroe.The town of **Port Madison** has many private piers but no fueling facilities. The narrow channel through the arm has a least depth of 16 feet, and local knowledge is necessary to keep in the best water. Two submerged rocks, covered 7 feet and are marked by a daybeacon (47°41'51"N., 122°32'08"W.), about 220 yards south-southwest of **Treasure Island**; caution should be exercised. An old ballast dump, nearly bare at low water, is 75 yards offshore 400 yards in from the east entrance point. Care should be taken to avoid the cluster of covered rocks 100 yards off the east entrance point. Sheltered anchorage for small craft may be had in up to 21 feet, mud bottom.

(119) **Meadow Point**, on the east side of Puget Sound nearly opposite Point Monroe, is a low, grassy point with a high tree and brush-covered bluff behind it. A lighted buoy is about 0.2 mile northwest of the point.

(120) **Murden Cove** is an open bight on the west side of the sound about 3.5 miles south of Point Monroe. An extensive flat that bares extends almost 0.5 mile from the head of the cove, and outside of it the depth increases rapidly. **Skiff Point**, the north entrance point, has low yellow bluffs to the south. A shoal, covered by kelp, extends about 250 yards from the point; this shoal is reported to be building out and should be given a wide berth. **Yeomalt Point,** the south entrance point, is a low, grassy sandspit, 150 yards wide, rising gradually to the general level of the high land. The radio towers about 0.9 mile southwest of Skiff Point are prominent from offshore.

(121) **Wing Point**, on the north side of the entrance to Eagle Harbor, is a narrow, bluff point 30 feet high, covered with trees to the edge. A flag pole is prominent on the point. A reef extends south-southeast for 0.5 mile from Wing Point and is generally marked by kelp. The south extremity of the reef is marked by a buoy. **Tyee Shoal**, 0.7 mile south-southeast of Wing Point, with a least depth of 14 feet, is marked by a light.

(122) Foul ground extends as much as 500 yards off the south point at the entrance; a light and buoy mark its outer limits.

(123) **Eagle Harbor** indents the east shore of Bainbridge Island opposite Elliott Bay. It is 2 miles long and affords excellent anchorage in 30 to 39 feet, muddy bottom. It narrows at the head to 300 yards.

(124) The entrance is deep, but caution is necessary in entering because the natural channel is only 200 yards wide between the reef south of Wing Point and the spit on the west side of the channel entrance. The channel is marked by lights and buoys. A wreck covered 18 feet is at 47°37'09"N., 122°31'11"W.

(125) A **regulated area**, prohibiting anchoring, dredging and bottom fishing among other activities, is in the eastern part of Eagle Harbor covering much of the entrance—see **33 CFR 165.1** through **165.40** and **165.1309**, chapter 2, for limits and regulations.

(126) **Winslow** is the largest town on Bainbridge Island. It is on the north shore of Eagle Harbor and is a major ferry port on the cross-sound routes to and from downtown Seattle. About 0.2 mile west of the ferry slip is a large building and two piers that are used by the Washington State Ferry System for ferry mooring and maintenance. About 0.3 mile west of the ferry slip is a city park with a float that offers 48-hour free moorage. Immediately west of the float is a launching ramp.

(127) There are several marinas located on the shores of Eagle Harbor. Numerous small craft are anchored in the upper half of Eagle Harbor.

(128) **Creosote**, a low flat extending 350 yards inland, then raising abruptly to over 200 feet, is on the south side of the entrance to Eagle Harbor. Two lights and a buoy mark shoals to the northwest and east. **Eagledale** is a small town with three marinas on the south shore about 0.5 mile west of Creosote.

(129) **Blakely Rock**, the highest of four rocks, is prominent in approaching Blakely Harbor; it is 0.7 mile north of Restoration Point and at high water shows about 15 feet at its highest point. It is 300 yards long, with shoal water, well marked by kelp, extending over 250 yards north. A light is on the south side of the rock.

(130) **Blakely Harbor** is a small inlet on the east shore of Bainbridge Island near its south end. It is 1 mile long. Depths range from 145 feet at the entrance to 25 feet near the head. The usual anchorage is near the entrance in 54 to 96 feet, sticky bottom, slightly favoring the south shore. There are many old pilings and dolphins in the shoal waters near the shores. There are no usable wharves in Blakely Harbor.

(131) **Restoration Point** is flat and about 10 feet high for 300 yards from the shore, then it rises abruptly to a wooded knoll about 100 feet high, on which a flagpole and a number of large buildings are prominent. **Decatur Reef**, partly bare, extends 300 yards east of Restoration

Point. The outer end of the reef is marked by a lighted buoy.

(132)

Shilshole Bay to Duwamish Head

(133) **Shilshole Bay** is between Meadow Point and West Point. It is an open bight from which the Lake Washington Ship Canal is entered, and is the site of the largest marina in the Seattle area. Clay cliffs extend for about 0.5 mile south of the canal entrance. Golden Gardens Park, Seattle Department of Parks and Recreation is north of the marina and extends up to and includes Meadow Point.

(134) **Shilshole Bay Marina**, the small-craft basin just north of the canal entrance, is administered by the Port of Seattle. A 4,400-foot breakwater, marked at each end by a light, protects the basin on its west side. There is one entrance at the north end and one at the and south end. There are berths at the concrete floats for 1,400 craft to 250 feet long, including a guest pier and transient berths. The marina can provide electricity, gasoline, bio-diesel (#1 and #2), diesel fuel, water, ice, marine supplies and a pump-out station at the 600-foot pier at the midpoint of the basin. Two 3-ton hoists are at the south end, and one 3-ton and one 4-ton hoists are at the north end of the basin. A 55-ton marine travel lift, for haul-out, is available at the boatyard at the south end of the basin. Dry storage is available for 82 boats on movable trailers at the north end of the marina. A boat launching ramp is located immediately north of the marina in Golden Gardens Park. The marina can be contacted on VHF-FM channel 17.

(135) **West Point**, at the north entrance to Elliott Bay, is a low, sandy point that rises abruptly to an elevation of over 300 feet 0.5 mile from its tip. The edge of the shoal extending west-southwest from the point is marked by a lighted buoy. **West Point Light** (47°39'43"N., 122°26'09"W.), 27 feet above the water, is shown from a 30-foot white octagonal tower attached to a building on the end of the point; a mariner-radio-activated sound signal is at the station, initiated by keying the microphone five times on VHF-FM channel 81A. Prominent in the area are the sump tanks of a sewage treatment plant about 0.1 mile east of the light, a VTS antenna tower between the plant and the light and a large white dome about 1 mile east-southeast of the light.

(136) **Alki Point**, at the south entrance to Elliott Bay, is low with a small prominent wooded knoll about 80 feet high immediately back of it. East of the knoll, lowland extends for nearly 0.4 mile before rising to the high land extending south from Duwamish Head. **Alki Point Light** (47°34'35"N., 122°25'14"W.), 39 feet above the water, is shown from a 45-foot white octagonal tower attached to a building on the end of the point.

(137) **Elliott Bay** indents the east shore of Puget Sound just north of Duwamish Head. The entrance is between West Point on the north and Alki Point 5 miles south. The bay proper, lying east of a line between Magnolia Bluff and Duwamish Head, has a width of about 2 miles and extends southeast for nearly the same distance. The bay is deep throughout most of its area.

(138) **Magnolia Bluff**, largely bare, light colored, and rising in places to nearly 300 feet, extends along the north shore from West Point to Smith Cove. **Fourmile Rock** is 60 yards offshore, 1.7 miles south-southeast of West Point Light. A light is on the rock. A wreck, covered 56 feet, is about 0.5 mile west of Magnolia Bluff in about 47°38'25"N., 122°25'35"W.

(139) Elliott Bay Marina is located just west of Smith Cove (Pier 91) below Magnolia Bluff. A 2,700-foot breakwater, marked by private lights, protects the basin on its south side. The basin has entrances on the east and west ends and has a reported depth 23 feet in the approach with a depth of 10 feet alongside the berths. The marina can accommodate 1,200 vessels up to 200 feet long, including 20 transient berths; larger vessel moorage is at the east pier. Services available include electricity, gasoline, diesel fuel, water, ice and pump-out facility and engine and electrical repair. A yacht chartering firm is on site. VHF-FM channel 78A is monitored, and a heliport is located at the center of the breakwater. No commercial vessels, commercial work or major boat repairs are allowed.

(140) **Duwamish Head**, 1.8 miles northeast of Alki Point and rising to over 260 feet from the point, bounds Elliott Bay to the south. The bluff is tree covered but is interspersed with houses. The lights of the houses along the beach and on the bluff are conspicuous at night. A shoal, extending over 0.2 mile north of the point, is marked by **Duwamish Head Light.**

(141)

Seattle

(142) **Seattle**, the largest and most important city in the Northwest and one of the major ports of the Pacific Coast, extends as a densely populated greater metropolitan area from Everett, the city to its north, almost to Tacoma, the major city to the south, and east beyond the limits of Lake Washington and its shores. Seattle has many modern, fully equipped ocean terminals, excellent transportation facilities, several large shipyards and numerous large marine supply houses.

(143) Much of Seattle's shipping is in the Pacific Rim trade, and the city is a major industrial center. Seattle handles most of the waterborne commerce to Alaska Ports and is the terminus of several shipping lines operating to Alaska as well as other parts of the world. Almost 22 percent of Seattle's commerce is in the foreign trade, with British Columbia, Japan, Asia and Europe forming the cornerstone of the overseas commerce. Principal exports are grain and grain mill products, logs, petroleum products, food and vegetable products, lumber, waste and scrap, chemicals, cement, wood chips and fuel wood, fabricated metal products and sulfur. The principal imports are logs, lumber, sand and gravel, iron and steel, petroleum products, newsprint, bananas, cement, canned

(163)

Structures across Duwamish Waterway

Name	Type	Location	Clearance (feet)		Information
			Horizontal	Vertical*	
Southwest Spokane Street bridge	swing	47°34'17"N., 122°21'14"W.	250	44 (55 at center)	Note 1
West Seattle bridge	fixed	47°34'15"N., 122°21'12"W.	150	140	
Burlington Northern Santa Fe Railroad bridge	bascule	47°34'12"N., 122°21'07"W.	150	7	Note 1
Overhead cable	power	47°33'49"N., 122°20'50"W.		174	
Overhead cable	power	47°32'35"N., 122°20'09"W.		160	
First Avenue South bridges	bascule	47°32'32"N., 122°20'04"W.	145	22 (32 for central 100 feet)	Note 1
16th Avenue/South Park bridge	bascule	47°31'47"N., 122°18'51"W.	125	29	Notes 1, 2 and 3
Overhead cable	power	47°30'56"N., 122°18'19"W.		134	

* Vertical clearance is referenced to mean high water
Note 1 – See **33 CFR 117.1** through **117.59** and **117.1041**, chapter 2, for draw bridge regulations.
Note 2 – In the open position, the draws overhang the channel at a height of 143 feet at the leaf tip.
Note 3 – Bridge tenders monitor VHF-FM channels 16 and 13, and work channel 13 or phone 206–549–2896.

fish and shellfish, limestone, machinery, pulp and paper, asphalt and tar, radio and TV products and clay.

(144) The **Port of Seattle** includes an outer and inner harbor. The outer saltwater harbor includes Elliott Bay; East, West and Duwamish Waterways; Shilshole Bay and the portions of Puget Sound adjacent to Ballard on the north and West Seattle to the south of the entrance of Elliott Bay. Seattle's freshwater inner harbor consists of Lakes Union and Washington, which are connected with each other and with Puget Sound by the Lake Washington Ship Canal. Most of the waterfront facilities of the inner harbor are privately owned.

(145) Of the nearly 60 piers and terminals in the outer harbor, the Port of Seattle owns more than 25, operating three and leasing out the others. These properties include 10 general cargo handling facilities and 1 major container handling terminal. The port also has four fully developed marine terminals, and a fifth in the construction phase, on the Duwamish Waterway south of Harbor Island in the Lower Duwamish Development District, a project that provides lease sites for terminal facilities and water-oriented industries. The Port of Seattle also operates Seattle-Tacoma International Airport, which is located about midway between Seattle and Tacoma.

(146) Although there are several deep-draft terminals on Elliott Bay, many of the piers and wharves are used by fisheries, ferry and tour boat operators and for entertainment facilities.

(147) **East Waterway** is separated from West Waterway by **Harbor Island**. Several important terminals are on the waterway. Most of the north side of Harbor Island is occupied by the piers and drydocks of a shipyard. A private light, shown from the northeast corner of Terminal 18, marks the west side of the entrance to East Waterway.

(148) **Note:** Vessels are cautioned against anchoring in the vicinity of pipeline and cable areas shown on the charts.

(149) Most of the east side of **West Waterway** and the area west of the entrance are occupied by the facilities of two large shipyards. The southwest side of the waterway is the site of the Port of Seattle's Terminal 5, which receives considerable deep-draft traffic. Several other wharves on the waterway also receive deep-draft vessels. (See **33 CFR 207.750**, Chapter 2, for regulations.)

(150) **Duwamish Waterway**, extending south from West Waterway, is fronted by factories and industrial plants for more than 4 miles. A number of log rafts are often anchored along the waterway around Kellogg Island and south of the 1st Avenue South Bridge.

(151)

Prominent features

(152) In clear weather the skyline of Seattle itself is unmistakable. From north to south the conspicuous features are the *Space Needle*, a legacy from the 1962 World Fair; the red lighted letter 'E' ' sign at pier 67; the 175-foot Seattle Great Wheel at the end of Pier 57 and the Columbia Center building, distinguishable from other skyscrapers by its greater height.

(153)

Channels

(154) Depths of 34 feet or more are available to the Seattle waterfront in Elliott Bay. A **federal project** provides for a depth of 34 feet in East and West Waterways. (See latest edition of charts for depths in East and West Waterways.) The project for Duwamish Waterway provides for a 30-foot channel from the south end of West Waterway to the 1st Avenue South Bridge, thence 20 feet for about 0.65 mile to 8th Avenue South, thence 15 feet to a point about 1.2 miles south of the 14th Avenue South Bridge, the end of the project. (See Notice to Mariners and latest editions of charts for controlling depths.)

(155)

Anchorages

(156) Four general anchorages are in Elliott Bay. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.)

(157)

Regulated Navigation Areas

(158) A **security zone** has been established at Pier 36 in Elliott Bay. (See **33 CFR 165.1** through **165.9**,

165.30, **165.33**, and **165.1334**, chapter 2, for limits and regulations.)

(159) A **safety** and **security zone** has been established around Pier 90 and 91 on the north side of Elliot Bay. (See **33 CFR 165.1** through **165.40** and **165.1324**, chapter 2, for limits and regulations.)

(160) A **safety zone** has been established around the mouth of West Waterway on the south side of Elliot Bay. The safety zone is only active at certain times. (See **33 CFR 165.1** through **165.40** and **165.1340**, chapter 2, for limits and regulations.)

(161) Two regulated areas have been established in Elliott Bay: southeast of Duwamish Head and on the east side of West Waterway. (See **33 CFR 165.1** through **165.13** and **165.1336**, chapter 2, for limits and regulations.)

(162) A regulated navigation area is in Slip 4 just off Duwamish Waterway. (See **33 CFR 165.1338**, chapter 2 for limits and regulations.)

(164)

Currents

(165) As a rule, the tidal **currents** in the harbor have little velocity. At times, however, with a falling tide an appreciable current will be found setting northwest along the waterfront. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area, including the Northern Part of Puget Sound. (Links to a user guide for this service can be found in chapter 1 of this book.

(166)

Weather, Seattle

(167) Seattle is on a hilly stretch of land overlooking the salt waters of Puget Sound to the west, and in an east direction, the waters of Lake Washington, an 18-mile-long (33 km) freshwater lake. The Lake Washington shoreline roughly parallels that of Puget Sound at distances varying from about 2.5 to 6 miles (5 to 11 km). Hills rise rather abruptly from both shorelines and reach elevations of more than 300 feet (92 m) in the central sections and more than 500 feet (153 m) in the extreme northern and the southwestern sections. The general north-south trend of the city is paralleled on the east by the Cascade Mountains, while to the west and northwest, at somewhat greater distance, the Olympic Mountains rise abruptly. The main commercial section of the city is along the east shore of Elliott Bay, an indentation in the Puget Sound shoreline.

(168) The climate is mild and moderately moist due to the prevailing west air currents, which advance inland from the Pacific Ocean, and to the shielding effects of the Cascade Mountains, which serve to exclude and deflect the cold continental air toward the east. Although the city is 90 miles distant from the ocean at the nearest point, the marine air penetrates readily inland, an effect that is aided by the extensive water surface of Puget Sound. The prevailing west air currents cross vast reaches of ocean, acquiring much water vapor and a temperature near that of the sea. This effect is received from the general currents of the ocean rather than from the Japanese Current, which curves far north into Alaskan waters. As a result of the rather steady influx of marine air, winters are comparatively warm and summers cool. Extremes of heat or cold are moderate and usually of short duration and the daily range in temperature small.

(169) The warmest summer and the coldest winter days come with north to east winds that have traveled under land influences from British Columbia or eastern Washington. In the summer, the number of days having maximum temperatures of 90°F (32.2°C) or above averages less than three, but these extreme temperatures have occurred in each month between May and September. Only once during the entire period of record has the temperature reached 100°F (37.8°C, July 1994). The average annual temperature is 52°F (11.1°C), with an average maximum of 59°F (15°C) and an average minimum of 44°F (6.7°C). Nighttime temperatures during the warmest months usually reach comfortable levels and very seldom remain about 65°F (18.3°C). During the winter, daily maximum temperatures fail to rise above the freezing point (0°C) on an average of only about two days per year, while the number of days having minimum temperatures of 32°F (0°C) or below averages only 15 per year. However, each month, October through May, has recorded sub-freezing temperatures, and single-digit temperatures have been recorded in each month from November through February. An extreme low temperature of 0°F (-17.8°C) was recorded in January 1950. In general, temperatures may vary by several degrees at any one time throughout the city, depending on wind direction, distance from shoreline and elevation.

(170) The normal precipitation of 38 inches (965 mm) is moderate compared with many points along the north Pacific Coast. Primarily this is due to the location of the city, which lies in the lee or dry side of the Olympic Mountains. The west or windward slopes of these mountains cause the moist marine winds to rise to cooler levels with heavy precipitation on the seaward slopes and diminished amounts east of the summits. A winter seasonal wet period along the Pacific Coast coincides with and is caused by the Aleutian Low. In summer this low pressure recedes north with higher pressures off the coast and results eventually in clear weather, rising temperatures and decreased humidities. The area has, therefore, a pronounced but not sharply defined wet season extending usually from October through April, a period in which about 82 percent of the total precipitation occurs, and a dry season, May through September, with 18 percent. Excessive precipitation is rare and the 24-hour extreme precipitation event is only 3.41 inches (86.6 mm), but in the wet season the continuance of light or moderate amounts is rather persistent. The average winter snowfall totals about 12 inches (305 mm), and snow seldom remains on the ground for more than 1 or 2 days at a time. Maximum recorded snow depths have ranged from as little as a trace in several instances to

(191)

Facilities in the Port of Seattle

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Facilities on Elliott Bay							
Port of Seattle Terminal 91, Pier 91	47°37'35"N., 122°22'58"W.	2,495 (W side) 1,875 (E side) 357 (face)	16-30	18	• Open storage (45 acres) • Cold storage (4.5 million feet³)	Receipt of general cargo, automobiles, and seafood **(Note 3)**	Port of Seattle
Port of Seattle Terminal 91, Pier 90	47°37'35"N., 122°22'48"W.	1,875 (W side) 2,222 (E side) 295 (face)	22-30	18	• Covered storage (138,000 sq. feet) • Tank storage (198,000 barrels)	Receipt and shipment of fruit and petroleum products **(Note 3)**	Port of Seattle
Louis Dreyfus Corp. Terminal 86	47°37'24"N., 122°22'12"W.	1,400	70	20	• Grain elevator (4.2 million bushels) • Vessel loading spouts • Belt conveyors	Shipment of grain	Port of Seattle/ Louis Dreyfus Corp.
Total Terminals Terminal 46	47°35'48"N., 122°20'28"W.	1,874	39-43	18.5	• Open storage (70 acres) • Gantry cranes (40 tons)	Receipt and shipment of general cargo	Port of Seattle/ Total Terminals, Inc.
SSA Terminals Terminal 37	47°37'32"N., 122°20'33"W.	850	50	18.5 / 21	• Open storage (12 acres) • Lifts (15 tons)	Receipt and shipment of general cargo and steel products	Port of Seattle/ SSA Terminals, Inc.
Rainier Petroleum Corp. Equilon Enterprises	47°35'20"N., 122°21'12"W.	460 (W side) 460 (E side)	35-40	19	Tank storage (550,000 barrels)	Receipt and shipment of petroleum products	ExxonMobil Corp./ Rainier Petroleum and Equilon Enterprises, LLC
Facilities on East Waterway							
SSA Terminals Terminal 18 (Berths 1 to 5)	47°35'20"N., 122°21'12"W.	6,000	49	17	• Open storage (196 acres) • Tank storage (850,000 barrels) • Traveling cranes (50 tons)	Receipt and shipment of general cargo and Petroleum products	Port of Seattle/ SSA Terminals and Kinder Morgan Energy Partners
Trans Pacific Container Service Corp. Terminal 30	47°34'49"N., 122°20'35"W.	1,812	40–44	18.5	• Open storage (45 acres) • Container cranes (50 tons)	Receipt and shipment of general cargo	Port of Seattle/ Trans Pacific Container Service Corp.
SSA Terminals Terminal 25	47°34'32"N., 122°20'35"W.	1,580	42-44	18.5	• Open storage (37 acres) • Container cranes (40 tons)	Receipt and shipment of general cargo	Port of Seattle/ SSA Terminals
Facilities on West Waterway							
BP Oil Company Seattle Terminal (Pier 11)	47°34'57"N., 122°21'30"W.	460	32	20	Tank storage (617,800 barrels)	Receipt and shipment of petroleum products	BP Oil Company
American President Lines Terminal 5 Wharf	47°34'37"N., 122°21'41"W.	2,900	45-50 **(Note 1)**	19	• Open storage (130 acres) • Container cranes (50 ton)	Receipt and shipment of general cargo	Port of Seattle/ American President Lines
Pacific Terminals East and West Wharves	47°34'25"N., 122°21'35"W.	670	15	19	Covered storage	Receipt and occasional shipment of lumber; receipt of wood pulp and paper products **(Note 2)**	Puget Sound Freight Lines/Pacific Terminals, Ltd.
Facilities on Duwamish Waterway							
Ash Grove Cement Co. North Wharf	47°34'06"N., 122°20'44"W.	600	25	20	• Silo storage (54,500 tons) • Pneumatic pipelines	Occasional shipment of bulk cement	Ash Grove Cement Co.
Ash Grove Cement Co. South Wharf	47°34'03"N., 122°20'45"W.	360	25	20	• Open storage • Silo storage	Receipt of coal, gypsum, gravel, and limestone	Ash Grove Cement Co.
Birmingham Steel Corp. Terminal 105	47°33'54"N., 122°20'56"W.	660	40	17	Open storage (3.7 acres)	Receipt of scrap metal by barge	Port of Seattle/ Birmingham Steel Corp.
Lafarge Corporation Cement Wharf	47°33'19"N., 122°20'42"W.	645	32	25	Silo storage (68,250 tons)	Receipt and shipment of bulk cement	Lafarge Corp.
Lafarge Corporation Raw Materials Wharf	47°33'14"N., 122°20'35"W.	1,100	30	20	• Open storage (50,000 tons) • One traveling crane	Receipt of limestone, shale, coal, and slag	Lafarge Corp.
Glacier Northwest West Terminal Wharf	47°32'56"N., 122°20'25"W.	467	34	20	• Silo storage (50,000 tons) • Traveling cement unloader	Receipt of bulk cement	Glacier Northwest
Glacier Northwest Slip No. 2 Wharf	47°32'49"N., 122°20'16"W.	325	16–17	15	• Open storage (13,000 tons) • Belt conveyor system	Receipt of sand and gravel	Glacier Northwest
International Terminal Co. Terminal 115	47°32'54"N., 122°20'24"W.	925	30	20	• Open storage (6.4 acres) • One 50-ton gantry crane	Receipt and shipment of general cargo and forest products; receipt of steel products	Port of Seattle/ various operators

Facilities in the Port of Seattle

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Northland Services 8th Avenue Terminal Wharf	47°32'05"N., 122°19'16"W.	1,035	13–15	18	• Open storage (20 acres) • Cranes to 150 tons	Receipt and shipment of general cargo	Crowley Marine Services/ Northland Services Inc.

Dimensions are given in feet
* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

Note 1 – Mariners are advised to use caution when using this wharf as the South Berth shallows rapidly from the 250-foot mark to the end of the pier.
Note 2 – Two tugs are recommended when docking at East Wharf.
Note 3 – Safety and Security Zone, See **33 CFR §165.1324**, chapter 2, for limits and regulations.

over 21 inches (533 mm). The occurrence of light fog is most frequent during late fall and winter where, on average, 19 days report fog during the October through January period. Thunderstorms average about eight per year, lightning damage is very infrequent, and tornadoes have never been reported in the city.

(171) The National Weather Service maintains an office in Seattle; barometers may be compared there or by telephone/internet—see Appendix A for address.

(172)

Routes

(173) Vessels bound for the Strait of Georgia from Seattle can use the following routes: **via Rosario Strait—**an approximate midchannel course using the vessel traffic system outbound lane (see the beginning of chapter 7 for Traffic Separation Scheme information), through Puget Sound and Admiralty Inlet to the precautionary area north of Point Wilson, thence east of Partridge Bank, Smith Island and Davidson Rock to the precautionary area at the south end of Rosario Strait, thence north passing east of Belle Rock, Lydia Shoal and Peapod Rocks, thence leaving the vessel traffic system lanes at the precautionary area just north of Clark Island, and proceeding into the Strait of Georgia either north or south of Alden Bank; **via Haro Strait—**from Admiralty Inlet using the vessel traffic system outbound lane to the precautionary area north of Point Wilson, thence west of Partridge Bank leaving the vessel traffic system lanes at the precautionary area just southeast of Hein Bank, thence through Haro Strait and Boundary Pass to the Strait of Georgia.

(174) These routes are available for vessels of any draft. A range should be steered where available to ensure making the courses good.

(175) Between Admiralty Inlet and the entrance to Rosario Strait, the current on the flood has a tendency to set a vessel east toward Whidbey Island; it also sets strongly through Deception Pass and up Rosario Strait. There is a strong west set in this area on the ebb tide. Through Rosario Strait the currents run with considerable velocity. Heavy tide rips and swirls are found off Black Rock, Obstruction Pass, Peapod Rocks and Lawrence Point.

(176) In crossing from Admiralty Inlet to the entrance of Haro Strait, the tidal currents setting to and from Rosario Strait and San Juan Channel, with estimated velocities of 2 to 3 knots, should be kept in mind. From Henry Island to around Turn Point, heavy tide rips are found on the ebb. Particularly heavy and dangerous tide rips occur on the ebb between East Point and Patos Island and for 2 miles north in the Strait of Georgia. The flood from Rosario Strait, which is felt as soon as the passage between Orcas and Sucia Islands is open, is apt to set a vessel toward East Point. The ebb in this vicinity sets to the east even before the Strait of Georgia is well open.

(177)

Pilotage, Seattle

(178) Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the west coast of the continental United States (including Alaska) and/or British Columbia. Pilotage for Puget Sound is provided by the Puget Sound Pilots. (See Pilotage, Strait of Juan de Fuca and Puget Sound, indexed as such, chapter 7, for details.)

(179)

Towage

(180) Tugs up to 5,000 hp are available in Seattle. Arrangements should be made in advance through ship's agent.

(181)

Quarantine, customs, immigration and agricultural quarantine

(182) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(183) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.) The quarantine anchorage is just north of Harbor Island.

(184) Seattle is a **customs port of entry**.

(185)

Coast Guard

(186) The Thirteenth Coast Guard District Office and Sector Puget Sound is located in the Federal Building in downtown Seattle. (See Appendix A for addresses.) The Coast Guard moors vessels at the Pier 36 Slip (47°35'24"N., 122°20'31"W.)

(187)

Harbor regulations

(188) Harbor regulations are enforced by the Harbor Patrol Unit of the Seattle Police Department. The unit has two patrol boats to aid in the enforcement of the city ordinance prohibiting unlawful destruction by excessive speeds, disorderly behavior or unsafe seamanship. They

maintain constant radio contact with each other and the police "land cruisers" on 24-hour patrol. The police patrol all waters of the harbor.

(189)

Wharves

(190) The Port of Seattle has numerous piers and wharves on both the outer harbor (Elliot Bay and East, West and Duwamish Waterways) and the inner harbor (Lake Washington Ship Canal, Lake Union and Lake Washington.) Of the facilities listed in the table, nearly half are owned by the Port of Seattle and leased to private operators, including eight large general cargo facilities, a grain elevator and a large terminal for handling automobiles. Most of the facilities in the inner harbor are privately owned and handle barge traffic almost exclusively. Only the major deep-draft facilities are listed. The alongside depths given in the table are reported—for information on the latest depths contact the port authorities or the private operators.

(192) All facilities described have direct highway connections and most have plant trackage with direct railroad connections. Water is available at most of the wharves, but electrical shore power connections are available at less than half of the wharves. General cargo at the port is usually handled by ships' tackle. Mechanical handling equipment, if available, is mentioned in the table. Shore-based hoisting equipment with capacities up to 200 tons and floating cranes with capacities to 400 tons are available to the public at Port of Seattle.

(193)

Supplies

(194) Marine supplies of all kinds are available in Seattle. Bunker fuel, diesel oil and lubricants are available. Large vessels can be bunkered at Pier 91, Pier 15 (Rainer Petroleum Corp. and Equilon Enterprises) and at Pier 11 (BP Oil Co.). Bunkering may be done at other berths by tank barges. Water is available at most berths. North of Seattle, vessels may bunker at Point Wells or Edwards Point.

(195)

Repairs

(196) There are two large shipyards in the Seattle area, both on Harbor Island at the south end of Elliott Bay. The largest floating drydock, at a shipyard just east of the entrance to West Waterway, has a capacity of 40,000 tons, an overall length of 873 feet, a minimum clear inside width of 137 feet and a depth over the keel blocks of 30 feet. Gantry cranes to 150-ton capacity are available at the yard. Another shipyard, at the northwest end of Harbor Island, has a drydock that is only slightly smaller. Smaller shipyards are on the Duwamish River and on Lake Union, in the inner harbor. There are larger drydocks at the Puget Sound Naval Shipyard in Bremerton, available for private use under certain conditions when not required by the government.

(197)

Small-craft facilities

(198) In addition to the large Shilshole Bay Marina, mentioned earlier in this chapter, numerous small-craft facilities line the shores of Lake Union, Lake Washington, Lake Washington Ship Canal, Elliott Bay and Duwamish Waterway.

(199)

Ferries

(200) **Washington State Ferries** operates three ferry slips at the **Colman Ferry Terminal (Pier 52)** in about 47°36'09"N., 122°20'22"W. Ferries operate between Seattle/Winslow and Seattle/Bremerton 24 hours a day. For information on routes or schedules, visit: *wsdot.wa.gov/ferries* or call 206–464–6400.

(201)

Communications

(202) Ferry service for passengers and automobiles is available to many points on Puget Sound. Seattle is served by two important railroads and by many steamship and towing companies. Many airlines have passenger and freight service to Seattle-Tacoma International Airport. Seattle is the major port for Alaska commerce, by both water and air carriers.

(203)

Lake Washington Ship Canal to Sammamish River

(204) **Lake Washington Ship Canal** extends from Puget Sound through Shilshole Bay, Salmon Bay, Lake Union, Portage Bay and Union Bay to deep water in Lake Washington. The canal is the only entrance from Puget Sound to Lake Union and Lake Washington and is highly trafficked by recreational boats, fishing vessels and commercial vessels. The entrance to the canal is marked by lighted buoys. The **federal project** depths in the entrance are 34 feet and 30 feet through the canal. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through the USACE hydrographic survey website listed in Appendix A.

(205) A **speed limit** of 4 knots is enforced within the guide piers of the Hiram M. Chittenden Locks. A **speed limit** of 7 knots is enforced elsewhere in the Lake Washington Ship Canal, except in an area marked by four private buoys in the north part of Lake Union.

(206) The **Hiram M. Chittenden Locks**, a government-owned and -operated double lock, and a fixed dam are at the narrows of the entrance to Salmon Bay, 1.2 miles in from the sound. The large lock, a two-chamber structure, has a clear length of 760 feet, width of 80 feet, lift of 26 feet and depth over the lower miter sill of 29 feet. The small lock has a clear length of 123 feet, width of 28 feet, lift of 26 feet and depth over the lower sill of 16 feet.

(217)

Structures across Lake Washington Ship Canal and Lake Washington

Name	Type	Location	Clearance (feet) Horizontal	Clearance (feet) Vertical*	Information
Burlington Northern Railroad bridge	bascule	47°40'01"N., 122°24'08"W.	150	43	Notes 1, 2 and 3 Call sign KCE-201
Ballard bridge	bascule	47°39'35"N., 122°22'34"W.	150	29 (46 at center)	Notes 2 and 3 Call sign KJA-445
Overhead cable	power	47°39'09"N., 122°21'38"W.		160	
Overhead cables	power	47°38'58"N., 122°21'15"W.		160	
Fremont bridge	bascule	47°38'51"N., 122°20'59"W.	150 (120 open)	14 (31 for central 38 feet)	Notes 2 and 3 Call sign KJA-442
George Washington Memorial bridge	fixed	47°38'48"N., 122°20'50"W.	150 525	136 73	Over navigation channel Outside the navigation channel
Overhead cable	power	47°39'11"N., 122°19'23"W.		182	
Freeway bridge	fixed	47°39'11"N., 122°19'21"W.	250	127 (138 at center)	
University bridge	bascule	47°39'10"N., 122°19'13"W.	171 (157 open)	30 (45 at center)	Notes 2 and 3 Call sign KJA-441
Montlake bridge	bascule	47°38'50"N., 122°18'17"W.	146 (129 open)	32 (48 at center)	Notes 2 and 3 Call sign KJA-438
Evergreen Point bridge (western navigation channel)	fixed	47°38'36"N., 122°16'28"W.	142	44 (west span) 41 (east span)	There are two spans over this channel Bridge is under construction
Evergreen Point bridge (eastern navigation channel)	fixed	47°38'18"N., 122°14'36"W.	226	67	Bridge is under construction
Interstate 90 bridge (western navigation channel)	fixed	47°35'25"N., 122°17'03"W.	195	29	
Interstate 90 bridge (eastern navigation channel)	fixed	47°35'23"N., 122°15'19"W.	195	29	West side of Mercer Island
Interstate 90 bridge (fixed)	fixed	47°34'44"N., 122°12'02"W.	200	71	East side of Mercer Island

* Vertical clearance is referenced to mean water level of the lakes (21 feet above mean lower low water)

Note 1 – Vertical clearance is referenced to Mean High Water

Note 2 – See **33 CFR 117.1** through **117.59** and **117.1051**, chapter 2, for draw bridge regulations.

Note 3 – Bridge tenders monitor VHF-FM channels 16 and 13, and work channel 13 or phone 206–386–4251.

Passage time is less than 30 minutes for large vessels and 5 to 10 minutes for small vessels. The lock tenders monitor VHF-FM channel 13 and can be contacted at 206–783–7000 for additional information.

(207) A saltwater barrier extends across the east end of the east chamber of the large lock to reduce the intrusion of saltwater into Lake Washington and to conserve water. (See **33 CFR 207.750**, chapter 2, for navigation regulations for Lake Washington Ship Canal, the Hiram M. Chittenden Locks and the saltwater barrier.)

(208)

Depths

(209) Depths above Hiram M. Chittenden Locks are referred to low water of the lakes, which is 20 feet above the plane of mean lower low water of Puget Sound.

(210)

Heights

(211) Vertical clearances above Hiram M. Chittenden Locks are referred to the mean water level of the lakes, which is 21 feet above mean lower low water of Puget Sound.

(212) **Salmon Bay** extends for about 0.8 mile from the east end of the locks to the Ballard (15th Avenue) Bridge. There are numerous piers and floats with extensive small-craft facilities on the bay. Fishermen's Terminal, operated by the Port of Seattle, is immediately west of the Ballard Bridge. The terminal is the home port of a large commercial fishing fleet. Depths of 14 to 28 feet are alongside the piers. There are 700 berths for craft 27 to 176 feet long. Complete facilities for fishing boats are available at the 54-acre terminal, including electricity, gasoline, diesel fuel, water, net repair yards and all types of marine supplies. Marine railways at the terminal can handle craft to 300 tons for complete repairs. A travel lift to 46 feet is also available at the terminal.

(213) From Salmon Bay the canal leads southeast to **Lake Union**, which is about 1 mile long in a north-south direction and about 0.5 mile wide. Depths in the lake range generally from 37 to 41 feet. The lake is heavily utilized by recreational boaters, especially during the summer months. There is a 10-foot shoal about 200 yards offshore from the southwest end of the lake; it is marked by a buoy. Four private buoys in the north part of Lake Union mark an unrestricted speed zone, which is used by boat builders around the lake as a testing area. The buoys are frequently repositioned; caution is advised when transiting the area. Seaplane takeoff and landings are frequent on the east and west sides of the lake. Seasonal buoys (June–September) running the length of the lake show a quick flashing yellow light when seaplanes are present.

(214) There are numerous marinas and repair facilities and several commercial wharves from which various commodities are shipped by barge. A drydock company

has several floating drydocks, the largest of which has a lifting capacity of 3,600 tons.

(215) **Portage Bay**, east of Lake Union, has many slips and finger piers for small-craft; hull and engine repairs are available on the northeast shore.

(216) **Montlake Cut (Portage Cut)** leads from Portage Bay past the conspicuous buildings and athletic stadium of **University of Washington**, on the north side, thence into **Union Bay**, and thence into Lake Washington.

(218) **Lake Washington**, the large freshwater lake on Seattle's east side, provides deep and protected water over most of its length of nearly 16 miles. Significant bands of submerged aquatic vegetation exist around the periphery of the lake in the 10- to 20-foot depth range. These beds are particularly thick in the relatively flat, shoal areas at the north end of the lake and in the various coves and bays along the eastern shore. The shores of the lake are studded with private piers and landings, and there are marinas and small-craft repair places at many locations. Gasoline and diesel fuel are available at a yacht basin just south of Newport Shores on the east side of Lake Washington. There are few commercial installations. Except for a few oil wharves, commercial shipments are by barge.

(219) Combined **measured half nautical mile, nautical mile** and **2,000-meter measured courses** have been established along the pontoon bridge from Foster Island to Evergreen Point on a bearing of **102°30'-282°30'**. The half nautical mile and nautical mile courses are marked on the south side of the bridge by 18-inch circles resembling an engineers target; the half nautical mile markers have green and white quadrants, and the nautical mile markers have red and white quadrants. The 2,000-meter course is marked by 1- by 3-foot green markers with 3-inch white vertical stripes on both sides of the bridge.

(220) **Houghton**, at the northeast side of the lake just south of Kirkland, is the site of a former shipyard. There are several marinas catering to yachtsmen.

(221) **Juanita Bay**, north of Kirkland, is a summer recreational area with several small piers.

(222) Offices and storage facilities of the National Oceanic and Atmospheric Administration are at **Sand Point** on the west shore of the lake just northeast of Union Bay.

(223) **Kenmore**, at the north end of Lake Washington about 4.4 miles north of Sand Point, is the site of several marinas and a barge loading facility. A dredged channel, marked by lighted buoys, leads across the flats to a turning basin. A submerged wreck covered 16 feet is near the approach to the dredged channel in about 47°44'51"N., 122°15'58"W.

(224) A seaplane base is at Kenmore.

(225) **Sammamish River**, about 0.1 mile south of Kenmore, is entered through a dredged channel that branches northeast from the Kenmore channel. About 0.3 mile above the mouth of the river is a highway bridge under construction (2020).

(226)

Possession Sound to Meadowdale

(227) **Possession Sound** joins Puget Sound at the south point of Whidbey Island and extends in a general north direction for 10 miles to its junction with Saratoga Passage and Port Susan. From the entrance it extends for 3.5 miles with an average width of 2 miles and then expands into an irregular basin about 6 miles in diameter.

(228) The waters of the sound are generally deep. The northeast part of the sound is filled with extensive flats, many of which uncover and rise abruptly from deep water. These flats are intersected by several shifting channels, forming the mouth of the Snohomish River. An anchorage area for large vessels is just south of the flats and near the entrance channel to Everett, with depths ranging from 6 to 60 fathoms.

(229) **Meadowdale**, a residential area on Browns Bay, is on the east side of the sound about 4 miles south of Possession Point. There is a large dry storage boathouse here with a hoist that can handle craft to 24 feet. Several floats are available during the summer months; gasoline and covered storage for about 40 craft are also available. Reported depths of 5 feet can be carried to the hoist on the northwest face of the wharf. Norma Beach, about 3 miles south of Possesion Point, is on the east side of the sound. A boathouse with a marine railway can handle small craft to 20 feet; gasoline and dry storage are available.

(230)

Elliot Point to Clinton

(231) **Elliot Point**, on the east side of Possession Sound 4 miles northeast of Possession Point, is a low spit projecting some 200 yards from the high land. **Mukilteo Light** (47°56'55"N., 122°18'22"W.), 33 feet above the water, is shown from a 33-foot white octagonal tower on the point; a mariner-radio-activated sound signal is at the station, initiated by keying the microphone five times on VHF-FM channel 83A.

(232) **Mukilteo** is a town east of Elliot Point. An automobile ferry runs between Mukilteo and Clinton on Whidbey Island—a private light marks the approach to the ferry dock. A rail/barge transfer facility (Mount Baker Terminal) at 47°57'15"N., 122°17'19"W. is marked by a private light.

(233) **Gedney Island**, locally known as **Hat Island**, is prominent 3.5 miles north of Elliot Point. It is about 1.5 miles long in a southeast direction, high and wooded. From its southeast point, a shoal extends southeast, the 5-fathom curve being at a distance of 0.8 mile. Foul ground extends 0.2 mile from the south side of the east half of the island. A light is on the north side of the shoal area.

(234) A fish haven is about 0.5 mile south of Gedney Island in about 47°59'48"N., 122°18'30"W. A marina, protected by a breakwater, is on the northeast side of the island. The breakwater is marked by private lights.

(235) **Clinton**, a village on **Randall Point**, is the Whidbey Island terminus of the ferry from Mukilteo. The town has several stores; a restaurant is near the ferry slip. Gasoline is available.

(236)

Everett to Snohomish River

(237) **Everett**, an important wood products shipping port, is on the east side of **Port Gardner**, 4 miles northeast of Elliot Point. The Port of Everett's large alumina silo is prominent along the water.

(238)

Channels

(239) A dredged channel with two settling basins extends inside a training dike along the east side of **Jetty Island** and in the Snohomish River around the north half of the city to a lumbermill 6 miles above Port Gardner. The channel is marked by lights, buoys and lighted and unlighted ranges. The second settling basin is subject to continual shoaling. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through the USACE hydrographic survey website listed in Appendix A.

(240)

Anchorages

(241) The general anchorage area is west of the waterfront. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.) Vessels usually proceed to the wharves.

(242)

Pilotage, Everett

(243) Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the west coast of the continental United States (including Alaska) and/or British Columbia. Pilotage for Puget Sound is provided by the Puget Sound Pilots. (See Pilotage, Strait of Juan de Fuca and Puget Sound, indexed as such, chapter 12, for details.)

(244)

Towage

(245) Tugs up to 3,000 hp are available at Everett, and larger tugs may be obtained from Seattle. Arrangements should be made in advance through ships' agents.

(246)

Quarantine, customs, immigration and agricultural quarantine

(247) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(248) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(249) Everett is a **customs port of entry**.

(250)

Harbor regulations

(251) Harbor regulations are enforced by the manager of the Port of Everett, who serves as **harbormaster** and port warden.

(252) **Naval Station Everett** is on the west and north end of the harbor. A naval restricted area, marked by a floating barrier and private lights, surrounds the docking facilities. (See **33 CFR 334.1215**, chapter 2, for limits and regulations.)

(253)

Wharves

(254) The Port of Everett operates three deep-draft piers on Port Gardner, and only the deep-draft facilities on those piers are described. The alongside depths are reported—for information on the latest depths, contact port authorities or the private operators. All the facilities described have both direct highway and railroad connections. Water is available at most of the wharves, and electrical shore power is available at all except Hewitt Wharf. General cargo at the port is usually handled by ships' tackle. Special handling equipment, if available, is mentioned in the description of the particular facility.

(255) **Port of Everett, South Terminal, Berth No. 1 and Dolphin Berth** (47°58'31"N., 122°13'38"W.): depth alongside, 38 feet; deck height, 20 feet; berthing space, 1,555 feet; 30 acres of paved open storage; receipt and shipment of conventional general cargo; shipment of logs; owned and operated by Port of Everett.

(256) **Port of Everett, Pacific Terminal Wharf** (47°58'47"N., 122°13'25"W.): depth alongside, 32 to 37 feet; deck height, 18 feet; berthing space, 600 feet; 8 acres of open storage; receipt and shipment of conventional and containerized general cargo in foreign and domestic trade; receipt and shipment of lumber and steel products; owned and operated by Port of Everett.

(257) **Port of Everett, Hewitt Avenue Terminal, Pier No. 1** (47°58'42"N., 122°13'22"W.): depth alongside, 38 feet (north side) and 42 feet (south side); deck height, 18 feet; berthing space, 140 feet (face), 600 feet (north side), 600 feet (south side); one 35-ton diesel crawler crane for handling containers; receipt and shipment of conventional and containerized general cargo; receipt and shipment of lumber and steel products; shipment of perishable food commodities; owned and operated by Port of Everett.

(258) **Port of Everett, Hewitt Wharf** (47°58'47"N., 122°13'12"W.): depth alongside, 20 feet; deck height, 18 feet; berthing space, 830 feet; one 36,000-square foot refrigerated building; shipment of perishable food commodities; owned and operated by Port of Everett.

(259) **Port of Everett, Hewitt Avenue Terminal, Pier No. 3** (47°58'53"N., 122°13'16"W.): depth alongside, 38 feet; deck height, 19 feet; berthing space, 120 feet (face), 800 feet (south side), 900 feet (north side); 15 acres of open storage, 55,000-ton covered storage dome, one mobile pneumatic unloader (rate of 600 tons per

(268)

Structures Across the Snohomish River, Steamboat Slough and Ebey Slough

Name	Type	Location	Clearances (feet) Horizontal	Vertical*	Information
Snohomish River					
BNSF Railroad bridge	swing	48°01'03"N., 122°11'20"W.	100	9	Horizontal clearance is for the north draw
Overhead cables	power/tv	48°01'02"N., 122°11'18"W.		74	
State Route 529 bridges	vertical lift	48°01'02"N., 122°11'15"W.	105	78 (up) 38 (down)	Note 1
Interstate 5 bridge	fixed	47°59'35"N., 122°10'48"W.	184	66	
US Highway 2 bridge	fixed	47°58'46"N., 122°10'52"W.	130	56	
US Highway 2 bridge	fixed	47°58'44"N., 122°10'58"W.	229	54	
Overhead cables	power	47°58'40"N., 122°11'03"W.		N/A	
Union Slough					
BNSF Railroad bridge		48°01'55"N., 122°11'06"W.	N/A	N/A	
Overhead cables	power	48°01'55"N., 122°10'59"W.		25	
State Route 529 bridges		48°01'54"N., 122°11'03"W.	10	3	
Steamboat Slough					
BNSF Railroad bridge	swing	48°02'09"N., 122°11'01"W.	100	7	
Overhead cables	power	48°02'10"N., 122°11'00"W.		53	
State Route 529 bridges	swing	48°02'10"N., 122°10'57"W.	N/A	N/A	Note 1
Overhead cables	power	48°02'11"N., 122°10'51"W.		53	
Interstate 5 bridge	fixed	48°02'09"N., 122°10'42"W.	100	41	
Ebey Slough					
Overhead cable	power	48°02'51"N., 122°11'02"W.		N/A	
Interstate 5 bridge	fixed	48°02'50"N., 122°10'58"W.	110	41	
BNSF Railroad bridge	swing	48°02'50"N., 122°10'51"W.		5	Bridgetender monitors VHF-FM channel 16 and works channel 13; call sign KZ-2475
Overhead cable		48°02'48"N., 122°10'40"W.		65	
State Route 529 bridge	fixed	48°02'46"N., 122°10'42"W.	110	16	

* Vertical clearances are referenced to Mean High Water
Note 1 – See **117.1 through 117.59 and 117.1059**, chapter 2 for limits and regulations

hour), 35-ton diesel crawler crane; receipt and shipment of conventional general cargo; shipment of lumber and logs; receipt of alumina; owned and operated by Port of Everett.

(260)

Supplies

(261) Water, provisions and some marine supplies can be obtained. Gasoline and diesel fuel are available for small craft at Everett Yacht Harbor. Fuel oil for large vessels is available only by Seattle-based tank barges.

(262)

Repairs

(263) There are no facilities for repairs to deep-draft vessels in Everett; the nearest such facilities are in Seattle.

(264) The **Port of Everett Marina** is about a mile northeast of the Snohomish River Channel's mouth. The marina consists of two separate north and south basins and has berths for more than 2,200 small craft including about 45 transient berths. The reported depths in the entrance to the south basin are 10 with 13 feet alongside and 12 feet in the entrance and alongside the berths in the north basin. Services available include electricity, gasoline, diesel fuel, water, ice, marine supplies, pump-out facility, launching ramps, full repairs (hull, engine, electrical) and a 75-ton marine lift. A harbormaster, whose office is on the south side of the harbor, assigns all berths.

(265)

Communications

(266) Everett is served by a railroad. The county airport, Paine Field, is 6 miles south-southwest of the city.

(267) **Snohomish River**, once heavily traveled by the light-draft river steamers and loggers, flows down through the dredged channel and settling basin near the yacht harbor and empties into Port Gardner just west of East Waterway. Traffic on the river above the yacht harbor consists of log tows, tugs and barges and pleasure boats. Several pulp, plywood and lumber mills are along the river.

(269) A marina is 0.5 mile upstream from the State Route 529 bridges. There is dry storage for over 1,000 craft to 40 feet long; transient mooring floats are available for visiting craft. Gasoline, water, ice, limited marine supplies, hull and engine repairs are available. A city park with a launching ramp is 1.2 miles upstream from the

State Route 529 bridges. The practical limit of navigation on the Snohomish River is 0.8 mile above the Interstate 5 bridge.

(270)

Steamboat Slough to Crescent Harbor

(271) The flats north of Everett at the mouths of **Steamboat Slough** and **Ebey Slough** are used for log storage. Navigation across the shallow flats should not be attempted without local knowledge. Local small craft navigate Ebey Slough to **Marysville**. A marina and boatyard are just east of the railroad bridge in the town. Marine supplies, winter boat storage, engine and hull repairs, a 4-ton hoist and launching ramp are available. There is a public launching ramp just west of the Interstate 5 highway bridge at Marysville.

(272) **Sandy Point**, the south point at the entrance to Saratoga Passage, is a low spit rising abruptly to 100 feet, with bluffs on each side; it is marked by a light.

(273) **Camano Head**, 1.5 miles north-northeast of Sandy Point, is the southeast point of Camano Island. A shoal, with a rock bare at low tide, extends nearly 0.2 mile southeast from the point and is marked by a light.

(274) **Tulalip Bay**, 4 miles northwest of Everett, is a small cove on the mainland. On the north side are the village of **Tulalip** and the agency buildings of the Tulalip Indian Reservation. The bay is shoal, with rocks extending more than 300 yards south and west from the point on the north side of the entrance. A light marks the edge of the shoal water west of the point at the south side of the entrance. Several small wharves and landing floats, mostly dry at low water, are at Tulalip; however, it has no public facilities. There are log-booming grounds in the south part of the bay. Mission Beach, immediately south of the bay, has several private boathouses and float landings.

(275)

Comano Island to Crescent Harbor

(276) **Camano Island** extends between Port Susan and Saratoga Passage. It is irregular in shape and 14 miles in length; the south portion consists of a long, narrow tongue that terminates in Camano Head, 340 feet high. At its north end it is separated from the mainland by **Davis Slough**, and South Pass and West Pass of the Stillaguamish River, all dry at low water. On the shores of the island are several resorts and unincorporated residential tracts.

(277) **Port Susan**, on the east side of Camano Island, extends about 11 miles in a northwest direction, terminating in flats that bare and extend over 3 miles wide at its head. There are several resort settlements. Deep water is throughout until nearing the head, where anchorage may be had off the extreme west edge of the flats in about 10 fathoms. Care should be used in approaching and anchoring, as the flats rise abruptly from deep water.

(278) **Stanwood** is in a dairying and farming district on the north side of the **Stillaguamish River** at the junction of **South Pass** and **West Pass**.

(279) **Saratoga Passage**, on the west side of Camano Island, extends some 18 miles in a northwest direction from its entrance between Sandy Point and Camano Head. At its north end it connects with Penn Cove and Crescent Harbor and leads east into Skagit Bay. Depths in the passage are from 100 fathoms at the entrance to 15 fathoms at the Crescent Harbor entrance. There are few outlying dangers, and a midchannel course is clear.

(280) There is considerable traffic in these waters, mostly pleasure and fishing craft, with occasional tugs bound to or from Deception Pass. This is a resort area; along the shores of the islands are several small marinas that provide gasoline, launching ramps and lodgings, limited berths, scattered areas of private mooring buoys. Principal commercial products are lumber and fish.

(281) **Langley** is a small town on Whidbey Island about 1.2 miles west of Sandy Point. Tugs often anchor off the beach between Langley and Sandy Point. The South Whidbey Harbor at Langley is protected on the north and east sides by a timber breakwater marked by private lights. Transient berths, water, electricity, launching ramp and pump-out facility are available. In 2010, 12 feet was reported alongside the berths. The harbormaster monitors VHF channels 16 and 66A; telephone: 360–221–1120. The stores of the town business district are nearby; supplies may be obtained.

(282) **East Point**, 6 miles northwest of Sandy Point, is a low sandspit about 300 yards long and is marked by a light.

(283) **Elger Bay**, on the west shore of Camano Island across Saratoga Passage from East Point, is an open bight 1 mile wide. Tugs anchor here in west and northwest winds.

(284) **Holmes Harbor**, entered 8 miles northwest of Sandy Point, indents Whidbey Island 5 miles in a south direction. Except for a sand and gravel wharf and a large private boathouse at the head of the harbor, only private pleasure piers are on the shores of Holmes Harbor. Depths range from 30 to 40 fathoms off the entrance to 17 fathoms near the head, where good anchorage, except from north weather, may be had in mud bottom. A **general anchorage** is in Holmes Harbor. (See **33 CFR 110.1** and **110.230**, chapter 2, for anchorage limits and regulations.) **Rocky Point**, at the east side of the entrance, is low but rises abruptly to 500 feet. **Baby Island** is a small islet 0.2 mile off the point. Shoals, marked by a buoy, extend northwest from the island.

(285) **Greenbank**, a small farming settlement, is on the west side of Holmes Harbor at the entrance. It has a store and service station. Anchorage against west weather is available off Greenbank in 12 to 18 fathoms, muddy bottom. **Freeland**, the business center for this area, is a small town at the head of Holmes Harbor.

(286) **Camano**, a settlement on the east side of Saratoga Passage, is 3.5 miles northwest of **Lowell Point**. A light

is on **Onamac Point**, 0.8 mile north of Camano. A fish haven is northwest of the point.

(287) **Penn Cove** indents the west shore of the basin at the head of Saratoga Passage and extends west for about 3.5 miles. In most weather, the cove affords good protection in 5 to 15 fathoms, good holding ground.

(288) Off **Snatelum Point**, the south point at the entrance to Penn Cove, is a narrow spit extending north 0.5 mile, with ½ fathom near its end. The spit is marked by a buoy.

(289) **Blowers Bluff**, the north point at the entrance to Penn Cove, is bare, light-colored, high and rounding. Rocks lie offshore 200 yards at places along the bluff. The shoal extending off the southwest end of the bluff reaches almost one-third the distance across Penn Cove. Vessels should favor the south shore when passing this shoal.

(290) **Coupeville**, the county seat of Island County, is on the south shore of Penn Cove, about 2 miles from the head. The town has stores and service stations. A wharf here extends to about 12 feet. Berthage is available at floats attached to the east side of the wharf. Gasoline, diesel fuel and pump-out station are available at a fuel dock on the north side. A rock covered 15 feet is about 300 yards northeast of the wharf. A launching ramp is about 0.3 mile east of the wharf.

(291)

Oak Harbor to Crescent Harbor

(292) **Oak Harbor**, which indents the north shore of Saratoga Passage west of Crescent Harbor, is a semicircular cove about 1 mile in diameter. A foul area with several rocks awash extends about 0.5 mile southeast of **Maylor Point** on the east side of the harbor entrance. The natural entrance channel is marked by lights and lighted and unlighted buoys. The town of Oak Harbor is on the north shore of the harbor and has a seasonal dock with an entrance channel marked by pilings. A marina operated by the town is on the east side and can provide gasoline, diesel fuel, transient berths, electricity, water, ice, marine supplies, winter storage, launching ramp and pump-out facility. A 30-ton marine lift is available and full repairs can be made. The marina is protected on the west side by a breakwater marked by private lights.

(293) **Crescent Harbor**, immediately east of Oak Harbor, is a semicircular bight 2.5 miles wide, between **Forbes Point** and **Polnell Point**. Polnell Point is wooded and rather bold, and connected to the main island by low ground, giving the point the appearance of an island from a distance off. Foul ground surrounds these points, but otherwise the harbor is clear, affording anchorage in 10 to 11 fathoms, muddy bottom. Shoals and foul ground extend about 0.7 mile south of Forbes Point; the outer end of this area is marked by a lighted buoy. The harbor is exposed to the south. A T-pier with mooring dolphin, used for fueling navy vessels, is on the west side of the harbor; the pier can be used only with permission. A breakwater protects the mooring area on the southwest side. Services and/or provisions cannot be provided.

(294)

Skagit Bay to Mount Vernon

(295) The entrance to **Skagit Bay**, southern part, lies between Polnell Point and Rocky Point. The bay is about 12 miles long in a west-northwest direction. The greater portion of it is filled with flats, bare at low water, and intersected by numerous channels discharging the waters of Skagit River.

(296) A natural channel varying in width from 0.2 to 0.6 mile and marked by lights and buoys follows the east shoreline of Whidbey Island to the north end of the bay. Shoal water extends off for some 100 to 300 yards from the east shore of the island. The north part of Skagit Bay is described in chapter 7.

(297) The controlling elevation of the flats at the mouth of South Fork is about 2.5 feet above mean lower low water, and the controlling depth at low tide depends on the river stage, probably not exceeding 1 foot during periods of minimum flow. The diurnal range at the mouth of the river is 11.3 feet. The extreme range at this point is estimated to be 20 feet.

(298) A fixed highway bridge with a clearance of 10 feet crosses the South Fork at **Conway**, 4.8 miles above the mouth.

(299) **Utsalady**, a small village on the north shore of Camano Island about 1.2 miles east of Rocky Point, has a store. Vessels may anchor just east of **Utsalady Point** in a small inlet between the shoal water of the flats and the shore in 3 to 6 fathoms, muddy bottom, with shelter from south winds. In the 1860s Utsalady became the first shipbuilding port in Puget Sound.

(300) **Strawberry Point**, about 2.5 miles north of Utsalady Point, is marked by a light. Southwest of the light, dredged canals give access to private moorings.

(301) The **South Fork** channel leading into Skagit River winds through the flats north of Camano Island. Because of shoaling, however, the channel has largely been abandoned by boat traffic to Mount Vernon except for local outboard boats; **North Fork** is used instead. In 1971, the mouth of the North Fork bared 2 feet at MLLW. There are several small-boat moorings along the banks of the river at **Mount Vernon**.

(302)

Hood Canal

(303) The entrance to **Hood Canal** is at the lower end of Admiralty Inlet, between Foulweather Bluff and Tala Point, about 10 miles south of Marrowstone Point. It extends in a general southerly direction for about 44 miles and then bends sharply northeast for 11 miles, terminating in flats bare at low water. The head of Case Inlet, in the south part of Puget Sound, is less than 2 miles from the head of Hood Canal. The shores are high, bold and wooded, and the water is deep, except at the

heads of the bays and at the mouths of the streams. Many small craft ply these waters. There are mostly small float-landings and private docks in the canal.

(304) U.S. Highway 101 follows much of the west shore of Hood Canal, and connecting highways to Port Orchard follow the south shore of the south part of the canal around The Great Bend. There are road connections with Port Orchard and with the Puget Sound highway system from all the settlements on the east shore of the canal.

(305) Water traffic in general is confined to tugs with log rafts, naval vessels in the upper part, and many pleasure craft. Hood Canal is a vacation area. Numerous private houses and summer cottages with small piers, mooring buoys and floats are on both sides of the canal. There are relatively few public floats or piers, and the only commercial activities are logging and some oystering.

(306)

Tides and currents

(307) The **tidal currents** in Hood Canal at times attain velocities exceeding 1.5 knots. In some places in the canal the currents are too weak and variable to predict. At times there are heavy tide rips north of and around Foulweather Bluff, sufficiently heavy to be dangerous to small boats and to break up log rafts. This is most pronounced when the ebb current from the main body of Puget Sound meets that from Hood Canal off the point, and particularly so with the ebb against a strong north or northwest wind. Off Point Hannon and Hazel Point, tide rips occur at times sufficiently strong to be troublesome to tugs with log tows. Current observations taken at a station in midchannel east of Hazel Point show that directions of both flood and ebb vary considerably at that location. At times southwest winds from Hood Canal and north winds from Dabob Bay cause a chop dangerous for small boats. Under these conditions smoother water is found near either shore. (See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.)

(308) The dangers are few and generally close inshore. A few low sandspits from 100 to 300 yards long are difficult to see at night, but most of them have been made into resorts, and the buildings nearby show up well against the background of trees. Flats off the mouths of streams extend as much as 0.5 mile offshore and are extensive at the heads of some of the bays. A midchannel course is clear until reaching The Great Bend, where Hood Canal turns east. Here the north shore just east of Ayres Point should be favored to clear the flats extending from the east part of Annas Bay.

(309)

Twin Spits to Port Gamble

(310) **Twin Spits** are two long, low, sand points, 0.5 mile and 1 mile south of Foulweather Bluff. When waiting for smooth weather to round Foulweather Bluff, tugs with log tows often anchor in 50 feet 1 mile southeast of the south spit, in a bight known locally as **Races Cove**, with Colvos Rocks Light slightly clear of the end of the south point of Twin Spits.

(311) **Hood Head**, on the west side of Hood Canal about 3 miles south of the entrance, is almost an island, having only a narrow strip of low sand connecting it with the west shore. The head is 220 feet high, steep and wooded and is a prominent feature in the entrance.

(312) A rocky ledge, marked by some kelp and covered 4 to 26 feet, extends more than 500 yards south of Hood Head; rocks covered 4 feet are near the south end of this ledge about 325 yards south of Hood Head. An aquaculture site, marked by lighted private buoys, is about 0.4 mile south of Hood Head.

(313) **Coon Bay**, 2.5 miles south of Foulweather Bluff, is a small, nearly landlocked harbor offering excellent protection to small craft during periods of rough weather. The privately dredged entrance channel is narrow and has a reported controlling depth of about 3 feet. There are several private piers inside the entrance, but no facilities are available.

(314) **Point Hannon** is at the east extension of Hood Head; it is marked by a light. A low sandy spit with shoal water extends about 200 yards east of the light.

(315)

Local magnetic disturbance

(316) Differences of more than 2° from normal variation have been observed in Hood Canal at Point Hannon.

(317) **Termination Point**, 1.6 miles east of the village of **Shine**, is 1.7 miles southwest of Point Hannon. A lighted transformer substation is on Termination Point.

(318) **Hood Canal Bridge**, a pontoon highway bridge crossing the canal between Termination Point and Salsbury Point west of Port Gamble has two fixed openings; the clearance of the west opening is 35 feet, and that of the east opening is 50 feet (at all tide levels). In the 600-foot center opening there are pontoons that are retracted for larger vessels. The bridgetender monitors VHF-FM channel 16, works on channel 13 (call sign, WHD–721) and can be contacted at 360–779–3233. (See **33 CFR 117.1** through **117.59** and **117.1045**, chapter 2, for drawbridge regulations.) Anchor cables, extending from the bridge pontoons to the canal bottom, extend nearly 500 yards both north and south of the bridge; anchoring should not be attempted in this area.

(319) **Sisters**, two rocks 200 yards apart, 0.5 mile south of Termination Point, are awash at about half tide. A light is on the south rock, 0.4 mile from the north entrance point to **Squamish Harbor**, an open bight just southwest of Termination Point. Tugs frequently anchor near the head of the harbor in about 6 fathoms, muddy bottom.

(320) **Case Shoal**, partly bare at low water, is about 0.6 mile from and parallel with the west shore of Squamish Harbor. The shoal is marked at its north end by a daybeacon and on its southeast side by a light.

(321) **Port Gamble Bay** is a small bay on the east shore of Hood Canal 5 miles from the entrance. It is 2 miles long with a narrow entrance. A dredged entrance channel, marked by lights, leads from deep water in Hood Canal into Port Gamble Bay.

(322) **Port Gamble**. the town on the west shore at the entrance, is company owned and maintains all facilities including the local housing, church and store. The lumber mill had been in operation for more than a century and closed in 1995. The white church steeple and flagpole in the town are prominent. A shoal covered 4 feet is about 500 yards northeast from the north end of the wharf. Strong currents on both flood and ebb tide are experienced through the entrance channel to Port Gamble Bay. Vessels should dock against the current. Local knowledge and careful, precise piloting are essential in docking at this wharf.

(323) Excellent anchorage may be had in the bay in 24 to 54 feet, muddy bottom.

(324) Vessels should hold a midchannel course on entering Port Gamble Bay until 200 yards or more past the south light, and then head for the wharf, keeping the long east face open to avoid shoal water on the west side of the channel.

(325)

Caution

(326) The entrance channel to Port Gamble Bay is quite constricted by shoals on both sides of the channel. The two lights on the east side of the channel are in shoal water and do not mark the edge of the channel.

(327) A bridge pontoon storage area is on the west side of Port Gamble Bay about 0.4 mile south of Port Gamble.

(328)

Thorndyke Bay to Triton Head

(329) **Thorndyke Bay** is a small bight on the west side of Hood Canal about 4 miles south of Squamish Harbor. An **explosives anchorage** is south of the bay. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.)

(330) **Bangor Wharf** on the east side of the canal, 3.5 miles south of Thorndyke Bay, is the property of the Bangor U.S. Naval Submarine Base. A **naval security zone** and **restricted area** surrounds the wharf and other naval docking facilities along the east side of Hood Canal. (See **33 CFR 165.1302** and **33 CFR 334.1220**, chapter 2, for limits and regulations.) These wharves are also surrounded by floating security barriers marked by lighted buoys. A 500-foot radio tower, marked by red aircraft warning lights, is on Bangor Wharf and is prominent. A 459-foot red and white radio tower, marked by red aircraft warning lights, is on the wharf 0.3 mile north-northeast of Bangor Wharf; this tower is also prominent. It is reported that vessels southbound from Hood Canal Bridge can use the towers as a **200.6°** range. Strong currents are in the vicinity of the piers at Keyport Naval Undersea Warfare Engineering Station.

(331) A **naval operating area** is in the south part of Hood Canal. (See **33 CFR 334.1190**, chapter 2, for limits and regulations.) A **naval exercise area** extends north from the north boundary of the operating area to just off **South Point**, about 2.3 miles northeast of Thorndyke Bay.

(332) **Bangor**, a small residential community about 2 miles south of Bangor Wharf, has no facilities.

(333) **Seabeck**, about 6 miles southwest of Bangor, is a settlement and resort at the head of **Seabeck Bay**, a small cove on the east shore. A marina, protected by a breakwater awash at high water and marked by private lights, is on the south side of the bay. Berths, gasoline, diesel fuel, water, ice, supplies and a 1½-ton hoist are available. In 2005, the marina was reported to be closed. Shoal water extends 0.5 mile from the head of the bay. Good anchorage, well protected from southeast to southwest weather, is available in the bay in 35 to 50 feet. Shoal water extends more than 200 yards off **Misery Point**, at the west side of the entrance of the bay. A light is about 300 yards northeast of Misery Point, and a fish haven is close northwest of the light.

(334) **Oak Head**, 2 miles north-northeast of Misery Point and marked by a light, is the south point of **Toandos Peninsula. Hazel Point**, 1.8 miles east-northeast of Oak Head, is the turning point where the canal bends sharply from south to southwest.

(335) **Fisherman Harbor** is a cove on the south end of Toandos Peninsula, just east of Oak Head. It is very narrow, with a constricted entrance that is practically bare at low water. A sandspit extends partly across the entrance from the west shore.

(336) **Brinnon** is a village on the south side of Dosewallips River, 3.5 miles west of Oak Head, at the entrance of Dabob Bay. It has a general store and service station. Gasoline, water, and ice are available, but there is no landing pier. A log booming ground is close offshore at Brinnon.

(337) **Dabob Bay**, the largest inlet in the canal and separated from it by Toandos Peninsula, extends 9 miles in a north direction. The entrance is between **Tskutsko Point** and **Sylopash Point** just north of the mouth of Dosewallips River. A light is off Tskutsko Point. The west shore of Dabob Bay is particularly steep and bold, reaching an elevation of over 2,600 feet in less than 2 miles from the coast.

(338) A **naval operating area** is in the bay. Unlighted spherical yellow mooring buoys may be temporarily established within the bay. Navy–maintained warning lights are shown from **Whitney Point**, Pulali Point and Sylopash Point on the west side of the bay, from **Zelatched Point** on the east side of the bay and on the southeast side of Bolton Peninsula on the north side of the bay. Flashing amber lights indicate that naval operations are in progress and all craft should keep well clear of vessels engaged in testing. Flashing red lights will be shown when naval operations close the area to navigation. Craft on the bay during these periods should stop their screws and secure their engines and depth sounders. Mariners are

advised to pass no closer than 1 mile of naval vessels engaged in bottom operations unless directed otherwise by radiotelephone or other signal from the shore, picket boat, or surveillance aircraft. (See **33 CFR 334.1190**, chapter 2, for limits and regulations.)

(339) A **restricted area** is off Whitney Point. (See **33 CFR 334.1260**, chapter 2, for limits and regulations.)

(340) **Quilcene Bay** is a small inlet on the west side of Dabob Bay north of Whitney Point. A light marks the east side of the entrance to the bay. The north half of the bay is filled with flats that bare. This part of the bay has two log booms and log storage areas. An oyster farm is on the east side of the bay just inside the entrance. There are rafts marked by lights and mooring buoys near the farm. **Quilcene**, a small town on the west side and near the head of the bay, is about 0.5 mile inland. The town has hotels, restaurants and stores.

(341) **Quilcene Boat Haven**, is on the west side of the bay about 1.4 miles south of the town. The entrance to the haven is protected by a stone breakwater; mooring floats for over 50 small craft and gasoline are available. The basin has a reported controlling depth of 10 feet. Two oyster farms are near the haven.

(342) **Pleasant Harbor** is a small cove on the west shore of Hood Canal about 3 miles west of Misery Point. It is about 300 yards wide and has a narrow shallow entrance. Owing to the narrowness of the entrance, boats should keep in midchannel until clear of the 6-foot shoal. Two marinas in the harbor have berths for about 250 craft and can provide electricity, gasoline, diesel fuel, water, ice, pump-out and limited marine supplies. Anchorage in about 36 feet, mud bottom is available inside the harbor. A state park pier is in the harbor.

(343) **Triton Head**, on the west shore, is 8.2 miles southwest of Oak Head. It is low, rocky and timbered, with a reef that bares extending 200 yards north from the point. **Triton Cove** is a small cove formed by the head and the west shore, that affords anchorage for small craft against south winds. Oyster beds, marked by stakes and brush, are about 0.8 mile north from Triton Head on the flat which extends off the mouth of **Fulton Creek**. Two resorts just south of Triton Head have berths, gasoline, diesel fuel, water, ice, dry storage and marine supplies. Hoists and railways to 10 tons are available, and outboard engine repairs can be made.

(344)

Holly to Lynch Cove

(345) **Holly** (47°33.5'N.,122°58.6'W.), on the east shore of Hood Canal, is a settlement on the south side of a small bight about 10 miles southwest of Oak Head. There are no facilities here. Shoal water extends about 300 yards north and east from the south shore of the bight. **Anderson Cove** is the shallow cove directly north of Holly.

(346) **Eldon** is a west shore settlement on the south bank of **Hamma Hamma River**, about 3 miles southwest of Holly. The delta flats of the Hamma Hamma River extend nearly 0.5 mile from shore. Unmarked jetties extend from the river through the flats into Hood Canal and constitute a potential hazard to small craft.

(347) **Lilliwaup** is a village on the south shore of **Lilliwaup Bay**, a small shallow cove on the west shore of Hood Canal about 6 miles southwest of Eldon.

(348) About 1 mile south, there is a resort at which berths, water, ice and marine supplies are available. A 3-ton elevator at the resort can handle craft to 19 feet long for hull and engine repairs.

(349) **Dewatto** is a small settlement on the south side of **Dewatto Bay**, a small, shallow cove on the east shore opposite Lilliwaup.

(350) **Hoodsport**, the largest town on Hood Canal, is on the west shore 4 miles southwest of Dewatto. It has a state fish hatchery and a public pier with floats.

(351) **Potlatch** is a small town on the west side of the canal about 2 miles south of Hoodsport and opposite **The Great Bend**,where Hood Canal turns northeast. The large gray building of a hydroelectric power plant, connected to a standpipe on the mountain above by three pipelines, is very prominent on the west shore 0.5 mile south of the town. **Potlatch State Park**, just south of the power plant, has a small-craft launching ramp, mooring buoys and water.

(352) **Union** is a town with several stores on the south shore of The Great Bend. A marina here can provide gasoline, diesel fuel, electricity, transient berths, pumpout, water, ice, launching ramp and winter storage. Depths alongside the floats are reported to be 25 feet; however, the marina should be approached from the northeast to avoid shoal water and snags. A large resort in the cove on the south shore 1.3 miles east of Union has a T-pier with a 600-foot face and reported depths of 20 feet alongside. Transient berths, electricity, pumpout, water and ice are available at the resort; a large motel and restaurant are here.

(353) **Annas Bay**, immediately west of Union, is a broad, open bight; the east half is flat and bare at low water. This flat extends about 0.2 mile into the canal immediately west of Union and is formed by the **Skokomish River**, which empties at the head of the bay.

(354) **Tahuya**, a small town on the north shore of The Great Bend 1.8 miles northeast of Union, has a resort with a pier and floats, about 0.75 mile west of the town; water and a launching ramp are available. Reported depths of 2½ feet are off the floats.

(355) Hood Canal terminates in **Lynch Cove**. Flats, mostly bare at low tide, extend for about 2.2 miles from the head of the cove.

(356)

Port Orchard to Brownsville

(357) **Port Orchard** is an extensive body of water, west of **Bainbridge Island**, 15 miles long. Its north end connects with Port Madison through Agate Passage. At its south end Port Orchard connects with Puget Sound through Rich Passage. The shores are moderately low and

wooded. Villages and numerous cottages line the shores with many having private docks, moorings and platforms.

(358)

Current

(359) Current observations taken in midchannel about 1 mile south of **Tolo** indicate that the tidal current in that locality is very weak. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(360) **Agate Passage** is the north entrance to Port Orchard and connects it with Port Madison. The channel extends about 1 mile in a southwest direction with a depth of about 20 feet. The passage is straight with shores that are wooded and fairly steep-to. The shoreline is mostly rocky and fringed with kelp to Point Bolin. The currents have velocities up to 6 knots; the flood sets southwest and the ebb northeast.

(361) The passage is partially obstructed by a shoal near the middle of the north end with depths of 9 feet, with depths of 13 to 18 feet almost in midchannel.

(362) The north entrance is marked by a light on the west side of the channel opposite **Agate Point**; a lighted buoy marks the channel through the passage and a light marks a shoal northeast of **Point Bolin**.

(363) A fixed highway bridge, 0.7 mile south of Agate Point, has a clearance of 75 feet for a midwidth of 300 feet. Overhead power cables cross the passage on both sides of the bridge; least clearance is 96 feet.

(364) **Liberty Bay** is a narrow inlet extending about 4 miles in a north direction from the northwest part of Port Orchard. The southeast half of the bay is narrow and tortuous. The shores are low and wooded; the shoreline is mostly sand and gravel. There are mud flats at the head of the bay and in the small bight on the south side of the bay. Mud is the predominating bottom characteristic. The current velocity is 0.8 knot north of Keyport, in the narrow entrance to the bay. Velocities exceeding 1 knot occur at times.

(365) **The Keyport Naval Undersea Warfare Center (NUWC)** is on the west side of the entrance to Liberty Bay. A seaplane float extends 100 feet northwest from the end of the pier and mariners are requested not to exceed 3 knots when passing it. Several buildings are prominent at the station.

(366) A **torpedo test area** extends off the shore between Brownsville and Keyport NUWC. Flashing red lights on navy range vessels between Keyport and Brownsville and atop a building at the seaward end of the southern building at Keyport NUWC indicate torpedo firings, or that noise measurement tests are in progress, or that conditions are generally hazardous to mariners. When lights are flashing, mariners should not enter the test area. Mariners near the area should stop engines, or other equipment generating underwater noise, such as depth sounders, because some torpedoes are guided by noise and may be attracted to the boat noises. (See **33 CFR 334.1230**, chapter 2, for limits and regulations of the restricted area.)

(367) **Keyport** is on the south side of the passage leading to Liberty Bay. A power cable with a clearance of 90 feet crosses the passage at Keyport. There are two piers with floats that can accommodate about 42 small craft. A store with gasoline pumps is about a half block from the Keyport launching ramp. A marine railway that can handle craft to 42 feet is available for repairs; a 7-ton hoist is also available. Engine and hull repairs and salvage and towing services are available at Keyport.

(368) **Poulsbo**. a fishing and pleasure resort on the east shore at the head of Liberty Bay, is the principal town of the area. The small-craft harbor at Poulsbo, protected on the south and west sides by an angled timbered breakwater, can accommodate about 400 fishing boats and pleasure craft. The breakwater is well marked by private lights. Piers and floats are in the harbor with reported depths of 7 feet alongside. Supplies and services available at the harbor are electricity, gasoline, diesel fuel, water, a pump-out facility and electrical/engine repairs. A float with the edges painted yellow is on the northeast side of the harbor and has been reserved as a seaplane dock. A yacht club and marina are about 0.4 and 0.6 mile south-southeast of the small-craft harbor, respectively. Supplies of all types may be obtained in town. A tall church steeple on the hill northeast of the harbor is prominent.

(369) **Manzanita** is a settlement on the west side of Bainbridge Island in a small cove about 2 miles south from Agate Passage. **Manzanita Bay**, south of the town, affords an excellent anchorage for small craft in 27 feet, mud bottom. There are several private wharves, buoys and floats in the bay. Caution is urged to avoid rows of submerged piling on each side of the bay, about midway in from the entrance.

(370) **Battle Point**, a sandy spit on the east side of Port Orchard about 1.7 miles south of Point Bolin, marks the turn in the direction of the channel from southwest to south. A light is off the end of the spit.

(371) **Brownsville**, on the west shore of Port Orchard, is on the north shore of **Burke Bay**, about 1.2 miles southwest of Battle Point. Brownsville has a marina with 310 berths, 35 transient berths and an additional 1,000 linear feet of guest moorage. The reported depth alongside is 8 feet. The marina can provide gasoline, diesel fuel, electricity, water, ice, marine supplies and a pump-out facility. The **harbormaster's** office is on the second floor of the town store. All of Burke Bay bares, but it may be entered by small craft at about half tide.

(372)

Illahee to Beans Point

(373) **Illahee** is a small settlement on the west shore of Port Orchard about 3.0 miles south of Battle Point. The town has a wharf and stores. A fish haven, extending about 140 feet from the outer end of the wharf, provides marine

habitat improvement for scuba diving and public fishing; mariners are advised to use caution. About 1 mile south of Illahee at **Illahee State Park** is a public pier with floats for small craft and a launching ramp. A rock awash was reported about 50 yards southeast of the pier in about 47°35'59.8"N., 122°35'32.1"W.; caution is advised in the area.

(374) **Fletcher Bay** is a village on the east shore of Port Orchard about 1.2 miles south of Battle Point. Small boats can enter the bay at three-quarter tide and find anchorage in 12 feet, mud bottom; the swinging area is limited. The bar across the entrance bares at half tide.

(375) The east and principal approach to Port Orchard from Puget Sound is south of Bainbridge Island through Rich Passage, between Restoration Point and Blake Island. It is deep and almost free from dangers, except for **Bainbridge Reef**, covered 35 to 55 feet, and currents in the constricted west part of Rich Passage. Bainbridge Reef is marked at the southwest end by a lighted buoy.

(376) **Orchard Point**, the south point at the entrance to Rich Passage, is marked by a light with a mariner-radio-activated sound signal, initiated by keying the microphone five times on VHF-FM channel 81A. A **naval restricted area** is on the south side of the point, surrounding the pier projecting south from the shoreline. (See **33 CFR 334.1244**, Chapter 2, for limits and regulations.) A **general anchorage** is in the vicinity of the point. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.)

(377) **Rich Passage** is about 3 miles long, with a sharp bend near its west end, where it narrows to 0.2 mile. **Orchard Rocks**, some 400 yards in extent, are on the north side of the channel just inside the east entrance. A small area near the center of the reef, which uncovers, is marked by a daybeacon. The rocks are marked off their south end by a lighted buoy. The reef off **Point Glover** is marked by a light and a mariner-radio-activated sound signal, initiated by keying the microphone five times on VHF-FM channel 83A. **Waterman Point**, at the west entrance, is marked by a light and a mariner-radio-activated sound signal, initiated by keying the microphone five times on VHF-FM channel 81A. A light marks the south edge of the shoal extending from **Point White**, the north point at the west entrance. The town of **Waterman** has a pier and float in deep water about 1 mile southwest of Waterman Point.

(378)

Currents

(379) Continuous observations in midchannel between Point Glover and Point White and at other points in the passage indicate that current velocities increase from east to west in Rich Passage reaching a maximum average velocity of 2.4 knots on the flood and 3.1 knots on the ebb at the west end off Point White. The strongest observed currents were 4 knots on the flood and 5 knots on the ebb. Ferry pilots on the regular daily run between Seattle and Bremerton advised that on rare occasions they have experienced ebb currents of "at least" 6 knots in the vicinity of Light 10.

(380) Near the time of slack, the average period when the velocity does not exceed 0.2 knot is about 20 minutes. For strong currents these periods will be decreased; for weak currents they will be increased.

(381) In the channel off Orchard Point, at the east end of Rich Passage, the velocity of the flood is 0.8 knot and on the ebb, 1.1 knots. Off Pleasant Beach the velocity of the flood is 1.3 knots and on the ebb, 2.8 knots.

(382) On the flood, the lines of stream flow are nearly uniform except off the bight just northwest of Middle Point and in the large cove on the north shore opposite Point Glover. Eddies do form in those two places, but they do not extend outward to the usual vessel track. On the ebb, however, extensive eddies and countercurrents do occur, owing to the funnel-shaped configuration of the passage.

(383) Between Middle Point and Point Glover, an extensive eddy extends from shore almost to midchannel and will frequently be encountered by vessels on the track between Orchard Rocks and Point Glover buoys.

(384) An eddy fills the cove on the north shore opposite Point Glover but does not extend outward to the vessel track.

(385) An eddy occurs about 0.2 mile south-southwest of Point White and a little north of midchannel at the west entrance to the passage. A weak countercurrent occurs inshore along the southeast side of Point White.

(386) These eddies and countercurrents on the ebb greatly diminish the effective width of the passage and so increase the velocities in the channel.

(387) Mariners unfamiliar with the area should not attempt to navigate Port Orchard, and particularly Rich Passage, in thick weather because of the strong tidal currents. In clear weather, however, the navigation of these waters presents no unusual difficulty.

(388)

Caution

(389) **Rich Passage**, because of activities of the Puget Sound Naval Shipyard, has a large volume of traffic. Many ferries a day each way, tugs with hawser tows and various types of naval craft, all contribute to create a considerable collision hazard in the passage, particularly at the sharp bend off Point Glover. Strong tidal conditions prevail in this vicinity, and deep-draft outbound vessels making the sharp turn may be unavoidably set well over toward the east shore, necessitating a two-blast, starboard-to-starboard meeting with inbound vessels. Vessels approaching Point Glover from either direction should sound one long blast when within 0.5 mile of the point as a warning to any vessel approaching from the opposite direction.

(390) **Fort Ward**, formerly a military post and now a state park on Bainbridge Island, is near the east entrance to Rich Passage, just inside Beans Point. There is a wharf here built out to 18 feet. A fish pen off the end of the wharf

is marked by private lights. An aquaculture site, marked by private lights, is about 300 yards south-southwest of the wharf in about 47°34'30.5"N., 122°31'29.5"W. A rocky patch covered 11 feet, 150 yards south of the wharf, is dangerous to vessels approaching from southward. A radio tower just northeast of Fort Ward and a large white house on **Beans Point** are prominent from the east end of Rich Passage.

(391)

Sinclair Inlet to Bremerton

(392) **Sinclair Inlet**, site of the city of Bremerton and the Puget Sound Naval Shipyard, is entered from Rich Passage and Port Orchard on the east, and Port Washington Narrows on the north. The inlet is 3.5 miles long, extending in a west-southwest direction from **Point Herron**, which is at the junction of Port Washington Narrows and Port Orchard; the point is marked by a light. Several navy-maintained unlighted mooring buoys, used at times by unlighted craft, are in Sinclair Inlet. Mariners are advised to exercise caution at night.

(393) **East Bremerton** is the community back of Point Herron, on the east side of the Port Washington Narrows entrance. The fixed highway bridge crossing the narrows here has a clearance of 74 feet.

(394) Sinclair Inlet is a **naval restricted area.** (See **33 CFR 334.1240**, chapter 2, for limits and regulations.)

(395) **Annapolis** is a village on the south shore of Sinclair Inlet directly south of Point Herron. A foot pier extends out to a float that is used by a passenger ferry between the village and Bremerton. East of the ferry pier is a public float and launching ramp. The float grounds at low water. The buildings of a veterans' home on the bluff above the town are prominent.

(396) A flat that bares extends about 0.2 mile from shore in the bight between Annapolis and Port Orchard.

(397) The town of **Port Orchard** is on the south shore about 0.5 mile west of Annapolis. It has a ferry pier, float landing and a marina. Passenger ferry service is maintained with Bremerton every 15 minutes from 1600 to 2400 daily. A marina, protected on the west, north and east sides by a floating breakwater, is just west of the ferry pier. The entrance is at the northwest corner and is marked by private lights. There are covered and open berths for about 600 small craft. A yacht club has its moorings just inside the west breakwater. Transient berths for 50 small craft are on the east side of the marina; larger transient craft can moor on the inside or outside of the north and east parts of the breakwater. Gasoline, diesel fuel, electricity, water, ice, pumpout facilities and full repairs are available at the marina. The stores of the town business district are nearby and all types of supplies may be obtained.

(398) A marina and boatyard are on the west side of town; water, ice, limited marine supplies and diesel fuel are available. The yard has a marine railway that can handle craft up to 75 feet and a floating drydock with a 25-ton capacity. Hull and engine repairs can be done at the boatyard; a machine shop and carpentry shop are available. Port Orchard Yacht Club has its moorings west of the boatyard. A floating breakwater in ruins, a wreck and other sunken debris are about 75 yards off the ends of the Yacht Club floats. Another marina and boatyard, just west of Port Orchard Yacht Club, can accommodate about 25 vessels. A mobile hoist with a 30-ton capacity can handle craft up to 55 feet.

(399) A marina and boatyard, about 1.5 miles west of Port Orchard, has berths for about 50 fishing boats and small craft. Electricity, gasoline, water and limited marine supplies are available. The boatyard has three marine railways, the largest of which can handle craft to 30 tons for hull repairs.

(400) **Puget Sound Naval Shipyard** occupies most of the north shore of the inlet. The hammerhead crane near the offshore end of Pier 6 of the yard is one of the most conspicuous objects from any direction. The ends of Pier 4, Pier 5 and Pier 6 are equipped with radar reflectors. A floating security barrier, marked by lighted buoys, surrounds the waterfront of the naval shipyard.

(401) Navy Drydock No. 6 is one of the largest in the world. Its inside dimensions are 1,152 feet long, 165 feet wide at the entrance measured 6 feet over sill and 53 feet over the sill at mean high water. This facility was built to accommodate the largest supercarrier. When not committed to navy use, and under certain conditions, the drydock may be used by other ships that are too large for commercial docks.

(402) **Bremerton** adjoins the shipyard, and most of the city's business and affairs are keyed to the needs of the Navy establishment. The city limits include East Bremerton and Point Herron. Frequent ferry service connects with Seattle. Floats for small craft are adjacent to the north ferry slip. The floats are managed by the Port of Bremerton; water, electricity and overnight moorage are available.

(403)

Port Washington Narrows to Ostrich Bay

(404) **Port Washington Narrows**, 3 miles long, joins Sinclair and Dyes Inlets. Tidal currents in the narrows attain velocities in excess of 4 knots at times. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(405) There are a number of petroleum distribution facilities with storage tanks and receiving wharves along the west shore of Port Washington Narrows between the south bridge over the narrows and Phinney Bay.

(406) Two fixed highway bridges and two power cables cross the narrows. The northerly of the two bridges has a clearance of 80 feet. An overhead power cable close east of the bridge has a clearance of 80 feet. The Manette

Bridge, in the south part of the narrows, has a clearance of 74 feet. A power cable with a clearance of 90 feet is about 0.3 mile north of the bridge.

(407) **Anderson Cove** is a small bight on the south shore about 1.5 miles above the East Bremerton Bridge. The cove is shoal; however, it has several private piers and a public launching ramp. A small-craft moorage is 250 yards east of Anderson Cove. Oil wharves are on both sides of the moorage.

(408) **Phinney Bay**, 0.8 mile long, makes into the west shore near the north end of the narrows. Bremerton Yacht Club has its moorage with floats on the west side of the bay. **Rocky Point** is on the west side of the north entrance of the narrows. There are tide rips off this point.

(409) **Dyes Inlet** extends about 3 miles north-northwest from the north end of the narrows to the village of **Silverdale** on the west side of the head of the inlet. The inlet is used by fishing boats and pleasure craft. There are several villages and many houses on its shores. A dock here has electricity, water, a pump-out station and limited marine supplies available. The facility is managed by the Port of Silverdale at the Silverdale Waterfront Park. Some local fishing boats are hauled out by crane for repairs. The village of **Tracyton** is on the east shore just north of the narrows. The village has a public boat launching ramp.

(410) **Chico** is a small residential town on the southwest side of Dyes Inlet, close west of Chico Bay; the log dump wharf here is in ruins.

(411) **Ostrich Bay** is an inlet in the southwest part of Dyes Inlet. A covered rock is reported in Ostrich Bay 500 yards south of **Elwood Point** inside the breakwater extending south of the point.

(412) Mariners are cautioned against anchoring, dredging, trawling or otherwise disturbing the bottom sediments in certain areas of Ostrich Bay due to possible existence of unexploded ordnance. Refer to the chart for locations. Additional information is available through Naval Base Kitsap Public Affairs Office at 360–627–4030.

(413) That part of the west shore of Ostrich Bay extending about 0.5 mile south from Elwood Point is an annex of the Puget Sound Naval Shipyard. The wharves and shops are no longer used and are in ruins.

(414) A depth of 6 feet can be carried from Ostrich Bay into **Oyster Bay** on midchannel courses. There is 4 feet or more in Oyster Bay.

(415)

East Passage to Gig Harbor

(416) **East Passage**, on the east side of Vashon and Maury Islands, extends from Alki Point south-southeast for 12.5 miles to Point Robinson, and thence southwest for 6 miles to Browns Point. The waters throughout are deep and free from dangers, which in no case extend as much as 0.5 mile from shore.

(417) **Fauntleroy Cove**, 3.5 miles south of Alki Point, is the site of the landing for the automobile ferry plying from there to Vashon Heights and Point Southworth.

(418) **Blake Island**, about 1 mile long, 249 feet high and covered with trees, is off the north entrance to Colvos Passage. Heavy tide rips, strongest with a flood current and strong south winds, are encountered at the north entrance to Colvos Passage south of Blake Island. Shallow, irregular bottom extends about 0.5 mile off the north shore of the island. A light is on the northeast point of the island. Just south of the northeast point of the island are the ruins of a wharf. A state marine park small-craft basin, protected by a breakwater, is at the northeast end of the island. The entrance to the basin is marked by a private light and daybeacons; a pump-out station is available. Several public mooring buoys are along the west, north and east sides of the island.

(419) **Yukon Harbor** is about 2 miles southwest of Blake Island and can afford anchorage in 30 to 50 feet, sticky mud and pebble bottom. The harbor is protected from south winds and can be used for anchorage in a variety of conditions. Much of the head of the harbor is bare at low tides. Several settlements and resort villages are along the shores of Yukon Harbor; mostly fishermen and pleasure boaters use these waterfront facilities.**Manchester** has a short wharf with a float landing and a launching ramp. A large fuel pier, just south of Orchard Point, is part of the U.S. Navy's Manchester Fuel Depot. The pier is a major fueling station for U.S. Government deep-draft vessels. A **naval restricted area** surrounds the fuel pier (See **33 CFR 334.1244**, chapter 2, for limits and regulations.) A **general anchorage** is between Blake Island and Manchester. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.) **Harper**, one mile west-northwest of Point Southworth, is the site of a former ferry pier. A ferry now operates from a pier on Point Southworth to Seattle, Fauntleroy and Vashon Island.

(420) **Vashon Island** is 11 miles long in a north direction. **Maury Island**, actually a peninsula of Vashon Island at its southeast extremity, is connected to it by a highway on a narrow neck of land. Maury Island is about 5 miles long.

(421) On these islands the land is of moderate rolling elevation and in places rugged, and most of the country is heavily wooded. The islands have numerous orchards and houses. There is some farming, and cattle and poultry are raised. The transmitting towers of Seattle broadcasting stations are on the islands; two groups of towers are on Vashon Island and two on Maury Island. The shores on all sides have numerous settlements. The county wharves, formerly used to ship farm produce, are no longer kept in repair, and shipments are now by truck.

(422) **Point Vashon**, the northwest tip of Vashon Island, is 305 feet high, steep and wooded. Shoal water extends 0.2 mile north from the point and nearly as far along the north shore as **Dolphin Point**, 1 mile east. A light is 300 yards north of Point Vashon.

(423) **Vashon Heights Landing**, 0.5 mile east-southeast of Point Vashon, has a combination ferry slip and landing wharf built out to 14 feet. An automobile ferry runs to Point Southworth and Fauntleroy.

(424) The tall radio towers of station KOMO are on Point Beals. The town of **Vashon** is on high land 1.5 miles southwest of Point Beals.

(425) A **159°58'-339°58' measured nautical mile** is east of Point Beals. The range markers are steel towers with round orange targets.

(426) **Three Tree Point**, about 7.8 miles south of Alki Point, is a sharp low spit, projecting 300 yards from the high land, which in 1 mile rises to an elevation of 430 feet. On the low part of the point is a grassy knoll, 30 feet high, with several trees on it. A light and a mariner-radio-activated sound signal are on the point, initiated by keying the microphone five times on VHF-FM channel 83A.

(427) **Tramp Harbor**, formed by the easternmost part of Vashon Island and the north end of Maury Island, has shoal water extending about 0.2 mile out from shore along its entire length. It is bounded on the north by **Point Heyer**, a sandspit behind which the ground rises rapidly. A shoal extends 0.2 mile southeast from the point. A radio tower on this point is about 450 feet high.

(428) **Portage** is a village extending over both sides of the low isthmus that connects Vashon and Maury Islands. Two radio towers about 526 feet high are 0.6 mile south of the isthmus, and three other radio towers are one mile southeast of the isthmus.

(429) The city of **Des Moines**, on the east shore of East Passage, operates a small-craft marina about 3.7 miles southeast of Three Tree Point. The marina, protected by a rock breakwater, offers shelter for over 700 craft including 50 transient berths. The entrance to the marina is from the west around the north end of the breakwater. Lights mark the north end and southwest corner of the breakwater. Services available include electricity, gasoline, diesel fuel, water, ice, pump-out station, wet and dry storage, marine supplies and a 25-ton marine lift; full repairs can be made.

(430) **Point Robinson**, the easternmost end of Maury Island and the major turning point in the passage, is a low spit projecting 140 yards from the wooded high land. **Robinson Point Light** (47°23'17"N., 122°22'28"W.), 40 feet above the water, is shown from a 40-foot white octagonal tower on the point; a mariner-radio-activated sound signal is at the station, initiated by keying the microphone five times on VHF-FM channel 81A.

(431) There are two barge-loading berths at the gravel pits about 1 mile southwest of Point Robinson. Conveyors load the barges. The gravel pits are prominent from the south end of East Passage. These facilities are the only commercial wharves on Vashon and Maury Islands, except for oil receiving wharves.

(432) **Redondo**, on **Poverty Bay**, about 6.8 miles south-southeast of Three Tree Point, is a suburban village. **Dumas Bay**, 2 miles west of Redondo, has a small wharf that bares alongside at low water.

(433) **Quartermaster Harbor** extends 5 miles north-northeast between the south parts of Vashon and Maury Islands, opposite Commencement Bay. The entrance is between **Neill Point** to the west and **Piner Point** to the south. Its shores are low and wooded, with numerous clearings, and several landings and private piers.

(434) Quartermaster Harbor affords excellent anchorage about 2 miles inside the entrance in 5 to 10 fathoms, muddy bottom. The harbor provides easy access; however, caution is advised to avoid charted obstructions and wrecks.

(435) A shoal just inside the entrance extends 300 yards from the east shore and is marked by a buoy. Several shoal areas with depths of 2 to 2¾ fathoms extend up to 400 yards off the west shore between Neill Point and Harbor Heights. Shoal areas with depths of 4¼ fathoms are near midchannel west of **Manzanita** and west of Dockton. In 2007, a wreck covered 8¾ fathoms was in this vicinity at 47°20'59"N., 122°29'01"W.

(436) Many settlements and summer resorts are along the shores of the harbor, but the landing wharves, for the most part, are in disrepair. There are several submerged hazards in the vicinity of the wharves.

(437) **Burton** is a town on **Burton Peninsula** that projects east from the west side about 3 miles from the entrance. The town has several stores, and some marine supplies are available. There are numerous private mooring buoys in the harbor.

(438) An oil-receiving wharf and storage tanks are on the west side of the harbor about 0.7 mile north of Burton at the mouth of Judd Creek. The storage tanks are on the hill north of the harbor.

(439) The village of **Dockton** is in the bight on the east side about 2.5 miles from the entrance. A county park on the east side of the bight has a public dock with several piers and a boat ramp. There is a large mooring field off the village; numerous submerged obstructions, small wrecks and scattered debris litter the bottom in this area.

(440) In the upper part of the harbor, north of the Burton Peninsula, are several private wharves and floats.

(441) **Colvos Passage**, on the west side of Vashon Island, extends about 11 miles in a general south direction, with an average width of 1 mile. The passage is free of dangers. The north entrance is about 4.5 miles southwest of Alki Point, and the south entrance is abreast Point Defiance. The passage is used principally by tugs hauling logs for sawmills and by medium-sized vessels departing Tacoma. A midchannel course can be followed with safety. The passage is marked by lights.

(442) The current in Colvos Passage sets north on the ebb and flood, and at times advantage is taken of this fact by vessels bound from Tacoma to Seattle. The current in the middle of Dalco Passage and along the southwest shore of Commencement Bay sets west or northwest almost continuously.

(443) **Point Southworth**, on the west side of the north entrance, is high and wooded. A ferry slip is 0.2 mile northwest of the point. An automobile ferry runs to Fauntleroy and Vashon Heights.

(444) **Fragaria** and **Olalla**, on the west shore of Colvos Passage, are small residential communities. Only isolated

pilings remain of their former wharves. A rock that bares at half tide is 400 yards north of the former wharf at Olalla. Olalla has a small-craft float landing and a general store. Gasoline, water, ice and some marine supplies are available.

(445) **Cove** and **Lisabeula**, on the east shore, are summer resort areas. There are no facilities at either area. The wharf at Cove is in ruins. Several pilings, formerly used as moorings for log rafts, are adjacent to the wharf. Lisabeula consists of a single waterfront resort with no facilities for small craft.

(446) **Tahlequah** is a small residential community on the south shore of Vashon Island between Neill Point and Point Dalco. A ferry operates between Tahlequah and Tacoma.

(447) **Gig Harbor** is an inlet about 1 mile long on the west side of the south entrance to Colvos Passage abreast Point Defiance. A private light is on the south end of the sandspit, at the east side of the entrance, which makes out for 220 yards and constricts the entrance to less than 100 yards wide. A narrow 10-foot channel in the middle has currents of considerable velocity. Inside the entrance the basin has from 3 to 5 fathoms. An obstruction with a least depth of 8 feet was reported in the harbor in about 47°20'14"N., 122°35'06"W. The surrounding land, partially cleared of timber, slopes gently toward the shores and is thickly settled.

(448) The town of **Gig Harbor** extends along the west shore and the head of the harbor. It is the home port of many pleasure craft and fishing boats. The town has a boatyard with three marine railways and one crane. The larger of the three railways can handle craft to 150 tons for hull and engine repairs. There are many private piers and wharves, including one gasoline float. There are many marinas here. Berths, gasoline, diesel fuel, water, ice, launching ramps and marine supplies are available in the harbor. Most of the pleasure craft moor at one of the marinas at the head of the harbor.

(449) On entering Gig Harbor, hold midway between the spit on the east side and the west shore until just inside the entrance. Then swing right toward the east shore until past the short spit extending from the west shore, and steer a course just south of midchannel into the harbor.

(450)

Dash Point to Tacoma

(451) **Dash Point**, the east entrance of Commencement Bay, and the village of **Dash Point** are 1 mile northeast of Browns Point. There is a restaurant at the foot of the long pier that extends out from the north side of the point to a depth of 20 feet.

(452) **Point Defiance**, the west entrance of Commencement Bay, terminates in a very prominent dirt bluff, 160 feet high. A light is just west of the point. The terminal for the Point Defiance/Tahlequah ferry is approximately 1.8 miles south-southeast of the Point. A small boat launch ramp is just south of the terminal adjacent to a small-craft boat basin formed by a manmade peninsula. **Point Defiance Park** is wooded along its northeastern shore for 3.8 miles from the end of the point.

(453) **Commencement Bay** entrance lies 18 miles south of Alki Point and 56 miles south of Point Wilson. The bay is about 2.5 miles in length, easy of access, and free of dangers. Log storage grounds are off the northeast shore of the bay.

(454) A **regulated navigation area** is in Commencement Bay—see **33 CFR 165.1** through **165.13** and **165.1344**, chapter 2, for limits and regulations.

(455) **Tacoma**, the second city in size and importance on the sound, occupies the south and southwest shores of Commencement Bay, and its residential area has grown north into Seattle's south suburbs and to Steilacoom on the southwest.

(456) The **Port of Tacoma** is a rapidly expanding major port, second only to Seattle in maritime importance on Puget Sound. Its exports include lumber and other wood products, grain, refined metals, machinery and general and containerized cargo; imports include alumina and refined steel, automobiles, electronic equipment, rubber and meat. Much of the Alaska trade originates here.

(457)

Prominent features

(458) On entering Commencement Bay, either from the north via East Passage or Colvos Passage or from the south via The Narrows and Dalco Passage, Dash Point, Browns Point and Point Defiance are prominent. **Browns Point Light** (47°18'21"N., 122°26'39"W.), 38 feet above the water, is shown from a 35-foot white concrete house on Browns Point. Once inside the bay, numerous stacks, tanks and towers are visible.

(459) A **132°05'–312°05' measured nautical mile** is along the southwest shore of the bay about midway between Ruston and Tacoma.

(460) A fishing reef is along the southwest shore of the bay about midway between Ruston and Tacoma. In the same vicinity, a line of mooring buoys extends 0.7 mile along the southwest shore of the bay.

(461) From the southeast corner of Commencement Bay, the city waterfront extends northwest to the southeast corner of Point Defiance Park. Along here are numerous industrial plants with wharves to accommodate vessels drawing 30 feet or more.

(462) **Thea Foss Waterway** is the westernmost of the channels at the head of the bay; a light is on the east side of the entrance. Two deep-draft wharves and many oil storage tanks are on the east side.

(463) There are two bridges over the waterway—the South 11th Street vertical lift bridge, 0.5 mile from the entrance to the waterway, has vertical clearances of 64 feet down and 139 feet up. A fixed highway bridge near the head of the waterway has a vertical clearance of 28 feet.

(464) **Middle Waterway**, northeast of Thea Foss Waterway, and **St. Paul Waterway**, northeast of Middle Waterway, are not **federal projects**. The inner parts of

both waterways have shoaled and are not navigable; there is no deep-draft traffic. St. Paul Waterway is used for log storage by the large papermill that occupies the land on the northeast side.

(465) **Puyallup Waterway**, northeast of St. Paul Waterway, discharges the water of **Puyallup River**. The waterway has shoaled to such an extent that it cannot be used commercially. A lighted buoy marks a shoal area extending about 500 yards northwest of the entrance. A fixed bridge, with a clearance of 29 feet, crosses the waterway about 0.7 mile above the mouth. An overhead cable, just southeast of the bridge, has a clearance of 46 feet.

(466) **Sitcum Waterway**, northeast of Puyallup Waterway, is maintained at more than the project depth of 40 feet. The Port of Tacoma's Pier 7 is on the east side. A private light is just off the northwest end of Pier 7; it marks the northeast side of the entrance to Sitcum Waterway.

(467) The next two channels to the northeast of Sitcum Waterway, **Blair Waterway** and **Hylebos Waterway**, are maintained as **federal projects**. The entrance to Hylebos Waterway is marked by a lighted buoy off a shoal on the north side and a private light on the south side at the northwest end of Pier 25. The entrance to Blair Waterway is marked by a private lighted buoy on the southwest side. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through the USACE hydrographic survey website listed in Appendix A.

(468) The 11th Street bascule bridge over Hylebos Waterway has a clearance of 21 feet. (See **33 CFR 117.1** through **117.59** and **117.1061**, chapter 2, for drawbridge regulations.) The bridgetender monitors VHF-FM channel 16 and works on channel 13. Call signs: KZN-574, Hylebos Bridge. A power cable at the bridge has a clearance of 173 feet.

(469) **Security zones** are in the Sitcum Waterway and Blair Waterway areas—see **33 CFR 165.1** through **165.8**, **165.30** and **165.1321**, chapter 2, for limits and regulations. **Regulated navigation areas** are in the Thea Foss Waterway and Middle Waterway—see **33 CFR 165.1** through **165.13** and **165.1329**, chapter 2, for limits and regulations.

(470)

Anchorage

(471) A **general anchorage** is off the north shore of Commencement Bay. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.) The depths elsewhere in the bay, as a rule, are too great for convenient anchorage. In 2010, a wreck covered 54 feet (47°17'36"N., 122°26'06"W.) and a submerged obstruction (47°17'33"N., 122°26'00"W.) were reported near the northwest corner of the anchorage area.

(472) City regulations permit anchorage in any part of the bay outside the harbor lines so as not to interfere with vessels arriving or departing from their docks.

(473)

Currents

(474) The tidal currents in the harbor have little velocity, except in Hylebos Waterway where the NOAA Ship McARTHUR reported estimated currents of up to 2 knots in 1994. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(475)

Pilotage, Tacoma

(476) Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the west coast of the continental United States (including Alaska) and/or British Columbia. Pilotage for Puget Sound is provided by the Puget Sound Pilots. (See Pilotage, Strait of Juan de Fuca and Puget Sound, indexed as such, chapter 7, for details.)

(477)

Towage

(478) Tugs up to 5,000 hp are available at Tacoma, and larger tugs may be obtained from Seattle. Arrangements should be made in advance through ships' agents.

(479)

Quarantine, customs, immigration and agricultural quarantine

(480) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(481) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(482) Tacoma is a **customs port of entry**.

(483)

Harbor regulation

(484) Harbor regulations are administered by the **harbormaster**, whose headquarters are at the fire station at 901 South Fawcett Street. The general offices of the Port of Tacoma are in the Tacoma Building at the corner of 11th and A Streets; the Port of Tacoma terminal offices are at Pier 2.

(485)

Speed

(486) A city ordinance prohibits speeds in excess of 5 knots on any of the waterways and within 200 yards of any shore or pier in the harbor.

(487)

Wharves

(488) The Port of Tacoma operates three marine terminals and owns ten that are privately operated. In addition to the port-owned facilities listed in the table, there are several private deep-draft piers and wharves. Only the

(489)

Facilities in the Port of Tacoma

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Facilities on Hylebos Waterway							
Trident Seafoods Corperation (Berths C and D)	47°16'58"N., 122°24'27"W.	1,258	18-25	18	• Open storage (4 acres) • Three gantry cranes	Receipt of frozen seafood	Port of Tacoma/ Trident Seafoods Corp.
Pioneer Americas (Docks 1 and 2)	47°16'49"N., 122°24'13"W.	940	25-28	19	• Tank storage (1.6 million gallons) • Open storage	• Receipt of bulk salt • Receipt and shipment of caustic soda	Pioneer Americas Inc.
City of Tacoma Coal Dock	47°16'36"N., 122°23'36"W.	250	30	-	Open storage (12,000 tons coal)	Receipt of coal by barge	City of Tacoma
Sound Refining	47°16'36"N., 122°23'10"W.	770	27	19	Tank storage (700,000 barrels)	Receipt and shipment of petroleum products	Sound Refining, Inc.
Atofina Chemicals	47°16'09"N., 122°22'28"W.	645	30	18	• Tank storage (5,360 tons) • Crane (½ ton)	Shipment of caustic soda and sodium chlorate	Atofina Chemicals, Inc.
Schnitzer Steel	47°16'05"N., 122°22'08"W.	850	32-35	18	• Open storage (26 acres) • Cranes to 250 tons	Receipt and shipment of scrap metal	Schnitzer Steel of Tacoma
Weyerhaeuser Company	47°15'48"N., 122°21'55"W.	1,100	34-37	19	Open storage (18 acres)	Receipt and shipment of logs	Weyerhaeuser Co.
Manke Lumber Company	47°15'52"N., 122°21'41"W.	320	30	18	• Open storage (10 million board feet) • Tank storage (21,360 tons)	• Receipt and shipment of lumber • Shipment of tallow	Manke Lumber Co. Inc./ Manke Lumber Co. Inc. and Pacific Northwest Terminals Inc.
Facilities on Blair Waterway							
Totem Ocean Trailer Express	47°16'28"N., 122°24'18"W.	790	40	11	Open storage (41 acres)	Receipt and shipment of general cargo	Port of Tacoma/ Totem Ocean Trailer Express
Tru-Grit	47°16'18"N., 122°24'02"W.	160	15-20	18	• Open storage (10,000 tons) • Belt conveyor	• Receipt of copper slag • Shipment of fabricated steel products	A.H. Powers Inc./ Jesse Engineering and Tru-Grit, Inc.
Graymont Western U.S.	47°16'11"N., 122°23'52"W.	335	32	20	• Open storage (15,000 tons) • Tank storage (1.3 million gallons) • Belt conveyor	• Receipt of limestone • Occasional shipment of calcium carbonate slurry	Graymont Western U.S., Inc.
Georgia-Pacific Gypsum Corperation	47°16'07"N., 122°23'45"W.	700	35	18	• Covered storage (32,000 tons) • Belt conveyor	Receipt of gypsum	Port of Tacoma/ Georgia-Pacific Gypsum Corp.
Weyerhaeuser Paper Company	47°15'43"N., 122°23'05"W.	800	40-51	20	• Open storage (185,000 tons) • Belt conveyors	Receipt and shipment of wood chips	Port of Tacoma/ Weyerhaeuser Paper Co.
Port of Tacoma (Berths A and B)	47°15'14"N., 122°22'42"W.	1,400	51	22	• Open storage (80 acres) • Covered storage (102,400 square feet)	• Receipt of automobiles • Receipt and shipment of lumber and general cargo	Port of Tacoma
Port of Tacoma Blair Waterway Terminal	47°15'35"N., 122°23'04"W.	1.200	51	22	Open storage (2 acres)	Shipment of logs	Port of Tacoma
Washington United Terminals	47°15'45"N., 122°23'23"W.	2,000	51	21.5	• Open storage (80 acres) • Four container cranes	Receipt and shipment of general cargo	Port of Tacoma/ Washington United Terminals
U.S. Oil & Refining Company (Docks 1 and 2)	47°16'04"N., 122°23'59"W.	1,095	40	18	Tank storage (2 million barrels)	Receipt and shipment of petroleum products	U.S. Oil & Refining Co.
Port of Tacoma (Terminal 4)	47°16'21"N., 122°24'21"W.	1,900	51	18	• Open storage (75 acres) • Six container cranes	Receipt and shipment of general cargo	Port of Tacoma/ Marine Terminals Corp.
Facilities on Sitcum Waterway							
Port of Tacoma (Terminal 7D)	47°16'16"N., 122°25'06"W.	900	51	18	• Open storage (33 acres) • Six container cranes	Receipt and shipment of general cargo	Port of Tacoma/ Husky Terminal & Stevedoring, Inc.
Port of Tacoma (Terminal 7C)	47°16'10"N., 122°24'58"W.	600	48	18	• Open storage (5 acres) • Covered storage (150,000 tons) • One 40-ton gantry crane	Receipt and shipment of miscellaneous bulk materials	Port of Tacoma/ Kaiser Aluminum & Chemical Corp.
Port of Tacoma (Terminals 7A and 7B)	47°16'04"N., 122°24'50"W.	1,200	48	18	• Open storage (6 acres) • Covered storage (180,000 square feet)	Receipt and shipment of containerized general cargo	Port of Tacoma
Maersk Pacific, APM Terminals	47°16'03"N., 122°24'58"W.	2,200	46	20	• Open storage (135 acres) • Five container cranes	Receipt and shipment of containerized general cargo	Port of Tacoma/ Maersk Pacific, Ltd.
Facilities on Thea Foss Waterway							

Facilities in the Port of Tacoma

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
ST Services/Shore Terminals	47°15'38"N., 122°26'09"W.	600	26	20	Tank storage (500,000 barrels)	Receipt and shipment of petroleum products	ST Services/Shore Terminals, LLC
Tosco Corporation	47°15'30"N., 122°26'03"W.	660	24-30	20	Tank storage (280,000 barrels)	Receipt of petroleum products	Tosco Corp
Tacoma Export Marketing Corporation	47°15'59"N., 122°26'35"W.	910	65	19.5	• Silo storage (3 million bushels) • Belt conveyor	Shipment of grain	Port of Tacoma/ Tacoma Export Marketing Co.

Dimensions are given in feet
* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

major deep-draft facilities are listed. The alongside depths given in the table are reported. For information on the latest depths contact the Port of Tacoma general office or the individual operators. All the facilities listed have direct highway connections, and most have plant trackage with railroad connections. Water and electrical shore power connections are available at about 80 percent of the wharves. General cargo is usually handled by ships' tackle. Mechanical handling equipment, if available, is mentioned in the table. The Port of Tacoma operates its own belt line railroad with switching connections to two major railroads and has a 200-ton mobile crane and a 300-ton floating crane.

(490)

Supplies

(491) Most marine supplies and services are available at Tacoma. Bunker fuel, diesel oil, and lubricants are available. Gasoline and diesel fuel are available at the oil docks on Thea Foss Waterway. Large vessels are bunkered at their berths by barge. Water is available at most of the berths.

(492)

Repairs

(493) There are no facilities for major repairs to large oceangoing vessels in Tacoma; the nearest such facilities are in Seattle, WA. The largest marine railway in Tacoma is at a repair yard on the northeast side of the upper turning basin in Hylebos Waterway; the railway here is certified for 1,000 tons.

(494)

Small-craft facilities

(495) A public pier, owned by the city of Tacoma, is 0.6 mile southeast of the south marker of the measured mile course on the southwest side of Commencement Bay; small craft moor here temporarily. There are numerous other small-craft facilities on Hylebos, Blair and Thea Foss Waterways and on the northeast and southwest shores of Commencement Bay.

(496)

Communications

(497) Tacoma is served by two major railroads, Seattle-Tacoma Airport and Tacoma Narrows Industrial Airport.

(498)

The Narrows to Peale Passage

(499) South of Point Defiance are numerous inlets, passages and islands. At many of the towns, the landing wharves have fallen into ruins, all transportation following the highways. These waters are navigated by log tows and by pleasure craft. Deep-draft vessels call at Olympia for lumber and other forest products. The depths are generally great and the dangers are few. The shores are well wooded and moderately low. The beaches are sand and gravel, with boulders in places, and are often backed by steep, bare sand and gravel bluffs. Olympia and Shelton are the only cities, but there are many towns. Strangers bound through these waters at night are advised to take a pilot.

(500)

Currents

(501) In The Narrows current velocities exceed 5 knots at times. At the north end of The Narrows the current sets north most of the time on the east side of the passage and south most of the time on the west side. See Tidal Current prediction service at *tidesandcurrents.noaa.gov* for daily current predictions for a midstream position near the north end of The Narrows. Details of the current movement at other locations including the Southern Part of Puget Sound should be consulted for details of the complicated currents of this area. Links to a user guide for this service can be found in chapter 1 of this book.

(502) From Point Defiance to near Days Island, the east shore of**The Narrows** consists of high, bold bluffs. A tunnel is 1.7 miles southeast of Point Defiance; from it a railroad track follows the shoreline to Nisqually River.

(503) **Point Evans**, 2 miles south of Point Defiance on the west side of The Narrows, is marked by a light. Power cables with a clearance of 200 feet cross 200 yards south of the point. **Tacoma Narrows Bridge**, a dual-span highway suspension bridge, crosses The Narrows a mile south of Point Evans. The bridge has a clearance 160 feet at the piers and 180 feet at the center; private sound signals are located on each pier.

(504) **Days Island** is about 4.5 miles south of Point Defiance. The ferry slip and wharf here are in ruins. There are three marinas here, one on the east side of Days Island and two in the cove 150 yards east of the north end of

the island. A total of about 200 berths are at the marinas; electricity, gasoline, diesel fuel, water, ice, dry storage for over 500 craft and marine supplies are available. A 15-ton crane and hoists to 3 tons are available to handle craft for hull and engine repair. Obstructions covered 1 to 2¼ fathoms are 230 yards west of the former ferry slip.

(505) A small-boat channel, 1 foot deep, leads into **Days Island Lagoon**. The channel favors the Days Island side and under the bridge is 30 yards from the island shore. Local boats anchor in 3 feet in the lagoon. The floats of a private yacht club are on the south and west sides of the lagoon. Anchorage for small-craft may be had east of the north end of Days Island.

(506) Three miles south of Days Island, the shores consist of bare bluffs that are prominent from south.

(507) From here the route to Olympia continues southwest and west through **Balch Passage**, Drayton Passage and Dana Passage, thence south into Budd Inlet. This route is deep and generally free of dangers.

(508)

Caution

(509) The channel through Balch Passage is only about 100 yards wide between the 10-fathom curves, and the scale of the chart is small. Vessels should stay carefully in midchannel, traffic permitting.

(510) **Hale Passage**, between **Fox Island** and the mainland, enters on the west shore 5 miles south of Point Defiance. It is 4 miles to its junction with Carr Inlet. Near the west end the passage is crossed by a fixed highway bridge with a clearance of 31 feet. A shoal, marked on its northeast side by a buoy, is 350 yards southeast of the bridge and near the middle of the passage; the shoal is boulder strewn and bares. The channel is on the northeast side of the buoy. A good small-craft anchorage is on either side of Tanglewood Island. The current in Hale Passage attains a velocity in excess of 3 knots at times. The east (ebb) current is stronger than the west (flood) current. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(511) **Fox Island** is a village in the small cove near the northeast end of Fox Island. It has a store and service station. **Tanglewood Island**, in the center of the cove, has a boys' camp, the buildings of which are prominent.

(512) **Wollochet Bay** is a small inlet about 2 miles long extending north from Hale Passage, about 1 mile inside the east entrance. The upper part is narrow and shoal. It affords an anchorage in midchannel about 0.3 mile inside the entrance in 11 to 12 fathoms, sticky bottom. There are many private piers and mooring buoys in the bay. A small-boat launching ramp is on the east side of the bay near the entrance.

(513) **Gibson Point**, the south tip of Fox Island and the north entrance point of Carr Inlet, is marked by a light. **Toliva Shoal**, nearly in midchannel 0.9 mile south of Gibson Point, consists of two rocks covered 3½ fathoms and is marked by a lighted bell buoy. An unmarked fish haven extends about 0.25 mile north from the shoal.

(514) **Carr Inlet** enters the west shore of the sound about 7½ miles south-southwest of Point Defiance. From the entrance, between Fox and McNeil Islands, it extends about 6 miles northwest and then trends north-northeast for 8 miles terminating in flats at the head. Good anchorage is available in the upper reaches in 6 to 15 fathoms, soft bottom and in several small coves on its south and east shores. From the entrance, a midchannel course is safe.

(515) A **naval restricted area** is in the south part of Carr Inlet. (See **33 CFR 334.1250**, chapter 2, for limits and regulations.)

(516) The Washington State penitentiary, on the southeast side of **McNeil Island** about 0.8 mile southwest of **Hyde Point**, is prominent from offshore. Vessel traffic is restricted within 100 yards of McNeil Island, that is prison property. The island is served by a ferry from Steilacoom which lands at the terminal on the south shore about a mile inside the east and of Balch Passage.

(517) **Wyckoff Shoal**, part of which bares, extends 0.8 mile northwest from the northwest part of McNeil Island. Lights on the west side of the shoal mark the east side of the channel leading into Pitt Passage.

(518) **Pitt Passage**, between Key Peninsula and McNeil Island, connects Drayton Passage and Carr Inlet. It is obstructed about midway of its length by **Pitt Island** and its surrounding rocks and shoals. Only the passage east of Pitt Island is used by small craft with local knowledge. In this passage the ebb (north current) is stronger than the flood and attains a velocity of 2.5 knots or more at times.

(519) **Lakebay**, at the head of **Mayo Cove** on the southwest shore of Carr Inlet, is a village with a store and several small private piers. A marina here has a long pier and floats with berthage for about 35 craft; electricity, gasoline, water and ice are available. About 7 feet can be carried to the marina pier, but the channel to the pier is difficult to navigate; strangers are advised to proceed cautiously and obtain local advice. On the east side of Mayo Cove, along **Penrose Point**, a state park has a small float with moorage for about 10 small craft. Water and a pump-out station are available at the state park.

(520) **Home**, a village on the west side of **Von Geldern Cove**, has a store and service station. A bridge crosses the cove at its head. A shoal extends from the north shore at the entrance to the cove.

(521) **Glencove** is a small settlement in Glen Cove on the west side of Carr Inlet, about 5 miles north of South Head. It is a summer recreational area with a private wharf and float. A small marina here has berths and gasoline.

(522) **Wauna** is a village at the head of Carr Inlet, where the spit enclosing **Burley Lagoon** joins the mainland. A county road extends along the spit and across the entrance to the lagoon over a fixed highway bridge to Rosedale and Gig Harbor. The bridge has a clearance of 12 feet (23 feet at center). A boat launching ramp is at Wauna just west of the bridge.

(523) **Rosedale** is a residential community on the cove on the east side of Carr Inlet and 180-foot-high **Raft Island**. There is an extensive shoal area around and between Raft Island and **Cutts Island**. Cutts Island is part of a state park. The shores of these islands are strewn with boulders. A fixed highway bridge and overhead cable extend from the south side of Raft Island to the mainland. The bridge clearance is 17 feet, and the cable, 48 feet.

(524) **Horsehead Bay**, about 1 mile long, is directly north of Green Point, at the west extremity of Hale Passage. This is a residential area with many private wharves.

(525) **Eagle Island**, small and wooded, is near the middle of Balch Passage, 0.2 mile from **Anderson Island**, and is marked on its north end by a light. Eagle Island is a state park.

(526) **Eagle Island Reef**, 300 yards west of Eagle Island, bares at low water at the south end and has a depth of 2 feet at the north end.

(527) **Drayton Passage**, between Key Peninsula and Anderson Island, is about 3 miles long in a north direction; at its north end, it connects with Pitt Passage and Balch Passage, and at its south end joins the west part of Nisqually Reach. With the exception of a spit extending 0.2 mile from the west shore, marked by a lighted buoy, the waters are deep and free of dangers. A small-boat launching ramp is 0.25 mile north of the light. Estimated current velocities of 1 to 2 knots occur at the southwest end of the passage.

(528) **Filucy Bay**, on the west shore opposite Balch Passage, is about 1.5 miles long and irregular in shape; it is 0.4 mile wide at the entrance. Good anchorage in 7 to 8 fathoms, muddy bottom, is available. There are numerous houses around the shores of this bay. **Longbranch**, a village in the small cove opposite the entrance, has a pier and floats for about 30 fishing and pleasure craft.

(529) **Steilacoom** is on the mainland about 9 miles south-southwest of Point Defiance. The town is of little commercial importance and has no waterfront facilities except for the ferry terminal that maintains service to Anderson, McNeil and Ketron Islands. Limited berthage for small craft, gasoline, water, ice and a hoist are available at the terminal. Limited engine repairs can be made. Indifferent anchorage may be had along the waterfront close inshore, but it is not recommended as the holding ground is poor and the currents have considerable velocity. Off Steilacoom there are tide rips which, with a wind opposing the current, are dangerous to small boats.

(530) There are two large, conspicuous sand and gravel pits on the bluffs about 1.5 miles north-northeast of Steilacoom. A pier is at the north pit and is served by a conveyor belt used for the shipment of sand and gravel. The pier is 520 feet long, 20 to 30 feet reported alongside, and has a deck height of 14 feet. Another pier, just north of the mouth of Chambers Creek, has been abandoned and is in ruins.

(531) **Ketron Island**, 10 miles south-southwest of Point Defiance, is privately owned and heavily wooded. A ferry from Steilacoom lands at the terminal on the northwest shore three times a day. **Cormorant Passage**, 0.5 mile wide, separates the island from the mainland south. The passage is clear but is little used.

(532) **Nisqually Reach** trends south and west around Anderson Island. The south shore is occupied for nearly 1 mile offshore by **Nisqually Flats**, the delta formed by the **Nisqually River**. The flats are very soft mud and bare at low water. A major portion is designated a National Wildlife Refuge; the boundaries are marked by signs. A section is also used for commercial aquaculture. A boat ramp at Nisqually Head is accessible only at high water. Two lights mark the steep north edge of the flats and are supplemented by a series of piles. A light marks the south tip of Anderson Island at Lyle Point. **Thompson Cove** on the west side of the point is a cable area and should not be used as an anchorage. An artificial reef is at the state park 2.7 miles west of Nisqually Head. The reef is marked by a private buoy.

(533) **Oro Bay**, in the southeast part of Anderson Island, is an irregular bight between **Cole Point** and **Lyle Point**. Most of the bay is shallow; it affords an indifferent anchorage in about 10 fathoms but is affected by the currents and affords little protection. A small shallow arm extends about 1 mile northwest on the west side of the bay and is marked by private buoys. An anchorage for small craft is here.

(534) **Devils Head**, the south point of Key Peninsula, is 280 feet high and heavily wooded. A light is shown off the south tip of Devils Head.

(535) **Johnson Point**, 2 miles west of Devils Head, is 90 feet high. A light is on the sandspit at the end of the point.

(536) A marina is on the west shore of Nisqually Reach about 0.8 mile south-southeast of Johnson Point. The marina provides open and covered berths with 6 transient berths. Services available include electricity, gasoline, diesel fuel, water, ice, marine supplies, launching ramp, pump-out station and a 3-ton marine lift.

(537)

Local magnetic disturbance

(538) Differences of as much as 3° from normal variation have been observed along Henderson Inlet.

(539) **Itsami Ledge**, covered 1 fathom, lies 1 mile west-southwest of Johnson Point. It is surrounded by kelp and marked by a light. This is a danger in entering Henderson Inlet or Dana Passage. A fish haven is close north of the light.

(540) **Henderson Inlet**, locally known as **South Bay**, immediately west of Johnson Point, extends about 4.5 miles in a south direction; the south part is an extensive flat. Good anchorage is inside the entrance in 5 to 6 fathoms, muddy bottom. A spit makes out about 0.2 mile north from the west point at the entrance; on the west shore, 0.8 mile south of the entrance point, is a long sandspit. Oyster beds abound in the south area of the bay.

(541) **Case Inlet**, a popular sport fishing and resort area, extends some 14 miles north from Johnson Point. The flats at its head are only 2 miles from the head of Hood

Canal. Depths are irregular, from 10 to 30 fathoms, but there are no off-lying dangers.

(542) **Harstine Island** forms the west side of the south part of the inlet.

(543) A facility in Whiteman Cove, on the east side of the inlet about 3.7 miles north of Devils Head, has berthing, water and a launching ramp.

(544) A marina in Jarrell Cove at the north end of the island has berths, electricity, gasoline, diesel fuel, water, ice and some groceries. The pier here has 22 feet reported alongside. The 200-foot Jarrell Cove State Park pier is directly across the cove from the marina. A state park float, with a pump-out station, is farther up the cove.

(545) **Herron Island**, about 4 miles north of the entrance and 0.3 mile west of the east side, is a private island, with moorings for small craft. A ferry connects with the mainland at the village of **Herron**. The bar between the north end of Herron Island and the east shore has a least depth of about 13 feet, but with local knowledge a depth of 21 feet can be carried through by rounding the northeast tip of Herron Island some 300 to 500 yards off.

(546) **McMicken Island**, 1.1 miles southwest of Herron Island, is connected to Harstine Island by a sandpit that bares at low water. Anchorage with a rocky bottom and protection from south winds is on the northwest side of the island.

(547) **Pickering Passage** indents the west shore of Case Inlet, about 2 miles north of Herron Island. The passage extends in a general south direction for 8 miles, connecting at its south end with Peale Passage and Totten Inlet. The shores are generally low and wooded, depths vary from 4½ to 15 fathoms. The passage contains numerous sites of aquaculture farming and shoaling extends east from the mouth of Hammersley Inlet. A midchannel course is considered safe. In Pickering Passage the flood current sets from Case Inlet toward Hammersley Inlet and the ebb in the opposite direction. The strongest currents are near the south end where velocities reach 2.5 knots at times. The settlements are served by highway. A fixed highway bridge with a clearance of 31 feet crosses the passage from Graham Point to Harstine Island, about 2.6 miles north of the entrance to Hammersley Inlet.

(548) **Stretch Island** is near the west shore of Case Inlet, just north of the entrance to Pickering Passage. There is no through channel west of this island. The north part of this island is partly cleared of trees and laid out in orchards; a winery and several grape juice factories, no longer operating, are here. There is a private landing wharf built out to 12 feet on the north end of the island. A fixed highway bridge with a clearance of 14 feet connects the mainland. **Grapeview** is a village opposite Stretch Island.

(549) **Reach Island**, 0.2 mile north of Stretch Island, has been subdivided for homesites and is known as **Treasure Island**. It is separated from the west shore by a shallow channel known locally as **Fair Harbor**. The channel is spanned by a fixed bridge with a clearance of 16 feet. There is a marina on the mainland 0.3 mile south of the bridge with about 70 berths, electricity, gasoline, water, ice, nautical supplies, hull and engine repair and a launching ramp. Approaches to the marina are recommended from the south. The remainder of the channel has reported depths of 2 feet when favoring the west shore. Caution is advised when navigating more than 150 feet north of the marina.

(550) **Vaughn** is a village on the north shore of **Vaughn Bay**, which lies on the east side of Case Inlet about 4 miles from the head. There is a public launching ramp here. The combined civic center for all the small towns on the entire peninsula is at Vaughn. A channel 1½ feet deep leads to deeper water in the bay. Follow the north shore for 200 yards after entering in midchannel off the end of the spit; then cross the bay parallel with the spit at a distance of 200 yards, heading toward the south shore; then follow the south shore at a distance of 200 yards, steering toward the head of the bay. Around the shores are numerous houses and orchards and a little-used log booming area.

(551) **Rocky Bay** is the shallow inlet north of Vaughn Bay. A channel 3 feet deep leads to the lagoon back of the sandspit near **Windy Bluff**. It is necessary to come around the small sand island north of the spit. Oysterbeds are in the east side of the bay north of the spit.

(552) **Allyn** is a village on the west side of Case Inlet near the head about 0.5 mile north of **Sherwood Creek**. A public pier and launching ramp are here. An oyster wharf is just north of Allyn.

(553) Good anchorage may be had anywhere north of Harstine Island, in 6 to 15 fathoms, muddy bottom.

(554) There are numerous farms and several small settlements whose chief industries are oyster culture, farming, and some logging. The flats near the head of the inlet are largely covered with oyster beds.

(555) **Peale Passage**, about 4 miles long, extends northwest between Harstine and Squaxin Islands, and connects with Pickering Passage. It has a controlling depth of about 10 feet. Strangers should not attempt it. The current at times attains a velocity of 2.0 knots in the narrow part of the passage and sets north on the flood.

(556)

Olympia

(557) **Dana Passage**, between **Brisco Point**, the south point of Harstine Island, and the mainland, is about 2 miles long. It is the main route to Budd Inlet and Olympia and also joins with three other bodies of water: Eld Inlet, Squaxin Passage and Peale Passage. Squaxin Passage leads to Totten and Hammersley Inlets, and Peale Passage leads to Pickering Passage.

(558) With the exception of Itsami Ledge near its east end and a fish haven about 0.3 mile north of Itsami Ledge Light 7, Dana Passage is clear and a midchannel course may be safely followed. The currents in Dana Passage frequently attain velocities of 3 knots or more.

(559) **Boston Harbor** is a village in the cove of the same name just east of Dofflemyer Point. A marina here can provide limited transient berths, gasoline, diesel fuel, electricity, water, ice, some marine supplies, launching ramp and pumpout facility.

(560) **Budd Inlet**, 29 miles by water from Tacoma, is about 6 miles long, extending south from Dana Passage and terminating in flats that bare at the head of **East Bay** and **West Bay**. The entrance is between Cooper Point and **Dofflemyer Point**; the latter is marked by a light. The entrance to Budd Inlet is deep except for a 25-foot shoal in the middle of the entrance. The shores are comparatively low and wooded. Depths along the shores of the inlet shoal abruptly on the west side and gradually on the east side. East Bay and West Bay are obstructed by flats and shoals that bare for about 0.8 mile, through which channels have been dredged to the Olympia waterfront.

(561) **Olympia**, the capital of the State of Washington is at the head of East and West bays at the south end of Budd Inlet. Traffic in the port is composed primarily of container vessels, roll-on/roll-off and break bulk.

(562)

Prominent features

(563) The capitol dome and the radio tower on the north end of the port fill area are prominent landmarks from outside the entrance channel.

(564)

Channels

(565) A **federal project** provides for a 30-foot channel from deepwater in Budd Inlet to a 30-foot turning basin off the west side of the port terminal near the head of West Bay—the channel is marked by lighted and unlighted buoys, lights and lighted ranges. Another channel, with a project depth of 13 feet, leads southeast from the 30-foot outer channel to a mooring basin on the east side of the peninsula at the head of East Bay—the channel is marked by lights. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through the USACE hydrographic survey website listed in Appendix A.

(566)

Anchorage

(567) Good anchorage may be had anywhere inside the entrance in muddy bottom.

(568)

Dangers

(569) **Olympia Shoal**, which bares, is about 0.4 mile off the west shore, 3 miles inside the entrance. A light is on the east side of the shoal, and on its west side are lights marking the approach to the dredged channel. There are numerous shoals, piles, dolphins and log booms on the east side of the harbor. A visible wreck, in about 47°05'14"N., 122°55'49"W., is near the approach to the dredged entrance channel to Olympia.

(570)

Regulated navigation area

(571) A security zone has been established in the turning basin of West Bay. (See **33 CFR 165.1321**, chapter 2, for limits and regulations.)

(572)

Pilotage, Olympia

(573) Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the west coast of the continental United States (including Alaska) and/or British Columbia. Pilotage for Puget Sound is provided by the Puget Sound Pilots. (See Pilotage, Strait of Juan de Fuca and Puget Sound, indexed as such, chapter 7, for detail.)

(574)

Towage

(575) Tugs to 5,000 hp are available from Tacoma and Seattle. No large tugs are stationed in Olympia.

(576)

Quarantine, customs, immigration and agricultural quarantine

(577) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(578) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(579) Olympia is a **customs port of entry**.

(580) There are two hospitals in Olympia.

(581)

Wharves

(582) The port terminal, owned and operated by the Port of Olympia, is on the east side of the turning basin near the head of West Bay; it is the only deep-draft facility in Olympia Harbor. The terminal has a 1,750-foot face with a deck height of 20 feet and alongside depths of 35 to 40 feet; contact the Port of Olympia (360–528–8000) for the latest depths. The terminal is served by two container gantry cranes, container toplifts, a rail car switcher and other cargo handling equipment. More than 59 acres of paved open storage is available.

(583)

Supplies

(584) Water, ice, groceries and some marine supplies can be obtained. Diesel fuel, gasoline and lubricants are available.

(585)

Repairs

(586) Only small craft can be repaired in Olympia. A large marina in the East Bay has a 77-ton lift that can handle craft up to 90 feet long. Machine shops are in the city. For repairs to larger vessels, the nearest facilities are in Seattle, WA.

(587)

Small-craft facilities

(588) There are many marinas at Olympia. Berths, electricity, gasoline, diesel fuel, water, ice, launching

ramps, storage and marine supplies are available. Hull and engine repairs can be made at a marina just south of the port wharf. A private yacht club has its moorings at the head of West Bay 0.3 mile south of the turning basin.

(589)

Communications

(590) Olympia is served by two major railroads. Olympia Airport is 4.5 miles south of the city.

(591)

Eld Inlet to Oyster Bay

(592) **Eld Inlet**, locally known as **Mud Bay**, immediately west of Budd Inlet, is of little commercial importance. It affords good anchorage inside the entrance in 24 to 42 feet, soft bottom. A midchannel course is clear to the flats at its head. In entering, **Cooper Point**, the east point at the entrance, should be given a berth of not less than 0.2 mile. Some logging and oystering are done here.

(593) **Squaxin Passage** is south of **Squaxin Island** and **Hope Island**. This passage leads north to Totten and Hammersley Inlets. A light on Hunter Point marks the southwest entrance point of the passage. The north shore is foul; a shoal covered 19 feet is 150 yards off the west shore of Hope Island abreast Steamboat Island.

(594) The passage is narrow, and strangers should proceed with caution. The south shore should be favored, and, at the west end, the north point of Steamboat Island should be favored. The principal danger in the passage is a reef that bares at extreme low water, southeast of Hope Island; a buoy is near its south end. This reef is easily avoided by keeping the north point of Steamboat Island well open of the south point of Hope Island. Tide rips are said to occur in Squaxin Passage. The usual velocity of the current is about 1.5 knots.

(595) The passage between Hope and Squaxin Islands has a least depth of 9 feet in the middle; greater depths can be carried in the passage with local knowledge.

(596) **Steamboat Island**, covered with private homes, is connected with **Carlyon Beach** on the mainland by a roadway on piling. The island, practically a part of the mainland, has abrupt shores and is heavily wooded. The northwest end of the island terminates in a long sandspit marked on the end by a daybeacon. A private pier is on the northwest side of the island, and a pier and large building of a private yacht club are on Carlyon Beach just east of the roadway on piling.

(597) **Totten Inlet** extends 9 miles southwest from the west end of Squaxin Passage. A depth of 30 feet can be carried to a point off the entrance to Skookum Inlet. A 3½-fathom shoal is about in midchannel at the entrance, 620 yards southwest of the south end of Steamboat Island. A spit extends west for about 100 yards from Steamboat Island. In entering, favor the west shore to avoid the spit and shoal. The inlet shoals gradually to near **Burns Point**, 100 feet high, on the south shore, where it bares at low tide.

(598) **Oyster Bay**, south of Burns Point, is an extensive mudflat; oysters are grown in this area, and there are log booms. South of the entrance to **Little Skookum Inlet**, along the shores of Totten Inlet, are rock or concrete walls enclosing the oysterbeds. The walls are a danger to navigation, and the oyster industry discourages boatmen from entering these waters. Oyster-processing wharves are on the north side of the inlet. Local knowledge is required to get to them. Good anchorage may be had anywhere inside the entrance of Little Skookum Inlet.

(599)

Hammersley Inlet to Oakland Bay

(600) **Hammersley Inlet** indents the west shore of the sound about 1 mile north of the west end of Squaxin Passage. It is about 6 miles long, expanding at its head into **Oakland Bay**, which is 3.5 miles long in a northeast direction. The inlet is obstructed by shoals, particularly at its mouth, where there is an extensive bar. The rocky shoals have been partly removed. The channel, marked by lights on **Libby Point** and **Church Point** has a controlling depth of about 8 feet to the town of Shelton on Oakland Bay. It is navigated only by small craft and by tugs with log rafts and railroad car floats; local knowledge is required. Tidal current velocities may reach 5 knots at times in the constricted parts of the inlet. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book. Vessels enter on the flood, usually after half tide, and leave on the ebb, usually before maximum strength. Hammersley Inlet is considered dangerous for strangers.

(601) Vessels with sharp rise of bilge should avoid the inlet as there is danger of capsizing in the strong current in case of grounding.

(602) **Arcadia** is a small settlement on the south point of the entrance of Hammersley Inlet. It has a public ramp for launching small pleasure craft.

(603) **Shelton**, at the head of the inlet, is a town of some commercial importance. Extensive logging, lumber and lumber product manufacturing interests are centered here. The west end of **Oakland Bay** is used primarily as a storage area for logs trucked in from the Olympic Peninsula to be used by the mills at Shelton. Hammersly Inlet receives little commercial traffic. Shelton is on a branch of the Burlington Northern Railroad; lumber is shipped largely by rail; however, some railroad car ferrying is done. Railway trestles used as log dumps extend east across the flats from the Shelton waterfront. The Port of Shelton marina, 0.3 mile from the head of the Shelton waterfront and on the north shore, can provide transient berths, gasoline, diesel fuel, electricity, water, ice and pumpout facility. A yacht club has its facilities at the marina. Some marine supplies are available in the town. There are no haulout or repair facilities at Shelton.

Oysters are cultivated in the shoal portions of Oakland Bay.

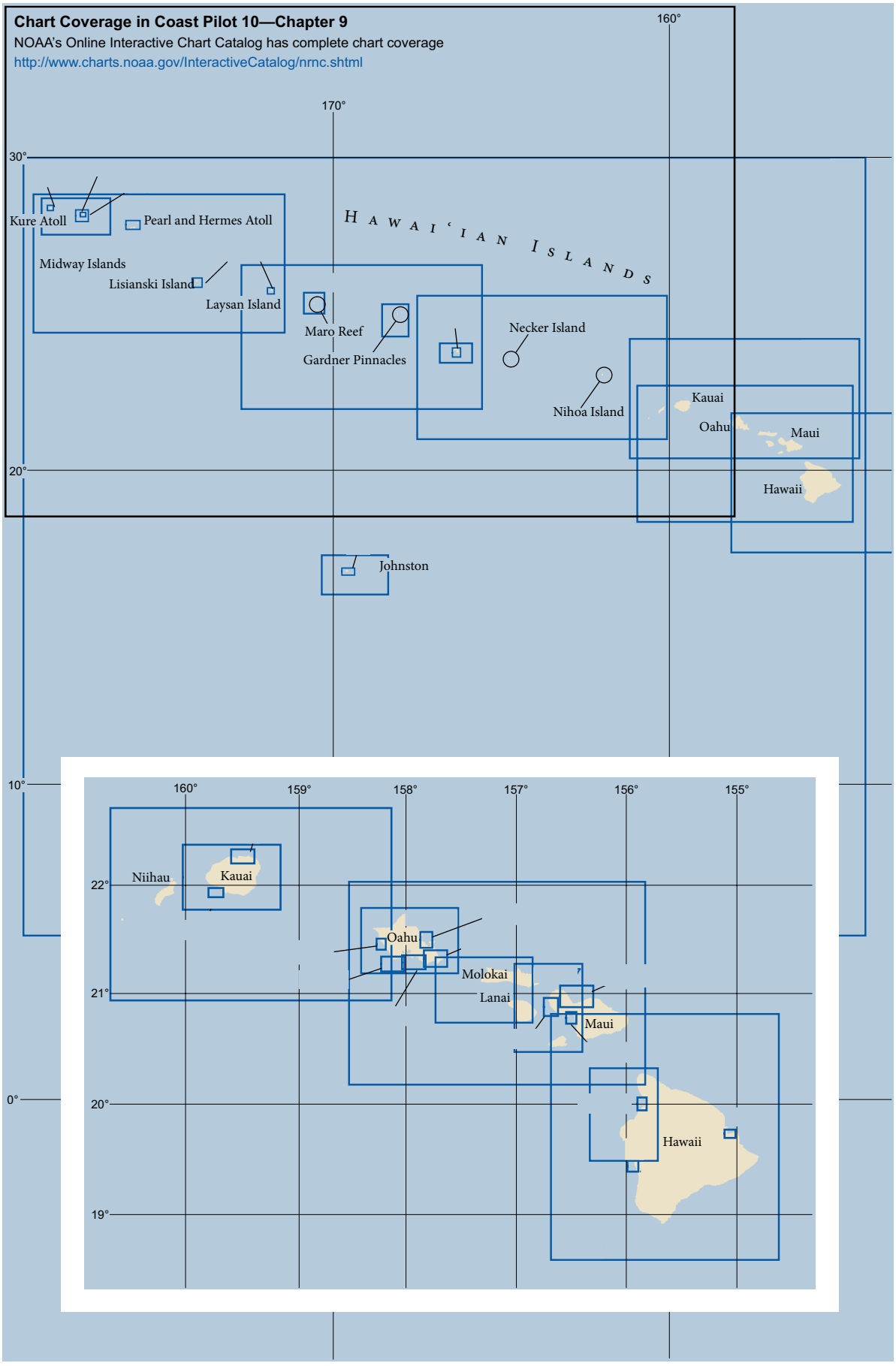
Chart Coverage in Coast Pilot 10—Chapter 9
NOAA's Online Interactive Chart Catalog has complete chart coverage
http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml
160°
170°
30°
20°
10°
0°
Kure Atoll
Pearl and Hermes Atoll
Midway Islands
Lisianski Island
Laysan Island
HAWAIIAN ISLANDS
Maro Reef
Gardner Pinnacles
Necker Island
Nihoa Island
Kauai
Oahu
Maui
Hawaii
Johnston
160°
159°
158°
157°
156°
155°
22°
21°
20°
19°
Niihau
Kauai
Oahu
Molokai
Lanai
Maui
Hawaii

Hawaii

(1)

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Chart - 540

(2) **Hawaii**, a Polynesian kingdom until 1893 and then briefly a republic, requested and was granted annexation to the United States in 1898 and was given a territorial form of government in 1900. By Presidential proclamation of August 21, 1959, Hawaii officially became the 50th of the United States.

(3) The **Hawai'ian Islands**, an archipelago, consist of eight large islands, plus many islets, reefs and shoals, strung out from southeast to northwest for 1,400 nautical miles in the north-central Pacific Ocean. The archipelago extends from 18°55'N. to 28°25'N., and from 154°49'W. to 178°20'W., straddling the Tropic of Cancer. All the islands of the archipelago, except 2-square-mile Midway, are part of the State of Hawaii.

(4) The capital and chief population center of the state is Honolulu on the island of O'ahu; the port is 2,091 nautical miles from San Francisco, 4,685 miles from the Panama Canal and 2,477 miles from Anchorage, AK. Land area of the state totals 6,425 square statute miles, of which the "Big Island" of Hawaii alone accounts for nearly 63 percent. The other seven large islands are, in order of size, Maui, O'ahu, Kaua'i, Moloka'i, Lāna'i, Ni'ihau, and Kaho'olawe.

(5) The major islands are mountainous and of volcanic origin; the Island of Hawai'i has two volcanoes that are still active. Elevations range from sea level to nearly 14,000 feet, with many peaks in excess of 2,500 feet. Although coastal plains, valley floors and certain plateaus are relatively flat, much of the surface is quite rugged, with high ranges and deep ravines or gorges.

(6) Nearly all of the island streams may be classified as mountain torrents, although some of them can be navigated for short distances by small boats. Most of the streams are on the north and east coasts, where rainfall generally is heaviest.

(7) The 20-fathom depth curve is seldom more than 1 mile from shore and usually is not far from the coral reefs that fringe much of the island coastline. The bottom generally pitches off rapidly to great depths from a narrow coastal shelf, and the few off-lying dangers usually are indicated by breakers or by a change in color of the water. Under normal conditions the color of the water changes from a deep blue in the open ocean to a blue-green between the 10- and 15-fathom curves; bottom features become visible at 6 to 7 fathoms.

(8) **Tourism** is Hawaii's bedrock industry accounting for the largest portion of the state's economy with over 6 million visitors arriving annually. All branches of the military maintian a large presence in the islands, specifically on O'ahu, due to Hawaii's strategic location. Hawaii, once dominated by sugar and pineapple production, has seen those crops diminish and now has committed itself to diversified agriculture such as seed corn, floriculture, unprocessed sugar, macadamia nuts, coffee and cattle. Science and technology, film and television production, sports and ocean research and development round out the state's economy.

(9) **Fish Aggregating Devices** (FADs) along the coastal waters of the main Hawai'ian Islands make the area very popular with commercial and recreational fishermen. For reasons unknown, fish in the north and west Pacific Ocean frequently gather in schools under floating objects. FADs may be as sophisticated as floating devices, often buoys, with electronic equipment attached for tracking or as crude as floating logs or other objects. The FADs in Hawai'ian waters, established by the state, are yellow, 6 feet across at the base and show a quick flashing yellow light atop a 5-foot steel pole. The buoys display 12-inch white letters. These buoys frequently break loose and/or become unlighted. Mariners are advised to use caution when in the vicinity of the FADs.

(10)

Polynesian-English Geographic Glossary
(English meanings of Polynesian words used frequently in Hawai'ian geographic names)

Akau – north	**Kowa** – channel, strait, sound
Ana – cave	**Lae** – cape, point
Awa – bay, cove	**Lapa** – ridge
Hale – house	**Loko** – pond
Hana – bay	**Lua** – crater, pit
Heiau – place of worship, temple	**Mauna** – mountain, hill, peak
Hema – south	**Moana** – ocean
Hikina – east	**Moku** – islet, island, rock
Hono – bay, cove	**Pali** – cliff, peak, point
Kai – sea	**Pele** – volcano
Kapu – prohibited	**Pohaku** – rock
Komohana – west	**Puu** – hill(s), mountain, peak
Kona – leeward	**Wai** – water
Koolau – north	**Wailele** – waterfall

(11)

Emergency signal flag

(12) The State of Hawaii has adopted an emergency signal flag as one of the signals that may be used or displayed when a vessel is in need of assistance; the flag should be at least **2 feet square** and **international orange** in color. This distress signal is authorized by the Hawaii Boating Law.

(13)

Harbors and ports

(14) Honolulu is by far the largest commercial deepwater facility in Hawaii. Other commercial deepwater harbors are Hilo and Kawaihae on Hawaii Island, Kahului on Maui and Nāwiliwili and Port Allen on Kaua‘i. These ports service both overseas and interisland shipping.

(15) Hawaii has several commercial barge harbors engaged in interisland shipping. Some of the more important are at Kaumalaupau on Lāna‘i and Kaunakakai, Haleolono and Kalaupapa on Moloka‘i. These harbors service only light-draft vessels.

(16) Contact information for harbors managed by Hawaii's Department of Transportation can be found at **https://hidot.hawaii.gov/harbors/contacts/** or via Hawaii DOT Harbors Division Administration, Hale Awa Ku Moku Building, 79 South Nimitz Highway, Honolulu, Hawaii 96813-4898.

(17)

Marine radio communications

(18) Honolulu is the only port that maintains a commercial radio communication watch. Vessels desiring services at other Hawai‘ian ports must make arrangements in advance.

(19)

COLREGS Demarcation Lines

(20) The lines established for the Hawai‘ian Islands and United States Pacific Island Possessions are described in **33 CFR 80.1410** through **80.1495**, chapter 2.

(21)

Control over movement of vessels

(22) Regulations require advance notice of vessel's time of arrival to Captain of the Port. (See **33 CFR 160.1** through **160.201**, chapter 2, for regulations.)

(23) Submerged submarine operations are conducted at various times in this area; proceed with caution.

(24)

Anchorages

(25) Anchorages are numerous except on the north and east sides of the islands where shelter from the trade winds is a major requirement. The anchorages on the south and west sides of the islands are unsafe during kona weather.

(26)

Regulated Navigation Area

(27) A security zone has been established for all waters within 1,000 yards of any U.S. Navy submarine that is operating in the Sector Honolulu Captain of the Port Zone and that is being escorted by the U.S. Coast Guard. (See **33 CFR 165.1** through **165.13** and **165.1412**, chapter 2, for limits and regulations.)

(28)

Tides

(29) The periodic tides around Hawaii average only 1 to 2 feet. The tides along the north coasts usually occur about 1 to 1½ hours earlier than the tides along the south coasts. See the Tide prediction service at *tidesandcurrents.noaa.gov* for daily predictions of times and heights of high and low waters for Honolulu.

(30) The effect of strong winds added to normal tidal action may cause water level to fall considerably below chart datum and/or rise considerably above mean higher high water. A heavy surf, particularly from north, gives the impression of higher tides on the exposed beaches; there is usually little actual increase under such conditions. On the south side of O‘ahu, where the trades usually blow directly off the land, a shift to kona winds or to a calm has been observed to raise the tide level a few tenths of a foot.

(31)

Currents

(32) The variable oceanic currents in the vicinity of Hawaii are believed to depend mostly upon the velocity and direction of the wind, but there are many reports of strong northeast currents setting against the prevailing trades. There is a prevailing west oceanic drift in the vicinity of the larger islands and as far west as Necker Island.

(33) The tidal currents are generally rather weak and are influenced by winds and oceanic movements. Such currents are mainly reversing in the channels between the larger islands, but they are rotary in more open waters, particularly around the west islets, and shift direction continuously in a clockwise movement. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(34)

Tsunamis (seismic sea wave)

(35) The Hawai‘ian Archipelago has been visited from time to time by tsunami, which causes enormous destruction. Loss of life and property can be lessened by intelligent response to warnings that such waves are imminent. (See chapter 1 for basic discussion.)

(36) The National Oceanic and Atmospheric Administration administers a tsunami warning system that alerts the Hawai‘ian Islands, other Pacific islands, and most of the countries bordering the Pacific. The system has an operating center at the Pacific Tsunami Warning Center, ‘Ewa Beach, O‘ahu, and includes scattered seismograph stations for quick detection and location of submarine earthquakes, a network of wave-detecting and reporting stations throughout the Pacific, a high-priority communication setup and an extensive

international arrangement for broadcasting warnings of possible sea waves.

(37) Military authorities in Honolulu will issue warnings to all military bases that might be affected. Local base commanders will put into effect any precautions deemed necessary. Elsewhere warnings will be broadcast by civilian authorities. Disaster committees have been set up on all the major islands to alert the population and to assist in evacuation and rescue as needed. In Honolulu and Hilo, former air raid sirens now operated by the police department will be used. On O'ahu, Civil Air Patrol planes equipped with sirens will fly the shoreline and sound the alarm. This service will later be extended to the other islands. On all the major islands, police cars equipped with sirens will patrol the coastal areas. Local commercial broadcasting stations will interrupt all programs to give the latest information and instructions.

(38) All warnings will also be broadcast by the National Weather Service on NOAA Weather Radio. (See Appendix A for locations and frequencies of the stations.)

(39) Should a warning occur when a radio station is closed down, it will come on the air immediately and remain on until the all clear is sounded. When an alarm is given, all persons are warned to turn on their radios to a local broadcasting station for information and instructions. If they have no radio and cannot find access to one nearby, they should seek high ground. Telephones are apt to be flooded with calls and therefore cannot be relied on during a warning.

(40) When a warning is received, persons should vacate waterfront areas and seek high ground. The safest procedure for ships will depend upon the amount of time available, and this may not always be known. A ship well out at sea would ride such waves safely, and hence, if time is available to put to sea, that would be the safest action. During the 1946 wave, the master of a ship lying offshore near Hilo felt no unusual waves, though he could see great waves breaking on the shore. Crews of fishing boats in the Hawai'ian area also reported no unusual conditions at that time. On the other hand, the crew of a ship in the harbor may have a difficult time averting serious damage.

(41) The destructive force is usually greater on the sides of the islands facing the oncoming waves, but this directional effect is frequently lacking and the waves may reach their greatest heights on the leeward sides of the islands. The waves may also attain great heights in funnel-shaped bays and at capes or other places where a submarine ridge projects seaward toward the oncoming wave. Unusual heights may be attained at any place where two waves traveling different paths arrive at the same time to reinforce each other. There is still much to be learned about these waves, and the best policy is to avoid them in any way possible.

(42)

Weather, Hawaii

(43) The climate of the Hawai'ian Islands is unusually pleasant for a tropical area, the result principally of the marked marine influence and the persistent trade winds. Considering the latitude of the islands, there is relatively little uncomfortable heat. The discomfort that is occasionally experienced usually occurs when the trades are temporarily displaced by light variable or south winds, which are accompanied by comparatively higher humidities. The outstanding climatic features of the islands are the dominant trade-wind influences throughout all seasons, the remarkable variation in rainfall over adjacent areas, and the uniform temperature regime which varies slightly throughout the year.

(44) During the summer season the trades blow with a high degree of persistency. As a result, uncomfortable periods are usually delayed until fall, and thus follow by weeks or possibly as much as two months the period when the highest temperatures occur. Rains most frequently fall at night.

(45) Thunderstorms are infrequent and practically never severe. Hail seldom occurs. Occasionally local storms are accompanied by winds of sufficient force to do limited damage, but severe storms such as hurricanes or tornadoes are rare. So-called thick weather is almost unknown to the extent of seriously interfering with shipping and is usually confined to mist and rain, rather than being in the form of fog. Interference to shipping or travel because of bad weather is almost unknown.

(46) The strongest influence in the pressure pattern underlying the general circulation of air over the Hawai'ian Islands area is the persistent and semipermanent high-pressure cell known as the Pacific high. The clockwise circulation around this cell, coupled with a slight deflection of the surface winds away from the high pressure, result in the northeast trades that are the dominant winds of the area.

(47) The trade-wind influence is dominant in all seasons throughout the greater part of all the islands. In some local areas, winds deviate from the general pattern because of topography. In coastal areas where mountains to the east project high above sea level, as they do in the kona districts of the Island of Hawai'i, the trades are cut off, resulting in prevalent southwest winds with land and sea breezes in evidence. Such effects may be rather general in some areas and extremely local in others.

(48) The Hawai'ian Islands lie on the extremities of both the Western North Pacific typhoon area and the Eastern North Pacific hurricane area. Therefore, a tropical cyclone from either region is rare. **Typhoons** can form in any month, but they rarely cross 180°; when they do they are usually extratropical and well north of the islands. It is not impossible, but highly improbable, that a typhoon will move through the Hawai'ian Islands.

(49) It is more probable that an Eastern North Pacific hurricane would hit the islands. These storms, prevalent from May through November, originate from the North American coast west between 10°N and 20°N. Most hurricanes either recurve or dissipate before reaching the Hawai'ian Islands. August is the most favorable month for one of these storms to reach the area, although they

have occurred from July through November. Since 1842 at least six storms have hit the Big Island. However, all six storms were in the dissipation stage and no major damage was reported.

(50) It is a different case however, for the western islands, especially Kaua‘i. Since 1842, Kaua‘i has had a direct impact from a northeast Pacific hurricane at least four times. Perhaps the most noteworthy storms were Hurricane Dot on August 7, 1959. Dot was a minimal hurricane with only 75-knot winds. Hurricane Iniki, with maximum winds estimated at 125 knots and gusts estimated at 150 knots, slammed into Kaua‘i early on September 12, 1992. Damage was extensive throughout Kaua‘i. Damage from the ocean was heaviest along the south shore of Kaua‘i and affected shoreline hotels and condominiums. Wind damage was extremely heavy throughout Kaua‘i, as many houses or buildings were flattened or lost their roofs. Iniki left 14,350 damaged or destroyed homes on the island. Electric and telephone services were lost throughout the island and only 20% of the power had been restored four weeks after the event. Crop damage was extensive, especially to fruit trees and sugar cane. The monetary value of the damage caused by Iniki on Kaua‘i was estimated at $1.8 billion. Six deaths were connected to the storm.

(51) The word “kona” is of Polynesian origin and means leeward. It refers to the south winds and accompanying weather on the normally leeward slopes of the principal Hawai‘ian Islands which, because of the wind shift, have temporarily become the windward slopes.

(52) The konas, which occur most frequently during October through April, provide the major climatic variations of the Hawai‘ian Islands. During these storms, heavy rainfall and cloudiness can be expected on the lee sides of coasts and slopes, which, under the usual wind pattern, receive less cloudiness and may have almost no rain. Near gales may occur, especially near points where the air tends to funnel into sharp mountain passes near the coasts. At such times leeward anchorages may become unsafe for smaller craft.

(53) The complicated rainfall pattern over the islands results chiefly from the effects of the rugged terrain on the persistent trade winds. Frequent and heavy showers fall almost daily on windward and upland areas, while rains of sufficient intensity and duration to cause more than temporary inconvenience are infrequent over the lower sections of leeward areas.

(54) In the districts where the trade winds are dominant, rains are decidedly heavier at night than during the day. This applies generally to the greater part of the islands. Daytime showers, usually light, often occur while the sun continues to shine.

(55) Considerably more rain falls from November through April over the islands as a whole than from May through October. It is not unusual for an entire summer month to go by without measurable rain falling at some points on the Maui isthmus; at times considerably longer dry periods may occur in that locality.

(56) Elevation is the major control factor in determining temperatures, although location, whether in a leeward or windward position, is also a noticeable factor. The highest temperatures reached during the day in leeward districts are usually higher than those attained in windward areas. The daily range is also greater over leeward districts where, because of less cloudiness, the maximum temperatures are higher and the minimum temperatures usually lower.

(57) August and September are the warmest months, and January and February are the coldest. At Honolulu there is an average monthly range between a low of 73.0°F (22.8°C) in January and February and a high of 81.3°F (27.4°C) in August. The extreme range of temperature at Honolulu for the 46-year period of record is from a low of 52°F for January 1969 to a high of 95°F recorded in September 1994. This spread of only 43°F (24°C) between the extreme high and extreme low temperatures is small when compared with ranges at Pacific coast ports.

(58) All coastal areas are subject to the relatively high humidities associated with a marine climate. Humidities, however, vary considerably, with high percentages over and near the windward slopes to low percentages on the leeward sides of the higher elevations.

(59) At Honolulu the normally warm months of August and September are usually comfortable because of the persistency of the northeast trades, which bring moderate humidities. Unpleasant weather is more likely later during the autumn or early winter when the trades may diminish and give way to south winds. During these periods known locally as “kona weather” (“kona storms” when stormy), the humidity may become oppressively high.

(60)

Routes

(61) Between the islands, proceed on rhumb lines as direct as safe navigation permits.

(62)

Honolulu to Panama

(63) Rhumb lines through 21°14'N., 157°39'W., and 21°18'N., 157°00'W.; thence great circle to 8°40'N., 88°00'W., off shoals reported south of Guardian Bank; thence rhumb lines through 7°05'N., 81°45'W.

(64)

Honolulu to San Diego, Los Angeles, San Francisco and Strait of Juan de Fuca

(65) (See routes in chapter 3.)

(66)

Honolulu to Anchorage

(67) Rhumb lines through 21°19'N., 157°36'W., and 59°00'N., 151°20'W.

(68)

Radar

(69) Most mariners rely on a combination of visual and radar piloting for interisland navigation. It is reported that landfall at a distance of 20 to 30 miles is not uncommon. The generally high, rugged coastline of the islands provide

good and well-defined radar returns; some navigators have reported radar contact at 40 miles.

(70)

Pilotage, Hawaii

(71) Pilotage is compulsory for all foreign vessels and for U.S. vessels under register in the foreign trade; it is optional for U.S. vessels in the coastwise trade. Hawaii Pilots provide pilotage service to several ports in the islands, namely, Honolulu Harbor, Hilo Harbor, Kahului Harbor, Port Allen Harbor, Nawiliwili Harbor and Kawaihae Harbor. Specific information is given in the description of the various ports.

(72)

Towage

(73) Tugs are available at the more important ports. (See description of port for further information.) Honolulu has some salvage equipment.

(74)

Quarantine, customs, immigration and agricultural quarantine

(75) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(76) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.) There are good hospitals on Hawaii, Moloka'i, Maui, Lāna'i, O'ahu, and Kaua'i.

(77) Honolulu is a **customs port of entry**. (See Appendix A for lists of other ports of entry.)

(78)

Harbor regulations

(79) These are established by the Harbors Division, Hawaii Department of Transportation, which also assigns harbormasters to the deepwater ports and the commercial barge harbors.

(80)

Supplies

(81) Honolulu is the principal supply center for the state. Water is available at most of the wharves and piers at the deepwater ports. Gasoline, diesel fuel, ice and minor items of marine supplies are available at the smaller ports.

(82)

Repairs

(83) Honolulu has a floating drydock that can handle medium-size vessels. The other ports have only minor facilities for small vessels.

(84)

Communications

(85) Honolulu is a major port of call for transpacific passenger and cargo vessels; air service, passenger and freight, includes scheduled flights to the other islands, to the mainland and to west and southwest Pacific areas. The other deepwater ports have regular interisland barge service and are irregular ports of call for transpacific vessels; interisland passenger travel is almost entirely by air.

(86)

Standard Time

(87) The State of Hawaii uses Hawaii-Aleutian standard time, which is 10 hours slow of Coordinated Universal Time (UTC). For example, when it is 1200 UTC, it is 0200 in Honolulu. Midway Islands use Samoa standard time, which is 11 hours slow of UTC. When it is 1200 UTC, it is 0100 at Midway Islands.

(88)

Daylight Saving Time

(89) Daylight saving time is not observed in the State of Hawaii.

(90)

Hawaii

(91) **Hawaii**, at the southeast end of the archipelago, is the "Big Island"; its area of 4,021 square statute miles is twice that of all the other islands in Hawaii State combined. The island is roughly triangular in shape, 82 nautical miles north to south and 72 miles east to west.

(92) Hawaii is also the **Volcano Island**; it has five volcanoes, two of which—Mauna Loa and Kīlauea—are still active. **Mauna Kea** and **Mauna Loa**, the two volcanoes that dominate the island, rise to heights of nearly 14,000 feet and are the highest in the state; from their summits, the land descends gradually with occasional cinder cones and lesser peaks dotting the slopes. Lava flows are numerous, and some reach the coast. **Kīlauea**, 20 miles east of Mauna Loa and 9 miles from the southeast coast, appears to be a crater in the side of its towering neighbor but is really a separate peak with an elevation of more than 4,000 feet.

(93) **Hualālaia**, a volcano dormant since 1801, rises to an elevation of 8,269 feet near the middle of the west coast. A peak of the **Kohala Mountains** rises to an elevation of 5,505 feet from the **Kohala Peninsula** at the northwest end of the island.

(94) A highway encircles the island, and another leads from Hilo to Waimea by way of the pass between Mauna Kea and Mauna Loa.

(95)

Anchorages

(96) There is little shelter from the northeast trades along the northeast and southeast sides of the island. Good anchorage is available along much of the west coast, but there are some areas so steep-to that anchorage is not practicable.

(97)

Currents

(98) The currents generally follow the northeast trade wind but occasionally set against it. One current follows the coast northwest from Kumukahi, the east extremity of Hawaii, and around Upolu Point, the north extremity. Another current follows the coast southwest from Kumukahi around Kalae, the south extremity, and thence north to Upolu Point; the latter flow is accompanied by an

(103)

METEOROLOGICAL TABLE – COASTAL AREA OFF HAWAI'IAN (LEEWARD) ISLANDS
Between 18°N to 22°N and from Island to 160°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	0.5	0.4	0.8	0.4	0.1	0.1	0.1	0.2	0.1	0.2	0.4	0.9	0.3
Wave Height > 9 feet [1]	2.3	2.5	2.9	2.0	0.9	0.7	1.2	0.9	0.9	1.5	2.2	4.5	1.8
Visibility < 2 nautical miles [1]	0.7	0.7	0.3	0.5	0.3	0.3	0.2	0.2	0.2	0.3	0.5	0.4	0.4
Precipitation [1]	4.0	4.6	4.0	3.7	3.2	2.2	2.1	2.2	2.1	2.8	3.9	4.5	3.2
Temperature > 69° F	94.7	93.6	93.1	97.0	99.1	99.8	99.8	99.9	99.9	99.8	99.7	97.6	97.8
Mean Temperature (°F)	75.1	74.7	74.7	75.7	77.1	78.5	79.2	79.7	80	79.3	77.9	76.2	77.4
Temperature < 33° F [1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean RH (%)	77	77	77	78	77	77	77	77	77	77	78	78	77
Overcast or Obscured [1]	9.0	10.4	11.9	11.6	7.0	5.4	4.1	4.2	4.8	7.4	9.6	10.4	8.0
Mean Cloud Cover (8ths)	3.7	3.8	4.1	4.2	4.0	4.0	3.8	3.6	3.6	3.9	4.0	4.0	3.9
Mean SLP (mbs)	1015	1015	1016	1017	1017	1016	1016	1016	1015	1015	1015	1015	1016
Ext. Max. SLP (mbs)	1032	1030	1037	1031	1031	1031	1031	1032	1031	1032	1032	1033	1037
Ext. Min. SLP (mbs)	993	998	1000	1000	1001	1002	1003	1001	1000	999	998	998	993
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning [1]	0.4	0.5	0.5	0.3	0.2	0.1	0.2	0.1	0.2	0.4	0.7	0.5	0.3

[1] Percentage Frequency

inshore countercurrent that sets southeast from Hanamalo Point around Kalae and thence northeast to Keauhou Point. An inshore current sets north from Hanamalo Point and sometimes attains considerable velocity. There are reports of strong northeast currents off Makolea Point and strong north currents at Māhukona; another report states that currents offshore from Makolea Point set east toward the coast. Currents are weak at Kawaihae; southwest currents with velocities of 0.5 knot have been observed in Honokaope and Kīholo Bays.

(99)

Weather, The Big Island

(100) The northeast trade winds seem to divide at Kumukahi, one part following the coast northwestward and losing its force when it rounds Upolu Point, the other part following the coast southwestward and around Kalae. On the west coast of Hawaii, except at Māhukona, the sea breeze sets in about 0900 and continues until displaced by the land breeze that usually springs up after sundown. Vessels bound east to ports on the windward side of the island should pass Upolu Point close-to and avoid the heavier offshore winds.

(101) During the trades, the northeast coast frequently is clouded over in early morning, but there is clear weather 1 or 2 miles (2 to 4 km) offshore; when the breeze picks up about 0900 the clouds are driven inland. Rainfall varies greatly with locality; the greatest amount is along the windward side, the kona highlands get a moderate amount, and a little reaches the Kau District and the west coast.

(102) The northeast coast of Hawaii Island has a length of about 77 miles between Upolu Point, the north extremity, and Kumukahi, the east extremity. This coast is mostly bold, and all dangers can be avoided by giving it a berth of 2 miles. Hilo Bay is the only sheltered harbor or anchorage.

(105)

Upolu Point to Akoakoa Point

(106) The numerous bluffs in the vicinity of **Upolu Point** appear quite similar from seaward. Several structures are prominent on the point: two buildings on the south side of Upolu Point Airport, an aerobeacon atop a wooden tripod and three blue silos with white tops south of the airport. A wind farm with several large wind turbines, adjacent to the silos and centered at 20°15'31"N., 155°51'16"W., is very prominet on Upolu Point. The country back of the point is cattle range; the camps and villages are generally situated high on the bluffs and among the occasional clumps of trees.

(107) **Kauhola Point Light** (20°14'47"N., 155°46'17"W.), 108 feet above the water, is shown from an 86-foot white pole on the low point 5 miles east of Upolu Point. A dangerous reef, usually marked by breakers, extends 0.3 mile from Kauhola Point; passing vessels should give the point a berth of 2 miles.

(108) Local vessels sometimes anchor in **Keawaeli Bay**, on the west side of Kauhola Point, in depths of about 4 fathoms with the light 0.3 mile distant on bearing 090°. Protection is afforded vessels forced to leave anchorage on the west coast during kona storms. **Hala'ula**, the principal village in the vicinity, is 1 mile inland from the light.

(109) **Akoakoa Point** is 2.8 miles southeast of Kauhola Point. The country southeast of Akoakoa Point rises gradually to the **Kohala Mountains**, which are heavily wooded to their summits.

(110)

Akoakoa Point to Waipio Valley

(111) The 10-mile stretch of coast between Akoakoa Point and Waipio Valley is backed by cliffs ranging up to 1,300

(104)

METEOROLOGICAL TABLE – COASTAL AREA OFF HAWAIʻIAN (WINDWARD) ISLANDS
Between 18°N to 22°N and 154°W to Island

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	1.4	0.8	1.3	0.4	0.0	0.1	0.2	0.2	0.1	0.2	1.1	1.9	0.6
Wave Height > 9 feet [1]	4.0	4.0	5.6	3.9	2.5	1.3	1.9	1.8	0.5	1.8	4.7	6.3	3.2
Visibility < 2 nautical miles [1]	1.2	0.6	0.3	0.5	0.2	0.3	0.2	1.0	0.6	0.4	0.6	0.3	0.5
Precipitation [1]	5.7	5.5	5.6	5.8	3.1	6.4	4.0	5.4	3.1	2.7	5.7	4.0	4.8
Temperature > 69° F	89.9	84.7	87.5	85.8	93.2	94.2	99.7	99.9	99.8	99.6	99.1	95.5	93.8
Mean Temperature (°F)	74.1	73.5	73.5	74.1	75.6	76.7	77.7	78.5	78.7	78.3	76.8	75.0	76.0
Temperature < 33° F [1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean RH (%)	79	79	78	78	77	77	78	79	77	77	78	78	78
Overcast or Obscured [1]	12.5	13.0	14.7	13.2	7.6	7.1	6.9	7.0	5.7	8.4	11.9	11.0	9.9
Mean Cloud Cover (8^{ths})	4.1	4.2	4.5	4.5	4.1	4.3	4.2	4.1	3.9	4.0	4.4	4.1	4.2
Mean SLP (mbs)	1015	1016	1017	1017	1017	1017	1017	1016	1015	1015	1016	1016	1016
Ext. Max. SLP (mbs)	1030	1033	1038	1030	1028	1030	1030	1030	1031	1030	1033	1028	1038
Ext. Min. SLP (mbs)	998	996	997	1001	1002	1002	1002	1002	1001	999	1000	1001	996
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning [1]	0.7	0.4	0.4	0.3	0.1	0.1	0.1	0.3	0.2	0.3	0.4	0.4	0.3

[1] Percentage Frequency

feet in height and deep gorges that extend well inland. Waterfalls are numerous. The cliff faces have a general brownish appearance, but in some places they are covered with vegetation from top to bottom.

(112) **Honokāne Iki Stream** empties into a narrow bay about 9.2 miles southeast of Upolu Point. The bay affords fair protection and possible landing places for small boats. A rock awash, 0.5 mile offshore from the stream, is surrounded by depths of 12 to 14 fathoms. A rock, covered 2 fathoms, is about 0.75 mile east of the bay in about 20°12'01"N., 155°42'20"W.

(113) Three rocky islets, the largest 230 feet high, are about 300 yards offshore 0.8 mile southeast of Honokāne Iki Stream. Between Akoakoa Point and the islets, the bottom is fairly regular and slopes gradually to the 20-fathom depth curve, which is about 0.7 mile offshore.

(114) **Waimanu Valley**, 14.5 miles southeast of Upolu Point, splits the highest cliffs in the vicinity and is the second largest ravine along this coast. Waimanu Bay may be used as an anchorage in favorable weather; there are depths of 7 fathoms 0.2 mile offshore from the ravine.

(115) **Waipio Valley**, the largest ravine along this coast, is 17.5 miles southeast of Upolu Point. The valley is a remarkable cleft in the bluffs and is easily recognized. Taro is grown in the vicinity of **Waipiʻo**, a small village near the mouth of the valley. In favorable weather, anchorage may be found in depths of 7 to 9 fathoms 0.3 mile off the valley or under the bluffs to the east.

(116) From Waipio Valley east the cliffs become lower, and at Kukuihaele the coast is a comparatively low bluff 30 to 300 feet high. The slopes between Waipio Valley and Hilo are covered in patches of feral sugarcane mixed with thick vegetation to an elevation of about 2,000 feet; continuing upward toward Mauna Kea, the slopes are wooded to about 2,600 feet and then present a barren appearance. Mauna Kea is frequently snowcapped during the winter.

(117)

Kukuihaele to Honokaʻa

(118) **Kukuihaele Point Light** (20°07'41"N., 155°33'22"W.), 154 feet above the water, is shown from a 27-foot white concrete tower at **Kukuihaele**, 19 miles southeast of Upolu Point.

(119) **Honokaʻa** is 24 miles southeast of Upolu Point. A power plant (Hamakua Energy) with two storage tanks, two stacks and a cooling tower is prominent just north of Honokaʻa in about 20°05'38"N., 155°28'13"W. A reef that usually breaks extends 170 yards north from the landing and is marked by several bare rocks. No shelter is available during normal weather, as the landing is open to the north and east.

(120)

Pāauhau

(121) **Pāʻauhau**, 26 miles southeast of Upolu Point, is marked by the masonry of the abandoned inclined railway that leads to the top of the bluff. The shore at the foot of the bluff consists of rocks and ledges over which the sea breaks constantly. The small concrete landing at the foot of the masonry incline offers little protection from the northeast trades.

(122)

Paʻauilo to Pepeekeo Point

(123) **Paʻauilo** is 31 miles southeast of Upolu Point and a mile inland.

(124) **ʻŌʻōkala**, about 36 miles southeast of Upolu Point, is on the edge of a bluff on the south side of a deep gulch. A lighted microwave tower is prominent.

(125) **Kaʻawaliʻi Stream** is about 1.5 miles southeast of ʻŌʻōkala. In this locality the country back of the coast

changes slightly in appearance; hummocky fields are noticeable.

(126) **Laupāhoehoe Point**, 39 miles southeast of Upolu Point, is low and flat and makes out about 0.3 mile from a deep gulch. **Laupāhoehoe Point Light** (19°59'37"N., 155°14'26"W.), 39 feet above the water, is shown from a pole with a black and white diamond-shaped daymark on the point. The outer end of the point is a mass of black lava rock that is broken into detached ledges that extend 250 yards seaward from the light. The seas usually break with considerable force over the ledges.

(127) **Laupāhoehoe** is at the inner end of the point. A boat ramp is in a 30-foot opening in the rock on the southeast side of the point. A breakwater, marked by a light, offers some protection for small boats in the area.

(128) **Maulua Bay**, 1.7 miles southeast of Pāpa'aloa, is a 0.3-mile indentation in the coast at the mouth of a gulch that is spanned by a high bridge. In favorable weather, small boats can be beached on the shingle at the head of the bay. Only slight protection is afforded from the northeast trades. **Nīnole** is 1.5 miles southeast of the bay.

(129) **Honohina**, 6.5 miles souheast of Laupāhoehoe Point, is a settlement on the plain between two gulches. No stacks or prominent buildings are to be seen from seaward. The land has lost its hummocky appearance, and the cane-covered fields are more uniform, although still broken by gulches. Between Honohina and Hilo the bluffs gradually decrease in height and finally disappear.

(130) **Hakalau Bay**, 8.5 miles southeat of Laupāhoehoe Point, lies at the mouth of **Hakalau Gulch**. Prominent from offshore are a high trestle spanning the gulch and several buildings on the highland just south of the gulch and quite close to the edge of the bluff. At night, a row of prominent lights extends from the highland down to the gulch.

(131) **Wailea** is a small settlement a mile south of Hakalau Bay and just north of **Kolekole Gulch**.

(132) **Honomū** is at the mouth of a gulch 10.5 miles southeast of Laupāhoehoe Point.

(133) **Pepeekeo Point**, 52 miles southeast of Upolu Point and 25 miles northwest of Kumukahi, is the most prominent point in the vicinity. **Pepeekeo Point Light** (19°50'50"N., 155°04'58"W.), 147 feet above the water, is shown from a 72-foot steel pole with a black and white diamond-shaped dayboard on the north side of the entrance to Hilo Bay. During the day, the light tower is obscured by trees. **Pāpa'ikou**, 4 miles south of Pepeekeo Point, is on the west side of Hilo Bay.

(134)

Hilo

(135) **Hilo Bay** has an entrance width of 8 miles between Pepeekeo Point on the north and Leleiwi Point on the southeast; the head of the bay is 4 miles inland. **Hilo**, on the southwest side of the bay, is second in importance of the commercial deepwater harbors in the State of Hawaii.

(136) The west shore of Hilo Bay is bluff, but the south and southeast shores are low. The outer bay is exposed to the northeast trades, but the inner harbor is protected by a breakwater on Blonde Reef. There is frequently a heavy swell that is deflected east by the west shore and causes considerable surge at the wharves behind the breakwater. The west end of the breakwater is marked by a light.

(137)

Prominent features

(138) **Paukaa Point Light** (19°45'44"N., 155°05'23"W.) 145 feet above the water, is shown from a white pyramidal concrete tower about 2 miles north of Hilo. A lighted red and white water tank is on the southeast side of Kūhiō Bay.

(139) The marine terminal is in **Kūhiō Bay**, behind the inner end of the breakwater. South of the terminal is a large commercial airport; the aero light at the airport can be seen many miles at sea.

(140) A flashing amber warning light, privately maintained and shown 2 feet above the southwest corner of the roof of the shed on Pier 2, is activated when there is a gas leak or the likelihood thereof. Anyone observing the light flashing should remain well clear and upwind, and sources of ignition should be secured.

(141)

COLREGS Demarcation Lines

(142) The lines established for Hilo Harbor are described in **33 CFR 80.1480**, chapter 2.

(143)

Channels

(144) From deep water on the north, the channel to the inner harbor leads between the breakwater and the west shore, then turns sharply east and follows the south edge of Blonde Reef to the wharves in Kūhiō Bay. A **federal project** provides for an entrance channel 35 feet deep and a harbor basin of same depth in Kūhiō Bay. Channel and basin are maintained at or near the project depth. The entrance and channel to the basin are marked by a directional light on **Coconut Point**, lighted and unlighted buoys, and a **097.2°** lighted range leading into Kūhiō Bay. The range may be obscured by vessels moored at Pier 1.

(145)

Anchorages

(146) Anchorages may be obtained anywhere under the lee of the breakwater where depths are suitable. Good anchorage is available west of Kaula'ināiwi Island in depths of 25 to 35 feet over good holding ground. Well protected small-craft anchorages with fair holding ground may be found in south of Kūhiō Bay and in **Radio Bay** east of Pier 1. The Hilo harbormaster usually assigns deep-draft anchorages.

(147) **Special anchorages** are on the south side of Hilo Bay and in the east part of Kūhiō Bay at the south end of the breakwater—see **33 CFR 110.1** and **110.129**, chapter 2, for limits and regulations.

(148)

Dangers

(149) **Blonde Reef** has depths of 4 to 25 feet and extends 1.5 miles in a northwest direction from the southeast side of Hilo Bay. In general, the shoaling is abrupt on all sides of the reef. A lighted buoy is off the outer end of the breakwater, which extends the length of the reef.

(150) Opposite Blonde Reef are two small islands on a reef that makes out 0.3 mile from the south shore; bare **Kaulaʻināiwi Island** is near the outer end of the reef and wooded **Coconut Island**, connected to the mainland by a footbridge, is close to shore. A lighted buoy marks the outer end of the reef.

(151) A large fleet of fishing boats operates in the outer part of Hilo Bay; the movements of these boats are uncertain, and approaching vessels should maintain a sharp lookout. The approach should be made from north, favoring the west shore and avoiding the northwest part of Blonde Reef; vessels have gone aground on the north side of the breakwater.

(152)

Regulated navigation area

(153) A safety zone is in Hilo Harbor, adjacent to the commercial piers. (See **33 CFR 165.1** through **165.40** and **165.14-1414**, chapter 2, for limits and regulations.)

(154)

Currents

(155) A north-northwest current of about 1 knot has been reported in the approach to the harbor. After heavy rains, currents from **Wailoa River** and **Wailuku River** set north in the inner harbor.

(156)

Weather, Hilo

(157) Hawaii lies well within the belt of northeast trade winds generated by the semipermanent Pacific high-pressure cell to the north and east. The climate of the island is greatly influenced by terrain. Its outstanding features are the marked variations in rainfall with elevation and from place to place, the persistent northeast trade winds in areas exposed to them and the equable temperatures from day to day and season to season in localities near sea level.

(158) Over the island's windward slopes, rainfall occurs principally in the form of showers within the ascending moist trade winds. Mean annual rainfall increases from 100 inches or more (>2,540 mm) along the coasts to a maximum of over 300 inches (>7,620 mm) at elevations of 2,000 to 3,000 feet (610 to 915 m) and then declines to about 15 inches (381 mm) at the summits of Mauna Kea and Mauna Loa. In general, leeward (south and west) areas are topographically sheltered from the trades, hence from trade-wind showers, and are therefore drier, although sea breezes created by daytime heating of the land move onshore and upslope, causing afternoon and evening cloudiness and showers. Where mountain slopes are steeper, mean annual rainfall may range from 30 inches (762 mm) along the coast to 120 inches (3,048 mm) at elevations of 2,500 to 3,000 feet (763 to 915 m). The driest locality on the island and in the state, with an average annual rainfall of less than 10 inches (254 mm), is the coastal strip just leeward of the south portion of the Kohala Mountains and of the saddle between the Kohalas and Mauna Kea.

(159) These marked contrasts in rainfall are reflected in soil and vegetation, with frequent abrupt transitions from lush tropical growth to near-desert conditions, such as occurs between Kīlauea's wet windward slopes and the Kaʻū Desert just to the south.

(160) Within the city of Hilo itself, average rainfall varies from about 130 inches (3,302 mm) a year near the shore to as much as 200 inches (5,080 mm) in mountain sections. The wettest part of the island, with a mean annual rainfall exceeding 300 inches (,7620 mm), is about 6 miles (11 km) upslope from the city limits. Rain falls on about 280 days a year in the Hilo area. At the Hilo airport, the average precipitation is 130 inches (3,302 mm) annually and has ranged from 211 inches (5,360 mm) in 1990 to 68 inches (1,727 mm) in 1983. The mean number of days with precipitation is 314. The wettest month is November with 15.35 inches (390 mm) and the driest month June, with a mean amount of 6.44 inches (164 mm). On 20 February 1979, 16.87 inches of rainfall fell at the Hilo airport, the wettest 24-hour period on record for the site. Snowfall has never been documented at Hilo.

(161) Hawaii's equable temperatures are associated with its mid-ocean location and the small seasonal variation in the amount of energy received from the sun. At Hilo, the range in average temperature from February, the coldest month, to August, the warmest, is only 4.9°F (2.7°C) and the average daily range, 14.4°F (8°C). The highest temperature of record at Hilo Airport is 94°F (34.4°C) recorded in May 1966; the lowest 53°F (11.7°C) recorded in February 1962. Greater variations occur in localities with less rain and cloud cover, but temperatures in the mid-nineties (33.9° to 36.1°C) and low fifties (10.6° to 11.1°) are uncommon anywhere on the island near sea level. Every month except April and July (more cloud cover) have seen extreme maximum temperatures of 90°F (32.2°C) or greater, and each month from November through May has recorded extreme minimum temperatures below 60°F (15.6°C).

(162) The trade winds prevail throughout the year (although they may be absent for days or even weeks at a time) and profoundly influence the climate. However, the island's entire west coast is sheltered from the trades by high mountains, except that unusually strong trade winds may sweep through the relatively low (2,600-foot, (793 m)) saddle between the Kohala Mountains and Mauna Kea and reach the areas to the lee. But even places exposed to the trades may be affected by local mountain circulations. For example, the prevailing wind at Hilo Airport is not the northeast trade, but the southwest wind that drifts downslope off Mauna Loa during the night and early morning hours.

(169)

(163) Except for heavy rain, really bad weather seldom occurs. Thunderstorms average only ten per year, most likely in March, and are rarely severe. During the winter, cold fronts or the cyclonic storms of subtropical origin (the so-called kona storms) may bring blizzards to the upper slopes of Mauna Loa and Mauna Kea, with snow extending at times to 9,000 feet (2745 m) or below and icing nearer the summit.

(164) Storms crossing the Pacific a thousand miles to the north, or kona storms closer by, may generate seas that cause heavy swell and surf along the north, east and southwest shores of the island.

(165) The National Weather Service office is at the Hilo Airport; barometers may be compared there or by telephone/internet.

(166)

Pilotage, Hilo

(167) Pilotage is compulsory for all foreign vessels and for U.S. vessels under register in the foreign trade; it is optional for U.S. vessels in the coastwise trade with a federal licensed pilot on board.

(168) Pilots are available through the Hawaii Pilots Association. Mariners are requested to give 24 hours advance notice of arrival, gross tonnage, length and draft of vessel by telephone (808–537–4169) or by e-mail at *dispatch@hawaiipilots.net*. The 31-foot long pilot boat PAUKAA has a black hull with yellow superstructure and displays the words HAWAII PILOTS in large white letters on the sides of the cabin. The pilot boat displays the International Code Flag H by day and shows the standard pilot lights at night, white over red. The pilot boat monitors VHF-FM channels 12 and 16 and can be reached by HILO PILOTS. Additionally, vessels are requested to rig a pilot ladder 1 meter above the water on the leeward side. The pilot boarding area is 1.2 miles north of the harbor entrance.

(170)

Towage

(171) One diesel-powered tug up to 4,400 hp is based in Hilo. A second assist tug from another island may be arranged with advance notice. This may require a minimum of 12 to 24 hours transit time to get to the Port of Hilo from either Maui or O‘ahu.

(172)

Quarantine, customs, immigration and agricultural quarantine

(173) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(174) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(175) Hilo is a **customs port of entry**.

(176)

Harbor regulations

(177) **Harbor regulations** are established by the Harbors Division of the Hawaii Department of Transportation. There is a vessel draft restriction of 32½ feet in Hilo Harbor. The **harbormaster** enforces the regulations and assigns anchorages.

(178) The Port of Hilo is located at 80 Kuhio Street, Hilo, HI 96720. For more information visit: **https://hidot.hawaii.gov/harbors/contacts/** or call the port at 808–933–8850 or 808–933–8853.

(179)

Wharves

(180) The state-owned and operated piers are on the east side of Kūhiō Bay. General cargo is usually handled by ships' tackle; forklift trucks and a 20-ton mobile hoist are available. Transit sheds with 81,500 square feet of covered space and 11 acres of open storage space are also available.

(181) **Pier 1:** 1,255 feet of berthing space, 34 feet reported alongside; deck height, 9 feet; receipt of dry bulk fertilizer and lumber; receipt of cruise ships; receipt of general and containerized cargo.

(182) **Pier 2:** 722 feet of berthing space, 35 feet reported alongside; deck height, 10 feet; receipt and shipment of general and containerized cargo by barge; receipt of bulk cement and lumber.

(183) **Pier 3:** 636 feet of berthing space, 35 feet reported alongside; deck height, 9½ feet; receipt of occasional cruise ships, petroleum products, liquefied petroleum, gas, and lumber and occasional receipt and shipment of general and containerized cargo by barge.

(184) **Pier 4**: 602 feet of berthing space, 25 feet reported alongside; deck height, 8 feet; receipt and shipment of general and containerized cargo by barge.

(185) Hilo Bay is subject to heavy surge, particularly between October and mid-April. Large vessels make fast to mooring buoys when coming alongside Pier 1; this is necessary to assist in leaving the pier and for breasting off when the surge is excessive. The use of wire mooring lines is not advised.

(186) Most of the small craft of the area berth at **Wailoa River Small Boat Harbor**, 0.1 miles south of Wailoa River mouth; lights mark the entrance to the river. In 2001, the reported depths were 9 feet in the river channel and 7 to 10 feet in the berthing area. The Wailoa River mouth is subject to extensive shoaling, especially during the winter months. In 2006, extensive flooding created further shoaling within the channel. Local boaters have reported depths of 2.5 feet within the channel. A precautionary sign with a flashing red light has been posted at the entrance to the harbor alerting mariners to the shoaling and advises them to use caution. Vessels drafting more than 4 feet should not attempt to enter the river. The fixed highway bridge at the entrance has a clearance of 12 feet.

(187)

Supplies

(188) Gasoline, diesel fuel, bunker C and water are available at the state piers; all fuels must be trucked in. Ice and some marine supplies are available in Hilo.

(189)

Repairs

(190) Hilo has no facilities for drydocking or making repairs to deep-draft vessels; the nearest facilities are in Honolulu. A marine railway at Hilo has a capacity of 50 tons. Several machine, electrical and welding shops off the waterfront are available for making above-waterline repairs to vessels at the port.

(191)

Communications

(192) Hilo has regular interisland barge service and is a port of call for transpacific vessels. Interisland passenger travel is available by air and through a cruise ship that makes weekly calls in Hilo. Telephone communication is available to the other islands and to the mainland.

(193)

Leleiwi Point to Puu Ulaula

(194) **Leleiwi Point**, on the southeast side of the entrance to Hilo Bay, is marked by a mass of bare, black lava rock about 20 feet high that extends 100 yards seaward from the tree line; the low point is difficult to identify at night.

(195) The 17-mile stretch of coast between Leleiwi Point and Kumukahi is a series of low bluffs meeting the ocean with abrupt descents of 10 to 40 feet. The shoreline is a jumble of lava boulders. **Kea'au**, 6 miles south of Leleiwi Point and 3 miles inland, is marked by two mill stacks and a water tank; the seaward stack is the most prominent. The 'Ōla'a plantations rise to an elevation of about 2,000 feet, above which the forest may be seen. An old lava flow reaches the sea 4 miles northwest of Kumukahi and is marked by two black hills, about 50 feet high, lying close together at its seaward end.

(196) **Cape Kumukahi Light** (19°30'59"N., 154°48'39"W.), 156 feet above the water, is shown from a 115-foot white pyramidal skeleton tower on the east extremity of Hawaii Island. The cape is a low mass of bare, black lava with a jagged top and is clearly defined from all sides; sharp pinnacles mark the end of the point. A chain of old craters, or cinder cones, extends 7 miles southwest from the cape. The nearest cone (Kapoho crater), 1.4 miles from the cape, is 245 feet high and is heavily covered with vegetation.

(197) The southeast coast of Hawaii Island is 63 miles long between Kumukahi, the east extremity, and Kalae, the south extremity. This coast is mostly bold, but passing vessels are advised to keep at least 1 mile offshore. There are no all-weather harbors or anchorages.

(198) The country southwest of Kumukahi is heavily wooded, and there are numerous coconut groves along the beach. Characteristic of this coast are the lava flows, bare and rough in appearance, which extend from the hills

to the sea. The old craters southwest from the cape join the ridge that forms the divide between the **Puna District** and **Kau District.**

(199) **Pohoiki**, a small village 4 miles southwest of Kumukahi, has a boat launching ramp on the north shore of a small bight. The bight is protected by a breakwater marked by a light.

(200) **Puu Honuaula**, 5 miles southwest of Kumukahi and 3 miles inland, is 844 feet high and quite prominent. The southeast side is blown out, but the remaining slopes are covered with vegetation and the rim is fringed with trees.

(201) **Opihikao**, a village 7 miles southwest of Kumukahi, is marked by a prominent grass-covered mound, 125 feet high, near its northeast beach.

(202) The shoreline between **Waipuku Point** and **Kupapau Point**, 11 to 17 miles southwest of Kumukahi, was reported in 2001 to be constantly changing and extending further seaward due to steady lava flows. A safety zone has been established in the area of active lava entry points along this coast; see **33 CFR 165.1** through **165.40** and **165.1414**, chapter 2, for limits and regulations.

(203) **ʻĀpua Point**, 27 miles southwest of the cape, is low and bare; shallow water extends 300 yards or more offshore. **Keauhou Point**, 2 miles west of ʻĀpua Point, is another prominent feature.

(204) From 3 miles southwest of Kupapau Point to Keauhou Point, the coastal plain and the lower slopes of the mountains are devoid of vegetation; higher up the mountains are wooded. Beginning 2 miles west of Kupapau Point is a series of bluffs several hundred feet high and 1 to 3 miles back of the shore. The bluffs are marked by numerous lava flows. **Kaluapele** (formerly known as **Kilauea Crater**) cannot be seen from seaward, but its location, when active, is indicated in daytime by the smoke that it discharges and at night by the glare on the clouds.

(205) At Keauhou Point the bluffs are yellow, steeper and near the beach. The plain at the foot of the bluffs is low, and on a dark night the beach is hard to see. A small shallow bay just west of Keauhou Point is the only area between Pohoiki and Punaluʻu that offers small craft protection from the seas; it offers little protection from the winds. **Keauhou Landing** is along the shallow bay just west of Keauhou Point. When entering the bay, favor the west shore to avoid a reef, covered 2 feet, in the entrance. The reported depth in the entrance channel along the west shore is 6 feet. An anchorage, with a restricted swinging area and a reported depth of 9 feet, is inside the reef in the entrance. **Puu Kapukapu**, about 2 miles west of Keauhou Point, is a yellow bluff about 1,053 feet high at its northeast end. This bluff is the most prominent landmark near the beach on this part of the coast.

(206) About 1.5 miles west of Keauhou Point is **Keaoi** which is low, close inshore, and separated from the mainland at its east extremity only by shoal water. Small boats find shelter behind this islet by entering from the west.

(207) **Kaʻū Desert**, the country south of Kīlauea volcano, is devoid of vegetation. The **Great Crack**, on the west side of the 1823 lava flow from Mauna Loa, marks the west limits of the desert. The Great Crack, which is visible from seaward, passes along the east side of **Puu Ulaula**. The hill is 1.5 miles inland and 994 feet high. A sharply defined, low, black cone is about 5 miles inland and on the east side of the lava flow at an elevation of about 1,800 feet. A prominent fence, which extends from just east of Puu Ulaula to the shore 8 miles west of Puu Kapukapu, marks the west edge of Hawaiʻi Volcanoes National Park.

(208) The country between the Great Crack and Punaluʻu is covered with sugarcane to an elevation of about 2,000 feet; thence the slopes are wooded to within about 6,000 feet of the summit of Mauna Loa. Here and there, bare lava flows cut up the canefields. Cane in the Kau District extends as far west as Waiʻōhinu.

(209)

Punaluʻu

(210) **Punaluʻu**, 17 miles northeast from Kalae, is a small bight with a black sand beach at its head. It was a former shipping point for the town of **Pāhala**, 3 miles inland, but the landing is no longer used and is in disrepair; a surfaced ramp is just north of the landing. Small boats find some protection in depths of 6 to 11 feet close to the east shore of the bight.

(211) The southwest part of the bight is foul. A rock, awash at half tide, is 260 yards south-southeast of the landing; another, with 8 feet of water over it, is 40 yards farther offshore in the same direction. The entrance is between these rocks and the shore to the north. A rock, with 3 feet of water over it, is 0.2 mile east of the entrance and 80 yards offshore. The northeast trades tend to haul more offshore in the vicinity of Punaluʻu Harbor, but in rough weather breakers extend completely across the entrance and passage is impossible.

(212)

Hāea to Kaumaikeʻohu

(213) The church and houses of **Hīlea**, 1.7 miles west of Punaluʻu and 1.5 miles inland, can be seen from seaward. Back of the landing at Punaluʻu, and up to an elevation of about 3,500 feet, the slopes are broken; above this they appear regular and gradual to the summit of Mauna Loa. The upper slopes of Mauna Loa can only be seen from several miles offshore.

(214) **Puʻuʻenuhe**, 3 miles northwest of Punaluʻu, is the seaward end of **ʻEnuhe Ridge**. The butte is a conspicuous flat-topped cone with an elevation of 2,327 feet. **Kaiholena**, **Pākua** and **Makanau** are promontories on **Kaiholena Ridge**, which extends 3 miles northwest from the village of Hīlea. **Nīnole Gulch** lies between the two ridges, making the region extremely rugged, with the buttes standing out boldly. The buttes are prominent from either the southwest or northeast.

(215) **Kaumaikeʻohu**, about 5 miles north of Punaluʻu, is a prominent cone, 3,430 feet high, on the southeast boundary of the Kaʻū Forest Reserve.

(216) Between Punaluʻu Harbor and Honuʻapo Bay, the shore is composed of masses of black lava rock that project out into deep water. About 1 and 3 miles southwest of Punaluʻu are two conspicuous lava flows that reach the shore. Some of the slopes back of Honuʻapo Bay are covered with cane.

(217)

Honuʻapo Bay

(218) **Honuʻapo Bay** is a slight coastal indentation 13 miles northeast of Kalae. Most prominent from offshore is the 236-foot cliff 0.5 mile southwest of the bay; the upper half of the cliff shows black against the light-brown background of the hills, and the lower half is a grass-covered slide. The Honuʻapo pier is in ruins. The bay offers good anchorage in about 20 fathoms for deep-draft vessels. The bay is exposed to the trades and offers little protection for small craft.

(219)

Nāālehu to Keāia

(220) **Nāʻālehu**, 11 miles northeast of Kalae and 2 miles inland, is on the south side of the base of **Puu Hoomaha**, which is 2,109 feet high. The country between Nāʻālehu and Kalae is a grassy plain on which cattle range.

(221) **Māniania Pali** begins at **Kimo Point**, 11 miles northeast of Kalae, and ends at **Waikapuna Bay**, 9 miles from Kalae; the black coastal cliff is 100 to 200 feet high and has a band of yellow clay on top. From Waikapuna Bay to Kamilo Point, the coast is low and rocky.

(222) **Kamilo Point**, 6 miles northeast of Kalae, is a low, dark, lava mass on which is a black lava monument with a square base. A reef over which the sea generally breaks extends about 0.3 mile from the point.

(223) **Kaʻaluʻalu Bay**, 1 mile west of Kamilo Point, affords good shelter for small craft during northeast trades but is exposed during kona weather. Anchorage can be found in depths of about 10 fathoms 200 yards due west of the point on the east side of the entrance. The submerged coral reefs between the anchorage and the northeast part of the bay should be avoided, especially during periods of heavy swells.

(224) Between Kaʻaluʻalu Bay and Kalae, the grassy plain is occasionally broken by bare lava. About 2.5 miles southwest of Kaʻaluʻalu Bay, the low coastline is broken by a grayish cinder cone.

(225) **Kaulana Bay**, 0.9 mile northeast of Kalae, is a small bay that offers excellent protection from the trades. It is best approached from southwest to avoid the submerged rocks extending offshore from a lava flow spit that makes up the east shore of the bay. A boat ramp, used by local fishermen, is on the north shore of the bay.

(226) **Kalae** is the south extremity of Hawaii Island. **Ka Lae Light** (18°54'44"N., 155°40'55"W.), 60 feet above the water, is shown from a 28-foot white concrete post with a black and white diamond-shaped dayboard on the outer end of the cape. The southeast side of the point is low; the bluff on the west side rises gently from the point to a height of 335 feet, 2 miles to the north. The bluff then leaves the shore and trends inland for several miles, increasing in height and forming the **Pali o Mamalu**, extends 0.6 mile south of the point; all vessels should keep 1 mile off to avoid possible dangers. The shore current setting northeast against the trade wind frequently produces a rough sea on the east side of the cape. Offshore the current sets southwest.

(227) From Kalae to Upolu Point, a distance of about 95 miles, the coast has a general north trend and is mostly bold. The largest reef extends about 0.6 mile from shore in Kawaihae Bay; few of the others off the numerous capes and points make out more than 0.3 mile. All dangers can be avoided by staying at least 1 mile offshore.

(228) **Honokohau Small-Boat Harbor** and **Kawaihae** are the only sheltered harbors along the west coast of Hawaii; all others are smooth during regular northeast trades but are exposed during kona weather. The trade winds draw around Kalae and hold north offshore for about 3 miles, generally causing a rough sea from Kalae to Kaunā Point. At Kaunā Point, the complexion of the sea changes abruptly, the sea being considerably smoother to the north.

(229) Storms from the southwest to northwest are most frequent in January and February. Some protection for small craft may be found in Keauhou, Honokohau and Kawaihae Bays, but anchorage space is limited. Boats sometimes seek shelter along the southeast side of the island during these storms.

(230) Gasoline and a limited supply of water are available at Keauhou, Kailua Kona and Kawaihae along the west coast. Supplies are mostly obtained from the stores on the main highway inland from the coast.

(231) The section of the west coast between Kalae and Kawaihae Bay, 79 miles north, is known as the **Kona Coast**. The country along this coast is broken up by numerous lava flows, varying in length from a few hundred yards to 30 miles, that have broken out from Mauna Loa and Hualālai. Between these flows are areas that are heavily wooded and covered with vegetation above an elevation of 1,500 feet, and there are large areas planted in coffee. Many of the lava flows reach the coast and terminate in bluffs, some fairly high and others only a few feet above the water. Scattered trees and bushes can be seen between many of the flows.

(232) From Pali o Mamalu to Hanamalo Point, about 16 miles northwest, are lowlands several miles wide, which rise gradually to the mountains. The country is extremely desolate, with its grayish-black slopes of bare lava. A particularly black flow lies at the base of the lighter colored cliffs of Pali o Mamalu.

(233) At an elevation of 2,000 feet the kona region is known for its cool and bracing climate and plentiful rain. Little variation in weather is experienced; there is generally

a land and sea breeze, except during kona winds. This condition, however, does not apply between Kawaihae Bay and Upolu Point, since the region is affected by the winds that draw across the island.

(234) **Waiʻahukini**, a small fishing village at the base of **Paliʻokūlani**, is marked by a patch of white sand. **Käʻiliki'i (Kailikii Shoal)** extends about 0.5 mile offshore to the west and north of the landing.

(235) **Puʻuhou**, a black, well-defined cone 273 feet high, is close to the beach 1.6 miles northwest of Waiʻahukini.

(236) **Pōhue Bay**, 9 miles northwest of Kalae, has a sand beach at its head where landings can be made.

(237) **Na Puu a Pele** are cones near the beach 12 miles northwest of Kalae. The cones are prominent landmarks, and at the summit of the highest is a black stone cairn.

(238) **Kaunā Point**, 13.5 miles northwest of Kalae, is low, flat and somewhat grassy, with a small hummock of graying lava 0.5 mile inland. The concrete base of a former light, nearly flush with the ground, is visible on the point. A 160-foot tower (19°03'01"N., 155°52'32"W.) is conspicuous just north-northwest of the point.

(239) **Kamoi**, 16.3 miles northwest of Kalae, is a low jumble of lava rock. A small bight, south of the point, has a sand beach at its northeast extremity where small boats can land. A small shack and a skeleton tower at the head of the bight are conspicuous from seaward.

(240) **Kānewaʻa Point** is 18.5 miles northwest of Kalae.

(241) **Okoe** is at the head of **Okoe Bay**, a cove immediately south of Hanamalo Point. The cove indents the shore more than any other in the vicinity and has a little more sand on the beach. Anchorage can be found in depths of 7 to 15 fathoms. Larger vessels can anchor in 20 fathoms by entering the bay from due west and dropping anchor with Milolii Point Light bearing **022°**.

(242) **Hanamalo Point**, 21 miles northwest of Kalae, is a low mass of lava with no prominent features. Unless close inshore, the point is difficult to distinguish from other points in the vicinity. South of Hanamalo Point, an inshore current sets south around Kalae and thence northeast along the shore to the vicinity of Keauhou Point.

(243) **Milolii Point Light** (19°11'13"N., 155°54'29"W.), 44 feet above the water, is shown from a 20-foot white steel pole with a black and white diamond-shaped dayboard.

(244) **Miloliʻi**, a village 2 miles north of Hanamalo Point, has a concrete boat landing with a depth of 7 feet alongside. A hoist on the landing has a maximum capacity of 2,000 pounds. The current off the landing has a prevailing north set that sometimes reaches a velocity of 2 knots. A dangerous reef extends about 400 yards offshore at the south end of the village.

(245) A large open-air shelter with a bright roof amongst several trees is visible from the northwest, about 250 yards south of Miloliʻi landing. Much of the area around the landing and shelter is covered with vegetation; however, farther outside this area the countryside is a barren mass of black lava. There is no protected anchorage off the landing. Storms occur most frequently in January and February.

(246) The lava flow of 1926 from the slopes of **Puʻuʻokeʻokeʻo** entirely destroyed the village of **Hoʻōpūloa** 1 mile north of Miloli'i. The same flow nearly engulfed Milolii.

(247) **Papa Bay**, 3 miles north of Miloliʻi, is a coastal indentation to the south of a prominent black lava flow of 1919. The ruins of an ancient Hawaiʻian civilization are at the north end of the bay.

(248) Three lava flows of 1950 are prominent 4.3, 7.7 and 9.3 miles north of Milolii Point Light. These flows emanating from the southwest rift zone of Mauna Loa extend into the sea, forming precipitous cliffs.

(249) **Auau Point**, 8.6 miles north of Hanamalo Point, is the crescent-shaped rim of an old crater that has had its seaward face blown out.

(250) **Lepeamoa Rock**, 11 miles north of Hanamalo Point, is close offshore from the island. The rock, 95 feet high, is the crescent-shaped rim of an old crater that has had its seaward face blown out. Small villages of a few houses each are scattered along the coast, 1 or 2 miles apart, between Miloliʻi and Lepeamoa Rock. The highway, which is 2 miles inland at Miloliʻi, draws nearer the coast until at Lepeamoa Rock it is only 0.5 mile inland.

(251) **Kauhakō Bay**, 34 miles northwest of Kalae, is a small cove which has at its head a pali, or cliff, about 0.5 mile long and 120 feet high. **Hoʻokena** is a small village at the foot of the north end of the pali. There is a heavy concentration of coconut and shade trees along with large amounts of vegetation around the village. Anchorage can be found in depths of 15 fathoms, sandy bottom, about 300 yards off Hoʻokena. A landing near the north end of the sand beach is in ruins and unusable.

(252) The bluffs along the coast north of Hoʻokena lose their height. The slope up to the interior is not so steep as to the south, and the country is covered with brush and coffee plantations.

(253) **Loa Point**, about 35.5 miles northwest of Kalae, is flat and low, and green to within 40 yards of the water, then rocky.

(254) Between Loa Point and Hoʻokena is the settlement of **Keālia**, which is at the north end of a long white sand and coral rubble beach. The villages along this section of the coast usually have a few houses on the beach, but most of the houses are on the highway 1 or 2 miles inland.

(255)

Honaunau Bay to Keawekāheka Point

(256) **Hōnaunau Bay**, 37 miles northwest of Kalae, indents the coast about 500 yards and is about 500 yards in width. The bay lies between two flat lava points. **Puʻuhonua Point**, on the south, is lower and smaller and is marked by the 12-foot-high stone walls of the **City of Refuge** and by a grove of tall coconut trees. The City of Refuge is of historic interest and is now maintained as a National Historical Park of about 182 acres. In former

times, criminals or refugees reaching the place were safe until such a time as the king of the land took action. Vessels anchor in depths of 4 to 8 fathoms 150 yards from the south shore. A surfaced ramp (19°25'24"N., 155°54'41"W.) is just north of the sand beach on the southeast side of the bay. Small boats can easily land on the beach during normal weather.

(257) **Palemanō Point**, on the south side of the entrance to Kealakekua Bay, is low and flat, with scattered coconut trees and temple ruins near its outer end. The buildings of a resort camp on the point are prominent. A mass of bare rocks extends 125 yards off the north side of the point. About 0.4 mile north of the point, an old lava flow reaches the shore.

(258) **Kealakekua Bay**, 40 miles northwest of Kalae, is marked on its north side by a light on Cook Point. The bay is about 2 miles wide between Palemanō Point and Keawekāheka Point and indents the coast about 1 mile. The shore is low, except on the northeast side where a precipitous cliff between 400 and 600 feet high extends about 0.5 mile. A narrow reef fringes the shore between the south end of the cliff and Palemanō Point. The bay is free of obstructions, affords good anchorage in all but strong southwest winds and is by far the best anchorage along this coast. In choosing an anchorage it is well to remember that in the daytime a sea breeze will prevail, shifting to a land breeze at night. The bottom is of coral and sand and is only fair holding ground.

(259) **Kaawaloa Cove** is the north part of Kealakekua Bay and lies between the high cliff and Cook Point. It was here that Captain James Cook was killed by the native Hawai‘ians in 1779. **Cook’s Monument** is a concrete shaft, 25 feet high, near the shore of the inner side of Cook Point. A concrete landing, with a depth of about 6 feet alongside, affords a means for visitors to reach the monument. Kaawaloa Cove is within the boundary of Kealakekua Bay Marine Life Conservation District and State Park. State regulations forbid anchoring, except in an emergency, and overnight mooring at other than designated locations within the park boundaries. A copy of the regulations can be obtained from the Department of Land and Natural Resources.

(260) The village of **Napo‘opo‘o** consists of a few houses scattered among the coconut trees just south of the cliff. Water and provisions are scarce. The landing, which has a depth of about 4 feet alongside, is in the middle of the village. A church spire is fairly prominent from offshore.

(261) **Keawekāheka Point**, on the north side of the entrance to Kealakekua Bay, is a low, bare lava point. An extensive lava flow reaches from the point to the high cliff at the head of the bay.

(262)

Puu Ohau to Hualālai

(263) **Puu Ohau**, 1.5 miles north of Keawekāheka Point, is a green cone, 231 feet high, near the beach. The cone has a blowhole in the middle, and its seaward side is blown out, forming a red cliff.

(264) **Keikiwaha Point**, 2 miles north of Keawekāheka Point, is low, black and jagged, with coconut trees on it. About 2 miles inland from the point, and on the highway, are a stack, a church and the buildings of **Kainaliu**.

(265) From Napo‘opo‘o to Kailua Kona is the most thickly settled section of the coast; cultivated fields of coffee extend both ways from the highway that parallels the shore 1 to 2 miles inland.

(266) **Kaukalaelae Point**, 4.4 miles north of Keawekāheka Point, is low and flat. The white hotel on the point is one of the most prominent landmarks along this coast.

(267) **Keauhou Bay**, 45 miles northwest of Kalae, indents the coast 0.3 mile and is 300 yards wide between entrance points. The bay is between two lava flows at the foot of a gentle slope and, though small, is one of the best protected along the Kona coast. **Keauhou Bay Entrance Directional Light** (19°33'43"N., 155°57'44"W.), 23 feet above the water, is shown from a post at the head of the bay. The **Keauhou** schoolhouse on the highway 1.5 miles inland is fairly prominent from offshore. The bottom is extremely irregular and has many coral heads with depths of 5 to 6 feet over them. A reef extends 100 yards off the north entrance point. By maintaining a lookout for coral heads, boats of 4-foot draft can enter the bay for anchorage. Breakers frequently extend across the mouth of the bay. Launching ramps are near the light at the head of the bay and on the southeast side. A pier used mainly for embarking and disembarking passengers for excursion cruises is at the southeast end of the bay, near the launching ramp. Fuel is available in limited quantities and is trucked in; there is no fuel dock. Several mooring buoys are in the bay.

(268) **Kahalu‘u** is a small village about 1 mile north of Keauhou.

(269) **Hualālai**, in the central west part of the island, is a conical peak 8,269 feet high, covered with vegetation to its summit and prominent from any point of approach. Its west slopes terminate in a bare lava plain about 4 miles wide. The plain forms a low beach consisting of sand in some places and lava rocks in others.

(270)

Kailua Bay

(271) **Kailua Bay**, 50 miles northwest of Kalae, is a dent in the coast at the south end of the flat plain that extends north to Kawaihae Bay.

(272) **Kailua**, on the north side of the bay, formerly a barge terminal, is now used by cruise and charter boats. Large ships anchor offshore, and ships’ tenders are used for transportation to shore. **Kailua Light** (19°38'16"N., 156°00'03"W.), 32 feet above the water, is shown from a white pyramidal concrete tower on **Kukailimoku Point**, which is on the northwest side of the bay entrance. Also prominent is the church spire east of Kailua pier and the radio tower northwest of the pier.

(273) No breakwater protects this small exposed harbor. Access is good, and no channel is required to reach open water. The turning basin east of the pier is 12 to 20 feet deep and about 500 feet square. The approach to the pier is marked by a **023°** directional light. The west side of the pier has a surfaced boat-launching ramp. The east side of the pier has a pump-out station and a marine hoist with a maximum capacity of 2,000 pounds.

(274)

Kaiwai Point to Kapalaoa

(275) The coast between Kailua Bay and Kawaihae Bay is a black, jagged mass of lava. The numerous capes and indentations are caused by the lava flows over the level country. Between Keahole and Upolu Points, the trade winds draw over the mountains, at times causing a very strong offshore wind. Vessels anchoring in this vicinity should be prepared to use both anchors, as the prevailing north current prevents laying to the wind.

(276) **Kaiwi Point**, about 2 miles northwest of Kailua, is low and black, with some small patches of white sand. Shoal water extends about 0.3 mile offshore on the south side of the point, but on the west side the 100-fathom curve is only 0.3 mile offshore.

(277) **Honokohau Small-Boat Harbor**, at the head of **Honokohau Bay**, about 1 mile north of Kaiwi Point, is entered through a marked dredged channel that leads to two basins in the harbor. Two boat ramps, a haul-out ramp and moorings are available in the harbor. A wharfinger is available on weekdays from 0630 to 1730 and can assist in arranging delivery of petroleum products by tank truck. A fuel facility and oil disposal shed are available. The harbor office phone number is 808–329–4215.

(278) **Keahole Point**, 57 miles northwest of Kalae, is the west extremity of Hawaii Island. **Keahole Point Light** (19°43'40"N., 156°03'40"W.), 43 feet above the water, is shown from a post with a black and white diamond-shaped dayboard. Kona International Airport, 1.2 miles east-northeast of the point, is prominent when transiting along the coast. An aerobeacon atop the 65-foot control tower is more prominent at night than Keahole Point Light. The point is low and well defined and consists of black lava with some small vegetation. White patches of sand may be seen between the fingers of the lava. A north current sets past Keahole Point. Frequently there are small tide rips near the point, and 2 miles to the north the rips are violent when the northeast trade winds are strong. A berth of 0.5 mile clears the point in deep water. Mariners should not anchor within 1 mile offshore or 500 yards north and 1000 yards south of Keahole Point because of submerged pipelines.

(279) **Puu Waawaa**, 13 miles east of Keahole Point, is prominent and can often be seen when Hualālai is hidden by the clouds. The mountain, 3,971 feet high, is dome-shaped, with deep gorges on its side, and rises about 1,000 feet above the slope on which it stands.

(280) Between **Makolea Point** and **Kawili Point**, 3 and 4 miles north of Keahole Point, shoal water extends about 0.7 mile offshore. The sand and coral bottom is plainly visible. A current sets northeast along this coast, and there are tide rips off Makolea Point. Offshore, beyond the 2,000-fathom curve, the current has been observed to set east toward the coast. When a heavy swell is running, breakers extend about 0.5 mile offshore. Strangers should give these points a berth of 1.5 miles. The village of **Mahaiula** is at the head of the unimportant bay between the two points. Between Keahole and Mano Points are several small bays that are rarely used.

(281) **Kuili**, 5 miles north of Keahole Point and 0.3 mile inland, is a brown crater 342 feet high. The hill marks the seaward end of a series of cones on the ridge extending from the northwest slope of Hualālai. An extensive shoal extends about 0.5 mile offshore about 2 miles north of Kuili and between the villages of **Kukio** and **Kaupulehu**.

(282) **Mano Point**, 9 miles northeast of Keahole Point, is a poorly defined, rounded, flat mass of lava.

(283) **Kīholo Bay**, 11 miles northeast of Keahole Point, indents the coast 0.5 mile and is 1 mile wide. The head of the bay is foul, but local vessels have anchored close to the black lava shore on the south side. A southwest current, with an average velocity of about 0.5 knot, has been observed in Kīholo Bay. The village of **Kīholo** consists of a few houses in a coconut grove at the head of the bay.

(284) **Puu Anahulu**, 4 miles east of Kīholo, is a prominent yellowish cone, 1,523 feet high, with lava flows on three sides.

(285) **Kapalaoa** is a village on the south side of a small bight 3.5 miles northeast of Kīholo. The bight is foul and can only be used by small boats with local knowledge.

(286)

Kawaihae

(287) **Puako Bay** is a small indentation in the coast 20 miles northeast of Keahole Point. There is no protection for large vessels, and very little is available for small craft. The bay is open to west and northwest winds and is foul with coral heads and reefs. The shores are mostly black, smooth lava extending into the water on a gentle slope, with many detached rocks of the same material. A small landing is at **Puako**, on the southeast side of the bay, and many houses are along the south shore.

(288) Small boats can approach the landing on a course of 137° until within 250 yards of it, where the channel is marked by private buoys; a private light is on shore near the landing. A reef off **Waima Point**, 1 mile southwest of Puako, is easily recognized from a safe distance offshore. Anchorage can be found about 0.8 mile northwest of Puako in depths of 12 to 15 fathoms, sand and coral bottom.

(289) A large hotel and golf course can be seen at **Kaunaoa Beach**, 2.7 miles northeast of Waima Point, and a cluster

(317)

of three tanks, about 0.5 mile inland from Puako Bay, are prominent.

(290) The coast, which has a northeast trend to Puako, turns north for 3 miles, then gradually recurves to the northwest, forming **Kawaihae Bay**. The black lava flows are no longer characteristic, and the back country, with its extensive slopes, is some of the best grazing land in the state.

(291) **Kawaihae**, 3.5 miles north of Puako, is a commercial deepwater harbor basin in the north part of Kawaihae Bay. The basin is protected by stone revetment and fill on the south and by a breakwater, marked by lights, on the west. The entrance channel is marked by a **120°** lighted range, lighted and unlighted buoys. A small-boat basin, just north of the main basin, has a dock and surfaced ramp. The breakwater on the west side of the small-boat basin is marked by a light at the south end.

(292)

Prominent features

(293) **Kawaihae Light** (20°02'29"N., 155°49'58"W.), 59 feet above the water, is shown from a 34-foot white pyramidal concrete tower on the northwest side of Kawaihae. Deep and heavily wooded **Honokoa Gulch** is northwest of the harbor, and **Pu'ukoholā Heiau** is a square of dark rocks on a 50-foot knoll southeast of the breakwater. **Kamali'i**, 1 mile northeast of Kawaihae, is 690 feet high and fairly conspicuous.

(294)

COLREGS Demarcation Lines

(295) The lines established for Kawaihae Harbor are described in **33 CFR 80.1470**, chapter 2.

(296)

Anchorages

(297) Good anchorage, except in kona weather, may be found in 4 to 8 fathoms between Honokoa Gulch and the outer end of the entrance channel.

(298)

Dangers

(299) Reefs that bare in places extend as much as 0.5 mile from the outer side of the breakwater and from the shore to the south.

(300)

Regulated navigation area

(301) A safety zone is in Kawaihae Harbor, adjacent to the commercial piers. (See **33 CFR 165.1** through **165.40** and **165.14-1414**, chapter 2, for limits and regulations.)

(302)

Currents

(303) The strong north current felt off Keahole Point and Makolea Point passes offshore at Kawaihae, where there is practically no current.

(304)

Weather, Kawaihae and vicinity

(305) This subject has been discussed on previous pages, but vessels maneuvering in Kawaihae Harbor are again warned to be on the alert for sudden strong offshore gusts caused by the trade winds drawing over the mountains.

(306)

Pilotage, Kawaihae

(307) Pilotage is compulsory for all foreign vessels and for U.S. vessels under register in the foreign trade; it is optional for U.S. vessels in the coastwise trade with a federal licensed pilot on board.

(308) The pilot boat, NININI, is yellow and 22 feet long with the word "PILOT" written in black letters on the hull. The boat displays the standard pilot lights at night and the International Code flag "H" by day. The pilot boarding area is 1.5 miles west-northwest of the harbor entrance. The pilots monitor and work VHF-FM channel 12. Mariners are requested to give at least 24 hours advance notice of arrival with gross tonnage, length, and draft of vessel; telephone (808–537–4169). Additionally, vessels are requested to rig the pilot ladder 2 feet above the water on the lee side and maintain a speed of not more than 5 knots.

(309)

Towage

(310) Tug service must be arranged for in advance; there are no tugs available in the harbor.

(311)

Quarantine, customs, immigration and agricultural quarantine

(312) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(313) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(314)

Harbor regulations

(315) These are established by the Harbors Division of the Hawaii Department of Transportation and are enforced by the **harbormaster**.

(316) Kawaihae Harbor is located at 61-3651 Kawaihae Road, Kamuela, Hawaii 96743. For more information visit: *https://hidot.hawaii.gov/harbors/contacts/* or call the harbor at 808–882–6213.

(318)

Wharves

(319) The state-owned waterfront facilities are on the northeast side of the harbor basin. General cargo is usually handled by ships' tackle, and cargo to and from barges by forklift trucks.

(320) **Kawaihae Pier 1**: Just inside harbor basin; 410-foot face, 20 to 24 feet reported alongside; deck height, 8 feet; 8,700 square feet covered storage; 20 refrigerated container positions; receipt and shipment of general and containerized cargo by barge; receipt of bulk cement and lumber; operated by State of Hawaii, Department of Transportation, Harbors Division; and others.

(321) **Kawaihae Pier 2**: 200 yards southeast of barge wharf; 1,152-foot face with 38-foot ends; 35 feet reported alongside; deck height, 8 feet; 12,000 square feet covered storage; pipelines extending from wharf to 5 steel storage tanks in rear with 41,000 barrel capacity; receipt and shipment of general cargo and automobiles; shipment of aggregate; receipt of petroleum products; operated by State of Hawaii, Department of Transportation, Harbors Division; and others.

(322) A 100-foot-wide concrete ramp with mooring dolphins, used exclusively for handling military cargo to and from U.S. Government-owned landing craft, is at the southwest end of the harbor.

(323)

Supplies

(324) Water and limited amounts of fuel oil and diesel oil are available.

(325)

Communications

(326) Kawaihae has interisland barge and air service and is a port of call for transpacific vessels.

(327) Between Kawaihae and Māhukona, the country is uncultivated grazing land. Mountain slopes terminate in cliffs at the coast and are cut intermittently by ravines.

(328)

Mahukona

(329) **Māhukona Harbor** is a small, open bight 10 miles northwest of Kawaihae and 6 miles southwest of Upolu Point. There are several abandoned warehouses and oil tanks around the harbor. The shore is rocky and the slopes back of the village are partially covered with algaroba trees.

(330) **Mahukona Light** (20°10'49"N., 155°54'05"W.), 64 feet above the water, is shown from a 22-foot white pyramidal concrete tower on Kā'oma Point, south of the village.

(331)

Magnetic disturbance

(332) Differences of as much as 3° from normal variation have been observed in the vicinity of Kauili Point about 0.7 mile north of Māhukona.

(333) Anchorage may be selected 0.2 mile southwest of Makaohule Point, in depths of 10 to 15 fathoms, sand and coral bottom. An anchorage with less wind can be found 0.3 mile northwest of the point and about 400 yards off the beach.

(334) Reports indicate that the inshore current usually sets north with considerable velocity. However, during the period of current observations the average north drift was about 0.2 knot, both north and south velocities of nearly 1 knot were measured, and the tidal current averaged less than 0.2 knot at strength. During the observations, winds were light to moderate and variable in direction. Strong

offshore winds, accompanied by violent gusts from varying directions, are frequently experienced during the normal northeast trades. Because of these conditions, vessels should anchor with plenty of cable and have a second anchor ready to let go.

(335) A public landing is at the head of the bight that has a hoist that is poor condition. The private landing on the north side is in ruins. Both landings are for small boats only.

(336) The coast between Māhukona and Upolu Point is a series of low, black bluffs. Back of the bluffs, the country is marked by many cinder cones and rises gently to the Kohala Mountains. The cuts and fills of the railroad that formerly skirted the coast from Māhukona to Kohala may be seen when close inshore.

(337)

ʻAlenuihāhā Channel

(338) **ʻAlenuihāhā Channel**, between the islands of Hawaii and Maui, is 26 miles wide in its narrowest part, between Upolu Point and Puhilele Point. The channel is free of obstructions and is deep close to the shores.

(339) Strong trade winds usually prevail, causing the channel to be very rough and a current of 1 to 2 knots to set west. Passage is very difficult for smaller vessels, especially when going east. During the calms that frequently follow, there is at times an east set of about 1 knot, and during kona winds the east set may reach a velocity of 2 or 3 knots. The channel is roughest and the west current strongest when the wind is between north-northeast and east-northeast. During periods of strong northeast trades, violent tide rips may be encountered 2 miles north of Keahole Point, probably caused by the meeting of the southwest offshore current with the north inshore current. When bound from Upolu Point to ʻAlalākeiki Channel, an onshore set is sometimes felt when reaching the lee of Maui.

(340)

Maui

(341) **Maui**, 26 miles northwest of Hawaii, has an area of 728 square statute miles and is second in size of the eight large islands. The island is 42 miles long in a northwest-southeast direction and 23 miles in greatest width. A low, flat isthmus joins the two distinct mountain masses that make up the island. The crater of **Haleakalā** (house of the sun), 10,025 feet high, is near the center of the east and larger part of the island. On the northwest side of the crater the land slopes gently, while on the south and east sides, it is much steeper and in some places precipitous. **Koʻolau Gap** on the north side, and **Kaupō Gap** on the southeast side, are two large openings in the side of the crater. **Puu Kukui**, 5,788 feet high, is near the center of the west and smaller part of the island, which is cut up by rugged peaks and deep valleys and gulches.

(342)

Anchorages

(343) Anchorages are numerous on the southwest side of Maui; the first requirement under ordinary conditions is shelter from the trade winds.

(344)

Currents

(345) In the vicinity of Maui, currents are variable, depending to a great extent upon the velocity and direction of the wind. Usually there is a west flow in the offshore areas along the north and south coasts, which is part of the general west oceanic drift accompanying the prevailing northeast trade winds. Much of the flow along the south coast appears to continue west past the south coast of Kahoʻolawe. Weak, variable currents are reported in ʻAlalākeiki Channel, and there is a north flow in Auau Channel. Near the shores of the island the currents are complicated by tidal effects, wind and countercurrents.

(346)

Weather, Maui

(347) The trade winds divide at Kaʻuiki Head, one part following the trend of the coast northwest and the other part following the south coast. The winds following the northwest coast divide again at the isthmus, one part drawing south and often reaching great force in the vicinity of Maalaea Bay, and the other part following the trend of the coast around the northwest end of Maui and through Pailolo Channel, with the greater force on the Molokaʻi side of the channel. That part of the trades following the trend of the south coast of Maui divides, with part continuing along the south shore of Kahoʻolawe and the other part drawing through ʻAlalākeiki Channel, around the north end of Kahoʻolawe and west through Kealaikahiki Channel.

(348) On the south coast of Maui, a sea breeze frequently sets in about 0900 and continues until after sundown, when the land breeze springs up. Light airs or calms are generally found in the vicinity of Molokini Islet and again along the west shore of Maui between Hekili and Kekaʻa Points. In the vicinity of Lahaina a light onshore breeze is generally felt, while farther out in Auau Channel the northeast trades are noticed.

(349) Rainfall is quite heavy on the windward side of the island and light on the lee side.

(350)

Quarantine, customs, immigration and agricultural quarantine.

(351) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(352) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(353)

Supplies

(354) Marine supplies are available in limited quantities for small craft at Kahului, Wailuku, Lahaina and Maalaea.

Fuel and water are available at Kahului, Maalaea and Lahaina.

(355)

Repairs

(356) Some machine repairs can be made at Kahului. Minor repairs of small craft can be accomplished at Maalaea.

(357)

Communications

(358) Maui has telephone communication with the other islands and with the mainland. Passenger and freight service travels over good to fair highways that extend to most parts of the island. Kahului is a port of call for interisland and transpacific shipping. The island has regularly scheduled air service.

(359) From Hāna Bay to Cape Hanamanioa, the coast has a generally west-southwest trend. Between Hāna Bay and Nuu Landing the coast consists of high, rough bluffs, broken up by numerous small capes and indentations. Vegetation may be seen as far as Kaupō Gap. The entire south face of Haleakalā is steep and eroded, presenting a reddish-brown appearance, dotted here and there with green patches. The slopes become less steep as the shore is approached. From Nuu Landing to Cape Hanamanioa the coast is bare, with practically no sign of habitation. Dangers lie offshore in the vicinity of ʻĀlau Island, Āhole Rock, and between Pohakueaea Point and Cape Hanamanioa. Otherwise, the 10-fathom curve lies within 0.2 mile of the shore. Landings can be made during trade-wind weather in the numerous coves along the coast between Mūʻolea Point and Nuu Landing. There are no suitable anchorages between Nuu Landing and Cape Hanamanioa.

(360)

Hana Bay

(361) **Hāna Bay** lies between Kaʻuiki Head and Nānuʻalele Point at the east end of Maui. The bay is about 0.4 mile in diameter and is open to the east. **Hāna** is on the south side of the bay.

(362) **Kaʻuiki Head**, on the south side of Hāna Bay entrance, is a crater 390 feet high; the outer half of the crater has eroded, leaving the inner side exposed. Because it is joined to the rest of Maui by a comparatively low neck of land, Kaʻuiki Head has the appearance from a distance of a separate island. **Kauiki Head Light** (20°45'26"N., 155°58'46"W.), 85 feet above the water, is shown from a 9-foot white pyramidal concrete tower on an islet close to the northeast side of the crater.

(363) The shores of Hāna Bay are rocky except for two short beaches, one at the south end of the bay and the other on the northwest side. A shoal, usually marked by breakers, extends halfway across the bay from the middle of the north shore. A small 16-foot rocky spot is 350 yards north of the light. Numerous rocks, some bare at all tides, extend for 200 yards off **Nānuʻalele Point**. The point is low, flat lava on the north side of Hāna Bay. **Twin Rocks** are two bare rocks, with deep water close-to, about 300 yards northeast of the light; the inner and larger rock is 15 feet high. About 200 yards south and 300 yards southeast of outer Twin Rock are **Inner Pinnacle Rock**, about 3 feet high, and **Outer Pinnacle Rock**, about 5 feet high.

(364) The entrance channel to Hāna Bay is between Twin Rocks and the 16-foot shoal and is unmarked. A local rule is to avoid entering the harbor when the seas are breaking at the entrance.

(365) The bay does not afford a desirable anchorage. Small vessels sometimes anchor in the southwest portion of the bay, but swinging room is limited. Anchorages in the bay are exposed to northeast winds and sea, and during strong southwest blows vessels are apt to drag anchor. In the absence of local knowledge, anchorage should be attempted only by small craft.

(366)

Currents

(367) Just outside the bay a tidal current reaches its south strength when the tide at Honolulu is rising and its north strength when the Honolulu tide is falling. South and north velocities of about 1 knot and 1.5 knots, respectively, have been observed. Farther offshore, a strong north or northeast current has been reported. Off Kaʻuiki Head and Nānuʻalele Point, rough seas occur when a northeast wind blows against the northeast current. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(368) No breakwater protects this small, exposed harbor. The turning basin is 20 to 30 feet deep and about 600 feet by 800 feet. The state-owned T-pier is in poor condition and has been condemned. A surfaced ramp for launching small boats is adjacent to the T-pier; however, its' orientation leaves it open to swells from the north, which can make launching extremely difficult. Small boats can also be launched from the sand beach at the south end of the bay.

(369)

Puʻuokahaula to Pimoe

(370) **Puʻuokahaula**, 545 feet high, is the highest of five hills 0.7 mile inland from Hāna; the stone memorial cross atop the hill is sometimes lighted at night.

(371) **ʻĀlau Island**, 1.5 miles south of Kaʻuiki Head and 0.4 mile offshore, is 100 yards in diameter and 150 feet high, is grass covered and has a few coconut palms. Between the island and Maui is an extensive reef. Tidal currents of 0.5 knot, setting north and south, have been observed near ʻĀlau Island. Off the island is a strong northeast current, and there is an eddy between the island and Kaʻuiki Head.

(372) Two rocks with about 9 feet of water over them are close together about 0.7 mile southeast of ʻĀlau Island. Under favorable conditions, these rocks appear as small,

yellowish-brown spots in the water. However, they are seldom seen and do not break in moderate seas. Vessels may avoid the rocks by giving ʻĀlau Island a berth of about 1.5 miles in passing.

(373) **Iwiopele**, about 1.5 miles south of Hāna Bay, is a formation similar to Kaʻuiki Head and resembles the latter in size and appearance.

(374) **Mokae Cove**, almost 1 mile south of Iwiopele, affords a landing for small boats in northeast weather. South currents with velocities up to 0.5 knot have been observed 0.5 mile from the shore in this locality.

(375) From **Makaʻalae Point**, 3 miles south of Kaʻuiki Head, the coastal trend is southwest. There are several villages between Mokae Cove and Wailua Cove. A church spire is prominent on the bluff at **Puʻuiki**, 3.5 miles southwest from Kaʻuiki Head.

(376) **Wailua Cove** is at the mouth of a valley 5.5 miles southwest from Kaʻuiki Head. Inland from the cove and halfway up the mountain is a high waterfall that is usually conspicuous from offshore. A white cross, below the waterfall, is visible. Landings may be made during normal trade-wind weather in almost any of the coves along the coast, although the swell enters all of them. **Mūʻolea Point**, a mile east of Wailua Cove, is rounded and rocky.

(377) **Kipahulu**, 8 miles southwest of Kaʻuiki Head and 0.5 mile west of **Puhilele Point**, is a ranch settlement on the west side of deep **Kipahulu Valley**. **Āhole Rock**, about 0.3 mile off the shore below Kipahulu, is low and flat and has a bare appearance; anchorage in the vicinity is not recommended.

(378) **Kaʻāpahu Bay**, 1.5 miles west of Kipahulu, is a small coastal dent that sometimes can be used for small-boat anchorage in trade-wind weather; there are depths of 4 fathoms about 200 yards off the pebble beach.

(379) **Kaupo Landing**, 11 miles southwest of Kaʻuiki Head, is the best in the vicinity during trade-wind weather. Adjacent land is divided into small homesteads, and cattle raising is the principal occupation. Vessels anchor well off and east of the landing. Strong east winds make landings difficult.

(380) **Kaʻīlio Point**, 13 miles southwest of Kaʻuiki Head, is 73 feet high, narrow and at the east end of **Mamalu Bay**. A prominent church is on the highway directly north of the point. Trade-wind anchorage may be found about 300 yards from the head of the bay in depths of 10 fathoms, sandy bottom.

(381) **Kaupō Gap** is the large opening, about 1.3 miles wide, in the southeast side of Haleakalā Crater. An immense old lava flow slopes gradually from the gap to the coast. The wide U-shaped gap at the top is a good landmark, day or night, for Kaʻīlio Point. The brush-covered lava flow is the dividing line between the forest and brush of the east part and the barren west part of the south coast. Waterfalls are numerous east of the gap.

(382) Low **Apole Point**, 15 miles southwest of Kaʻuiki Head, is composed of black, jagged rock. The point marks the seaward end of the Kaupō lava flow.

(383) **Nuu Landing** is a small bight on the west side of Apole Point. Small vessels can find anchorage in depths of about 8 fathoms.

(384) From Nuu Landing to **Pohakueaea Point**, 12 miles to the west the coast is barren and deep water is close-to. All dangers are close to the bluffs. A few homesteads may be seen on the slopes that rise to the rim of Haleakalā. The slopes are cut by gulches and are barren except for a scattering of trees about halfway up. At Pohakueaea Point, the 20-fathom curve begins to trend offshore.

(385) A pinnacle rock with depths of less than 12 feet over it is reported to exist within 0.5 mile of the shore somewhere between Pohakueaea Point and La Perouse Bay. The rock may be off Pohakueaea Point as an extension of the lava flow that forms the point. Vessels making the run along this coast in recent years have observed no indication of an offshore danger; however, they give Cape Kinau a berth of about 1 mile, as it is known that a steamer struck bottom in the vicinity of the cape, probably about 0.2 mile offshore.

(386) **Lualaʻilua Hills**, 6 miles west of Nuu Landing and 2 miles inland, are a group of red mounds about 2,000 feet high.

(387) **Hōkūkano**, 1 mile southwest of Lualaʻilua Hills, is a conspicuous red cone with a lava flow reaching the sea in a high black mass.

(388) **Pimoe**, 2.4 miles west of Hōkūkano, is a red dome, irregular in shape, with its east side broken. The dome, 1,766 feet high, is the crater from which the large, fan-shaped lava flow in the vicinity of Pohakueaea Point had its origin.

(389)

Cape Hanamanioa to Keawakapu

(390) **Cape Hanamanioa**, the southwest extremity of Maui, is a black lava mass. **Hanamanioa Point Light** (20°35'00"N., 156°24'43"W.), 73 feet above the water, is shown from a 21-foot post with a black and white diamond-shaped dayboard on the cape. A current is reported to set constantly northwest past the cape; however, a short series of observations a mile southeast of the light indicates a tidal current with a velocity of 0.8 knot at strength.

(391) **La Perouse Bay**, between Cape Hanamanioa and Cape Kinau, is about 0.7 mile wide and indents the coast about 0.5 mile. On the northwest side of the bay is **Puu o Kanaloa**, a low yellowish-brown cone at the water's edge, with its seaward side blown out. The crater is surrounded by a lava flow from **Kalua o Lapa**, a small, black cone about 1 mile north of the bay. A rock covered 10 feet is in the middle of the entrance to the bay. A rocky outcrop is on the northwest side of the bay. Strangers are advised to exercise extreme caution in the bay.

(392) **Cape Kinau**, 1.5 miles northwest of Cape Hanamanioa, is a broad, low, black lava point and a **protected area** of a Natural Area Reserve. A rock with

4½ feet of water over it is 400 yards offshore near the north end of the cape.

(393) **Puu Olai**, about 2.5 miles north of Cape Kinau, is the most prominent landmark in this vicinity. The hill is brown in color, 367 feet high, and consists of three bare knolls, of which the southernmost is the highest.

(394) **Molokini**, 5.5 miles northwest of Cape Hanamanioa, is a small crescent-shaped islet about 0.3 mile long and 156 feet high. The islet is the bare rim of a crater, the north part of which is submerged. **Molokini Island Light** (20°37'50"N., 156°29'51"W.), 186 feet above the water, is shown from a 30-foot pole with a red and white diamond-shaped dayboard. A reef extends 300 yards north from the northwest end of the islet; there is deep water close to the south side. Vessels pass on either side of the islet. In 1975 and 2020, unexploded ordnance was reported in the vicinity of the islet; caution is advised.

(395) **Makena Anchorage**, 1 mile north of Puu Olai, is exposed to kona weather but affords good holding ground during the trades. Anchorage can be had in depths of 12 to 15 fathoms off **Nahuna Point**, with a fairly prominent church bearing 100°. A few houses may be seen among the trees on the rocky point at the north side of the bight, and a prominent house is at the south end of the sand beach. The strong trade winds that are felt farther north in Maalaea Bay are not pronounced at Makena. Secondary roads lead along the coast and inland from the village. Anchorage can also be found in **Ahihi Bay**, just south of Puu Olai.

(396) The country back of Makena rises gently to the mountains. The lower slopes are covered with cactus, while the slopes higher up are wooded in places. From Makena to Kīhei the coast has a general north trend and is heavily developed with beach homes and hotels. The country back of the coast is like that in the vicinity of Makena.

(397) **Keawakapu** is 8 miles north of Cape Hanamanioa. An apartment building on the small point at Keawakapu is the most prominent landmark along this coast. A fish haven, 200 yards by 1,150 yards, is 0.7 mile southwest of Keawakapu.

(398)

Maalaea Bay

(399) **Maalaea Bay** is a large bight midway along the southwest coast of Maui. The shores are low, mostly sandy and fringed with algaroba trees. The isthmus behind the bay and the slopes on either side are cultivated in sugarcane. Several hotels and resort developments can be seen along the east side of the bay and three stacks are prominent in about 20°48'02"N., 156°29'37"W.

(400) Maalaea Bay is only a fair anchorage. Fresh winds sweep across the isthmus during the trades, and the bay is completely exposed to kona storms. The holding quality of the ground is poor. A north current has been reported in the bay. In the central and east portions the bottom is very irregular. A reef fringes the shore for a distance of 3.5 miles south of Kīhei. Off Kalepolepo, where the reef is widest, a 14-foot spot is 0.5 mile offshore along the edge of the reef. Broken ground with a least depth of 3 fathoms lies about 0.7 mile west-southwest of the Kīhei wharf. A shoal with a least depth of 7 fathoms is in the center of the bay; shoals with 3¾ and 4½ fathoms are northeast of this shoal. Strangers should pass well offshore.

(401) **Kalepolepo** is on the east side of Maalaea Bay, 11 miles north of Cape Hanamanioa. A large old fish pond extends 0.2 mile from shore. Local vessels anchor behind the reefs in depths of 3 to 4 feet.

(402) **Kīhei** is on the east side of Maalaea Bay 12 miles north of Cape Hanamanioa. A settlement is scattered among the trees and along the beach in the vicinity of the remains of a wharf.

(403) **Keālia Pond**, just northwest of Kīhei, is separated from the bay by a narrow sand strip over which the shore highway passes.

(404) **Maalaea** is a village on the northwest shore of Maalaea Bay. A few buildings can be seen among the algaroba trees. The boat harbor at the village is about 500 yards long east to west, about 200 yards across, and is protected by breakwaters. Depths in the harbor are about 7 feet in the west basin and about 10 feet in the northeast basin, mud bottom. In 2009, a reported depth of 8 feet was available in the entrance channel. The entrance channel is marked by a **338.4°** lighted range and private buoys. Inside the harbor, a reef and shoal area extends into the center of the harbor. Care must be taken to avoid these areas when approaching the slips on the north side of the harbor. Gasoline, diesel fuel (by fuel truck) and a launching ramp are available; engine repairs can be made. The harbormaster can be contacted on VHF-FM channel 68 or by phone at 808–243–5818. The harbor office is at the head of the harbor. The harbor experiences considerable surge during all but calm weather.

(405)

Coast Guard Station

(406) Coast Guard Station Maui is just inside the breakwaters of Maalaea Village and can be contacted at 1-808–986–0023.

(407)

McGregor Point to Launiupoko Point

(408) **McGregor Point Light** (20°46'39"N., 156°31'22"W.), 72 feet above the water, is shown from a 20-foot white tower on McGregor Point on the west side of Maalea Bay. A row of wind turbines is prominient north-northeast of the light. The coast between McGregor Point and Olowalu is broken by low bluffs rising from the water's edge, behind which the country presents a barren appearance. The mountains have sharp jagged peaks and are cut by deep gorges.

(409) **Papawai Point**, 0.9 mile west of McGregor Point, is the southernmost point of west Maui. Deep water is close inshore at the point.

(410) **Olowalu** is on **Hekili Point**, 18 miles northwest of Cape Hanamanioa. The deep gulch of **Olowalu Stream** appears as a gap in the mountains when abreast of the point and is an excellent night mark.

(411) **Launiupoko Point**, about 2 miles northwest of Olowalu, is low and rounding. About 0.8 mile inland from the point is an 808-foot hill that has a mottled, grayish-brown appearance. Shoal water extends about 0.2 mile offshore from the point northwest to Lahaina. The highway skirts the shore between these points, and automobile lights along the road are usually the only lights seen along the coast.

(412)

Lahaina to Hanakaoo Point

(413) **Lahaina** is 23 miles northwest of Cape Hanamanioa. Once the whaling capital of the mid-Pacific, Lahaina is now a colorful resort town and a favorite port of call of yachtsmen and boating enthusiasts. In the vicinity of Lahaina, canefields extend along the coast and for several miles inland on the ridges that lead to high, rugged mountains. A mill stack near the center of Lahaina is very prominent and a spire is visible on Puunoa Point. A reef, over which the sea generally breaks, extends about 350 yards offshore from Makila Point, 1 mile southeast of Lahaina, to Puunoa Point, a mile northwest of Lahaina. **Mala** is a small settlement on the north side of **Puunoa Point**. The concrete wharf at Mala is in poor condition and is no longer in use. A breakwater extends along the northeast side of the Mala wharf. A launching ramp is between the inner end of the breakwater and a short groin that protects the ramp on its north side.

(414) **Lahaina Light** (20°52'20"N., 156°40'43"W.), 44 feet above the water, is shown from a 39-foot white pyramidal concrete tower at the inner end of the Lahaina small-boat wharf.

(415) South of Lahaina wharf is a boat basin, about 200 by 800 feet, protected by breakwaters. The approach to the basin is marked by a lighted buoy. The entrance channel is marked by lighted buoys and a **044°** lighted range. Vessels entering or leaving the boat basin should exercise caution as the combined effects of the swell and the 90° turn into the basin can set vessels onto the shoal opposite the basin entrance.

(416) Gasoline and diesel fuel are available at Lahaina but must be obtained through the harbormaster (VHF-FM channel 68 or 808–662–4060). Some small-craft supplies may be obtained at Lahaina and a 1-ton hoist is available on the small-boat wharf.

(417) Good anchorage can be had off Lahaina. Calm water will generally be found even though strong trade winds are blowing elsewhere; however, the anchorage is exposed in kona weather. In approaching the anchorage, vessels should keep about one mile offshore until the light bears **056°**, then head in on this course and anchor in depths of 9 to 15 fathoms. Anchorage can be had anywhere in the bight north of Mala wharf, 0.6 mile offshore in depths of about 12 fathoms, sandy bottom. Offshore mooring buoys for up to 72 hours are available by permit only.

(418) Lahaina has become a destination for both foreign and domestic cruise ships. From fall to spring, passenger and crew counts in excess of 300 can be expected. Ships anchor out and ferry passengers into the harbor by small boat. **Security zones** are active around all large passenger vessels in the harbor—see **33 CFR 165.1 through 165.40** and **165.1408**, chapter 2, for limits and regulations. For foreign vessels, a customs station is set up at the harbor. The Harbor Master acts as a VTS for the duration of the cruise ship port call. All traffic must check in and out of the harbor on VHF-FM channel 68.

(419)

Currents

(420) The current off Lahaina usually sets north and reaches a maximum velocity of 1 or 2 knots before low water. Before high water the current is normally quite weak and may set either north or south.

(421) It is reported that the current near the wharf at Mala sets south most of the time.

(422) The coast between Mala and Keka'a Point consists of a low, sandy beach with a fringe of coconut and algaroba trees, back of which the canefields extend inland for about 2 miles. Buildings can be seen along the coast among the trees.

(423) **Puu Laina**, 1.2 miles northeast of Mala, is a prominent cone 650 feet high. The lower slopes of the hill are covered with cane.

(424) **Hanakaoo Point**, 2 miles north of Mala, is rounding and not conspicuous from offshore. The 10-fathom curve is about 500 yards off this point, and the bottom slopes gradually to the sandy beach. Several hotels line the shore north and south of the point.

(425)

Keka'a Point to Nakalele Point

(426) **Keka'a Point** (20°55.8'N., 156°42.0'W.), 26 miles northwest of Cape Hanamanioa, is the westernmost extremity of Maui and is known locally as Black Point. The point is a dark, rocky promontory, 85 feet high, which appears detached from a distance; there are no offshore dangers. A hotel is on the point.

(427) A northward current is reported off Keka'a Point. A tidal current of 0.5 knot, setting north and south, was observed 0.5 mile from the shore.

(428) From Keka'a Point to Lipoa Point, the coast consists of low bluffs and stretches of sand beach along that may be seen clumps of algaroba trees and several resort hotel complexes. The gently sloping country is cut by shallow gulches and is covered with cane and pineapple which extend well up the mountain slopes.

(429) **Napili Bay**, 4.5 miles north of Keka'a Point, is a small bight between two coral reefs. Anchorage can be found about 0.5 mile offshore in depths of 5 fathoms, but it is seldom used. North currents are reported off the bay. Small boats can land in Napili Bay during tradewind

weather. Breakers extend 0.2 mile offshore for a distance of 1.5 miles south of the bay.

(430) **Hawea Point Light** (21°00'14"N., 156°39'59"W.), 75 feet above the water, is shown from a post with a diamond-shaped black and white dayboard 5 miles north of Keka'a Point.

(431) **Honolua Bay** is the open bight on the south side of **Lipoa Point**, which is 7 miles northeast of Keka'a Point. Smaller vessels can find fair anchorage in the bay, and boats can land in the cove at the northeast end.

(432) In the vicinity of Lipoa Point, the bluffs along the north shore of Maui become higher and more precipitous. Also, the bluffs are cut up by more bights and headlands. The country is more rolling and is cut by deeper gulches. The mountains are steeper and greener. Near their tops the mountains are wooded in places. Patches of black rocks, awash at high water, are found close inshore off several of the points in the vicinity. Vessels should give this coast a berth of at least 0.8 mile.

(433) **Kanounou Point**, about 2 miles east-northeast of Lipoa Point, has several bare, black rocks a short distance offshore.

(434) **Honokohau**, on the west side of Kanounou Point, consists of a few houses at the mouth of **Honokohau Stream**. There is little protection off the village.

(435) **Nakalele Point** is three miles east-northeast of Lipoa Point. Close off Nakalele Point are several bare, black rocks; blowholes can be seen along the southeast face of the point. **Nakalele Point Light** (21°01'45"N., 156°35'26"W.), 142 feet above the water, is shown from a 21-foot pile with a black and white diamond-shaped dayboard.

(436)

Kahului

(437) **Kahakuloa Head**, 3 miles southeast of Nakalele Point, is the seaward end of one of the numerous abrupt capes in this general vicinity. **Pu'u Koa'e (Sugarloaf)**, a dark bare, conical mound 634 feet high, is on Kahakuloa Head; this feature is one of the most conspicuous landmarks on the island of Maui. East and close to Pu'u Koa'e, on the same ridge, is a low and more rounded dome. **Kahakuloa** is a small village in **Kahakuloa Bay**, just west of Kahakuloa Head. A spire can be seen in the village. Kahakuloa is the last settlement on the paved road that skirts the west and north shores of Maui. Deep water is found close to the head, although there are numerous breakers and covered rocks just offshore. A rock, covered 4½ feet, in surrounding depths of 15 to 20 fathoms, is 0.4 mile off the head of the cove between Pu'u Koa'e and Mokeehia Island.

(438) **Mokeehia Island**, 1.4 miles southeast of Pu'u Koa'e, is a large, bare rock 170 feet high, just off the outer end of **Hakuhee Point**. Caverns can be seen in the faces of the cliffs on both sides of the island.

(439) **Puu Olai**, 0.7 miles inland from Mokeehia Island, is 1,002 feet high.

(440) **Hulu Island**, 95 feet high and close to shore, is 2 miles south of Mokeehia Island. Several rocks are close south of the island.

(441) **Waihee Point** is 2.6 miles south of Mokeehia Island. Southeast of the point is extensive **Waihee Reef**, and back of the point is deep and precipitous **Waihee Valley**, which is quite prominent.

(442) **Iao Valley**, also deep and precipitous, is 6 miles south of Mokeehia Island; some of the finest scenery on Maui is found in this vicinity.

(443) **Wailuku**, at the mouth of Iao Valley and 1.5 miles from the coast, is the seat of Maui County and is the largest town on the island. The town has a hospital, hotels and numerous stores; a white multistory building in the center of the town is prominent. There is a direct highway to Kahului.

(444) **Kahului Harbor**, on the south side of **Kahului Bay** 6 miles southeast of Mokeehia Island, is protected by breakwaters that extend outward from the west and east shores. On the southeast side of the harbor is the commercial deepwater port of **Kahului**.

(445)

Prominent features

(446) **Pauwela Point Light** (20°56'44"N., 156°19'17"W.), 161 feet above the water, is shown from a 40-foot white post 9 miles east-northeast of Kahului Harbor and is the principal mark for the approach. Other marks are an aero light at the airport east of Kahului, the breakwater lights, the lighted entrance range, the power plant stacks east of the piers, the radio tower 0.8 mile west of the rear range and the Wailuku spire and stack 2 miles west of the harbor.

(447)

COLREGS Demarcation Lines

(448) The lines established for Kahului Harbor are described in **33 CFR 80.1460**, chapter 2.

(449)

Channels

(450) From deep water on the north, the channel leads between the breakwaters, then turns sharply southeast to the Kahului piers. A federal project provides for an entrance channel 35 feet deep and a harbor basin of the same depth. Channel and basin are maintained at or near project depth. Navigational aids include lighted and unlighted buoys, breakwater lights and a **176.8°** lighted range. A channel, marked by private buoys, leads to a boat ramp at the west end of the harbor.

(451)

Anchorages

(452) Swinging room inside the breakwaters is too restricted for large vessels, which may anchor east of the sea buoy, but caution is necessary to avoid dragging by the prevailing northeast trades. Small craft have plenty of anchorage room in the unimproved areas behind the breakwaters.

(471)

(453)

Dangers

(454) **Waihee Reef**, northwest of the breakwaters, and **Spartan Reef**, northeast of the breakwaters, extend 0.7 mile and 1.2 miles offshore, respectively. Vessels approaching the harbor entrance range from either direction should avoid the reefs. The west part of the inner harbor is shallow. There is a buildup of silt and marine debris (old tires) that creates a shallow area in the southeast corner of the commercial harbor in about 20°53'44"N., 156°27'56"W.

(455)

Regulated navigation area

(456) A safety zone is in Kahului Harbor. (See **33 CFR 165.1** through **165.40** and **165.14-1414**, chapter 2, for limits and regulations.)

(457)

Currents

(458) Harbor currents are weak.

(459)

Weather

(460) The prevailing winds are the northeast trades.

(461)

Pilotage, Kahului

(462) Pilotage is compulsory for all foreign vessels and for U.S. vessels under register in the foreign trade; it is optional for U.S. vessels in the coastwise trade with a federal licensed pilot on board. Pilotage is available through the Hawaii Pilots Association. Mariners are requested to give 24 hours advance notice of arrival, gross tonnage, length and draft of vessel by telephone (808–537–4169) or by e-mail at dispatch@hawaiipilots.net. The 31-foot long pilot boat PAUWELA has a black hull with yellow superstructure and displays the word 'PILOT' in large white letters on the sides of the cabin. The pilot boat displays the International Code Flag 'H' by day and shows the standard pilot lights at night, white over red. The pilot boat monitors VHF-FM channels 12 and 16 and can be reached by "KAHULUI PILOTS." Additionally, vessels are requested to rig a pilot ladder 1 meter above the water on the leeward side. The pilot boarding area is 2.2 miles north of the harbor entrance. The rough weather boarding area for Kahului is at Lahaina, 1 mile southwest of the sea buoy.

(463)

Towage

(464) Two 4,400 hp tugs are available at the port.

(465)

Quarantine, customs, immigration and agricultural quarantine

(466) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(467) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public

Health Service, chapter 1.) There is a public hospital between Kahului and Wailuku.

(468) Kahului is a **customs port of entry**.

(469)

Harbor regulations

(470) These are established by the Harbor Division of the Hawaii Department of Transportation. The harbormaster enforces the regulations and assigns berths and anchorages. Kahului Harbor is located at 101 East Kaahumanu Ave., Suite 100, Kahului, Hawaii 96732. The harbormasters' office hours are from 0745-1630. For more information visit: *https://hidot.hawaii.gov/harbors/contacts/* or call the harbor at 808–873–3350.

(472)

Wharves

(473) The state-owned and -operated piers are on the southeast side of the harbor. General cargo is usually handled by ships' tackle and cargo to and from barges by forklift trucks; crawler and truck cranes are available. Transit sheds with 78,000 square feet of covered storage space and 21 acres of open storage space are available at the piers; truck lines serve the piers.

(474) **Pier 1:** 1,350 feet of berthing space along the southwest side; 30 to 35 feet alongside; deck height, 9 feet; receipt and shipment of general and containerized cargo; receipt of automobiles; receipt of petroleum products, coal, lumber and steel products; boarding passengers.

(475) **Pier 2:** 894 feet of berthing space along the northeast side, 20 to 24 feet alongside; deck height, 9½ feet; 288 feet of berthing space along the outer end, 24 feet reported alongside; receipt and shipment of conventional and containerized cargo and automobiles; receipt of lumber, bulk cement and liquefied petroleum gases.

(476) **Pier 3:** extends northeast from the foot of Pier 2; 500 feet of berthing space along northwest side, 11 to 17 feet alongside; deck height, 9 feet; receipt and shipment of general and containerized cargo and automobiles; receipt of petroleum products, sand, lumber and steel products; mooring towboats.

(477) There is a surge at the piers during periods of heavy north swells; this occurs about 10 times a year. Departing vessels may have some difficulties in breasting off from Pier 1 during kona weather.

(478)

Supplies

(479) Gasoline, diesel fuel and water are available at all piers; gasoline and diesel fuel are trucked in. Bunker C fuel can be obtained in limited quantities by truck. Ice and some marine supplies are available.

(480)

Repairs

(481) Kahului has no facilities for making repairs or drydocking deep-draft vessels. The nearest such facilities are in Honolulu. There are machine, electrical and welding concerns off the waterfront for making above-the-waterline repairs to vessels.

(482)

Communications

(483) Kahului has regular interisland barge service and is a port of call for transpacific vessels, but interisland passenger travel is almost entirely by air. Telephone communication is available to the other islands and to the mainland.

(484) The coast is low between Kahului Harbor and Pauwela Point.

(485) **Paia** is 6 miles east of Kahului Harbor and 1 mile inland. An opening in Spartan Reef off Paia is sometimes used by local craft seeking anchorage behind the reef.

(486) **Maliko Bay**, 8 miles east-northeast of Kahului Harbor, is a narrow opening with steep, rocky sides. The bay provides fair anchorage for small craft in depths of 1½ to 5¼ fathoms, rocky bottom, when the trade winds are blowing. Rocks and foul ground, which extend from the east side of the entrance to the bay to about halfway across, form a natural breakwater. Rocks on the west side of the entrance restrict the channel to a width of about 100 yards. A reef that bares is on the southwest side of the bay about 0.1 mile inside the entrance. Small craft can be launched from a boat ramp at the head of the bay.

(487) **Pauwela Point**, 9 miles east-northeast of Kahului Harbor, is marked by a prominent light that has already been described. An east current is reported off the point.

(488)

Uaoa Bay to Pukaulua Point

(489) Paralleling the northeast coast of Maui is a state highway that is the main link between Kahului and Hāna. From Pauwela east the road is a succession of sharp turns and steep grades as it winds from and toward the shore in crossing the numerous gulches. Sections of the highway can be seen from seaward, but it disappears as it follows the gulches inland.

(490) Between Pauwela and Nāhiku, a distance of about 15 miles, the bluffs reach heights of 300 to 400 feet, then gradually lose elevation to the southeast, and are low in the vicinity of Hāna. The back country is generally green, and the higher slopes are heavily wooded. Because of the heavy rains, waterfalls are numerous in the many gulches that lead to the sea. Very little of this northeast coast is planted in sugarcane. From Pauwela Point to Waipio Bay the land on the seaward side of the coastal highway is under pineapple cultivation, and there are many taro patches at Ke'anae and Nāhiku. The slopes southeast of Nāhiku are grazing areas for cattle. There are many inshore rocks between Pauwela Point and Hāna, but all such dangers can be avoided by keeping a mile offshore.

(491) **Uaoa Bay**, 3 miles east of Pauwela Point and just east of **Opana Point**, indents the coast about 0.4 mile. Fair anchorage during south winds can be had 0.3 mile offshore in depths of 12 to 16 fathoms, sandy bottom. A large detached rock off Opana Point marks the west side of the bay.

(492) **Pilale Bay**, 4 miles east of Pauwela Point, is a small opening at the mouth of a deep valley. Small boats can find fair anchorage during tradewind weather in depths of 4 to 7 fathoms a short distance off the beach.

(493) **Waipio Bay**, 6 miles east of Pauwela Point, lies between **Honokala Point** and **Huelo Point** and is open to the northeast. **Huelo** is a small village along the highway 0.5 mile inland.

(494) **Hoalua Bay**, 7 miles southeast of Pauwela Point is small and too exposed for anything but emergency anchorage. Under favorable conditions landings can be made at the head of the bay.

(495) **Oopuola Cove**, 8 miles southeast of Pauwela Point, is narrow and steepsided. A reef lies just north of the point on the west side of the entrance. Beach landings can be made at times, and small boats can find anchorage in depths of 3 to 6 fathoms near the center of the cove. **Puu Kukai**, 574 feet high, is 0.5 miles west of the cove.

(496) **Keopuka Rock**, 141 feet high, is 9.5 miles southeast of Pauwela Point and close to shore. The rock's double-humped top is distinctive from east or west, but from directly offshore it blends into the cliffs behind it.

(497) **Honomanu Bay**, 10 miles southeast of Pauwela Point, is a good landing place and a fair small-boat anchorage during the trades, although the swell is felt in the bay. Anchorage can be found in depths of 2 to 3 fathoms about 200 yards from the black shingle beach at the head of the bay. The east side of the bay is shallow. **Puu o Kohola**, 844 feet high, is 0.5 mile west of the bay.

(498) **Nuaailua Bay**, close east of Honomanu Bay and on the west side of Ke'anae Point, is the only suitable anchorage for moderate-size vessels along this northeast coast. The bay is somewhat exposed to the northeast trades but is partly protected by Ke'anae Point. A 250-foot vessel can anchor in depths of 13 to 15 fathoms in the middle of the main bay; the bottom is quite even and has good holding qualities. Approach from seaward should be made on a due south course, keeping about 0.3 mile off the west shore and well clear of the 15-foot lone, black rock which is 0.3 mile off the east shore.

(499) **Ke'anae Point**, 11 miles southeast of Pauwela Point, is a low, flat peninsula that juts out 0.3 mile from the bluff line. Landings should not be attempted on the point proper because of the covered rocks and ledges on all sides. A scattering of houses can be seen on the point.

(500) **Ke'anae Valley** is the largest and most prominent valley on this part of Maui. The valley leads inland 7 miles from the vicinity of Ke'anae Point to Ko'olau Gap, the large opening in the north rim of Haleakalā Crater.

(501) **Pauwalu Point** is 1 mile southeast of Ke'anae Point. **Mokumana Rock**, close off Pauwalu Point, is 77 feet high and flat topped; the rock is particularly outstanding when approached from the east, but from some directions it appears to be a continuation of the point although there is a separation of some 50 yards.

(502) **Aluea Rock**, 2 miles southeast of Ke'anae Point and about 0.2 mile offshore, is only a few feet high and has the appearance of a reef awash as the seas break over it continuously and covered rocks extend another 300 yards from shore. This area should be avoided by all boats.

(503) **Wailua** consists of a few houses along the shore of the small bight immediately southwest of Aluea Rock. On the east side of the bight is a high wooded bluff, and the west side is low and grass covered. The highway leading to Hāna leaves the shore west of the bight, and from seaward it may be seen high up on the ridges as it winds its way southeast.

(504) **Nāhiku**, 15 miles southeast of Pauwela Point, is a small settlement on the east side of an open bight. Anchorage can be found in depths of 7 fathoms close to shore, but strangers should not attempt it because of the two covered rocks near shore. A southeast current is reported off Nāhiku, and the inshore current between Nāhiku and Ka'uiki Head is said to be weak. **Kūhiwa Gulch** extends inland from the vicinity of Nāhiku and is visible from seaward.

(505) **Opikoula Point** is a low, rocky bluff on the east side of the Nāhiku anchorage. Similar bluffs extend 5 miles southeast to Pukaulua Point, and there are no easily recognized landmarks. This reef-fringed stretch of coast is not recommended for small-boat landings.

(506) Low **Pukaulua Point** is 2.5 miles north-northwest of Hāna Bay and Ka'uiki Head. **Hana Airport** is 0.5 mile northwest of the point; the main runway is laid out in an east-west direction and is close to the bluffs.

(507)

'Alalākeiki Channel to Kealaikahiki Channel

(508) **'Alalākeiki Channel**, between Maui and Kaho'olawe, is about 6 miles wide. The channel is clear of dangers, with the exception of Molokini, which is marked by a light.

(509) Observations show that the **current** usually flows northwest with a maximum velocity of 0.7 knot on the west side of the channel near Kaho'olawe Island and south-southeast with a maximum velocity of 0.4 knot along the east side of the channel near Maui Island. Velocities up to 1 knot have been observed in the channel.

(510) The trade winds draw through the channel, hauling around the north end of Kaho'olawe. The trades blow with much force at the east entrance to the channel, but in the vicinity of Molokini it is generally calm.

(511) **Auau Channel**, between Maui and Lāna'i, is about 8 miles wide. With the exception of a reef about 3 miles long, which extends not more than 0.5 mile offshore north of Kikoa Point, Lāna'i, the channel is free from obstructions. The aerolight at Moloka'i airport can be seen when passing through Auau Channel.

(512) Observations in Auau Channel show that the **current** seldom floods but that the flow is mainly in the ebb direction; ebb is east with a velocity of 1.1 knots. Beginning with maximum ebb, the current decreases to a minimum ebb or slack and then increases to a maximum ebb without a significant flow in the flood direction. Maximum velocities of 2 knots have been observed. See

the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book. During trade winds it is often calm in the channel.

(513) **Pailolo Channel**, between Maui and Molokaʻi, is about 7.5 miles wide. The channel is clear of obstructions with the exception of Mokuhoʻoniki and Kanahā Rock, near the east end of Molokaʻi, and a reef about 0.8 mile wide that fringes the shore of Molokaʻi.

(514) Observations show the **current** in the channel to set northeast with a velocity of about 0.3 knot. The maximum velocity observed was 0.6 knot.

(515) In navigating this channel, the tanks on Molokaʻi and Maui will prove useful landmarks; those on Molokaʻi are on the southeast shore, near Pūkoʻo, and those on Maui are on its west-northwest side, near Kekaʻa Point.

(516) It is reported that the junction of Pailolo, Auau and Kalohi Channels, locally known as **The Slot**, is subject to high winds and dangerous currents as winds and seas funnel between Maui and Molokaʻi. High winds were also observed near Maʻalaea Bay from trade winds funneling through the saddle of the Maui.

(517) **Kahoʻolawe**, 6 miles southwest across ʻAlalākeiki Channel from the southwest extremity of Maui, has an area of 45 square statute miles and is the smallest of the eight major islands. Kahoʻolawe is about 10 miles long and 6 miles wide and from a distance has an even, unbroken appearance. The high cliffs on the east and south sides are grayish-black; the soil of the mountain tops and the gentle slopes of the north and west sides are reddish. The island has scarcely any rainfall, and the huge clouds of red dust that trail to leeward during strong winds can be seen for many miles. **Puʻu ʻO Moaʻula Iki**, a brown dome 1,444 feet high near the east end of the island, is the most prominent landmark.

(518)

Warning

(519) Kahoʻolawe is under naval jurisdiction. The island was previously used as a military target area for bombing and gunnery training. Large amounts of unexploded ordnance are present on the island and in its adjacent waters. Entry onto the island or in its adjacent waters is prohibited without the consent of Commander, Third Fleet, Pearl Harbor, HI 96860. Entry regulations are contained in **32 CFR 763.1** through **763.6** (not carried in this Coast Pilot). A **danger zone** extends 2 miles from all sides of the island. (See **33 CFR 334.1340**, chapter 2, for limits and regulations.)

(520) From **Lae ʻO Kuikui**, the most north point of the island, to Kanapou Bay, the coast is rocky and the bluffs gradually increase to cliffs several hundred feet high at the bay.

(521) **Lae ʻO Kaule**, 2.8 miles southeast of Lae ʻO Kuikui, is on the north side of Kanapou Bay.

(522) **Kanapou Bay** 2 miles wide between Lae ʻO Kaule and **Lae ʻO Hālona**, offers protection in kona weather. Anchorage is available for small vessels in **Keoneuli (Beck Cove)** on the southwest side of the bay. The bay should be entered on a southwest course, heading for the middle of the cove, and anchorage should be made in depths of 15 to 20 fathoms off the mouth of the cove and midway between the sides. The bottom shoals rapidly from depths of 12 to 3 fathoms about 0.2 mile from the sandy beach at the head of the cove. West winds draw down the canyon at the head of the cove with considerable force.

(523) From **Lae ʻO Kākā**, the southeast point of Kahoʻolawe, to within 1 mile of Honokanaiʻa on the southwest side, the coast consists of sheer cliffs that reach a maximum height of 800 feet at Kamōhio Bay. There are no offlying dangers except Puʻu Koaʻe.

(524) **Kamōhio Bay** and **Waikahalulu Bay**, 3 and 6 miles west of Lae ʻO Kākā, respectively, each indent the coast about 0.7 mile. Neither bay can be recommended as an anchorage because of the deep water close to the shores. The bays are subject to strong gusts of wind that sweep down over the high cliffs when the trades are blowing. On the west side of Kamōhio Bay is **Puʻu Koaʻe**, a black mass of rocks 378 feet high and about 100 yards offshore.

(525) The prevailing current along the south coast of Kahoʻolawe is west.

(526) **Honokanaiʻa** is 1 mile southeast of **Lae ʻO Kealaikahiki**, the westernmost point of the island. The cove is the best anchorage on the island except during west or south weather. Anchorage can be had in depths of 10 to 12 fathoms 0.5 mile off the sand beach. The prevailing current at the anchorage is northwest. The best landing is on the sand beach close to the conspicuous black rock at the head of the cove. The shore is low and has alternate stretches of sand and rocks. A stream, which is usually dry, and a clump of algaroba trees may be seen. As many as five buildings may be seen on the shore above the beach.

(527) **Kuia Shoal**, with a least depth of 1 fathom, extends 0.7 mile west from Lae ʻO Kealaikahiki. A shoal with a least depth of 3 fathoms is about 0.5 mile southwest of Kuia Shoal. Vessels should give the point a berth of at least 1.5 miles. The country slopes up evenly from Lae ʻO Kealaikahiki to the east.

(528) The northwest coast is rocky and has a line of low bluffs from which the country slopes gently up to the reddish hills in the center of the island. There are scarcely any distinguishing marks and no off-lying dangers.

(529) **Kuheeia Bay (Kuheia Bay)**, 2 miles southwest of Lae ʻO Kuikui, is a very small bight where boats can land at times, however this is inside of submerged unexploded ordnance zone and restricted area. Regulations are enforced by Commander, Naval Base, Pearl Harbor.

(530) **Kealaikahiki Channel**, between Kahoʻolawe and Lānaʻi, is about 15 miles wide. The channel is free from obstructions. Currents in the channel are weak and variable and are influenced by the wind. A maximum

velocity of 0.5 knot in a general northeast direction was observed in 1962. Sailing craft should avoid this channel during trade winds, as long periods of calms sometimes occur south and west of Kahoʻolawe and Lānaʻi.

(531)

Lānaʻi

(532) **Lānaʻi**, 8 miles west across Auau Channel from Maui and the same distance south across Kalohi Channel from Molokaʻi, has an area of 141 square statute miles and ranks sixth in size of the eight major islands. Lānaʻi is about 15 miles long in a northwest direction and about 10 miles wide near its south end, gradually narrowing toward its northwest end. The highest point on Lānaʻi is **Lānaʻihale**, 3,370 feet high and 3.5 miles inland from the southeast side of the island. The slopes on the east side of the mountain are steep and cut by gulches; those on the west side are more gradual, terminating in a rolling plain between the 1,000- and 2,000-foot levels. There is little rainfall and, in general, the island has a barren appearance. The local economy is driven mostly by tourism, although some livestock is raised. **Lānaʻi City**, the only large community, is in the center of the island.

(533)

Kikoa Point to Puu Ulaula

(534) The coast is low, sandy and brush covered from **Kikoa Point**, the easternmost point of Lānaʻi, to **Kamaiki Point**, 3.1 miles south-southwest. A coral reef and shoal water fringe the shore from 200 to 400 yards off the beach. Low bluffs appear to Kamaiki Point, gradually increasing in height until close to Manele Bay, where they reach a maximum of about 400 feet.

(535) **Manele Bay** is a small indentation in the south coast of Lānaʻi, 3 miles southwest of Kaimaiki Point; a lighted buoy is off the entrance. A low rock, over which the sea usually breaks, is 300 yards seaward from the entrance point on the east side of Manele Bay. Small local vessels have anchored in depths of 14 fathoms about 350 yards southwest of the rock.

(536) **Manele Small-Boat Harbor**, protected by a breakwater on the south side, is in the northwest corner of the bay; a light marks the end of the breakwater. A dredged channel marked by private buoys leads from Manele Bay north of the breakwater thence southwest to a mooring basin. When entering the harbor, local conditions dictate staying well to the right side of the entrance channel. The prevailing winds blow from the east and there are numerous coral heads near the left edge of the channel, just off the end of the breakwater. A rock covered 3 feet and marked by a buoy was reported about 30 yards northwest of the breakwater light in about 20°44'34"N., 156°53'13"W. A fishing pier and launching ramp are at the head of the harbor.

(537) **Puupehe Island (Puupehe Rock)**, locally known as Sweetheart Rock, is 0.5 mile southwest of Manele Bay. The island is 110 feet high, brown on its steep sides, flat and grass covered on its top. It is separated from the shore by a short, low sandspit. The island is the most prominent landmark along this section of the coast. Rocks, over which the sea usually breaks, extend 300 yards east and south from Puupehe. **Hulopoe Bay**, just west of the island, has a sandy beach and a prominent large hotel complex at its head. Squalls are less pronounced in Hulopoe Bay than in Manele Bay.

(538) Hulopoe Bay is within the boundary of Manele-Hulopoe Marine Life Conservation District. State regulations forbid operating, mooring or anchoring any power-driven vessel within Hulopoe Bay. A copy of the regulations can be obtained from the State of Hawaii, Department of Land and Natural Resources, P.O. Box 621, Honolulu, HI 96809.

(539) From Manele Bay to Palaoa Point, the coast consists of low bluffs, behind which the land rises in steep slopes to the tableland above. It is reported that the currents are weak along the south coast of Lānaʻi. A high, detached grass-covered rock is close to the shore 1.8 miles west of Puupehe. Many small rocks are close to the shore; one, awash at times, is 400 yards offshore and about 2 miles east of Palaoa Point.

(540) **Palaoa Point Light** (20°43'56"N., 156°57'53"W.), 91 feet above the water, is shown from a white skeleton tower on the east prong of a double point at the southwest extremity of Lānaʻi. A small bight, with a rocky shore on which small boats can usually land during trade-wind weather, is between the double points. A large rock, known locally as Shark Fin Rock, is about 0.3 mile north-northwest of the point in about 20°44'15"N., 156°58'08"W.

(541) Beyond Palaoa Point, the coast has a north-northwest trend. Between the point and Kaumalapau Harbor, the sheer coastal bluffs of **Kaholo Pali** are more than 1,000 feet high in some places. The bluffs are marked by two landslides; one about 1.5 miles north of Palaoa Point consists of dark material and is very large and conspicuous; the other, about 1.8 miles north of the point, has a gravelly appearance and is covered with vegetation.

(542) **Puu Ulaula**, 1,271 feet high, is 2 miles north of Palaoa Point and a mile inland from Kaholo Pali. There is an air-navigation installation on the summit.

(543)

Kaumalapau Harbor to Kaʻena Point

(544) **Kaumalapau Harbor**, 3.5 miles north of Palaoa Point, is the best harbor on Lānaʻi in all but west and kona weather. The harbor is a small bight at the mouth of the most prominent gulch in the vicinity. A shoal area, marked by unlighted buoys at the outer extremity, extends along the south and east sides of the harbor. Many local fishing craft moor to unlighted mooring buoys in the harbor.

(545) A safety zone is in Kaumalapau Harbor. (See **33 CFR 165.1** through **165.40** and **165.14-1414**, chapter 2, for limits and regulations.)

(546) **Kaumalapau** is a commercial barge landing on the north side of the harbor.

(547) **Kaumalapau Light** (20°46'59"N., 156°59'30"W.), 68 feet above the water, is shown from a post with a black and white diamond-shaped dayboard on the south side of the harbor entrance. Oil tanks are prominent on the high ground back of the wharf. A private aerolight is about 2.3 miles east of the harbor.

(548) A 250-foot breakwater with a distinctive white appearance is on the north side of the entrance is about 50 yards west-southwest of the outer end of the breakwater. There is no entrance channel but a 600-foot opening leads to a turning basin that is 30 to 50 feet deep and about 500 feet by 800 feet. The wharf provides cargo sheds and about 400 feet of berthing space. The facilities also include two 35-ton and one 30-ton crane, bulk-handling and storage for petroleum products. A barge makes weekly (Wednesday) calls on the harbor, at which time the harbor becomes a security zone. If a fuel barge is present, there is no admittance.

(549) Gasoline, diesel fuel and water can be obtained on the Kaumalapau wharf. Small craft up to 40 feet can be handled by a derrick to the deck of the wharf, and small machine repairs can be made at a nearby shop.

(550) Between Kaumalapau Harbor and Ka‘ena Point, the coast is a series of bluffs, in some places precipitous and 300 to 400 feet high. The shore is rocky, with a few short stretches of sand. In general, the bottom is fairly steep-to, but small vessels can find anchorage with sufficient swinging room in some places. At times, when the trades are blowing, the wind sweeps down the gulches in heavy gusts that are felt for a mile or more offshore. There are no houses or trees of any size along this coast, which has a barren appearance.

(551) **Nanahoa (Five Needles)**, about 2.3 miles north of Kaumalapau Harbor and near the middle of the west side of the island, are a group of detached pinnacle rocks. The outermost rock is about 300 yards offshore and 32 feet high, and the inner pinnacle is 120 feet high. The rocks are of the same material as the higher cliffs of the shore and are therefore not easily recognized from offshore. Good anchorage for small craft can be had in the vicinity.

(552) **Keanapapa Point**, 7.5 miles northwest of Kaumalapau Harbor, is the westernmost point of Lāna‘i. The point is low and rocky and is marked by a small knoll 150 yards inland from the shore. A small detached rock, 8 feet high and 150 yards offshore, is 1.9 miles southeast of Keanapapa Point. The cliffs, which are 200 feet high in the vicinity of this rock, gradually diminish in height until they are only 20 or 30 feet high 0.5 mile south of Keanapapa Point.

(553) **Ka‘ena Point**, 1 mile north of Keanapapa Point, is low and rocky and is hard to distinguish from the other points in the vicinity. The low, rounding, unlighted northwest coast of Lāna‘i is not easily seen at night, and vessels should give it a berth of at least 1 mile, although 0.5 mile will clear all dangers. There are many small, rocky points and short, sandy indentations in this vicinity, and boats can land in the lee of the points at times.

(554) About 1.5 miles east-northeast of Ka‘ena Point is a 1-mile-long stretch of sand beach, with no fringing reef, that provides easy landing for small boats. East of this beach the coral reef fringes the north and east sides of Lāna‘i to a width of as much as 0.3 mile. In general, the beach is backed by a low, narrow strip of land that rises gently to the tableland. Vegetation consists of cactus, low brush and a few small trees.

(555)

Puhakuloa Point to Kalohi Channel

(556) **Pohakuloa Point**, marked by a light, 4 miles east-northeast of Ka‘ena Point, is so low and rounding that it is difficult to recognize as the north extremity of Lāna‘i. A 150-yard opening in the reef 0.4 mile east of the point affords small-boat access to the sand beach. Two wrecks on the reef that fringes the north coast are very prominent. One wreck is 0.7 mile west of Pohakuloa Point; the other wreck is 4.4 miles east of the point.

(557) **Maunalei Gulch**, 6 miles east of Pohakuloa Point, is forked and should not be confused with deep **Hauola Gulch**, 2 miles farther to the southeast. A hard-surface highway leads from Lāna‘i City to the mouth of Maunalei Gulch; a group of beach houses, probably **Kahokunui**, is 0.8 mile northwest of the gulch.

(558) **Keomuku**, 10 miles southeast of Pohakuloa Point, is an abandoned village in an extensive coconut grove. There is a shallow opening in the reef off the village, and boats of less than 4-foot draft find anchorage behind and south of the entrance.

(559) The northeast coast of Lāna‘i should be given a berth of at least 0.8 mile. Prevailing east winds tend to set vessels to the west. Current information for this coast is included in the discussion of Auau Channel.

(560) **Kalohi Channel**, 8 miles wide between Lāna‘i and Moloka‘i, is free of dangers except for the marginal reefs around the two islands.

(561)

Currents

(562) Observations made in Kalohi Channel show reversing currents with average maximum velocities of 0.5 knot. The flood sets northeast, and the ebb sets southwest. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(563)

Moloka‘i

(564) **Moloka‘i**, 7.5 miles northwest across Pailolo Channel from Maui and 8 miles north across Kalohi Channel from Lāna‘i, has an area of 259 square statute

miles and ranks fifth in size of the eight major islands. More or less rectangular in shape, Moloka‘i is about 34 miles long in a west direction and about 7 miles wide. The east end is mountainous; its summit is **Kamakou**, 4,970 feet high. On the north side, the mountain slopes are very steep, in many places almost perpendicular, and numerous deep gorges with precipitous sides can be seen. On the south side, the slopes are gradual, cut by gorges, and terminate in a narrow strip of rolling land near the coast. On the west side, the land slopes gently and is cut by gulches; here and there the crater of an extinct volcano can be seen. About 10 miles from the west end of the island the plain is only a few hundred feet high and is marked here and there by prominent blowholes. The entire west end of the island is a bare table land cut by small gulches and rising gradually to **Mauna Loa**, 1,400 feet high. From seaward this part of the island presents a smooth and rolling appearance.

(565) The island’s rural economy includes tourism, cattle ranching, irrigated fruit and vegetable farming, and coffee.

(566)

Anchorage

(567) Depths along the south and west coasts of Moloka‘i are such that vessels may anchor at will, having due regard for the abrupt shoaling inside the 10-fathom curve. The bottom is mostly coral and sand. The east end of the island is exposed to the northeast trades, and the north coast is exposed and offers very little protection. The only traffic along the north coast is the twice-yearly supply barge that calls on Kalaupapa, a community of Hansen’s Disease patients. Kamalō Harbor and the boat lagoon in Puko‘o Harbor are the only harbors on the south side of the island considered safe during kona storms. Local knowledge is advised when entering Puko‘o Harbor.

(568)

Currents

(569) Current observations have been made at several places along the south shore of Moloka‘i between Kamalō and Lā‘au Point. They indicate, in general, an east flow along the shore in the vicinities of Kaunakakai and Kamalō and a west flow near Lā‘au Point. Combined with these movements are tidal currents that usually reach an east maximum velocity about the time of low water at Honolulu and a west maximum about the time of high water. The west flow near Lā‘au Point is reported to turn sharply north at the point, and vessels should guard against a set toward the point. Currents are said to set west along the entire north coast of Moloka‘i and northeast along the east coast. (For further current information covering waters adjacent to Moloka‘i, see the discussions of Pailolo, Kalohi and Kaiwi Channels.)

(570)

Weather, Moloka‘i

(571) The trade winds divide at Cape Hālawa; one part follows the north shore and another part follows the south shore. Because of the topography of the island the trade wind is frequently a little south of east along the south coast of Moloka‘i. The wind is usually light in the early morning, but blows with considerable strength in the middle of the day. During strong trades, dust clouds appear over the west end of the island. Very heavy rainfall is found on the northeast side of the island; the south and west sides have very little rainfall.

(572)

Supplies

(573) Provisions and some marine supplies are available at Kaunakakai. Gasoline and diesel fuel can be delivered by truck to the Kaunakakai pier. There are no other sources of provisions on Moloka‘i. The harbor agent may be contacted at 808–553–1742.

(574)

Communications

(575) The island has telephone communication with the other islands and with the mainland. Good roads extend from Kaunakakai, on the south coast, to Moloka‘i Airport, in the west central part of the island, and to Kamalō and other small towns. Interisland air and barge service are available.

(576) From Cape Hālawa, the east part of the island, to Kamalō, a distance of about 12 miles, the coast has a general southwest trend; thence to Lā‘au Point, a distance of about 25 miles, the trend is west. A reef about 1 mile wide fringes almost the entire coast, the widest part being in the bight about 13 miles east of Lā‘au Point. During the day the limits of the reef can generally be determined by the breakers, but, at night, vessels are cautioned to give this coast a good berth.

(577)

Cape Hālawa to Kainalu

(578) **Cape Hālawa**, the east point of Moloka‘i, is a brown cliff about 300 feet high. Breakers extend about 300 yards off the point and a rock, which bares at times, is 250 yards offshore. During the heavy east sea, it is apt to be quite choppy off this point, and vessels should give the cape a berth of about 1.5 miles.

(579) **Cape Halawa Light** (21°09'33"N., 156°42'45"W.), 321 feet above the water, is shown from a steel pole with a concrete base.

(580) **Koali‘i**, 1 mile west of the cape, is a hill 794 feet high. In general, the coast between Cape Hālawa and Kaunakakai Harbor is low, but rises, first gently, then rapidly, to high, rugged mountains that are cut by many gulches.

(581) **Mokuho‘oniki**, a small, yellow, bare, rocky islet, 198 feet high and with almost perpendicular sides, is 0.9 mile offshore and 1.6 miles south of Cape Hālawa. **Kanahā Rock**, 95 feet high, is about 50 yards southwest of Mokuho‘oniki. Midway between the rocks and Moloka‘i are depths of about 15 fathoms. The two islets together are locally known as Turtle Rock.

(582) **Honouliwai**, 3.5 miles southwest of Cape Hālawa, is a small indentation in the coast and offers small boats

a little protection from the trades. It should be entered only with local knowledge. About 0.3 mile northeast of Honouliwai is **Honoulimaloo**, a small bight in the coast. The coral reef trends farther offshore from Honouliwai southwest.

(583) **Waialua**, 4.6 miles southwest of Cape Hālawa, consists of a few houses at the mouth of a gulch.

(584) **Pauwalu Harbor**, 5 miles southwest of Cape Hālawa, is a double opening in the reef. The west opening is about 200 yards wide and is usually marked by breakers on either side. Within the entrance is a small pocket with depths of about 2 fathoms, where a few local vessels find some shelter. A house and tank near the beach are partly hidden by trees. The reef extends 0.6 mile offshore, and the 10-fathom curve is about 0.7 mile offshore.

(585) About a mile southwest of Pauwalu Harbor is another opening in the reef near **Kainalu**.

(586)

Pūko'o Harbor

(587) **Pūko'o Harbor**, 7.4 miles southwest of Cape Hālawa is a pocket in the reef some 800 yards long and 250 yards wide. The entrance is through a break in the reef from the southeast. A privately dredged channel continues from the harbor to a three-fingered boat lagoon called **Pukoo Lagoon**. The entrance to the lagoon is a 60-yard opening through a rock seawall. A depth of 12 feet can be carried across the harbor entrance to the lagoon channel. The lagoon channel has a depth of 6 feet with a depth of 4 feet inside. The lagoon offers excellent protection to small craft in all weather. The outer harbor is smooth during the trades, although the wind sweeps across it with full force. The passage through the reef is marked on either side by breakers. During kona storms, breakers extend across the passage. Boats entering the harbor should start their approach midway between the breakers and steer for the opening in the seawall of the boat lagoon. Caution should be exercised as there are no navigation aids, and numerous coral heads and submerged rocks are on both sides of the channel; local knowledge is advised. The village of **Pūko'o** consists of a few houses on the lowland near the beach in front of a steep-sided gorge that extends well back into the mountain. The reef at Pūko'o extends 0.6 mile offshore.

(588) There are many old fishponds in the vicinity of Pūko'o and along the coast for 10 miles west. About 1 mile west of Pūko'o is the village of **Kalua'aha.**

(589) **Kalaeloa Harbor**, 3.2 miles west of Pūko'o Harbor, is the largest and best protected harbor along the coast, but its use is limited by the bar across the entrance, which is an unmarked opening in the reef.

(590)

Kamalō Harbor

(591) **Kamalō Harbor**, 5 miles southwest of Pūko'o Harbor, is the east of two pockets opening south in the reef at the most south point on Moloka'i. The harbor, excluding the entrance, is about 150 yards wide and extends more than 0.5 mile into the reef. The entrance to the harbor is through a break in an outer reef. The outer reef has general depths of 1 to 6 feet and the entrance through the break has a least depth of 11 feet. A lighted buoy is off the entrance. The coral reef marking the limits of deep water within the harbor usually are easily seen by day. The village of **Kamalō** consists of a few houses at the mouth of a gulch back of the harbor. The ruins of an old wharf are at the head of the harbor and an A-frame house is visible from seaward.

(592) Kamalō Harbor offers good protection from west to north winds. The soft gray mud bottom has good holding quality. The harbor is used by small boats but seldom by larger vessels. The swell is not felt within the harbor. Current observations a mile off Kamalō show velocities of about 1 knot. Water, fuel and supplies are available in the village.

(593) **Pu'upāpa'**, 830 feet high, is 2 miles northwest of Kamalō Harbor and 0.6 mile inland. **Kamalō Gulch** is 1 mile east of the hill, and 2.5 miles west of the hill is **Kawela Gulch**, which extends well inland from the small village of **Kawela**.

(594) From Kamalō Harbor the coast has a west trend and the reef extends as much as 1 mile from shore.

(595)

Kaunakakai Harbor

(596) **Kaunakakai Harbor**, 9 miles west of Kamalō Harbor and 16 miles from the west extremity of Moloka'i, is a commercial barge harbor in the reef off **Kaunakakai**. The harbor is about 600 feet wide by 1,500 feet long and is open to the south. The approach to the basin is marked by lighted and unlighted buoys and a **33.8°** lighted range.

(597) Kaunakakai Harbor can be reached by mail at P.O. Box 2050, Kaunakakai, Hawaii 96748. For more information visit: *https://hidot.hawaii.gov/harbors/contacts/* or call the harbor at 808–285–0935.

(598) A safety zone is in Kaunakakai Harbor, off the west face of the state pier. (See **33 CFR 165.1** through **165.40** and **165.14-1414**, chapter 2, for limits and regulations.)

(599) The state-owned wharf, lit by floodlights at night, provides a cargo shed and 500 feet of berthing space. A 700-yard-long mole extends northeast from wharf to shore. The mole protects small craft from the trade winds. Barges can lie at the wharf except during the two or three severe kona storms of the winter season. Kamalō Harbor offers better protection for small craft during the konas. When barges are present, the wharf is a secure area and proper identification is required for access. Water is piped to the wharf; gasoline and diesel fuel can be delivered by tank truck. Some marine supplies may be obtained in Kaunakakai.

(600) A boat ramp and mooring area for small craft are just off the north end of the wharf. A channel, marked by private buoys, leads to a small-boat harbor off the southeast side of the wharf. The southeast side of the

channel and east side of the harbor are extremely shoal; caution is advised. The harbor is protected on its east side by a detached breakwater. There are 29 slips that are reserved for regular occupancy; no visitor slips are available.

(601) The coastal reef extends more than a mile from shore on both sides of the Kaunakakai entrance. Vessels can anchor temporarily in depths of about 15 fathoms off the entrance, but there is little shelter from the northeast trades or the konas.

(602) Current observations a mile off Kaunakakai indicate an east set most of the time. Maximum velocities observed were 1 knot east and 0.5 knot west. East and west maximums occur at about the times of low water and high water, respectively, at Honolulu.

(603) For 3 miles west from Kaunakakai the lowlands extend much farther inland than along any other section of the coast. The reef extends more than a mile from shore and is mostly covered 1 to 3 feet but has many coral heads that bare at low water. The country between Kaunakakai and Kolo is bare and rocky and is cut by numerous small gulches. The sandy beach is fringed with algaroba trees.

(604) The aerolight of Molokaʻi Airport and the aero obstruction lights on the surrounding hills are visible off the south shore of the island.

(605)

Kolo Harbor

(606) **Kolo Harbor**, about 10 miles west of Kaunakakai, is a large pocket in the reef with a narrow entrance from south. Two private white markers on shore about 300 yards west of Kolo wharf provide a **007°** range, which marks the channel through the reef. The channel and the harbor have depths of about 8 feet; the harbor is subject to shoaling. A moderately heavy swell causes heavy surf on the entrance bar, and the combination of surf and current often creates a hazardous condition. Kolo Harbor affords anchorage with limited swinging room, but the swell is felt even though its full force is broken by the outer reefs. The harbor is not recommended for strangers. The ruins of an old wharf are at the head of the harbor.

(607) From Kolo Harbor west to Lāʻau Point, the coast is low and has a narrow sand beach, broken here and there by short stretches of rocky shore. The coral reef gradually becomes narrower until it disappears at Lāʻau Point.

(608) **Haleolono Point**, 13 miles west of Kaunakakai and 3.5 miles east of Lāʻau Point, is a conspicuous brown bluff, 50 feet high, that extends 0.2 mile along the water's edge.

(609) An abandoned barge harbor (**Lono Harbor**) is at Haleolono Point. The entrance is marked by a **345°** private unlighted range. Two breakwaters provide protection for the harbor. Local knowledge is advisable for entering.

(610)

Waiʻeli to Kalaupapa

(611) **Waiʻeli** is a prominent, bare hill, 625 feet high, 1 mile northeast of Haleolono Point.

(612) **Lāʻau Point**, the southwest extremity of Molokaʻi, is low and rocky; the 10-fathom curve is about 0.5 mile offshore. **Laau Point Light** (21°05'59"N., 157°18'18"W.), 151 feet above the water, is shown from a spindle with a black and white diamond-shaped dayboard on a bluff near the point. The prevailing current off Lāʻau Point is north, and vessels are cautioned against a set onto the point.

(613) **Penguin Bank**, an extensive shelf, makes out from the west end of Molokaʻi in a general west-southwest direction for a distance of 28 miles from Lāʻau Point. The bank is fairly flat and consists of sand and coral at depths of 21 to 30 fathoms. Along the north, west and south edges, the bank drops off very abruptly into depths of more than 100 fathoms.

(614) In the vicinity of Lāʻau Point currents are strong and likely to be erratic. Usually flowing along the west part of the south coast of Molokaʻi is a west current that turns sharply to the north as it rounds the point. A strong tide rip west and north of the point forms breakers when the wind is north. A northeast set over Penguin Bank joins the north current along the west coast of Molokaʻi. This current is not felt in the deep water west of Penguin Bank but is apparent at the edge of the bank when passing inside the 100-fathom curve. There is no apparent connection between this current and the tides, and the trade winds appear to have little effect upon it, although it appears to be stronger or weaker according to whether there is a barometric depression north or south of the islands.

(615) Between Lāʻau Point and ʻĪlio Point, a distance of about 8 miles, the west coast of Molokaʻi is bare, low and rolling and cut up by a few small gulches. The beach is marked by low bluffs and short stretches of sand, back of which the land rises gently.

(616) **ʻĪlio Point**, 8 miles from Lāʻau Point, is the northwest extremity of Molokaʻi. Breakers have been observed about 0.3 mile off ʻĪlio Point during heavy weather. A 293-foot hill is 0.8 mile inland. During the trades, small craft can find fair anchorage 1.5 miles south of the point.

(617) The north coast of Molokaʻi is mostly bold, but deep-draft vessels should not stand close to the shore. This north coast has no harbor or anchorage that affords shelter in all winds. Kalaupapa is the only port of call for local vessels.

(618) **Mokio Point**, 3 miles east of ʻĪlio Point, is a low, rocky bluff with a detached rock just offshore.

(619) Five miles east of ʻĪlio Point is **Hauakea Pali**, a low cliff that extends inland at right angles to the beach. The seaward end resembles a large, white sandbank and is the most conspicuous landmark in the vicinity. The cliff is the west boundary of the low plain that extends across the island.

(620) East of Hauakea Pali the coastal bluffs gradually rise to precipitous cliffs that are 2,000 to 3,000 feet high in some places.

(621) **Kalaupapa Peninsula**, 16 miles east of ʻĪlio Point, is a low point of land that juts out 2 miles from the face of a high cliff. **Molokaʻi Light** (21°12'34"N., 156°58'11"W.), 213 feet above the water, is shown from a 138-foot white tower on the outer part of the peninsula. There is deep water close to the peninsula except for the marginal reef just north of Kalaupapa.

(622) **Kalaupapa** on the west side of Kalaupapa Peninsula is the commercial barge harbor for the community of Hansen's Disease patients that occupies the peninsula. Special permit is required to land unless on state business. This open harbor has a small breakwater on the north side. The state landing provides 56 feet of berthing space and has depths of 2 to 4 feet alongside. Access is good, and no channel is needed to reach open water. Anchorage can be found in depths of 12 fathoms, 0.2 mile off the landing. A steeple is prominent on the approach from the west.

(623)

Kalawao to Hālawa

(624) The country between Kalaupapa Peninsula and Cape Hālawa has a very irregular and jagged appearance and is more or less covered with vegetation. The coastal cliffs are broken by headlands, bights and deep gulches. There are no landing places other than the few debris piles in front of the cliffs and the few level spots in the mouths of the gulches.

(625) **Kalawao**, on the southeast side of Kalaupapa Peninsula, is a part of the community of Hansen's Disease patients.

(626) **Mōkapu Island**, 360 feet high, is 3 miles southeast of Molokaʻi Light and 0.7 mile offshore. The island is the outermost of two; **Okala Island**, 370 feet high, is close to shore.

(627) **Pahu Point**, 5 miles southeast of Molokaʻi Light, is a bold, pyramidal headland 1,022 feet high. The point is the seaward end of a sharp ridge that extends inland along the west side of a deep gulch. **Mōkōlea Rock**, over which the sea always breaks, is 0.6 mile northeast of the point.

(628) **Umilehi Point**, 1 mile east of Pahu Point, is particularly conspicuous and appears to be a small crater with the entire seaward side blown out. **Mōkoholā Island**, 20 feet high, is a dark rock 0.3 mile off Umilehi Point.

(629) The east half of Molokaʻi's north coast is noted for its rugged scenery and high waterfalls. **Pāpalaua Falls**, 10 miles east of Kalaupapa Peninsula and 5 miles west of Cape Hālawa, start from an elevation of about 2,000 feet at the head of a deep gulch and have a 500-foot drop in one place.

(630) **Hālawa Bay** is between **Lamaloa Head**, an 837-foot cliff, and Cape Hālawa, the east extremity of Molokaʻi. The bay, which is about 1.5 miles wide between Lamaloa Head and Cape Hālawa, extends about 0.7 mile inland and affords no shelter from the trades, but indifferent anchorage can be found in depths of 5 fathoms about 0.3 mile from the head. The shores of the bay are mostly backed by high cliffs; there are two black rocks close to the south shore.

(631) **Hālawa** consists of a few houses at the mouth of a deep gulch on the southwest side of Hālawa Bay. The gulch penetrates west, and a waterfall is visible 1 mile from the mouth. A triangular cliff, 300 feet high, is conspicuous about 0.5 mile east of Hālawa.

(632)

Kaiwi Channel

(633) **Kaiwi Channel**, between Molokaʻi and Oʻahu, is about 22 miles wide and is clear of obstructions. A general north drift is reported over Penguin Bank and in the vicinity of Lāʻau Point; elsewhere in the channel the currents appear variable, depending mainly upon the direction and velocity of the wind. The trade winds that follow the north and south shores of Molokaʻi draw across Kaiwi Channel toward **Makapuʻu Point**.

(634)

Oʻahu

(635) **Oʻahu**, 22 miles west-northwest across Kaiwi Channel from Molokaʻi, has an area of 604 square statute miles and is third largest of the eight major islands. Oʻahu measures 39 nautical miles southeast-northwest between Makapuʻu and Kaʻena Points and 26 miles south-north between Kalaeloa and Kahuku Point. The island has two prominent mountain ranges, and its skyline is rough and jagged.

(636) **Koʻolau Range** parallels the northeast coast for nearly its entire length. The part of the range between Makapuʻu Point and Kāneʻohe Bay has on its seaward side a sheer, rocky cliff, or pali, nearly 2,000 feet high in some places. Northwest of Kāneʻohe Bay, the cliffs give way to steep, rugged slopes. From offshore, the northwest half of the range appears as a long ridge, sloping gradually downward, and ending in low bluffs near Kahuku Point. The crest of the ridge and about half the seaward slope are wooded; the lower part of the slope is grass covered. The entire range has a very jagged appearance and is cut up on its inland side by deep gorges and valleys. The greatest elevation in Koʻolau Range is at **Kōnāhuanui**, 3,150 feet high and 5 miles back of Honolulu; the peak is on the east side of Nuuanu Valley and overlooks the famous **Nuʻuanu Pali** at the head of the valley. Two miles closer to Honolulu is **Tantalus**, a rounded peak, 2,013 feet high, with a heavily wooded summit. On the seaward side of Koʻolau Range the land is mostly low and rolling; it is cut by a few sharp hills and is under cultivation.

(637) **Waianae Mountains** parallel the southwest coast for nearly the entire distance between Kaʻena Point and Kalaeloa. Several spurs extending from the range toward the shore form short valleys. The range has numerous high peaks; **Kaʻala**, 4,046 feet high, is the highest.

(638) Between the two mountain ranges is an extensive plain that extends from Pearl Harbor on the south to Haleʻiwa on the north; the plain rises to an elevation of about 1,000 feet at Wahiawā. There are low, flat coastal plains between Honolulu and Kalaeloa, in the vicinity of Waiʻanae, Haleʻiwa and Kahuku Point, and between Kāneʻohe Bay and Waimānalo.

(639) Prominent headlands on Oʻahu are Makapuʻu Head, Koko Head, Diamond Head, Kaʻena Point, Kahuku Point, Kualoa Point and Mōkapu Peninsula. The entire coast of the island is fringed with coral reefs 0.5 to 1 mile in width, except along parts of the west shore between Kalaeloa and Kaʻena Point. From Kaʻena Point to Kahuku Point, the reefs are not so continuous as along other parts of the island.

(640)

Harbors and ports

(641) The largest harbors on Oʻahu are Kāneʻohe Bay and Pearl Harbor; the latter is a prohibited area. Small-craft harbors include Maunalua Bay, Honolulu's Ala Wai Boat Harbor and Kewalo Basin, Waianae Harbor and Haleiwa Small-Boat Harbor in Waialua Bay. The northeast coast is exposed to the trade winds during most of the year, and the only small-craft shelter available is in Kāneʻohe Bay.

(642)

Currents

(643) The currents around Oʻahu depend largely upon the winds and are variable in velocity and direction. The general tendency is a west or north flow along the coast. Tidal currents and eddies are noticeable in some places. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(644)

Weather, Oʻahu

(645) Thanks largely to the marked marine influence and the persistent trade winds, the climate of Oʻahu is unusually pleasant for the tropics. Records at the International Airport at Honolulu, on the leeward side of the island, show a lowest temperature of 52°F (11.1°C) and a highest of 95°F (35°C). August is the warmest month with an average temperature of 81.3°F (27.4°C). January and February are the coolest with an average temperature of 73.0°F (22.8°C). Each month, May through November, has recorded maximum temperatures in excess of 90°F (32.2°C) while each month from November through May has recorded minimum temperatures of 60°F (15.6°C) or lower. Throughout the year, the average daily range in temperature is about 14°F (8°C).

(646) In some parts of the Koʻolau Range the annual rainfall is as much as 300 inches (7,620 mm). The driest region is the southwest where rainfall drops to below 20 inches (508 mm) a year. At the International Airport, the average annual precipitation is only about 22 inches (559 mm) ranging from about 3.5 inches (89 mm) in December to about one-third of an inch (9.7 mm) in June.

(647)

Supplies and repairs

(648) All kinds of supplies are available at Honolulu, and medium-size vessels can be handled for repairs.

(649)

Communications

(650) Oʻahu has a good network of hard-surfaced highways. Air and sea transportation is available from Honolulu to the other islands and to the mainland.

(651) Honolulu is the only port in the Hawaiʻian Islands that maintains a commercial radio communication watch.

(652)

Makapu'u Head to Diamond Head

(653) **Makapuʻu Head**, the east extremity of Oʻahu, is a bold, barren, rocky headland 647 feet high. **Makapuu Point Light** (21°18'36"N., 157°38'59"W.), 420 feet above the water, is shown from a 49-foot white cylindrical concrete tower on the head.

(654) The seaward side of Makapuʻu Head is a dark cliff; the inland side slopes rapidly to the valley, which separates it from the Koʻolau Range. The headland is the landfall for vessels inbound to Honolulu from the mainland.

(655) There is deep water close to the outer end of the headland, but shallower water is found along the north and east sides. Deep-draft vessels should give Makapuʻu Head a berth of about 1 mile and/or stay in depths greater than 20 fathoms.

(656) The **restricted area** of the Makai Undersea Test Range extends northwest and northeast from Makapuʻu Point. (See **33 CFR 334.1410**, chapter 2, for limits and regulations.)

(657) **Koko Crater**, 2.6 miles southwest of Makapuʻu Head and 0.5 mile from the beach, is a sharp, brown cone 1,204 feet high. The coast between Makapuʻu Head and Koko Crater is low sand, rock and shingle; from Koko Crater to Koko Head the coast is rocky, precipitous and somewhat irregular.

(658) **Hanauma Bay**, 3.5 miles southwest of Makapuʻu Head, is 0.3 mile wide and extends 0.5 mile inland. The waters off the entrance are very choppy during south and east winds. Across the head of the bay is a sand beach that is fringed by 150 yards of coral reefs. The bay is a nature preserve and is a popular snorkeling and scuba diving site. State regulations do not permit boats to enter the bay.

(659) **Koko Head**, 4 miles southwest of Makapuʻu Head, is a bold promontory 640 feet high; the seaward side is precipitous, the top is flat, and it slopes off rapidly on the inland side. The headland is developed on its lower west slopes with residential homes, but its general appearance is mostly brown and barren. There is deep water close to Koko Head. Strong west currents have been reported offshore.

(660) **Maunalua Bay** is an open bight that extends west from Koko Head to Diamond Head; coral reefs fringe most of the shore. On the west side of Koko Head, a channel, marked by a light and private daybeacons, leads through the reef to a private marina in Kuapa Pond and to a public launching ramp behind the reef. The channel has a least depth of 5 feet, except at the entrance where it shoals to a depth of 3 feet on the east side near Daybeacon 2. Behind the Koko Head reefs is one of the few anchorages that offer small-craft shelter in all weather except kona storms. Although depths are 13 feet, only small craft familiar with the area should venture behind the reefs. Tidal currents in Maunalua Bay flood west and ebb east; slack waters occur at about the times of high and low waters at Honolulu.

(661)

Caution

(662) Vessels approaching Honolulu from the east at night should not mistake the lights between Koko Head and Diamond Head for the lights of Waikīkī Beach. Commercial and residential development of the coast along Maunalua Bay has resulted in an increase of background lighting. Vessels have mistaken Makapuu Point Light for Diamond Head Light and run aground on the reef west of Koko Head.

(663) **Wailupe**, 2.7 miles west of Koko Head, is a residential area with a seawall and private piers. A channel, reported dredged to 12 feet, leads through the reefs to Wailupe. Several pipes mark the west side of the entrance channel.

(664) **Diamond Head**, 9 miles west-southwest of Makapu‘u Head, is an extinct volcano 761 feet high. The steep slopes and the top of the crater are bare and brown; the base is brush covered. **Diamond Head Light** (21°15'21"N., 157°48'34"W.), 147 feet above the water, is shown from a 64-foot white concrete tower near the beach. A lighted buoy is moored in 150 feet of water 0.6 mile off the light. Currents setting in various directions with velocities up to 1 knot were noted about 3 miles southwest of Diamond Head.

(665)

Waikīkī Beach to Kewalo Basin

(666) The low coast between Diamond Head and Honolulu Harbor is thickly developed, and palm trees are numerous. Along this stretch is world-famous **Waikīkī Beach** with its big hotels, surfboarding, outrigger canoe races and sunbathers. The Waikiki Shore Water Restricted Zone is an area extending about 0.4 mile offshore along Waikīkī Beach. Boating is prohibited in this area, except by permit issued by the Harbors Division, Hawaii Department of Transportation.

(667)

Anchorage

(668) A **special anchorage** is in **Kapua Entrance**, about 0.9 mile south of Waikīkī Beach—see **33 CFR 110.1** and **110.129b**, chapter 2, for limits and regulations.

(669) **Ala Wai Boat Harbor** is 2.5 miles northwest of Diamond Head Light. A dredged channel leads from Māmala Bay through the reefs to the basins inside the harbor. Depths inside the harbor are 8 to 20 feet. The approach to the channel is marked by lighted buoys and the channel is marked by private buoys, daybeacons and a lighted range. Mariners are advised to line up on the range before entering or exiting the harbor at night.

(670) During the trades, the winds within the harbor are distorted by the nearby tall buildings. Vessels maneuvering in the harbor under sail should beware of sudden changes in the direction and velocity of the wind. The harbor can be entered in all weather except during kona storms. During the summer months, very large swells can be found outside Ala Wai Harbor; mariners should navigate with the utmost caution during those times.

(671) The harbor is one of the most popular places for small-boat activity on O‘ahu, and yacht clubs in the harbor are the host for the famed transpacific yacht race. The harbor attendant controls the berthing and mooring facilities.

(672) Marine supplies and complete repair facilities are available in the harbor including a sailmaker, radio repairs and a marine railway that can handle craft up to 45 feet.

(673) **Kewalo Basin**, 3.5 miles northwest of Diamond Head Light, is used exclusively by cruise boats and charter and commercial fishing vessels. A dredged channel leads from Māmala Bay through the reefs to the basin. The channel has a controlling depth of 19 feet. Depths in the basin are from 18 to 22 feet for the most part with shallow depths of less than 4 feet along the edges of the entrance channel. The channel is marked by lighted buoys and a directional light.

(674) At times when stormy south or southwest (kona) winds create high swells, the channel becomes extremely hazardous. There is usually a strong rip current crossing the channel at this time.

(675)

Honolulu

(676) **Honolulu Harbor** is 5 miles northwest of Diamond Head and midway along the south coast of O‘ahu; the harbor is protected from all winds and is usually free of surge. **Honolulu** is the capital and the principal deepwater port of the State of Hawaii.

(677)

Prominent features

(678) **Honolulu Harbor Entrance Light** (21°17'45"N., 157°52'08"W.), 95 feet above the water, is shown from a white post on the southeast point of the entrance channel. The flashing green light can be easily identified against the background of Honolulu lights.

(679) **Sand Island**, which borders the seaward side of Honolulu Harbor, is government-owned and has been built up mostly from harbor dredging. The Coast Guard base is on the northeast side of the island.

(680) **Aloha Tower**, a 193-foot cream-colored, square clock tower on Pier 10, is one of the most conspicuous objects in the harbor. The tall, square, twin white office buildings 300 yards east of Aloha Tower are prominent and provide an excellent reference to ships approaching the harbor by day. **Punchbowl Hill**, 500 feet high and flat topped, is 1 mile inland from Aloha Tower. The horizontal blue lights of the Ala Moana Tower restaurant (21°17.8'N., 157°50.7'W.), 1.5 miles east of Honolulu Harbor entrance, are easily distinguished at night and provide an excellent navigation aid.

(681)

Caution

(682) Vessels approaching the harbor from the west at night should not mistake the lights between Pearl Harbor and Honolulu for the lights of Honolulu or the lighted buoys off Kalihi Channel for the lighted buoys off the main entrance. Vessels have mistaken these lights and gone aground off Keʻehi Lagoon. From the east the lights north of Diamond Head should not be confused with those of Honolulu or the lighted aids of Kewalo Basin with those of Honolulu Harbor. Also from the east, vessels should not mistake the lights between Koko Head and Diamond Head for the lights of Waikīkī Beach. Commercial and residential development of the coast along Maunalua Bay has resulted in an increase of background lighting. Vessels have mistaken Makapuu Point Light for Diamond Head Light and run aground on the reef west of Koko Head.

(683)

COLREGS Demarcation Lines

(684) The lines established for Māmala Bay are described in **33 CFR 80.1420**, chapter 2.

(685)

Channels

(686) A **federal project** provides for a 45-foot Honolulu Entrance Channel from **Māmala Bay**, thence 40 feet in the main harbor basin. The project also provides for a 23-foot channel leading from Māmala Bay through Kalihi Channel on the west side of Sand Island to Kapālama Basin. The connecting channel between main harbor basin and Kapālama Basin has a 40-foot project depth with 40 feet in the Kapalama Basin. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through the USACE hydrographic survey website listed in Appendix A.

(687) **Honolulu Entrance Channel** is marked by lights, buoys and a **027.9°** lighted range. The rear light and marker of the range is sometimes obscured when large ships are moored at Berth 8. **Kalihi Entrance Channel** is marked by lights, buoys and a **007°** lighted range.

(688) **Honolulu Harbor Entrance Lighted Buoy H** (21°16'51"N., 157°52'48"W.) is 0.7 mile south-southwest of Honolulu Harbor Entrance Channel—the buoy has red and white stripes, with a red topmark.

(689) The John H. Slattery (Sand Island) highway bridge over the harbor end of Kalihi Channel has fixed spans with a clearance of 14 feet.

(690)

Anchorages

(691) General anchorages for commercial vessels are in Māmala Bay, west and southeast of Kalihi Channel Entrance, sand and coral bottom. (See **33 CFR 110.1** and **110.235**, chapter 2, for limits and regulations.) Mariners are advised not to use this anchorage or to leave the anchorage during periods of large south swell or strong kona winds. Use of the anchorages is controlled by the Honolulu harbormaster; any vessel that wishes to use an assigned anchorage is required to obtain permission from the harbormater's office. Vessels entering the anchorage area are required to seek traffic clearance from Aloha Tower traffic control on VHF-FM channel 12; call sign, WHX-528. Vessels are also required to advise Aloha Tower of their departure time from the anchorages. All vessels must monitor VHF-FM channels 16 and 12 while they are in the anchorages. Anchorage is not practical in the harbor basins because of the limited swinging room. Sewer outfall lines extend southwest from a point on Sand Island; mariners are cautioned not to anchor within 600 yards of the sewer line.

(692)

Regulated navigation areas

(693) A security zone and safety zone are in Honolulu Harbor and entrance channel. (See **33 CFR 165.1** through **165.40**, **165.1407** and **165.14-1414**, chapter 2, for limits and regulations.)

(694)

Currents

(695) It is reported that a tidal current floods west and ebbs east along the coast between Makapuʻu Point and Honolulu. In the vicinity of Honolulu, an east counterflow along the edge of the reef is reported to accompany the west flood. Strong west currents have been reported off Honolulu. Currents setting toward all four quadrants and having velocities up to 1 knot have been noted about 3 miles southwest of Diamond Head. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov*. Links to a user guide for this service can be found in chapter 1 of this book.

(696)

Tsunamis

(697) The size of a predicted tsunami cannot be estimated in advance. Most of them felt in Honolulu Harbor have been relatively small; the largest of record was 10 feet high in 1960. However, it is prudent to anticipate that even greater ones may strike.

(698) Honolulu Harbor authorities require all ships to vacate the harbor prior to the estimated time of arrival of a sea wave if possible. If a long engine warmup is necessary, it should be started at the first alert so the vessel may be ready to proceed in time.

(699) Telephone notification will be given by the Captain of the Port to vessel agents who must, in turn, notify their respective ships. Messengers will be used to the extent available to supplement the telephone warnings.

(700) When ready to depart, each ship should obtain clearance from the harbormaster. The Aloha Tower, traffic control, can be contacted on VHF-FM channel 12, call sign WHX-528. The traffic controller will assign each vessel a departure time in accordance with harbor regulations, depending on vessel size, type, location in the harbor and vessel type priority. Once a vessel has checked in with Aloha Tower traffic control, they are required to monitor VHF-FM channel 12 at all times.

(701) The **harbormaster** will assign the departure time in accordance with assigned priorities and in consideration of the time each vessel becomes ready to move. The assigned priorities for vessels ready to depart are government vessels, passenger vessels, tankers, vessels with explosive cargo, and freighters.

(702) Vessels unable to move in time should take adequate precautions against damage during the tsunami due to the expected rise and fall of the water.

(703) A **regulated navigation area** for staging vessels in the event of a tsunami evacuation is off the south coast of O'ahu between Diamond Head and Honolulu International Airport. See **33 CFR 165.1413**, chapter 2, for limits and regulations.

(704) (See discussions of tsunamis at beginning of this chapter and in chapter 1.)

(705)

Weather, Honolulu

(706) The climate of Hawaii is unusually pleasant for the tropics. Its outstanding features are (1) the persistence of the trade winds, where not disrupted by high mountains; (2) the remarkable variability in rainfall over short distances; (3) the sunniness of the leeward lowlands, in contrast to the persistent cloudiness over nearby mountain crests; (4) the equable temperature from day to day and season to season; and (5) the infrequency of severe storms.

(707) The prevailing wind throughout the year is the northeast trade wind, although its average frequency varies from more than 90 percent during the summer to only 50 percent in January.

(708) Annual rainfall in the Honolulu area averages less than 30 inches along the coast (22 inches at the airport, 24 inches in the downtown area (559 mm and 610 mm, respectively)), but increases inland at about 30 inches (762 mm) a mile. The mean annual number of days with precipitation totals 220. The wettest year on record, 1965, saw nearly 43 inches (1,092 mm) while the driest year, 1983, saw only 5 inches (127 mm) of precipitation. In March 1958, over 15 inches (381 mm) of precipitation fell in one 24-hour period. Parts of the Ko'olau Range average 300 inches (7,620 mm) or more a year. This heavy mountain rainfall sustains extensive irrigation of cane fields and the water supply for Honolulu. East (windward) of the Ko'olaus, coastal areas receive 30 to 50 inches (762 to 1,270 mm) annually; cane and pineapple fields in central O'ahu get about 35 to 40 inches (889 to 1,016 mm). O'ahu is driest along the coast west of the Waianaes where rainfall drops to about 20 inches (508 mm) a year. However, variations from month to month and year to year are considerable; more so during the cooler season, when occasional major storms provide much of the rain, than in the summer, when rain occurs primarily as showers that form within the moist trade winds as they override the mountains. Thus, March rainfall at Honolulu Airport has ranged from more than 20 inches (508 mm) to as little as 0.001 of an inch (0.03 mm, in effect, a trace). In the mean, about a third of the airport's annual total occurs during its two wettest months, December and January. Trade-wind rainfall is more frequent at night. Daytime showers, usually light, often occur while the sun continues to shine, a phenomenon referred to locally as "liquid sunshine."

(709) Average water temperatures at Waikīkī Beach vary from 75°F (23.9°C) in the morning to 77°F (25°C) in the afternoon during March and from 77°F (25°C) in the morning to 82°F (27.8°C) in the afternoon during August.

(710) Because of the persistence and moderate humidity of the northeast trade winds, even the warmest months are usually comfortable. But when the trades diminish or give way to south winds, a situation known locally as "kona weather" ("kona storms" when stormy), the humidity may become oppressively high.

(711) Weather severe enough to interfere with shipping or travel is uncommon. Intense rains of the October to April "winter" season sometimes causes serious, but local, flash flooding. Thunderstorms are infrequent and usually mild, as compared with those of the midwestern United States. Hail seldom occurs, and when it does it is small and rarely damaging to crops. At great intervals a small tornado or a waterspout moving onshore may do some slight damage. Four hurricanes have struck Hawaii since 1950, but several times that many, and a number of less intense tropical cyclones, most of them drifting west from their breeding grounds off the Mexican coast, have approached near enough for their outlying winds, clouds, and rain to affect the islands.

(712) A National Weather Service office is in Honolulu; barometers may be compared there or by telephone/internet—see Appendix A for address.

(713)

Pilotage, Honolulu

(714) Pilotage is compulsory for all foreign vessels and U.S. vessels under register in foreign trade; it is optional for U.S. vessels in coastwise trade with a federal licensed pilot on board. Pilots are available through the Hawaii Pilots Association. Mariners are requested to give 24 hours advance notice of arrival, gross tonnage, length, and draft of vessel by telephone (808–537–4169) or by e-mail at dispatch@hawaiipilots.net. The 41-foot-long HONOLULU and the 33-foot-long HANAKAHI pilot

(731)

Facilities in the Port of Honolulu

Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
State of Hawaii Fort Armstrong (Piers 1 and 2)	21°18'00"N., 157°52'01"W.	3,025	35-40	7.25	• Open storage (29 acres) • Covered storage (318,610 square feet)	• Receipt foreign containers and non-bulk cargos • Cruise ship terminal, Foreign Trade Zone No. 9 and neo-buld cargo	State of Hawaii
State of Hawaii (Piers 22 and 23)	21°18'40"N., 157°52'10"W.	800	30	6	Grain elevator with 20 silos (26,000 tons) served by underground conveyor	Receipt of grain	State of Hawaii/ Hawaiian Flour Mills
State of Hawaii (Piers 24 and 25)	21°18'38"N., 157°52'13"W.	935	23-30	6	Covered storage (70,000 square feet)	Receipt and shipment of conventional, containerized and roll-on/roll-off general cargo and automobiles	State of Hawaii/ Young Brothers, Ltd.
State of Hawaii (Pier 26)	21°18'37"N., 157°52'14"W.	695	22-29	6	Covered storage (35,000 square feet)	Receipt and shipment of conventional, containerized and roll-on/roll-off general cargo and automobiles	State of Hawaii/ Young Brothers, Ltd.
State of Hawaii (Pier 27)	21°18'35"N., 157°52'14"W.	885	29	7	Covered storage (64,450 square feet)	Receipt and shipment of conventional, containerized and roll-on/roll-off general cargo and automobiles	State of Hawaii/ Young Brothers, Ltd.
State of Hawaii (Piers 28 and 29)	21°18'35"N., 157°52'19"W.	1,523	35	7	Covered storage (102,175 square feet)	Receipt and shipment of conventional, containerized and roll-on/roll-off general cargo and automobiles	State of Hawaii/ Young Brothers, Ltd.
Chevron Products Co. Honolulu Pier 30	21°18'41"N., 157°52'26"W.	270	30	6-7	28 storage tanks with a total capacity of 370,000 barrels	Receipt and shipment of petroleum products	Chevron Products Co., Inc.
State of Hawaii (Piers 31A, 31, 32 and 33)	21°18'45"N., 157°52'35"W.	1,500	35	7	• Open storage (5 acres) • Covered storage (200,000 square feet) • Tank storage: (302,000 barrels) (600,000 gal. caustic soda	• Receipt and shipment of conventional general cargo • Storage sheds, bunkering, pipelines, roll-on/roll-off general cargo, dry bulk cargo	State of Hawaii
State of Hawaii (Pier 34)	21°18'53"N., 157°52'40"W.	545	35	7	Tank storage: (18,000 tons of cement) (508,000 barrels of petroleum)	• Bunkering, pipelines and general cargo	State of Hawaii/ Tosco Distribution Co.; Tesoro Petroleum Corp.; Hawaiian Cement Corp.
State of Hawaii (Pier 39)	21°19'03"N., 157°52'50"W.	2,260	30	8	• Open storage (9.5 acres) • Covered storage (90,000 square feet)	Barges and tugboats, break-bulk and container cargoes, and roll-on/roll-off general cargo	State of Hawaii/ Young Brothers, Ltd.
State of Hawaii (Pier 40)	21°19'02"N., 157°52'54"W.	2,430	30	8	• Open storage (13 acres) • Covered storage (46,800 square feet)	Barges and tugboats, break-bulk and container cargoes, and roll-on/roll-off general cargo	State of Hawaii/ Young Brothers, Ltd.
State of Hawaii (Pier 51A)	21°18'51"N., 157°53'07"W.	680	37	8	• Open storage (39.9 acres) • Tank storage (840,000 barrels) • Two 37½-ton container cranes	Domestic containers, automobiles, roll-on/roll-off general cargo, and petroleum	State of Hawaii/ Sea Land Service, Inc.; Airport Group International, Inc.
State of Hawaii (Piers 51B and 51C)	21°18'50"N., 157°53'00"W.	1,233	37-40	8	• Covered storage (49,741 square feet) • Tank storage (72,000 gallons)	Receipt and shipment of domestic containers and automobiles	State of Hawaii/ Matson Terminals, Inc.
State of Hawaii (Piers 52A, 52B and 53)	21°18'40"N., 157°52'37"W.	3,000	40	8.2	• Open storage (40.3 acres) • Tank storage (4 million gal.) • Seven container cranes to 45 tons	Receipt and shipment of containerized and roll-on/roll-off general cargo, automobiles and molasses	State of Hawaii/ Matson Terminals, Inc.; Alexander & Baldwin, Inc.

Dimensions are given in feet
* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

boats have black hulls with yellow superstructures and display the words "HAWAII PILOTS" in large white letters on the sides of the cabin. The pilot boats display the International Code Flag "H" by day and shows the standard pilot lights at night, white over red. The pilot boat monitors VHF-FM channels 12 and 16 and can be reached by "HONOLULU PILOTS" call sign, WXZ-456. Additionally, vessels are requested to rig a pilot ladder 1 meter above the water on the leeward side. The pilot boarding area is 1 mile south of the sea buoy. The pilot station is at pier 19 and monitors VHF-FM channels 12 and 16. When pilots are boarding incoming vessels from the pilot boat, the vessel should maintain a speed of about 5 knots. Foreign and U.S. vessels under registry in foreign trade and U.S. vessels in coastwise trade without a licensed federal pilot on board must acquire pilot service before entering the anchorages.

(715) In addition to the above, the State of Hawaii has established **special pilotage regulations** for all **tankers, tanker barges** and **tankerlike vessels**. In general the regulations require these vessels to have on board a Honolulu Port Pilot when entering or departing Honolulu Harbor for any reason. Exempt from this requirement are tankerlike vessels and vessels towing tanker barges when under the control and direction of a person duly licensed as a pilot by the U. S. Coast Guard for the Port of Honolulu and tankers when departing from anchorage. A copy of the rules and regulations affecting such vessels may be obtained from the Department of Transportation of the State of Hawaii, Harbors Division, Honolulu, or at the office of the harbormaster.

(716) All mariners are advised to monitor Honolulu harbor traffic movements on VHF-FM channel 12 at all times when approaching or transiting the waters of Māmala Bay.

(717)

Towage

(718) Tugs up to 4,800 hp, including several z-drive type tractor tugs, are available in Honolulu. Salvage equipment is also available.

(719)

Quarantine, customs, immigration and agricultural quarantine

(720) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(721) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(722) Honolulu is a **customs port of entry**.

(723)

Coast Guard

(724) **Honolulu Coast Guard Base** is on the northeast side of Sand Island. The Fourteenth Coast Guard District Office and Sector Office Honolulu are located in Honolulu. (See Appendix A for address.)

(725)

Harbor regulations

(726) Harbor regulations are established by the Harbors Division, Hawaii Department of Transportation, and are enforced by the harbormaster. Prior to entry, all vessels must establish communications with Aloha Tower traffic control on VHF-FM channels 12 or 16; call sign, WHX-528. The phone number for Aloha Tower is 808–587–2076.

(727) The **speed limit** in Honolulu Harbor is 5 knots for all vessels and tows and 10 knots for motorboats and other small craft.

(728) A flashing amber warning light, privately maintained and shown about 22 feet above the water from a pole about 70 yards south-southwest of Pier 38, is activated when there is a gas leak or the likelihood thereof. Anyone observing the light flashing should remain well clear and upwind, and sources of ignition should be secured.

(729)

Wharves

(730) Honolulu has several piers and wharves around its harbor waterfront. Only the deep-draft facilities are listed in the facilities table. The alongside depths for the facilities listed are reported—for information on the latest depths, contact the State of Hawaii, Department of Transportation, Harbors Division or the private operators. All facilities have direct highway connections. Water is available at the berths and most have electrical connections. General cargo at the port is usually handled by ship's tackle. Special handling equipment, if available, is mentioned in the table under *Mechanical Handling Facilities*. Several cranes to 200 tons can be rented and numerous warehouses/cold storage facilities adjacent to the waterfront are available.

(732)

Supplies

(733) There is no bunkering by tank barges at Pier 30. Operators at the port provide bunker fuel solely to vessels using their particular facility.

(734)

Repairs

(735) Above and below the waterline repairs of any nature can be made at Honolulu. A floating drydock is available and has a lifting capacity of 8,000 tons, 463-foot length over the keel blocks, 78-foot width between the wing walls (maximum width of 101 feet) and a 20-foot depth over the blocks. A large marine railway is available in the port with a lifting capacity of 400 tons, 222-foot length, 63-foot width and 10-foot depth. In an emergency large commercial vessels have been handled at the Pearl Harbor Naval Shipyard.

(736)

Communications

(737) Honolulu is a major port of call for transpacific vessels, and there is commercial barge service to and from the other islands. Air service, passenger and freight, includes scheduled flights to the other islands, to the mainland and to west and southwest Pacific areas.

(738)

Ke'ehi Lagoon

(739) **Ke'ehi Lagoon**, 6 miles northwest of Diamond Head, is triangular in shape and is fronted by coral reefs. The cuts through the lagoon are former seaplane landing areas. Kalihi Channel, previously mentioned, cuts through the southeast part of the lagoon. A privately dredged channel branches northwest from Kalihi Channel to a small-boat harbor and a barge harbor and turning basin on the east side of the landing areas. The barge channel is marked by a private lighted range.

(740)

Anchorage

(741) A **special anchorage** is in Ke‘ehi Lagoon on the west side of the barge channel—see **33 CFR 110.1** and **110.129b**, chapter 2, for limits and regulations.

(742) Submerged pipelines, centered about 160 yards northeast from the north corner of the special anchorage, extend from the southeast to the northwest side of Ke‘ehi Lagoon; mariners should avoid anchoring in the pipeline area. The south end of the anchorage has several submerged wrecks and obstruction—mariners are urged to use caution when navigating in this area.

(743)

Regulated navigation areas

(744) A **Security Zone** has been established in Kalihi Channel and Ke‘ehi Lagoon. (See **33 CFR 165.1407**, chapter 2, for limits and regulations.)

(745) **Honolulu International Airport**, on the north shore of Ke‘ehi Lagoon, is the largest commercial airport in the state. The control tower (21°19'14"N., 157°55'38"W.) is prominent from seaward.

(746)

Pearl Harbor

(747) A low, flat plain, 3 to 5 miles wide, borders the sandy shore between Ke‘ehi Lagoon and Kalaeloa. The area includes Pearl Harbor and several airfields. West of Pearl Harbor, most of the area is developed with residential communities.

(748) **Pearl Harbor**, 9.5 miles west-northwest of Diamond Head, is a **Defensive Sea Area** established by Executive Order No. 8143 of May 26, 1939. The order says in part:

(749) “The area of water in Pearl Harbor, Island of O‘ahu, Territory of Hawaii, lying between extreme high-water mark and the sea, and in and about the entrance channel to said harbor, within an area bounded by the extreme high-water mark, a line bearing south from the southwest corner of the Puuloa Naval Reservation, a line bearing south from Ahua Point, and a line bearing west from a point 3 miles due south from Ahua Point, has been established as a defensive sea area for purposes of national defense, and no persons (other than persons on public vessels of the United States) are permitted to enter this defensive sea area, and no vessels or other craft (other than public vessels of the United States) are permitted to navigate in this area, except by authority of the Secretary of the Navy.”

(750) Permission to enter Pearl Harbor must be obtained in advance from Commander, Navy Region Hawaii 96860.

(751)

Pilotage, Pearl Harbor

(752) All vessels, except commissioned ships of the U.S. Navy, U.S. Coast Guard and NOAA, are required to take a pilot when entering or departing Pearl Harbor. Pilots meet vessels at Approach Point PAPA HOTEL (21°16’06"N., 157°56’23"W.), about 2 miles southeast of the entrance buoys. All vessels destined for Pearl Harbor must pass through this point, which is marked by a virtual automatic identification system (V-AIS) navigational aid.

(753) Pearl Harbor Control maintains a 24-hour guard on VHF-FM channel 69. It is requested that vessels guard VHF-FM channel 69, 1 hour before entrance, and continuously thereafter unless guard for this circuitry is arranged after arrival. The voice call of Pearl Harbor Port Control is “Pearl Harbor Control”; ships use own ship’s name as voice call.

(754) The fan-shaped harbor has an entrance width of 400 yards and a greatest inland extent of 5 miles. The entrance channel is marked by lights, a lighted range, lighted and unlighted buoys. The main basin is divided by two peninsulas and an island into four smaller basins known as **West Loch**, **Middle Loch**, **East Loch** and **Southeast Loch**. Tidal currents are generally weak. A dangerous west set may be experienced in the vicinity of the entrance to Pearl Harbor Channel.

(755)

Anchorages

(756) With the exception of a few special/small-craft anchorages, anchorage is forbidden within Pearl Harbor. In an emergency, if a vessel finds it necessary to anchor in Pearl Harbor, caution must be exercised to avoid cable and pipeline areas.

(757) **Special anchorages** are on the east side of the Pearl Harbor Entrance Channel near Kumumau Point, on the west side of the channel in the lagoon south of Iroquois Point and in ‘Aiea Bay on the east side of East Loch—see **33 CFR 110.1** and **110.129b**, chapter 2, for limits and regulations.

(758)

Kalaeloa

(759) **Kalaeloa**, 17 miles west of Diamond Head, is the southwest extremity of O‘ahu. The low land back of the rounding point extends 3 miles north to the foothills of the Waianae Mountains; the hill slopes are steep and partly brush covered but the bare soil that shows in places gives them a reddish appearance.

(760) **Barbers Point Light** (21°17'47"N., 158°06'22"W.), 85 feet above the water, is shown from a 75-foot white cylindrical concrete tower. A reef extends 0.6 mile off the light.

(761) In 1996, Captain of the Port Honolulu amended federal **pilotage waters** in the vicinity of the offshore pipeline terminal off Kalaeloa. The area was expanded to be identical to that designated in 1995 for vessels engaged in foreign commerce and is defined by the following points:

(762) 21°17'47"N., 158°06'23"W.; thence to

(763) 21°14'49"N., 158°06'23"W.; thence to

(764) 21°14'49"N., 158°03'10"W.; thence to

(765) 21°15'26"N., 158°00'57"W.; thence to

(766) 21°18'18"N., 158°01'49"W.; thence along the shoreline to the point of beginning.

(767) All foreign trade vessels, U.S. vessels under registry and U.S. vessels engaged in coastwise trade operating within this area must be under the direction and control of a first class pilot.

(768) Two naval **danger zones** and a **restricted area** have been established between Kalaeloa and the entrance to Pearl Harbor. (See **33 CFR 334.1360**, **334.1370**, and **334.1400**, chapter 2, for limits and regulations.)

(769) Three offshore oil tanker mooring terminals and their submarine pipelines are located within a **restricted anchorage area** and **security zone** off Kalaeloa. (See **33 CFR 110.236** and **165.1407**, chapter 2, for limits and regulations.) All vessels, except for vessels with official business at the tanker terminals, should stay well south of these areas in order to avoid the unlit mooring buoys located there.

(770)

Currents

(771) There is a general west current along the coast between Honolulu and Kalaeloa. Velocities up to 0.8 knot, setting west, have been measured off the point, and greater velocities have been reported.

(772)

Barbers Point Harbor

(773) The coast has a general northwest trend between Kalaeloa and Ka‘ena Point, a distance of about 20 miles, and consists of alternating ledges of rock and stretches of white sand. Spurs of the Waianae Mountains extend to most of the points. Between the spurs and ridges are heavily wooded valleys that contrast with the rocky and bare mountains. A highway follows the coast from just north of Kalaeloa to Ka‘ena Point.

(774) Much of the shoreline is fringed with rocks and reefs, but they are mostly close to the shore. The 3-fathom curve is within 0.5 mile of the shore, and the 10-fathom curve is within 1 mile. Vessels can avoid all outlying dangers by giving the coast a berth of 1 to 1.5 miles. Other than Pōka‘ī Bay, there are no harbors or anchorages along the west coast that afford shelter in all winds.

(775) **Barbers Point Harbor** is about 2 miles northwest of Kalaeloa. A dredged channel leads northeast to a basin in the harbor. In 2021, the controlling depth was 40 feet in the entrance channel to the basin, thence 36 to 38 feet in the basin. The channel is marked by lighted buoys, lights, and a **045.9°** lighted range. A **security zone** and **safety zone** are in the harbor. (See **33 CFR 165.1** through **165.40**, **165.1407** and **165.14-1414**, chapter 2, for limits and regulations.)

(776) The basin has a 1,600-foot dock with a 30-acre paved backup area and 120 acres for cargo handling and storage. A ship repair company has an 18,000-ton drydock capable of handling vessels over 600 feet long and 94 feet wide. Vessels entering the harbor during the winter months should be aware of large swells coming from the north.

(777)

Pilotage, Barbers Point Harbor

(778) A state licensed pilot is required to enter the harbor. Pilots are available through the Hawaii Pilots Association. Mariners are requested to give 24 hours advance notice of arrival, gross tonnage, length and draft of vessel by telephone (809–537–4169) or by e-mail at dispatch@hawaiipilots.net. The 31-foot-long pilot boat IWA has a black hull with yellow superstructure and displays the word “PILOTS” in large white letters on the sides of the cabin. The pilot boat displays the International Code Flag “H” by day and shows the standard pilot lights at night, white over red. The pilot boat monitors VHF-FM channels 12 and 16 and can be reached by “BARBERS POINT PILOTS.” Additionally, vessels are requested to rig a pilot ladder 1 meter above the water on the leeward side. The pilot boarding area is 2 miles southwest of the entrance buoys.

(779) A marina harbor entrance, marked by lights, is in the northwest portion of the basin. Gasoline, diesel fuel, 267 slips, electricity, water, pump-out, marine supplies and a public boat ramp are available at the marina. In 2003, the harbormaster reported that the marina could accommodate vessels up to 150 feet in length with a draft of 13 feet.

(780) A flashing amber warning light, privately maintained and shown from a pole about 22 feet high on the south side of the harbor, is activated when there is a gas leak or the likelihood thereof. Anyone observing the light flashing should remain well clear and upwind, and sources of ignition should be secured.

(781) Barbers Point Harbor is a **customs port of entry**.

(782) **Kahe Point**, 3.5 miles north of Kalaeloa, is the seaward end of a mountain spur. A large power plant is prominent on the point. The largest stack is 485 feet high with a strobe light on top. Two short boulder groins extending from the shore protect the intake of the plant’s cooling system. The outfall is about 250 yards offshore with 9 feet of water over it.

(783) **Nānākuli**, 5.5 miles north of Kalaeloa, is a homestead area near the shore.

(784) **Pu‘u‘ohulu**, about 7 miles northwest of Kalaeloa, is a narrow rocky, barren ridge, 1.5 miles long. A large water tank is on the saddle of the south slope. The ridge is on **Mā‘ili Point**, the south of the two important projecting points of this coast, and is the most conspicuous landmark in this vicinity. The west end of the ridge is close to the shore and has an elevation of 856 feet; it is precipitous on its seaward side.

(785)

Kaneilio Point to Kepuhi Point

(786) **Lualuaei Homestead** tracts are north and northeast of Pu‘u‘ohulu. Two 1,500-foot radio towers are prominent in the valley. **Pu‘umā‘ili‘ili**, about 2 miles north of Pu‘u‘ohulu, is a narrow, rocky ridge, 723 feet high, near the shore and approximately at right angles with it.

(787) Low **Kaneilio Point**, 10 miles northwest of Kalaeloa, projects 0.2 mile from the general coastline. A fish haven consisting of old auto bodies is 1 mile south of the point. Between Puʻuʻohulu and Kaneilio Point the light-colored buildings of a limekiln 0.3 mile inland show up against a dark background. In 1999, suspected live ordnance was reported about 2 miles southwest of Kaneilio Point inside the following coordinates: 21°26'23"N., 158°12'11"W.; 21°26'23"N., 158°12'38"W.; 21°25'26"N., 158°12'38"W.; 21°25'26"N., 158°12'11"W.

(788) **Pōkaʻī Bay**, on the northwest side of Kaneilio Point, is the seaward approach to **Waiʻanae**. Shallow water extends 0.3 mile from the inner shore of the bay. The breakwater extending north from Kaneilio Point and the opposing boulder groin from the inner shore form a state water recreation area. Swim zone buoys are about midway between the breakwater and the shore. The area east of the buoys is for swimming, and the area between the buoys and the breakwater is for outrigger canoes. No person shall operate, anchor or moor any other vessel in the area between the buoys and the breakwater except in adverse weather conditions when emergency anchoring is permitted.

(789) **Waianae Boat Harbor**, 0.5 mile northwest of Kaneilio Point, is owned and operated by the State of Hawaii and is used primarily by fishing boats. The harbor is is protected on the west side by a 1,690-foot-long L-shaped breakwater, marked on its seaward end by a light, and on the northeast side at the entrance by a 220-foot-long stub breakwater. A **003.3°** lighted range marks the entrance approach. Transient berths, water and two double launching ramps are available at the harbor. Waiʻanae harbormaster has scheduled daytime hours (0745 to 1630) Tuesdays through Saturdays; phone numbers are: 808–697–7095 (business) and 808–851–1839 or 808–696–9921 (emergency or after hours); 808–594–0849 (fax).

(790)

Local magnetic disturbance

(791) Differences of 2° or more from normal variation may be expected in Pōkaʻī Bay.

(792) A deep valley extends about 4 miles inland between Puʻuʻohulu and Lahilahi Point and is the largest valley on this side of the Waianae Range. The broken ridge that makes down to Puʻupāheʻeheʻe divides the valley. **Puʻupāheʻeheʻe**, 652 feet high, is about 1 mile inland from Waiʻanae.

(793) **Lahilahi Point**, 1.7 miles northwest of Kaneilio Point, is a detached, steep ridge of dark rock, 234 feet high. This narrow, conspicuous point, projecting seaward about 0.2 mile, has the appearance of an islet from a distance and is known to local fishermen as **Black Rock**. An apartment building on the beach 250 yards north of the point and a hotel about 1.2 miles north-northeast of the point are good landmarks.

(794) **Kepuhi Point**, 13 miles northwest of Kalaeloa, is a few hundred yards from the seaward end of a bold, rocky mountain spur.

(795)

Kaʻena Point to Kahana Bay

(796) The coastal bight between Kepuhi Point and Kaʻena Point, 7 miles to the northwest, is backed mostly by ridges of the Waianae Mountains. Midway along the bight is a sand beach in front of a small valley; small boats can make beach landings when the sea is smooth and can anchor in depths of 4 to 6 fathoms about 0.2 mile offshore.

(797) **Kaʻena Point**, the northwest extremity of Oʻahu, is low and rocky and is only a few hundred yards from the foot of Kuaokala Ridge. A light is on the lower west end of the Point. Off the end of the point are several low, jagged rocks, over which the sea washes, and breakers extend about 0.4 mile from shore. The 10-fathom curve is 0.8 mile west of the point.

(798) The **danger zone** of a firing area covers a wide sector north of Kaʻena Point. (See **33 CFR 334.1350**, chapter 2, for limits and regulations.)

(799)

Currents

(800) A continuous northwest current and moderate tide rips are reported off Kaʻena Point. Observations over a 24-hour period at a location 0.8 mile south of Kaʻena Point show a northwest current averaging 0.8 knot; the greatest velocity measured was 1 knot.

(801) The north coast of Oʻahu trends east for 9 miles from Kaʻena Point to Waialua, thence northeast for another 11 miles to Kahuku Point; rock ledges alternate with stretches of white sand beach. The broad valley back of Waialua spreads to the coastal plain, which narrows as it approaches Kaʻena and Kahuku Points; most of the valley is cultivated in sugarcane. From Kaʻena Point to Waialua the mountains have a rugged appearance; from Waialua to Kahuku Point the hills resemble a continuous plateau. A hard-surface highway parallels the coast.

(802) Most of the north coast is fringed with reefs as much as 0.5 mile in width, but all dangers can be avoided by staying at least 1 mile from shore. Haleiwa Small-Boat Harbor is the only harbor along the north coast.

(803) **Kuaokala Ridge**, back of Kaʻena Point, is high, and its seaward end breaks off rather abruptly. White domes and telemetry antennas are conspicuous along the ridge. The scattered beach houses between Kaʻena Point and Waialua are backed by cultivated fields that extend to the mountains.

(804) **Kaiaka Bay** is a small coastal dent 9 miles east of Kaʻena Point; **Kiikii Stream** and **Paukauila Stream** empty into the head of the bay. Prominent from offshore is the mill stack in **Waialua**, 0.5 mile back of the beach. A depth of 3 feet can be carried halfway into the bay by passing between the **Kaiaka Point** reefs, on the northeast side, and the reef in midentrance.

(805) **Waialua Bay**, 1 mile northeast of Kaiaka Bay, is a small dent at the bend in the middle of the north coast. The bay shores are low, black rock, with sand patches in the bights and fringed by large algaroba trees. The low land back of the beach slopes gently to a tableland with mountain ranges on either side. **Haleʻiwa** is at the head of Waialua Bay.

(806) **Haleiwa Small-Boat Harbor**, at the head of Waialua Bay is protected by a breakwater on the west at the entrance and a breakwater further inside; both are marked by lights on the outer ends. The approach to the harbor is marked by lighted and unlighted buoys, lights and a **128.9°** lighted range. The entrance channel leads southwest and south between two breakwaters to a basin inside. The harbor has 64 slips and 24 moorings available for vessels up to 50 feet, boat ramps and water at most of the slips. The harbor can be entered in all but the most violent storms, at which time good anchorage can be found about 1 mile offshore in 20 to 30 fathoms. Night entry is not recommended without local knowledge. The harbor office can be reached at 808–637–8246.

(807) **Anahulu River** empties into the southwest corner of Waialua Bay. River navigation is restricted by the fixed bridge over the mouth; the clearance is 8 feet for a channel width of 14 feet.

(808) The narrow coastal plain between Waialua and Kahuku Point is backed by a vegetation-covered tableland with steep seaward slopes that are cut by deep gorges.

(809) **Waimea Bay**, 5 miles northeast of Waialua, is a small coastal dent at the mouth of the **Waimea River** gorge. The highway bridge over the river can be seen from seaward. A yellow-brown tower and scattered buildings are visible on the north side of the bay.

(810) **Wānanapaoa Islands** are two ragged masses of black rock off the south point of Waimea Bay; deep water is close to the seaward side. The submerged rocks near the point on the northeast side of the bay are usually marked by breakers.

(811) Waimea Bay affords little shelter, and beach landings can be made only in very smooth weather. There is a wide beach at the head of the bay, but both sides of the entrance are fringed with rocky ledges. Indifferent anchorage is available in depths of 9 or 10 fathoms, sand bottom, 0.3 mile west of the river mouth.

(812) **Waialeʻe** is 4 miles northeast of Waimea Bay. A group of large conspicuous buildings is at the foot of a bluff a few hundred yards inland. Also prominent are two large dish antennas atop a ridge about 1.3 miles southwest of Waialeʻe and a windmill with a strobe light about 2.0 miles east-southeast. Low **Kuilima Point**, 5.4 miles northeast of Waimea Bay, has a resort hotel complex on the point.

(813) **Kahuku Point**, the north extremity of Oʻahu, is low and sandy; the dunes are partly overgrown with vegetation, and there are few scattered trees. The coast rounds gradually at Kahuku Point, and there are several small black rocks close to shore. The land rises gently from the low bluffs near the point to the mountains of Koʻolau Range. The 10-fathom curve draws in to within 0.4 mile of the point. The breakers afford sufficient daytime warning of coastal dangers, but the low, unmarked point is difficult to locate at night. Currents off Kahuku Point set west or northwest but are sometimes negligible; tide rips have been reported 1 mile east of the point.

(814) The coast between Kahuku Point and Makapuʻu Point, 30 miles to the southeast, is known as **Windward Oʻahu** and is more productive than other parts of the island because of its greater rainfall. Paralleling this coast is the Koʻolau Range from which several spurs reach shore between Lāʻie Bay and Kāneʻohe Bay. The shore is low and sandy with patches of black rock outcrop, particularly at the headlands and most of the points. Between the shore and Koʻolau Range is a narrow strip of cultivated land; this coastal area widens between Kāneʻohe Bay and Waimānalo and is one of the principal agricultural areas of Oʻahu. There are good highways along the entire coast.

(815) Nearly all of this northeast coast is fringed by coral reefs with little or no water over them at low tide, and the area is exposed throughout most of the year to the sea and swell built up by the northeast trades. The numerous small openings in the reefs can be navigated by local craft; wider openings lead to Kahana, Kāneʻohe, Kailua and Waimānalo Bays. The 10-fathom curve is no farther than 1.6 miles from shore except in Kāneʻohe Bay.

(816) **Kahuku**, 3 miles southeast of Kahuku Point, is marked by a mill stack which is a half mile from the beach.

(817) Low **Makahoa Point** projects 0.2 mile from the general coast 3.5 miles southeast of Kahuku Point. **Kīhewamoku**, an islet 24 feet high, is 0.5 mile off Makahoa Point; 0.2 mile north of the islet is a rock that covers 4 feet and sometimes breaks.

(818) Wooded **Kalani Point**, 4 miles southeast of Kahuku Point, is on the north side of Lāʻie Bay. **Mokuauia**, an island 0.2 mile long and 23 feet high, is 0.2 mile off the point; between the island and the point are depths of only 1 or 2 feet. A rock 0.2 mile seaward of the island is covered 10 feet.

(819) **Pulemoku**, a rock 30 feet high, is 0.4 mile southeast of Mokuauia. A 2-foot-high rock is close to the south side of Pulemoku.

(820) **Lāʻie Bay** has outer depths of 3 to 7 fathoms, and a narrow reef opening affords access to shelter and landing for local small craft. **Lāʻie**, at the head of the bay, has a Mormon Temple, a large, flat-roofed building that is visible from seaward.

(821) **Laniloa**, a narrow peninsula with white sandy beaches on either side and covered with homes, is on the south side of Lāʻie Bay. Off the outer end of Laniloa are two small rocky islets; **Kukuihoʻolua**, 30 feet high, and **Mokuālai**, 33 feet high.

(822) **Kaipapaʻu Hill**, about 700 feet high, is 2 miles south of Laniloa and 0.5 mile inland; the hill has a pyramidal, grass-covered top.

(823) **Hauʻula** is a beach settlement 2.5 miles south of Laniloa. **Punaluʻu**, 4 miles south of Laniloa, is a beach

settlement with a prominent apartment building near the beach.

(824) **Kahana Bay**, 11 miles southeast of Kahuku Point, has an entrance width of 1 mile between **Makali'i Point** on the north and **Māhie Point** on the southeast; inland extent is 0.6 mile. Local small craft make the narrow passage through the reef and find limited shelter behind it. A breakwater protects a launching ramp on the west side of the bay. The breakers on both sides of the bay are the only guides for entering.

(825)

Kualoa Point to He'eia Kea Small-Boat Harbor

(826) **Kualoa Point**, 15 miles southeast of Kahuku Point, is on the northwest side of the entrance to Kāne'ohe Bay. **Mokoli'i Island**, 206 feet high, is a conspicuous conical islet 0.3 mile seaward of Kualoa Point.

(827) **Kāne'ohe Bay** has an entrance width of 4.6 miles between Kualoa Point on the northwest and Mōkapu Peninsula on the southeast; greatest inland extent is 3 miles. The bay has low sand and coral beaches along which are many of the old diked fishponds, some which are still in use. Islands, coral reefs and sand shoals are numerous throughout the bay. Mokoli'i Island, **Kapapa Island**, about 2.8 miles southeast of Kualoa Point and in the center of Kāne'ohe Bay, and **Kekepa Island**, mushroom-shaped and 4.4 miles southeast of Kualoa Point, are easy to identify from seaward. These islands make for poor landfall. **Moku o Loe Island (Coconut Island)**, in the southwest part of the bay, is the largest of the islands with reports of significant uncharted coral shoaling on all sides, the majority being found south of the island.

(828) The University of Hawaii operates a launch that ferries university personnel to and from the Hawaii Institute of Marine Biology on the island of Moku o Loe. The launch runs from the island to a nearby pier on the southwest side of Kāne'ohe Bay.

(829) Kāne'ohe Bay is a **Naval Defensive Sea Area** established by Executive Order No. 8681 of February 14, 1941. The order says in part:

(830) "The territorial waters within Kāne'ohe Bay between extreme high-water mark and the sea and in and about the entrance channel within a line extending 3 miles northeast from Ka'o'io Point, a line extending 4 miles northeast from Kapaho Point, and a line joining the seaward extremities of the two above-described bearing lines, are hereby established and reserved as a naval defensive sea area for purposes of national defense, such area to be known as Kāne'ohe Bay Naval Defensive Sea Area; and the airspace over the said territorial waters is hereby set apart and reserved as a naval airspace reservation for purposes of national defense, such reservation to be known as Kāne'ohe Bay Naval Airspace Reservation."

(831) "At no time shall any person, other than persons on public vessels of the United States, enter Kāne'ohe Bay Naval Defensive Sea Area, nor shall any vessel or other craft, other than public vessels of the United States, be navigated into said area unless authorized by the Secretary of the Navy."

(832) "At no time shall any aircraft, other than public aircraft of the United States, be navigated into Kāne'ohe Bay Naval Airspace Reservation, unless authorized by the Secretary of the Navy."

(833) **Note:** Naval control over entry into Kāne'ohe Bay Naval Defensive Sea Area has been suspended, except for a 500-yard **prohibited area** around the perimeter of Mōkapu Peninsula where only authorized vessels may enter. Naval control may, however, be reinstated without notice at any time.

(834) **Kaneohe Marine Corps Air Station** is on Mōkapu Peninsula. Mariners are advised that field operations are conducted throughout the year and divers, rafts and aircraft may be operating in the bay. Additionally, Military Amphibious/Search and Rescue operations may be underway at any time, day or night, in the vicinity of 21°26'06"N., 157°46'11"W. and 21°26'45"N., 157°46'55"W. Surface support craft will be marked with appropriate day and night time markings/signals and can be reached via MARBAND 82A for any reason. Request that vessels using sonar contact Water Front Operations via MARBAND 82A or 808–257–2941 to avoid injury to divers that may be in the area. Caution should be exercised when operating near the air station runway.

(835)

COLREGS Demarcation Lines

(836) The lines established for Kāne'ohe Bay are described in **33 CFR 80.1430**, chapter 2.

(837) Two channels lead through the reefs to the southeast end of the bay. The deeper approach from the north end of the bay is through a dredged channel entered about 2 miles east of Kualoa Point. The channel is marked by lights, buoys, daybeacons and a **227°** and a **349°30'** lighted range with the front range tower common to both. Sampan Channel (Kaneohe Passage) to the southeast is entered about 0.8 mile northwest of the north extremity of Mōkapu Peninsula. This channel intersects the deeper channel about 0.9 mile west of Mōkapu Peninsula and is marked by a **217°15'** lighted range, daybeacons and lighted and unlighted buoys.

(838) **Crashboat Channel**, about 0.4 mile west of Mōkapu Peninsula, has been dredged by the navy for search and rescue vessels. This channel is within the prohibited area and should not be used by pleasure craft as it may hamper aid to a needy vessel or downed pilot. The navy monitors VHF-FM channels 16 and 82A at its search and rescue facility on the southwest side of Mōkapu Peninsula; telephone number 808–257–2941.

(839)

Anchorages

(840) **Special anchorages** are in the southeast and west parts of Kāne'ohe Bay—see **33 CFR 110.1** and **110.129b**, chapter 2, for limits and regulations. Anchoring in Kāne'ohe Bay outside of these areas is limited to 72

hours. To obtain authorization for longer durations, contact the Harbor Master at 808–233–3603.

(841)

Dangers

(842) Mariners are advised to exercise caution as the channels and other dredged areas in the bay have not been dragged or swept. Numerous coral heads are along the sides of the channels, especially in the vicinity of Moku o Loe Island. Many of these are marked by privately maintained pipes extending 3 to 5 feet above the water.

(843) The bay is by far the best locality for the operation of small craft on O'ahu. Many permits are being obtained by property owners to dredge small-boat basins and channels through the reefs. Numerous docks, including the Kaneohe Yacht Club, are in the bay. In addition, many uncharted private floats and buoys, used to mark race courses, moorings and fish and lobster pots are throughout the bay.

(844) **A 015°–195° measured course**, 3,038 feet long, is southeast of Moku o Loe Island in Kāne'ohe Bay. The range markers are 30 by 40-inch white daymarks with orange borders set on coral reefs about 0.4 mile off the southeast shore of the bay.

(845) **Kāne'ohe** near the southeast end of the bay is the principal community in the area. Radio towers are prominent at **He'eia**, one mile northwest of Kāne'ohe.

(846) **He'eia Kea Small-Boat Harbor**, just north of Kealohi Point about 0.9 mile north of He'eia, is open to the public. The fuel pier has a reported depth of 10 feet alongside. Gasoline, diesel fuel, berths, water, ice and launching ramps are available. Anchorage in the harbor is by permit only. The Harbor Master can be contacted at 808–233–3603.

(847)

Mākapu Peninsula

(848) **Mōkapu Peninsula**, 20 miles southeast of Kahuku Point, has a greatest elevation of 683 feet. **Pyramid Rock**, on the northwest point of the peninsula, is black and has a sharp summit. **Pyramid Rock Light** (21°27'44"N., 157°45'49"W.), 101 feet above the water, is shown from a white square concrete house with black diagonal stripes. **Puu Hawaiiloa** is a 337-foot hill near the center of the peninsula. A red and white skeleton tower and a nearby aerobeacon atop the hill are the most prominent navigation aids on the peninsula.

(849)

Danger zone

(850) A weapons training range **danger zone** extends north-northeast from Mōkapu Point. (See **33 CFR 334.1380**, chapter 2, for limits and regulations.)

(851) **Ulupa'u Crater**, part of an old crater rim, is a rocky headland at the northeast end of Mōkapu Peninsula. **Mokumanu Islands**, two islets with vertical sides 202 feet and 132 feet high, are 0.7 mile north of the headland. The passage between the islets and the peninsula has midchannel depths of 3½ to 8½ fathoms but is not recommended for strangers. An east current is reported in the vicinity of Mokumanu Islands.

(852) The beach between Mōkapu Peninsula and Makapu'u Point, 10 miles to the southeast, is mostly low and sandy, with black rocks showing in some places. Between the beach and the cliffs of the Ko'olau Range is a narrow strip of land developed with residential communities. The cliffs are characteristic of Ko'olau Range from behind Kāne'ohe Bay to rugged Makapu'u Head.

(853) **Mōkōlea Rock** is about 1 mile off the southeast side of Mōkapu Peninsula; the black rock is 20 feet high, has a submerged edge that extends 0.15 mile west and has depths of 6 to 8 fathoms around it.

(854) **Kailua Bay**, south of Mōkapu Peninsula, is an open bight that affords no shelter from the trades. The north part of the bay is free of the usual fringing reefs, and there is a sand beach at the head of the bay.

(855) **Alāla Point**, on the south side of Kailua Bay, is a low bluff with a 25-foot white stone monument that resembles a lighthouse. A public launching ramp is on the west side of the point.

(856) **Popoi'a Island** is a small, flat, low-lying island 0.2 mile north of Alāla Point.

(857) **Mokulua Islands**, 0.7 mile from shore and midway between Mōkapu Peninsula and Makapu'u Head, are steep, rocky, grass covered and locally known as **Twin Peaks**. Elevations are 206 feet for the north islet and 182 feet for the south islet. On the shore side of the islets is an extensive reef; between the reef and the shore is a small-boat passage that leads to private landings.

(858)

Wailea Point to Kāohikaipu Island

(859) **Wailea Point**, 5 miles northwest of Makapu'u Head, is the northwest point of Waimānalo Bay. An inactive airfield occupies a large area south of the point.

(860) **Waimānalo Bay**, between Wailea Point and Makapu'u Head, affords all-weather shelter for small craft behind the barrier reefs that parallel much of the bay's shore. A 2-mile stretch off midbay has no fringing coral reef; in its south part, the reef gets closer to shore and disappears near Makapu'u Head. Depths of 10 feet can be carried into the bay except during strong trades when the entrance is closed by breakers. **Waimānalo** is on the coastal highway that skirts the head of the bay.

(861) **Mānana Island**, 361 feet high, is 1 mile north-northwest of Makapuu Point Light. The island is part of an old crater and has a lighter shade of rock than any other in the vicinity. The sides are bluff except on the west where there is a short sloping point. The water is deep on the seaward side of Mānana Island, and there are depths of 4 fathoms between the island and the mainland; the 4-fathom passage is not recommended for strangers.

(862) **Kāohikaipu Island**, 80 feet high, is a flat, black mass of rock midway between Mānana Island and Makapu'u Head. A double rock, 10 feet high, is 200 yards northeast of Kāohikaipu Island and a small black

(874)

METEOROLOGICAL TABLE – COASTAL AREA OFF BARKING SANDS, HI
Between 22°N to 24°N and 159°W to 162°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	0.6	0.4	0.6	0.2	0.1	0.3	0.2	0.1	0.0	0.2	0.8	0.7	0.3
Wave Height > 9 feet [1]	3.0	6.2	5.0	5.3	1.8	1.5	2.9	1.4	0.9	1.7	4.5	7.7	3.4
Visibility < 2 nautical miles [1]	0.7	0.4	0.3	0.3	0.2	0.1	0.1	0.2	0.5	0.4	0.4	0.6	0.3
Precipitation [1]	3.8	3.5	4.3	3.9	2.4	1.8	2.1	3.0	2.0	3.1	4.6	5.3	3.3
Temperature > 69° F	84.1	77.0	80.4	88.0	96.1	98.5	99.8	99.9	99.5	99.0	98.3	93.3	93.0
Mean Temperature (°F)	73.4	72.7	73.0	73.7	75.2	76.9	77.9	78.8	79.1	78.0	76.6	74.5	75.9
Temperature < 33° F [1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean RH (%)	78	78	78	78	79	80	79	79	78	77	78	78	78
Overcast or Obscured [1]	11.3	13.9	13.5	12.4	8.7	5.1	4.6	4.7	3.6	8.7	11.9	14.7	9.3
Mean Cloud Cover (8ths)	3.9	4.2	4.3	4.4	4.2	3.9	4.0	4.0	3.7	3.9	4.1	4.3	4.1
Mean SLP (mbs)	1015	1016	1018	1018	1018	1018	1017	1017	1016	1016	1016	1016	1017
Ext. Max. SLP (mbs)	1028	1031	1031	1032	1030	1030	1027	1026	1030	1026	1032	1029	1032
Ext. Min. SLP (mbs)	997	999	998	1000	1007	1002	1004	1002	1002	1001	1002	995	995
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning [1]	0.6	0.3	0.3	0.5	0.3	0.1	0.3	0.5	0.3	0.5	0.7	0.7	0.4

[1] Percentage Frequency

rock, barely above water, is about the same distance southwest of the island. There are depths of 5 fathoms between Mānana and Kāohikaipu Islands, but passage is not recommended for strangers because reefs make off from both islands. Depths are 4 to 6 fathoms in the bight between Kaohikaipu Island and Makapu'u Head; passage is not recommended.

(863) About 1.2 miles northwest of Makapu'u Point is a privately operated ocean research facility. An L-shaped pier, protected by a breakwater, extends 700 feet into the bay. In 2000, the basin and channel leading to the facility had a reported depth of 12 feet. The channel and basin are privately marked by daybeacons. A **restricted area** of the Makai Undersea Test Range extends about 2.5 miles offshore. (See **33 CFR 334.1410**, chapter 2, for limits and regulations.)

(864)

Kaua'i Channel

(865) **Kaua'i Channel**, northwest of O'ahu, is wide, deep and clear. During the trades the current usually sets west across the channel and divides at Kaua'i, part following the north side of the island and the other part following the south side. Strong south or southwest winds cause the current to set in the opposite direction to that produced by the trades.

(866)

Kaua'i

(867) **Kaua'i**, 63 miles northwest across Kaua'i Channel from O'ahu, has an area of 555 square statute miles and is fourth largest of the eight major islands. Kaua'i measures 29 nautical miles east-west by 23 miles north-south and slopes from centrally located **Kawaikini**, a 5,170-foot peak. **Lihue**, the seat of Kauai County, is 2 miles inland from the east-coast port of Nāwiliwili.

(868) The mountains on the west and north sides of Kaua'i descend in steep, jagged ridges; the gentle slopes on the east and south sides are cut by numerous gulches. The peaks are nearly always cloud covered, making them difficult to see from any great distance. Dome-shaped **Haupu**, 2,290 feet high, is prominent in the southeast part of the island. The entire northwest coast is backed by high bluffs; the rest of the coast is mostly low and rocky with some scattered sand beaches. A low coastal plain extends west from the town of Waimea. The few outlying dangers can be avoided by giving the coast a berth of 2 miles.

(869)

Harbors and ports

(870) Nāwiliwili, on the east coast, and Port Allen, on the south coast, are the only commercial harbors on Kaua'i and are the only places that afford shelter in almost all weather.

(871) Small craft planning to visit Kaua'i should carry two good holding anchors, because mooring space is scarce and there are few well-protected anchorages. Advance arrangements with the Kaua'i District Manager, Harbors Division of the Hawaii Department of Transportation, are advised.

(872)

Currents

(873) The oceanic currents in the vicinity of Kaua'i generally follow the winds. The available local information relative to currents is given in the discussions of the various localities.

(875)

Weather, Kaua'i

(876) The trade winds divide on the east side of Kaua'i, one part follows the north coast and one part the south coast, and unite again some distance west of the island. On the west side, between Mānā Point and Mākaha Point,

(885)

calm or light variable airs prevail. A moderate southwest wind is sometimes felt at Waimea Bay, while a strong east wind is blowing about 2 miles (4 km) offshore. Along the north and south shores the early morning trade wind is usually light until about 0900 and again decreases in strength about 1600. Occasionally kona winds, starting in the southeast, displace the normal trades; this condition occurs more often during the winter.

(877) The east and north, or windward, sides of the island are noted for their heavy rainfall, which reaches a maximum yearly average of more than 400 inches (10,160 mm) on 5,080-foot-high (1,550 m) **Wai'ale'ale**. The lower slopes have much less rain, and along the south side the fall seldom exceeds 20 inches. The winter, from December to March, produces the strongest winds, which sometimes reach gale force and are accompanied by more rain than is usual at other times of the year. Precipitation averages over 42 inches (1,067 mm) at the Lihue airport and has ranged from 74.4 inches (1,890 mm) in 1982 to 16.4 inches (417 mm) the very next year. Precipitation falls, on average, 275 days each year. December is the wettest month and June, the driest.

(878) The National Weather Service office located at the Lihue Airport has an average annual temperature of 75.6°F (24.2°C). The average maximum is 81.1°F (27.3°C) while the average minimum is 69.7°F (20.9°C). Annual extremes are 90°F (32.2°C) recorded in August 1981, September 1993 and 1995, and October 1957, and 50°F (10°C) recorded in January 1969. August is the warmest month with an average temperature of 79.3°F (26.3°C) while January and February each have an average temperature of 71.6°F (22°C).

(879)

Supplies and repairs

(880) Food supplies are obtainable at the various towns on the island, particularly at Lihue, the county seat. Marine supplies are limited to small-craft requirements and occasionally must be ordered from Honolulu. Fuel and water are available at Nāwiliwili and Port Allen; limited bunker C oil is available at Port Allen. The island has no repair facilities for medium or large vessels, but minor repairs can be made at Nāwiliwili and Port Allen.

(881)

Communications

(882) Port Allen and Nāwiliwili are ports for a few interisland barges and transpacific vessels. Interisland passenger traffic is by air. Telephone communication is available to the other islands and to the mainland. A good highway skirts the island except on the northwest side.

(883)

Nāwiliwili Bay

(884) **Nāwiliwili Bay**, on the southeast side of Kaua'i, has an entrance width of 0.8 mile between Carter and Ninini Points and an inland extent of about 1 mile. **Nāwiliwili**,

on the north side of the bay, is one of the two commercial deepwater ports on Kaua‘i and is protected by a breakwater, marked at the end by a light, extending northeast from Carter Point, and by a jetty in the inner harbor. Southeast winds produce some surge, but the harbor is otherwise secure.

(886)

Prominent features

(887) The shore consists of rocky bluffs, except at the mouth of Huleia Stream and in the vicinity of Nāwiliwili. The jagged, mountainous coast extending southwest from the bay is in marked contrast with the lowlands of Huleia Stream, on the southwest side of the bay, and affords a means of fixing the entrance from well offshore. A water tank on the wharf and a large tan storage warehouse on the hill overlooking the wharf are conspicuous.

(888) **Ninini Point**, on the north side of the entrance, is low, flat and rocky and is backed by land planted in cane. A rocky ledge with a depth of 12 feet at the outer end extends about 100 yards south of the point. **Nawiliwili Harbor Light** (21°57'18"N., 159°20'09"W.), 110 feet above the water, is shown from a 73-foot buff-colored cylindrical concrete tower on the point. The loom of the light is frequently seen by vessels 40 miles away. **Lihue Airport** is along the coast, north of the light.

(889) **Kukii Point**, 0.7 mile west of Ninini Point and the north entrance point of the inner harbor, is a high bluff with a low, rocky shelf at the base. There is a light on the point.

(890) **Carter Point**, on the south side of the entrance to Nāwiliwili Bay, is rocky and rises rapidly to **Kalanipuu**; the hill is marked by an aviation obstruction light 799 feet high. The mountain spur that extends inland rises to Haupu, the most prominent feature of southeast Kaua‘i.

(891) **Kawai Point**, 0.5 mile south of Carter Point, is a bold rocky headland, 525 feet high, very irregular and jagged in appearance.

(892)

COLREGS Demarcation Lines

(893) The lines established for Nawiliwili Harbor are described in **33 CFR 80.1450**, chapter 2.

(894)

Channels

(895) A **federal project** provides for an entrance channel that leads between the outer end of the breakwater and Kukii Point, thence turns southwest before entering the harbor basin. The federal project depths are 40 feet in the entrance channel and 35 feet in the harbor basin. The entrance channel is marked by lights, buoys and a lighted range.

(896)

Anchorage

(897) Anchorage in the vicinity of Nāwiliwili Bay, outside the breakwater, is not recommended. Commercial vessels are not allowed to anchor within the harbor basin, except by permission from the harbormaster. Swinging room is limited. An anchorage area for small boats is within the mouth of **Huleia Stream**, adjacent to the small boat harbor basin.

(898) A **special anchorage** is north of the Nawiliwili Small-Boat Harbor—see **33 CFR 110.1** and **110.129a**, chapter 2, for limits and regulations.

(899)

Regulated navigation area

(900) A Safety Zone is in Nawiliwili Harbor, north of the small-boat harbor. (See **33 CFR 165.1** through **165.40** and **165.14-1414**, chapter 2, for limits and regulations.)

(901)

Caution

(902) Generally, the current offshore of Ninini Point is from north to south. However, deep-draft vessels have reported a northerly set as they get closer to the point, while on the range line. The transit of the entrance into Nawiliwili Harbor is difficult for large vessels in all but calm weather. The turn around the outer breakwater, then immediately turning in the opposite direction around the inner jetty, is made difficult by the combined effects of the winds and seas. Vessels must contend with large quartering swells and brisk tradewinds on the stern while approaching the outer breakwater. While turning around the inner jetty into the main basin, the fresh tradewinds generally are on the beam. Local pilots require an assist tug to escort all medium- to large-size vessels inbound and outbound from Nāwiliwili. Vessels berthing at pier 3 are advised to consider laying out an anchor to assist in undocking during moderate to heavy tradewinds weather conditions.

(903)

Pilotage, Nāwiliwili

(904) Pilotage is compulsory for all foreign vessels and for U.S. vessels under register in the foreign trade; it is optional for coastwise vessels who have on board a pilot licensed by the federal government.

(905) Pilots are available through the Hawaii Pilots Association. Mariners are requested to give 24 hours advance notice of arrival, gross tonnage, length and draft of vessel by telephone (808–537–4169) or by e-mail at dispatch@hawaiipilots.net. The 31-foot-long pilot boat NININI has a black hull with yellow superstructure and displays the word “PILOTS” in large white letters on the sides of the cabin. The pilot boat displays the International Code Flag “H” by day and shows the standard pilot lights at night, white over red. The pilot boat monitors VHF-FM channels 12 and 16 and can be reached by “NAWILIWILI PILOTS.” Additionally, vessels are requested to rig a pilot ladder 1 meter above the water on the leeward side. The pilot boarding area is 1.5 miles east-southeast of Ninini Point Light. The boarding area is generally very rough, open sea conditions. Vessel masters are advised that boarding a pilot in these conditions may take some time. They should not allow their vessel to stand in towards shore west of Ninini Point until a local pilot is on the bridge.

(906)

Towage

(907) Two 4,400-hp tugs are available for hire based in Nawiliwili Harbor. Local pilots advise which combination of tugs is necessary for safe transit of ships.

(908)

Quarantine, customs, immigration and agricultural quarantine

(909) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(910) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.) A private hospital is at Lihue.

(911) Nāwiliwili is a **customs port of entry.**

(912)

Harbor regulations

(913) Harbor regulations are established by the Harbors Division of the Hawaii Department of Transportation and enforced by the harbormaster.

(914) The harbor has a **security zone** when the fuel barge is in port, generally each Friday to Saturday. (See **33 CFR 165.1** through **165.40**, chapter 2, for regulations.)

(915) The **speed limit** in the harbor is 5 mph.

(916)

Wharves

(917) The **State of Hawaii, Nawiliwili Piers 1 and 2** (21°57'15"N., 159°21'18"W.): 1,285 feet of berthing space with a depth of 35 feet alongside and deck height of 8.8 feet; receipt and shipment of conventional and containerized general cargo; receipt of petroleum products, cement and bulk fertilizer; receipt of cruise ships; owned and operated by the State of Hawaii.

(918) The **State of Hawaii, Nawiliwili Pier 3** (21°57'07"N., 159°21'31"W.): 627 feet of berthing space with a depth of 35 feet alongside and a deck height of 8 feet; receipt and shipment of conventional and containerized general cargo and automobiles; receipt of liquefied petroleum gas, lumber and dry bulk fertilizer; receipt of occasional cruise ships; owned and operated by the State of Hawaii.

(919)

Supplies

(920) Gasoline, kerosene, fuel oil and diesel fuel are available by tank truck, and water is piped to the pier. Some provisions and supplies are available at Lihue. Marine supplies are limited to items for small craft.

(921)

Repairs

(922) There are no facilities available at Nāwiliwili for making major repairs or for drydocking large, deep-draft vessels. Several machine, electrical and welding concerns off the waterfront in Nāwiliwili and in Honolulu are available for making above-waterline repairs to vessels berthed at the port.

(923) **Nawiliwili Small-Boat Harbor** is on the southwest side of Nawiliwili Harbor. Two jetties protect the harbor and are marked by lights on the outer ends at the entrance. Private lights mark the channel inside the harbor. The harbor has three piers, 85 berths, a launching ramp on the north side of the harbor and a pump-out station.

(924)

Kawelikoa Point to Koheo Point

(925) **Kawelikoa Point**, 4 miles southwest of Nāwiliwili Bay, is a dark, rocky headland 691 feet high. The point is at the seaward end of a ridge that extends north to a 2,297-foot-high peak of Haupu.

(926) From about 1.5 miles southwest of Kawelikoa Point to Hanapēpē Bay, the coast is a series of low bluffs and beaches; the back country is mostly under cultivation, and the cane fields extend well up the slopes in some places.

(927) **Makawehi Bluff**, 3.5 miles southwest of Kawelikoa Point, stands on the east side of **Shipwreck Beach**. The beach extends for 0.25 mile and fronts a conspicuous hotel with distinctive green roofs.

(928) **Makahuena Point**, 7 miles southwest of Nāwiliwili Bay, is the south extremity of Kaua'i. The low, flat point has a rocky shore with bluffs 20 to 50 feet in height. The land near the point is sandy and rolling, and there are short stretches of sand beach both northeast and west of the point. A hotel is prominent on the west side of the point. **Makahuena Point Light** (21°52'08"N., 159°26'39"W.), 80 feet above the water, is shown from a 17-foot pole with a black and white diamond-shaped daymark on the point. The bottom slopes gradually to a depth of 7 fathoms about 0.5 mile off the point. Several reefs extend about 300 yards offshore between the point and Kōloa Landing.

(929) There is a conspicuous mill stack at **Kōloa**, 2 miles inland from Makahuena Point. The stack is visible all along this coast except for the short distance where it is hidden by **Paa Cones**, which are on a long, low ridge that extends inland from the point.

(930) **Kōloa Landing**, 1.5 miles west of Makahuena Point, has a landing slip for small, flat-bottom boats and outrigger canoes. The landing slip is treacherous, and only persons familiar with the landing should attempt to land a small boat. Anchorage is available in depths of 12 fathoms, rocky bottom, about 400 yards south of the landing. A road leads inland to Kōloa.

(931) **Kuhio Park** is 0.5 mile west of Kōloa Landing and on the shore road. There are several beach houses between the landing and the park.

(932) **Kukuiula Bay**, 3 miles west of Makahuena Point, has an entrance width of 150 yards and an inland extent of 300 yards. There is a small boat harbor with ramp and moorings; considerable protection is afforded except in south winds. A wreck (21°52'54"N., 159°29'36"W.), covered 25 feet, is about 0.3 mile south of the breakwater. **Kukuiula** is a settlement at the head of the bay. About 500 yards west of Kukuiula is the **Spouting Horn**, a seawater spout that is active even in smooth weather.

(933) **Lawai Bay**, 3.5 miles west of Makahuena Point, has an entrance width of 300 yards and an inland extent of 0.2 mile; fair protection is afforded small craft except in

south winds. The side shores of the bay are low and rocky, but there is a wide sand beach at the head. A grass-topped rock, 70 feet high, stands at the upper edge of the sand on the west side of the bay.

(934) **Makaokahai Point**, 4.6 miles west of Makahuena Point, is easily recognized because of the several hills extending north from it. One particularly prominent hill, 0.5 mile inland, is 436 feet high and well rounded, has canefields on the lower slopes and is evenly capped with trees. The first low hills on the point are the walls of a water-filled crater.

(935) **Ioleau**, 1.1 miles north of Makaokahai Point, is a flat-topped 625-foot hill. A Vortac station on the hill is a good landmark.

(936) **Kalanipuao Rock**, with 2 feet of water over it, is about 0.3 mile southeast of Makaokahai Point and is marked by a buoy. Vessels should not attempt to pass north of the buoy.

(937) **Koheo Point**, 1.4 miles west of Makaokahai Point, is level and covered with vegetation. A radio tower is on the west side of the point. A radar tower (21°53'38"N., 159°33'09"W.), on the grounds of the Kauai Coffee plantation, is the most conspicuous landmark on the south shore and is visible from Makahuena Point.

(938)

Wahiawa Bay to Port Allen

(939) **Wahiawa Bay**, 2.8 miles west of Makaokahai Point and 1 mile east of Port Allen, is 170 yards wide at the entrance and indents the coast about 0.2 mile. Excellent protection is afforded small craft in all but south winds. Boats anchor in depths of 5 to 10 feet, sandy bottom. The sides of the bay are rocky. The seas usually break over the shoal 100 yards off **Weli Point** on the southeast side of the bay.

(940) **Hanapēpē Bay**, midway along the south coast of Kaua'i, is the approach to **Port Allen**. The bay is about 0.6 mile wide and about 0.4 mile long and is protected from the southeast by a breakwater marked near the end by a light. The shores are low, rocky bluffs except at the head of the bay, where there is a sandy beach.

(941)

Local magnetic disturbance

(942) Differences of as much as 2¼° from normal variation have been observed at Hanapēpē Bay.

(943)

Prominent features

(944) The east side of the bay has several oil tanks and warehouses. A light is on low, flat, and rocky **Puolo Point** on the west side of the bay. A landing strip, used by tour helicopters and occasionally small planes, is back of the point.

(945)

COLREGS Demarcation Lines

(946) The lines established for Port Allen Harbor are described in **33 CFR 80.1440**, chapter 2.

(947)

Channels

(948) A **federal project** provides for an entrance channel that leads north past the outer end of the breakwater to a harbor basin in Hanapēpē Bay with a project depth of 35 feet in the entrance channel and basin. The harbor basin is marked by lighted and unlighted buoys on the north and west sides.

(949)

Dangers

(950) A reef extends about 200 yards from the shore east of the inner end of the breakwater. In heavy weather breakers extend 350 yards offshore on the northwest side of the bay and 50 to 150 yards off the southeast side of Puolo Point.

(951)

Anchorage

(952) There is little shelter for vessels intending to anchor off Port Allen. In order for a vessel to get in the lee of the bluffs, located on the east shore, the vessel would be positioned dangerously close to shallow water near the breakwater. Fresh tradewinds generally make this area a poor anchorage. The harbor is congested with small commercial charter boats. There is little swinging room within the basin. Port Allen is known for surge conditions. At times, the surge is severe enough to discourage commercial vessels from mooring at the south face of the main pier.

(953)

Regulated navigation area

(954) A Safety Zone is in the waters of Port Allen surrounding the state pier. (See **33 CFR 165.1** through **165.40** and **165.14-1414**, chapter 2, for limits and regulations.)

(955)

Currents

(956) The prevailing current off Puolo Point is west.

(957)

Pilotage, Port Allen

(958) Pilotage is compulsory for all foreign vessels and U.S. vessels under register in the foreign trade; it is optional for coastwise vessels who have on board a pilot licensed by the federal government. The pilot boat, IWA, is a yellow 35-foot catamaran with the word PILOT in black letters on the side of the cabin. The boat displays the International Code flag "H" by day and the white and red signal lights at night. The pilot boarding area is 1.5 miles west-southwest of the harbor entrance. The pilots monitor and use VHF-FM channel 12. Mariners are advised to give at least 24 hours advance notice of arrival with overall length, gross tonnage, and draft of vessel; telephone 808–537–4169. Vessels are requested to rig a ladder no more than one meter on the lee side and to maintain a "dead slow ahead" speed, between 5 and 10 knots.

(969)

(959)

Towage

(960) Two tugs from Nawiliwili Harbor are available to service vessels entering and exiting Port Allen.

(961)

Quarantine, customs, immigration and agricultural quarantine

(962) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(963) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.) A private hospital is at Waimea.

(964) Port Allen is a **customs port of entry**.

(965)

Harbor regulations

(966) Harbor regulations are established by the Hawaii Department of Transportation, Harbors Division and enforced by the **harbormaster**.

(967) The harbor has a **security zone** when the fuel barge is in port, regularly scheduled for every Monday. (See **33 CFR 165.1** through **165.40**, chapter 2, for regulations.)

(968) The **speed limit** in the harbor is 5 mph.

(970)

Wharves

(971) The state pier in the east part of the harbor provides 600 feet of berthing space along both the north and south sides and 124 feet along the west face. In 1999–2021, depths to 25 feet were available along the north side, 33 feet on the south side and 26.6 feet on the west face; deck height, 11 feet. A transit shed with 24,000 square feet of covered storage space and open storage are available. Pipelines are on the wharf, and bulk handling and storage facilities for molasses, liquid fertilizer and petroleum products are in the port. General cargo and barge and tanker traffic are handled at the pier.

(972) Vessels are advised to drop an anchor when approaching the pier. This assists in maneuvering to a berth as well as getting away in an emergency. During and after strong winds some surge is experienced at the pier. This condition may require small and medium craft to cast off and sometimes interferes with the cargo handling of large vessels.

(973)

Supplies

(974) Gasoline, fuel oil and diesel fuel are available by tank truck, and water is piped to the wharf. Provisions are available in the principal towns on the island. Marine supplies are limited to small-craft items.

(975)

Repairs

(976) Facilities for minor repairs to vessels are available.

(977) **Port Allen Small Boat Harbor** is north of the state pier on the east side of the bay. The harbor has 3 launching ramps, 38 berths, 6 mooring buoys and a small pier.

(978)

Communications

(979) Port Allen has highway and telephone communication with other parts of the island and radiotelephone and air communication with the other islands of the group. The town is a port of call for interisland barge and transpacific vessels.

(980)

Kaumakani to Kikiaola Boat Harbor

(981) **Kaumakani** is 2 miles northwest of Puolo Point and a half mile inland. A mill stack is prominent.

(982) **Robinson Landing**, 1 mile northwest of Kaumakani, is a small-boat harbor with a dredged entrance that accommodates drafts of 2 to 4 feet. A stone wall has been built around the harbor edges, and a marine railway is available for handling small craft. This is a private landing and cannot be used without the owner's permission.

(983) **Hoanuanu Bay**, 2 miles northwest of Kaumakani, has depths of 2 to 3 fathoms and affords good protection from trade winds for small craft. The east side of the bay is rocky; the northwest side is a sand beach.

(984) A breaking area extends 0.5 mile off **Poo Point**, which is on the northwest side of Hoanuanu Bay.

(985) **Waimea Bay**, an open bight 3 miles northwest of Kaumakani, is the approach to **Waimea**, which is the place where Captain James Cook, R.N., made his first (January 1778) landing in the islands.

(986) A **naval anchorage** is off Waimea Bay. (See **33 CFR 110.1** and **110.237**, chapter 2, for limits and regulations.) Good anchorage, for other vessels, can be found in and off Waimea Bay during ordinary weather in depths of 3 to 20 fathoms, sand bottom. Small boats usually shift anchorage to Hoanuanu Bay for better protection when the trades are strong. Depths of 5 to 18 feet extend 0.3 mile from the shore of Waimea Bay. The Waimea pier, 0.3 mile northwest of the Waimea River, is a former interisland steamer landing that is used as a state recreational pier, primarily for fishing. The town has a hospital.

(987) **Waimea River**, which empties into Waimea Bay along the east side of Waimea, is navigable only for pulling boats because of the bar across the mouth; the river descends from the mountains through the deepest gorge on this part of Kaua'i. The ruins of a Russian fort are on the east side of the river's mouth; the fort was built in 1815 and abandoned in 1817.

(988) Between Waimea River and **'Ō'ōmanō Point**, 2.3 miles to the west, a reef extends 0.4 mile from shore and breaks in heavy weather. **Kikiaola Boat Harbor**, 1.6 miles west of the river, is entered over the reef and is protected by breakwaters. The end of the west breakwater is marked by a privately maintained light. The harbor has a launching ramp and loading piers. Caution should be exercised when entering or leaving the harbor due to the combined effects of the breakers and the 90° turn in the basin.

(989)

Kokole Point to Kailiu Point

(990) A low plain, about 2 miles wide, extends west from Waimea River around Kokole Point and north to Barking Sands beyond Nohili Point. The shore side of the plain has a growth of algaroba trees, behind which are occasional sand dunes.

(991) **Kekaha** is a plantation settlement on the northwest side of 'Ō'ōmanō Point and 2.5 miles from Waimea River. A mill stack is prominent.

(992) **Kokole Point**, 5 miles west-northwest of Waimea River, is low, rounding and wooded. **Kokole Light** (21°58'44"N., 159°45'22"W.), 58 feet above the water, is shown from a three-legged tower with a black and white diamond-shaped daymark on the point. The transmitting antenna of Radio Station **WWVH** (National Bureau of Standards) is about 0.7 mile northwest of Kokole Light.

(993) **Mānā Point**, about 3.5 miles north of Kokole Point, is the west extremity of the island. Along the water's edge is a strip of sand that extends 2 miles on either side of the point, but the sea breaks on a lava ledge at the edge of the sand, making the beaching of boats dangerous except when the sea is smooth. The aviation control tower at Barking Sands Pacific Missile Range Facility Airport is prominent.

(994) Current observations taken during a 24-hour period 0.5 mile off Mānā Point show a tidal current of 0.8 knot velocity at strength setting south and north along the coast. The south maximum occurs about 3 hours after low water at Honolulu, and the north maximum 3 hours after high water. Similar observations taken near the coast about 3.8 miles north-northeast of Nohili Point show a tidal current with velocities generally less than 0.5 knot. Discolored water, caused by the drainage canals and the undertow from the beach, is often noted as far as 2 miles off Mānā and Kokole Points.

(995)

Safety zone

(996) A safety zone extends northward from Mānā Point to Polihale. (See **33 CFR 165.1406**, chapter 2, for limits and regulations.)

(997)

Danger zone

(998) A danger zone is between Kokole Point and Nohili Point. (See **33 CFR 334.1390**, chapter 2, for limits and regulations.)

(999) **Nohili Point**, about 6 miles north of Kokole Point, is marked by **Nohili Dune**, 100 feet high, and the highest and southernmost of a chain of sand dunes extending along the coast for 2.5 miles to the northeast. The dunes are

known as **Barking Sands**. A road continues to Polihale. A light is on the point.

(1000) A narrow sand shoal, with depths of 7 to 10 fathoms, extends from Nohili Point to **Alapi'i Point**, 7.5 miles to the northeast. The shoal, which appears to be a succession of east-west sand ridges, is 1 to 2 miles from shore. A depth of 3 fathoms is 0.5 mile west of Alapi'i Point; from there to Kailiu Point, 7 miles farther to the northeast, the 15-fathom curve is at an average distance of 1 mile from shore. A navy aerolight and radar dome antenna are about 2.5 miles southwest of Alapi'i Point, and a conspicuous radar dome antenna is on top of a high ridge about 3 miles east-southeast of Alapi'i Point.

(1001) From Barking Sands northeast to Kailiu Point, the coast is rocky and precipitous. The section between Alapi'i and Kailiu Points consists of a series of cliffs known as **Nāpali**. These cliffs are 2,000 feet high in some places and are cut up by numerous streams, which form small waterfalls. The south part of this section is practically bare, but the north part is wooded.

(1002) **Kalalau Valley**, 2.5 miles northeast of Alapi'i Point, is the broadest and deepest valley along the northwest coast and is easily distinguished from seaward.

(1003) **Kailiu Point**, on the north coast of Kaua'i, is the seaward end of a jagged ridge that ends abruptly in a sharp peak 1,200 feet high. There is a narrow strip of lowland at the point.

(1004)

Ha'ena Point to Kepuhi Point

(1005) **Hā'ena Point**, 1.2 miles east of Kailiu Point, is low and rounding. A reef, which bares at low water, extends 0.3 mile northwest from the point. The **Haena Caves**, which cannot be seen from seaward, are 0.2 mile inland under the bold face of the mountains; the caves are near the west end of the highway that skirts the north shore of Kaua'i.

(1006) **Wainiha Bay**, 1.3 miles east of Hā'ena Point, has an entrance width of 0.5 miles between the extensive **Kepuhi Point** reef on the west and **Kolokolo Point** on the east; inland extent is 0.4 mile. The bay is an open bight that affords little protection except in kona weather. **Wainiha River** empties into the head of the bay from the most west of the deep valleys along the north coast of Kaua'i.

(1007) **Lumaha'i River**, which is unnavigable, empties into the sea on the east side of Kolokolo Point; east of the river mouth is a sandy beach with a few rocky patches.

(1008) **Makahoa Point**, 2 miles east-southeast of Hā'ena Point, is black and rocky. A half mile inland is Puu Ka Manu, a 714-foot hill.

(1009) **Hanalei Bay** has an entrance width of a mile between Makahoa Point on the west and the extensive Puu Poa Point reef on the northeast; inland extent is nearly a mile. Breaking coral reefs fringe the shores on both sides of the entrance. Seas break across the entire entrance during north or northwest gales. During the winter and spring, the entire bay is subject to high surf, but when the sea is calm good protection is afforded from the trades. Midbay anchorage is in depths of 6 fathoms, sandy bottom.

(1010) Along the sandy beach at the head of Hanalei Bay are clumps of ironwood and coconut trees and the houses of **Hanalei**. The highway is close to the shore. Three miles inland the mountains attain heights of more than 4,000 feet.

(1011) **Hanalei River**, which empties into the east side of the bay, is navigable for shallow-draft boats for a distance of 2 or 3 miles. A privately dredged channel passes close to the reef on the northeast side of the bay and leads to the river mouth. At high water, a depth of 4½ feet can be carried over the bar at the mouth and about 4 feet to the bridge 1.8 miles above the mouth. A launching ramp is on the south side of the river, 0.1 mile above the mouth. A clump of ironwood trees is prominent on the north side of the river's mouth.

(1012) Overhead power and telephone cables with a clearance of 27 feet cross Hanalei River at its mouth.

(1013) A 300-foot long concrete pier, used as a shore recreation site for swimming and fishing, is on the east side of the bay and 200 yards south of the Hanalei River. A prominent large resort complex is on the bluff on the north side of the river near the entrance.

(1014) **Waioli Stream** and **Waipa Stream** which empty into the head of Hanalei Bay, are not navigable.

(1015) **Puu Poa Point**, on the east side of Hanalei Bay, is a bluff about 50 feet high, back of which a green ridge extends inland.

(1016) From offshore the north side of Kaua'i presents a very irregular and jagged skyline, with ridges extending in all directions. In the northwest part of the island these ridges often end abruptly at the sea. The mountains are heavily wooded. The coast between Hanalei and Kalihiwai Bays is a series of more or less wooded bluffs cut up by gulches back of which a rolling plain extends to the mountains. Between the shore and the highway, 1 mile inland, is a resort community with homes, condominiums and golf courses.

(1017) **Anini Beach**, to the west of Kalihiwai Bay, is a long stretch of sandy beach with a boat ramp.

(1018) **Kalihiwai Bay**, 4.5 miles east of Hanalei Bay, is about 0.5 mile wide and is a popular surfing site. **Kapukaamoi Point**, a red precipitous bluff about 150 feet high, is on the east side of the entrance. Several houses are scattered along the sand beach at the head of the bay, which is backed by a wooded gulch. Indifferent anchorage, with poor holding ground, can be found in depths of 5 fathoms in the center of the bay, but a heavy swell sets in during north winds. A rock awash is 150 yards north of Kapukaamoi Point. A reef, 0.2 mile wide and bare at low water, fringes the shore for 2.5 miles west from Kalihiwai Bay, and vessels should stay at least 0.8 mile offshore. A shore road, with beach houses along it, extends west from the bay for 1.5 miles.

(1019) **Kīlauea Point**, the north extremity of Kaua'i, is a grass-covered bluff about 165 feet high. **Kilauea Point**

Light (22°13'53"N., 159°24'07"W.), 174 feet above the water, is shown from a white concrete pole. **Mokuaeae Island**, 200 yards off Kīlauea Point, is a black, flat, grass-topped rock about 200 yards in diameter and 92 feet high. The island is the most prominent feature in the vicinity to coasting vessels.

(1020) **Kīlauea**, 1.3 miles inland from Kīlauea Point, is the site of a sugarmill but is not easily seen when close to the shore. The sugar of the district is trucked to Nāwiliwili for shipment.

(1021) Between Kīlauea Point and Mōkōlea Point the coast is bluff, rising gradually from each point to an elevation of about 570 feet midway between them.

(1022) **Makapili Rock**, 0.8 mile southeast of Kīlauea Point, is 156 feet high, black and prominent. The rock is on the outer end of a narrow neck of land that juts out 200 yards from the general coastline.

(1023) **Mōkōlea Point**, 1.2 miles southeast of Kīlauea Point, is narrow and 140 feet high and projects out 0.3 mile from the general coastline. The point is on the northwest side of Kīlauea Bay and has two old buildings near its outer end. An abandoned rock quarry is on the east side of the point.

(1024) **Kīlauea Bay** has an entrance width of 0.5 mile and an inland extent of 0.5 mile. The bay is subject to high surf, especially in the winter and spring. The bay is open to the trades but offers some protection in west weather. A narrow coral reef fringes the shore, and **Kīlauea Stream** empties into the head of the bay. Anchorage can be found in depths of 6 fathoms, rocky bottom, near the center of the bay.

(1025) Low **Kepuhi Point** is 2 miles east of Mōkōlea Point. The low coast between the two points is fringed with a narrow coral reef.

(1026)

Moloaa Bay to Kālepa Ridge

(1027) **Moloaa Bay** (22°12'N., 159°20'W.), 4.5 miles southeast of Kīlauea Point, has an entrance width of 0.3 mile and extends the same distance inland to the mouth of a gulch. Little protection is afforded from the heavy swell that sets into the bay during the trades, but anchorage is possible during south winds in depths of 3 to 6 fathoms in midbay. There are a few houses along the sand beach at the head of the bay, and rice is grown in the gulch. The interior between Moloaa and Anahola Bays is used for pineapple cultivation and for grazing.

(1028) **Papaa Bay**, 6 miles southeast of Kīlauea Point, is a small bight that is wide open to the trades. The central part of the bay is foul, and there is a rock awash 300 yards from shore. A coral reef fringes the south shore.

(1029) **Anahola Bay**, 7.5 miles southeast of Kīlauea Point, is a small bight exposed to the trades. **Kahala Point**, a low bluff with a grove of ironwood trees near the outer end, is on the southeast side of the bay. **Kahala Point Light** (22°08'48"N., 159°17'43"W.), 40 feet above the water, is shown from an 21-foot steel pole with a black and white diamond-shaped daymark on the point. A water tank 1 mile west of the light is prominent. Discolored water frequently extends for a considerable distance off **Kuaehu Point** on the northwest side of the bay. A reef extends about 0.3 mile from Kuaehu Point. Because of the numerous reefs, strangers should not attempt to enter the bay. In moderately smooth weather small vessels can find anchorage well inside the bay in depths of 4 to 6 fathoms, mud bottom.

(1030) **Puu Konanae**, 1.3 miles inland from Anahola Bay, is a tall, dark spire, with green slopes, that stands out more prominently than any other land feature on this part of the island.

(1031) Between Kahala Point and Keālia are low coastal bluffs and a rocky shore with some patches of sand.

(1032) **Keālia**, 3 miles south of Kahala Point, is a plantation village. A short breakwater, extending southeast from the shore, affords some protection from north weather for shallow-draft boats. The breakwater is not kept in repair, and portions have been carried away by the sea. Vessels should not approach the village without local knowledge. About 0.8 mile south of Keālia, and 0.3 mile inshore, the stack of the Samuel Mahelona Memorial Hospital is prominent.

(1033) **Kapa‘a** is 4.5 miles south of Kahala Point. A reef, which is 0.3 mile wide in some places, extends alongshore from north of Kapa‘a to Hanamā‘ulu Bay. An opening in the reef at Kapa‘a is usually marked by breakers on either side. Small craft find anchorage in depths of about 2 fathoms behind the reef and about 150 yards off the north side of the village. At **Waipouli Beach Park** an opening in the reef with a marked channel, and spanned by a foot bridge, leads to a sheltered boat ramp. The village of **Waipouli** is just south of Kapa‘a along the highway.

(1034) **Wailua** is a settlement at the mouth of **Wailua River** that empties into small **Lehuawehe Bay** 6.5 miles south of Kahala Point. The river, which is spanned by a bridge at its mouth, is navigable for small boats for several miles, once a shifting bar at the mouth is passed. Only very shallow draft vessels can cross the bar even at high tide, and only during calm weather. A public marina is 0.3 mile above the mouth. Vessels may find unprotected anchorage off Wailua in depths of 10 to 15 fathoms, rocky bottom, but like the whole northeast coast of the island, anchorage is not safe when the trade winds are blowing.

(1035) **Nounou**, 1.3 miles northwest of Wailua and 1,241 feet high, is the northernmost and highest of the low mountains near the coast.

(1036) **Kālepa Ridge** is 1 mile inland and parallels the coast from Wailua to Hanamā‘ulu Bay. The south end of the ridge, which is about 700 feet high, is marked by several buildings high on the seaward face of the bluff. The buildings can be seen for many miles offshore and are a good leading mark for Hanamā‘ulu Bay.

(1037)

Hanama‘ulu Bay

(1038) **Hanamā‘ulu Bay**, 10 miles south of Kahala Point and 2.6 miles north of Nāwiliwili, is about 0.3 mile wide and indents the coast about 0.5 mile. **Ahukini Landing** is on the point on the south side of the entrance. Only the outer third of the bay has deep water; the sand and coral bottom slopes gradually from the 18-foot curve to the beach at the head of the bay. The shores of the bay are low, rocky bluffs, about 40 feet high, except for the white sand beach at the head. A fringe of trees on the bluffs forms a windbreak for the extensive cane fields on either side of the bay. **Hanamā‘ulu Stream**, which empties into the head of the bay, is not navigable.

(1039) The 20-foot concrete tower of an abandoned lighthouse is on the outer end of the 300-foot stone breakwater that projects from the south point of Hanamā‘ulu Bay entrance; the pilings and ruins of a small wooden pier are at the inner end of the breakwater. The bay is no longer used by large vessels. Only the concrete piling remains of the former wharf at Ahukini Landing, and most of the port installations are in ruins. A heavy outside swell causes a heavy surge in the harbor.

(1040) From Hanamā‘ulu Bay to Nāwiliwili the coast is a series of low bluffs with occasional stretches of sand beach; there are no off-lying dangers. Sugarcane is grown extensively on the land back of the beach. An aerolight at Lihue Airport is 0.7 mile south of Hanamā‘ulu Bay.

(1041)

Kaulakahi Channel to Ka‘ula

(1042) **Kaulakahi Channel**, between Kaua‘i and Ni‘ihau, is about 15 miles wide and clear of obstructions. Off Mānā Point the trade wind following the south coast of Kaua‘i meets the air current that has followed around the north side. The trades blow directly across the lowlands of Ni‘ihau, but part is deflected south and around the southeast point of the island.

(1043)

Currents

(1044) Little is known of the current in Kaulakahi Channel, but presumably it is variable depending mainly upon the velocity and direction of the wind. There appears to be a general northwest flow along the southwest coast of Kaua‘i. It is reported that a current sometimes sets south along the east coast of Ni‘ihau at the same time that the current is setting northwest along the Kaua‘i coast. There are noticeable tidal currents near the west extremity of Kaua‘i. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1045) **Ni‘ihau**, 15 miles west across Kaulakahi Channel from Kaua‘i, is seventh in size and westernmost of the eight major islands. Ni‘ihau has an area of 72 square statute miles, a northeast-southwest length of 16 nautical miles, and an average width of 3.5 miles. Near the middle of the island is a high tableland with occasional rises or cones, the highest of which is 1,281-foot **Pānī‘au**. The north and east ends of the tableland are precipitous and vary in height from 600 to 1,000 feet; the south and west slopes are gradual. An unpaved road follows the west coast of Ni‘ihau for most of its length. The island lies in the rain shadow of Kaua‘i and is a semi-arid island with no streams.

(1046) The population of Ni‘ihau was 230 in 1990. One family owns the entire island and operates it as a cattle ranch. There are no scheduled communications with the island.

(1047) **Lehua**, about 0.6 mile off the north end of Ni‘ihau, is a small rocky, crescent-shaped island, with the crescent open to the north. The east and west points are low, rising gradually to an elevation of about 700 feet near the center of the island. On the west point is a natural arch. **Lehua Rock Light** (22°01'12"N., 160°05'51"W.), 704 feet above the water, is shown from a 10-foot post on the summit of Lehua.

(1048) **Lehua Channel**, between Ni‘ihau and Lehua, is restricted on its south side by rocks that show above water and extend about halfway across it. A depth of 9 fathoms can be carried through the channel by staying within about 350 yards of the Lehua shore. In heavy northwest weather the swell almost breaks in the passage, and, as little is to be gained by using the channel, vessels should pass north of Lehua Island. The current through the channel varies with the tide and sets in both directions with a velocity of about 1.5 knots.

(1049) To the east of Lehua Channel vessels should give the north coast of Ni‘ihau a berth of 0.5 mile; to the west the clearance should be about 1 mile.

(1050) **Pu‘ukole**, on the north end of Ni‘ihau, is low, as is **Kīkepa Point**, 1 mile to the east. Between these points and the high bluff on the north side of the tableland, the land is low and grass covered, with a few low hills. From a distance this lowland is not visible and Lehua appears to be about 3.5 miles from Ni‘ihau.

(1051) **Kaunuopou**, 1.8 miles southeast of Kīkepa Point, is the easternmost point of north Ni‘ihau. **Kaunuopou Rocks**, over which the sea breaks, are 300 yards off the point. Another rock, about 0.4 mile off the south side of the point, usually breaks and should be given a good berth by vessels approaching Ki‘i.

(1052) **Ki‘i** (Ki‘i Landing), a small bight about 0.7 mile west of Kaunuopou, is only slightly protected from the trade winds. The landing is usable in ordinary weather, but not in south weather. The landing is built on beach boulders and has depths of only 2 or 3 feet alongside. Anchorage can be had in depths of about 8 fathoms, coral bottom, about 0.6 mile off the landing.

(1053) About 1.3 miles south of Ki‘i, a reef with about 1 fathom of water over it and usually breaking extends 0.5 mile offshore. The 10-fathom curve is about 1 mile

offshore. From the vicinity of the reef to Pueo Point the coastline consists of cliffs reaching a height of 1,000 feet.

(1054) **Pueo Point**, 5 miles south of Kaunuopou, is a prominent brown, precipitous bluff about 800 feet high. Southwest from the point for a distance of about 4.5 miles the coastline consists of bluffs that gradually diminish in height toward the lowlands of the south half of the island. The bluffs are broken by small bights, most of which have short sand or pebble beaches where boats could land during smooth weather. Beyond the bluffs to Kawaihoa, a distance of about 6 miles, the coast consists of a series of low bluffs about 15 feet high, with stretches of sand beach, a few sand dunes and scattered trees. Between Pueo Point and Kawaihoa are no known outlying dangers; the few isolated rocks are very close to the shore.

(1055) The lowland of the south part of the island is broken by two hills, one on Kawaihoa and the other, **Kāwa‘ewa‘e**, a gently rounded hill 315 feet high, which is 4 miles north of the cape and 1.3 miles inland from the west coast.

(1056) **Kawaihoa (Kawaihoa Point)**, the southernmost point of Ni‘ihau, is formed by a hill 548 feet high, the seaward face of which is steep. From a distance the hill has the appearance of an island and can easily be mistaken for Ka‘ula. Deep water is close to the point. About 2 miles south of the point there is a prevailing west current that reaches a velocity of about 1.5 knots.

(1057) Beyond Kawaihoa the coast gradually curves northwest and north and is low and rocky with occasional short sand beaches. At **Le‘ahi** (Le‘ahi Point), 1.7 miles west of Kawaihoa, the 10-fathom curve is 0.6 mile offshore. A road skirts the west shore.

(1058) The coast between **Kamalino**, a former village 4 miles northwest of Kawaihoa and Puu Kole, is practically one low, continuous beach, with an occasional group of rocks. Near the beach are numerous sand dunes covered with sparse vegetation. In the vicinity of Kamalino, weak currents have been reported setting north and south along the coast.

(1059) **Nonopapa Landing**, 5.5 miles northwest of Kawaihoa, is the principal landing on the island. Local vessels call occasionally for the island’s cattle. The landing is used only from May to September, as there is often a heavy north swell during the winter. The landing is marked by a shed and derrick on a short concrete retaining wall at the north end of a long sand beach. **Kā‘eo**, a cone 1,018 feet high and near the center of the tableland, shows on the skyline from the anchorage.

(1060) Anchorage is available in depths of 8 fathoms, coral and sand bottom, about 660 yards off the derrick, with the landing shed and Kā‘eo in range and bearing 070°. Kāwa‘ewa‘e is 1.5 miles 135° from the anchorage. The landing is somewhat protected by a small reef extending about 75 yards southwest from the end of the retaining wall. Small boats approaching the landing head south of it until the reef is rounded. **Pu‘uwai**, the principal village of the island, is about 2.5 miles northeast of the landing.

(1061) **Kuakamoku Rock**, 1.6 miles north of Nonopapa Landing, is a large, single rock about 4 feet above water and near the center of a reef some 200 yards in diameter and 500 yards offshore. The reef should be given a berth of 0.5 mile, and only small craft should attempt the passage between the reef and the shore. Other reefs extend about 0.5 mile offshore 0.5 mile south and 3 miles northeast of Kuakamoku Rock.

(1062) **Kaununui (Kaununui Point)**, 4.5 miles northeast of Kuakamoku Rock, is marked by a group of rocks a few feet high and close to the shore. A coral reef with depths of 6¼ fathoms over it is 1.5 miles off the point. It is reported that the reef breaks in heavy weather. The passage inside the reef is not recommended except for small boats.

(1063) **Keawanui Bay** is no more than a slight curve in the shoreline that extends northeast from Kaununui for 3 miles. The bay has a sand and coral bottom and a sandy shore. A rock with 2 feet of water over it is in the south part of the bay, 0.8 mile north of Kaununui and 0.5 mile offshore.

(1064) From the north side of the bay to Puu Kole the coast is foul for a distance of about a mile offshore. Vessels should give this section of the coast a berth of at least 1 mile. About 2 miles west of Puu Kole and 0.9 mile offshore is a reef with reported depths of 12 feet over it. A mile south of this reef and 0.8 mile offshore is a rock with 5 feet of water over it.

(1065) **Ka‘ula**, 19 miles souhwest of Ni‘ihau, is a small, bare, rocky islet, 550 feet high. Vessels have anchored close to both the south and east sides of Ka‘ula in depths of about 20 fathoms, but as the islet is only 0.7 mile long, little protection is afforded. A rock with a least depth of 5 fathoms is 3.8 miles 300° from the highest point on Ka‘ula. A bank with depths of 30 to 40 fathoms extends 5 miles northwest from the islet.

(1066)

Danger zone

(1067) The **danger zone** of an aerial bombing and strafing target is centered on Ka‘ula. (See **33 CFR 334.1340**, chapter 2, for limits and regulations.)

(1068)

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(1069) **Outer Islands**. The small rocky islands, reefs and atolls west-northwest from Ni‘ihau form a well-defined chain in the Hawai‘ian Archipelago. Between Ni‘ihau and Gardner Pinnacles, 480 miles distant, are several widely separated high barren rocks; continuing west are the coral reefs and atolls.

(1070) The Hawai‘ian Archipelago from longitude 161°W. to 176°W. is part of the **Hawai‘ian Islands National Wildlife Refuge** and under the jurisdiction of the U.S. Fish and Wildlife Service, Department of Interior. The islands and atolls in the refuge include Nihoa, Necker Island, French Frigate Shoals, Gardner Pinnacles, Maro Reef, Laysan Island, Lisianski Island, Pearl and Hermes Reef and all intervening reefs and shoals, which are also part of the so-called Leeward Islands.

(1071) The refuge was established in 1909 in order to preserve wildlife including very rare forms found in the area. All fish and wildlife are protected. Federal laws governing wildlife and national wildlife refuges are in force. Sharks are abundant throughout the refuge. Entry to the refuge is **prohibited** except by permit issued by the Refuge Manager, Hawai'ian/Pacific Islands National Wildlife Refuge Complex, U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, P.O. Box 50167, Honolulu, HI 96850. Entry upon Tern Island of French Frigate Shoals and Green Island, Kure Atoll, must be also by approval Commander, 14th U.S. Coast Guard District, Honolulu. The restrictions apply to all civilian and military agencies, as well as individuals. Because of the extreme fragilities of the refuge islands ecosystems general public use is not permitted. Entry to the entire refuge is restricted to scientists on previously U.S. Fish and Wildlife approved research projects.

(1072) The Hawai'ian Archipelago and surrounding waters between Nihoa Island and Kure Atoll have been designated as **Papahānaumokuākea Marine National Monument** by Presidential Proclamation 8031 of June 15, 2006. Within this Monument are three areas to be noted: a Particularly Sensitive Sea Area (PSSA), Areas to be Avoided, and a Ship Reporting Area. These areas are described in detail below.

(1073) Papahānaumokuākea Marine National Monument encompasses an area of the marine waters and submerged lands of the Northwestern Hawai'ian Islands. The seaward boundary of the reserve is 50 miles from the approximate geographical center of Nihoa Island, Necker Island, French Frigate Shoals, Gardner Pinnacles, Maro Reef, Laysan Island, Lisianski Island, Pearl and Hermes Reef, Midway Atoll and Kure Atoll and includes all areas of the Hawai'ian Islands National Wildlife Refuge and Midway Atoll National Wildlife Refuge. (See **50 CFR 404.1** through **404.12**, chapter 2, for limits and regulations.)

(1074) The **Particularly Sensitive Sea Area (PSSA)** is an International Marine Organization (IMO)-designated zone sharing the same boundary as the Monument. The area encompasses a 1,200-mile stretch of coral islands, seamounts, banks and shoals. It is home to more than 7,000 marine species and contains 4,500 square miles of coral reefs. Ship traffic has been identified as one of the primary anthropogenic threats to the vulnerable and valuable natural and cultural resources of the area. PSSA designation augments domestic protective measures by alerting mariners to exercise extreme caution when navigating through the area.

(1075) The IMO has adopted certain **Areas to be Avoided** in the region of Papahānaumokuākea Marine National Monument. Given the magnitude of obstacles that make navigation in these areas hazardous and in order to increase maritime safety, protection of the environment, preservation of cultural resources and areas of cultural importance significant to Native Hawai'ians, and facilitate the ability to respond to developing maritime emergencies in the Monument, all ships solely in transit should avoid the following areas contained within a circle having a radius of 50 nautical miles centered upon the following geographical positions:

(1076) (1) 28°25.18'N., 178°19.75'W. (Kure Atoll)

(1077) (2) 28°14.20'N., 177°22.10'W. (Midway Atoll)

(1078) (3) 27°50.62'N., 175°50.53'W. (Pearl and Hermes Atoll)

(1079) (4) 26°03.82'N., 173°58.00'W. (Lisianski Island)

(1080) (5) 25°46.18'N., 171°43.95'W. (Laysan Island)

(1081) (6) 25°25.45'N., 170°35.32'W. (Maro Reef)

(1082) (7) 25°19.50'N., 170°00.88'W. (Between Maro Reef and Raita Bank)

(1083) (8) 25°00.00'N., 167°59.92'W. (Gardner Pinnacles)

(1084) (9) 23°45.52'N., 166°14.62'W. (French Frigate Shoals)

(1085) (10) 23°34.60'N., 164°42.02'W. (Necker Island)

(1086) (11) 23°03.38'N., 161°55.32'W. (Nihoa Island)

(1087) and the areas encompassed by the following geographical positions:

(1088) Area 1

(1089) (1) 26°53.22'N., 173°49.64'W.

(1090) (2) 26°35.58'N., 171°35.60'W.

(1091) (3) 24°57.63'N., 171°57.07'W.

(1092) (4) 25°14.42'N., 174°06.36'W.

(1093) Area 2

(1094) (1) 25°38.90'N., 167°25.31'W.

(1095) (2) 24°24.80'N., 165°40.89'W.

(1096) (3) 23°05.84'N., 166°47.81'W.

(1097) (4) 24°14.27'N., 168°22.13'W.

(1098) A mandatory **Ship Reporting System (CORAL SHIPREP)** has been established in Papahānaumokuākea Marine National Monument Particularly Sensitive Sea Area for the following vessels entering or departing any U.S. port or place and in transit through the reporting area:

(1099) (1) All vessels 300 gross tons or greater

(1100) (2) All vessels experiencing an emergency in the Reporting Area

(1101) Vessels other than those described above, including sovereign immune vessels, are encouraged to participate. The current notification requirements described in **50 CFR 404.4** for U.S. flagged vessels passing through the monument remain in effect.

(1102) The reporting area boundary adopted by the IMO (See IMO SN.1 Circ.273.) generally extends 10 miles out and entirely around the monument boundary and includes three transit corridors through the monument PSSA. Vessels using these corridors are asked to report only twice, once when entering the reporting area and once when leaving. These transit corridors are between the designated Areas to be Avoided around:

(1103) (1) Pearl & Hermes Atoll and Lisianski Island

(1104) (2) Maro Reef and Gardner Pinnacles

(1105) (3) Necker Island and Nihoa Island

(1106) The reporting area does not include the Areas to be Avoided within the Monument. A vessel that passes

through an Area to be Avoided shall notify the shore-based authority when:

(1107) (1) entering the reporting area

(1108) (2) leaving the reporting area to enter an Area to be Avoided

(1109) (3) exiting the Area to be Avoided to enter the reporting area on the other side of the Area

(1110) (4) leaving the reporting area.

(1111) The potential burden of reporting four times is justified by the navigation hazards that exist within the Areas to be Avoided. (See **50 CFR 404-Appendix E**, chapter 2, for reporting requirements.)

(1112)

Atolls

(1113) An atoll may comprise one or more low coral islands situated on a strip or ring of coral surrounding a central lagoon. Many of these atolls have openings in the coral ring that permit passage of small boats, and sometimes large vessels, to anchorage in the enclosed lagoon.

(1114)

Reefs

(1115) Successful navigation through or among coral reefs often depends on the eye. They are always more plainly seen from the masthead than from the deck or bridge. The best observing conditions are with the sun high and behind the observer, and with the sea slightly ruffled; reefs are extremely difficult to distinguish if the sea is glassy calm.

(1116) Reefs with about 3 feet of water over them appear light brownish in color; those with a fathom or more appear light green, deepening to dark green and finally deep blue. Under favorable circumstances, a reef with depths of 3 or 4 fathoms over it can be seen from aloft for a considerable distance; in greater depths, the reef can only be seen when nearly over it. Polarized glasses have been found of great help in navigating among reefs.

(1117)

Vigias

(1118) A vigia is an indication on a chart that a dangerous rock or shoal is thought to be near the spot indicated. Doubtful navigation and strong currents account for a large proportion of the vigias that encumber or have encumbered the charts of the Pacific Ocean. Phosphorescence, seaweed scum and shoals of fish often resemble reefs and breakers so closely as to deceive the most experienced. Many vigias have been disproved by extensive investigation, but many others are still on the charts and remain a source of annoyance to the navigator.

(1119)

Nihoa to Northwest Cape

(1120) **Nihoa** (23°03'N., 161°55'W.), a barren, rocky and uninhabited island, is about 120 miles northwest of Ni‘ihau. The island was discovered by Captain Douglas of the British vessel IPHIGENIA on April 13, 1790. The low, stone walls of ancient Polynesian ceremonial sites still remain on the island. The island is inhabited by a number of species of sea birds and two extremely rare land birds.

(1121) Nihoa is about 0.8 mile long and 0.2 mile wide. The east, north and west sides are high and precipitous; the south side is much lower and its slopes are more gradual. **Millers Peak**, 910 feet high and the highest point on the island, is near the northwest end. **Tanager Peak**, 874 feet high, is near the northeast end. The southeast and soutwest sides of the island terminate at points on either side of **Adams Bay**. In the bay are three small bights; the westernmost has a sand beach, and the shores of the other two are rocky ledges. There is deep water, close to all sides of the island.

(1122) The safest anchorages are between the 15- and 20-fathom curves west and southwest of the island, but the holding ground is poor. The middle cove of Adams Bay probably affords the best landing, but the surge is considerable and great care must be taken in landing anywhere on the island. During heavy northwest weather landing is very dangerous. A steep trail leads from the middle cove to the top of the bluff. At the foot of the bluff is a seepage of water that is not suitable for drinking purposes except in emergencies.

(1123)

Currents

(1124) The prevailing current sets west in the vicinity of Nihoa. Current observations taken about 0.2 mile west of the island show a nontidal flow of about 0.2 knot setting west-southwest combined with a tidal current of nearly 0.5 knot at strength setting north and south. The north strength of the tidal current occurs about 6 hours after the local transit of the moon and the south strength at about the time of local transit. The velocity measured was nearly 2 knots and set south. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1125)

Local magnetic disturbance

(1126) Differences from normal variation of as much as 33° have been observed on Nihoa.

(1127) Nihoa is near the southwest end of a bank that is about 18 miles long in a northeast-southwest direction 10 miles wide and has depths of 14 to 36 fathoms, except for a reported depth of 6½ fathoms at the westernmost extremity. Another bank, the center of which is about 18 miles west-southwest from Nihoa, is about 14 miles long in an east-west direction, 9 miles wide, and has depths of 15 to 25 fathoms, except for an 11-fathom depth about 2 miles southeast of its center, and a 14-fathom depth about 6 miles south-southeast of its center, reported in 1968. A bank about 54 miles southeast of Nihoa has a least depth of 32 fathoms except for a reported depth of 19 fathoms at its south end; the positions of the reported depths are

approximate and caution is advised. The two banks 57 and 70 miles west of Nihoa have least depths of 29 and 33 fathoms, respectively. The edges of the bank slope steeply to much greater depths. A 9-fathom shoal is about 5 miles northwest of the east bank.

(1128) **Necker Island** (23°34'N., 164°42'W.) is 158 miles west from Nihoa. It was discovered by La Perouse on November 1, 1786, and was annexed to Hawaii in 1895. The island, which might well be called a rock, is uninhabited, but, like Nihoa, shows unmistakable evidence of ancient habitation. It is the home of countless sea birds.

(1129) About 0.7 mile long and less than 0.2 mile wide, Necker Island is made up entirely of lava. There are four peaks or hills, one near each end and two between. The highest, **Summit Hill**, 277 feet high, is near the middle of the island. **Annexation Hill**, 249 feet high, at the west end of the island, is separated from the other hills by a low saddle and when seen from a distance appears detached. There is a sparse growth of low brush on the upper slopes of the hills.

(1130) **Northwest Cape**, a rocky spur extending north from the west end of the island, is joined to the rest of the island by a low isthmus over which the seas break in rough weather. On the west side of the cape is **West Cove**, and on the east side is **Shark Bay**. Off the east end of the island are several low, detached rocks. A depth of 5 fathoms has been reported 0.5 mile south of Necker Island where general depths are 10 to 12 fathoms.

(1131) Vessels can anchor in depths of about 12 fathoms 0.5 mile south of the southwest point of the island, but the island is so small that it affords little protection. West Cove and Shark Bay are the landing places and are usually very hazardous, and there are times when it is impossible to land anywhere on the island. During heavy northwest weather landing at West Cove is very dangerous. Shark Bay, open to the northeast trades, is usually filled with breakers. Small seepages of unpalatable water have been found on the island.

(1132)

Currents

(1133) The prevailing current sets west, but countercurrents may be expected close to the island. Four days of current observations taken 0.2 mile west-northwest of the west end of Necker Island show a west nontidal flow of about 0.5 knot, combined with a tidal current of about 0.8 knot at strength. East trade winds prevailed during the observations. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov*.

(1134)

Weather, Necker Island

(1135) September is reported to be the calmest month of the year; strong north and northeast winds prevail during the other months.

(1136)

Local magnetic disturbance

(1137) Differences from the normal variation of as much as 22° have been observed on Necker Island.

(1138) Necker Island is near the north end of a bank about 40 miles long in a northwest-southeast direction. The bank is about 15 miles wide and has depths of 8 to 23 fathoms except for a reported 5-fathom depth 0.5 mile south of Necker Island and a 5-fathom depth reported in 1968 about 5 miles north of Necker Island. The sand and coral bottom is plainly visible. A 10-fathom shoal has been reported about 19 miles northeast of Necker Island.

(1139)

French Frigate Shoals

(1140) **French Frigate Shoals**, about 85 miles west from Necker Island, is a crescent-shaped atoll about 17 miles long in a north-northwest direction. It was discovered by La Perouse on November 6, 1786, the day after leaving Necker Island, and like that island was annexed to Hawaii in 1895. The atoll consists of a coral reef with a number of small, bare, sand islets on it and is flanked by a volcanic rock and numerous coral heads and reefs. It is home to many sea birds, seals, turtles and other fish and wildlife all protected by federal Law.

(1141) La Perouse Pinnacle and Tern Island are the best landmarks. The other islands are of little assistance in navigation due to their constantly changing size and shape and low elevations. Shark Island has been observed to be particularly unreliable in this regard.

(1142) The crescent reef is double, and the outer and inner arcs bound a lagoon that is 1 to 6 miles wide. At its midpoint the windward reef lies about 8 miles from a line joining the tips of the crescent; the leeward reef is about 5 miles from this line. The windward reef is nearly continuous and can be plainly seen in the daytime for a considerable distance by vessels approaching from the north, east or southeast. The sea practically always breaks over the reef, and during the few times it is not breaking, the green shoal water inside the reef is seen in ample time to avoid danger. The bottom slopes uniformly from the reef to the 100-fathom curve 1 to 2 miles off, and there are no known dangers from north through east to south of the windward reef.

(1143) The leeward or inner reef, however, is broken in many places and in normal weather is seldom marked by breakers. The lagoon between the reefs is very foul with numerous coral heads, some just under the surface of the water.

(1144) **La Perouse Pinnacle** (23°46'08"N., 166°15'39"W.), a volcanic rock about 60 yards long, 20 yards wide and 122 feet high, lies about midway between the tips of the crescent and west of the leeward arc of the reef. The rock is so steep and rugged that it is almost inaccessible. From a distance its guano-coated outline resembles a brig under sail. A small detached lava rock about 9 feet high lies off the west side of the pinnacle. The points of the crescent

(1158)

METEOROLOGICAL TABLE – COASTAL AREA OFF FRENCH FRIGATE SHOALS
Between 23°N to 25°N and 165°W to 168°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	1.7	1.3	0.4	0.9	0.2	0.0	0.3	0.0	0.1	0.3	1.6	1.4	0.7
Wave Height > 9 feet [1]	6.7	5.4	3.5	5.2	1.5	0.5	1.5	0.3	0.4	3.0	3.1	7.5	3.1
Visibility < 2 nautical miles [1]	1.1	0.9	0.8	0.3	0.3	0.2	0.4	0.4	0.0	0.3	0.6	0.6	0.5
Precipitation [1]	5.4	4.8	6.1	4.8	4.2	1.8	2.8	4.2	2.9	4.0	6.7	4.5	4.4
Temperature > 69° F	68.7	66.4	68.5	80.7	94.1	99.6	99.9	99.9	100	99.8	97.9	87.1	88.9
Mean Temperature (°F)	72.0	71.7	71.9	73.1	75.0	77.9	78.7	79.4	79.4	78.5	76.4	73.8	75.7
Temperature < 33° F [1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean RH (%)	77	78	79	78	79	79	79	79	78	77	78	76	78
Overcast or Obscured [1]	16.8	14.1	16.1	16.1	10.8	3.9	4.4	7.0	5.0	9.5	14.9	13.6	11
Mean Cloud Cover (8^{ths})	4.6	4.2	4.6	4.8	4.3	3.9	4.2	4.2	3.9	4.3	4.5	4.4	4.3
Mean SLP (mbs)	1015	1016	1018	1019	1018	1018	1018	1017	1016	1016	1016	1016	1017
Ext. Max. SLP (mbs)	1029	1027	1030	1031	1026	1027	1029	1026	1022	1026	1029	1034	1034
Ext. Min. SLP (mbs)	991	1000	1001	998	1002	1004	1009	1007	1002	1004	1003	991	991
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning [1]	0.1	0.3	0.4	0.4	0.1	0.2	0.2	0.4	0.2	0.6	0.7	0.5	0.4

[1] Percentage Frequency

reef, as indicated by the ends of the line of breakers, bear about 170° and 310° from La Perouse Pinnacle. La Perouse Pinnacle is reported to be the first object sighted, generally, when approaching the atoll, and it is usually picked up on radar at 12 to 15 miles.

(1145) **Shark Island**, the northwesternmost of the sand islets, lies 6 miles northwest of La Perouse Pinnacle. A coral reef fringes the island. **Tern Island**, about 2 miles east-northeast of Shark Island, is marked by two 40-foot towers, low concrete buildings, a wooden telegraph pole and four large trees. The island and buildings are visible at 8 and 5 miles, respectively. There are no facilities on the island.

(1146) **East Island**, 3 miles east-northeast of La Perouse Pinnacle, is a low sand bar 600 yards long in a northwest direction and about 100 yards across. Reefs that are awash most of the time extend a mile west and 0.2 mile south from the island; the south reef seldom breaks. A coral head that sometimes breaks is 0.6 mile south of East Island. Northeast and east of the island are numerous coral heads and reefs.

(1147) Extreme caution must be exercised when navigating in the vicinity of these islets because of the numerous coral heads.

(1148)

Channels

(1149) The principal approach to Tern Island is through a natural channel that leads to a lagoon and anchorage southeast of the island. Mariners are advised that attempting entry into the lagoon requires extensive local knowledge, good sea and weather conditions and the sound judgment to recognize when conditions allow committing the vessel to a course through the reef opening.

(1150)

Anchorages

(1151) The best holding ground southwest of French Frigate Shoals is in depths of 13 to 15 fathoms, sand bottom; in lesser depths the bottom is mostly coral. There are no all-weather anchorages for large vessels, but the conformation of the reef is such that some protection can be found from choppy seas and ground swell. Small vessels can find good protection from most weather behind the shoals and coral heads.

(1152)

Routes

(1153) Vessels approaching French Frigate Shoals from the north, east or southeast in the daytime should have no difficulty in picking out the outer reef from a considerable distance off. La Perouse Pinnacle, plainly visible from outside the reefs in clear weather, is reported to make a good radar target at 19 miles. From the south, the reef is not so easily seen. The sea may not break over the shoals, and although the bottom is plainly visible close in, the shoals might not be detected from a short distance. The 100-fathom curve is only about 0.5 mile from the shoals.

(1154)

Currents

(1155) A prevailing current sets west in the vicinity of French Frigate Shoals, but variable currents have been noted. A southwest current of 2 knots has been measured. A 1-day series of half-hourly current observations taken 0.7 mile west of the south end of the shoal during a period of small wind velocity shows practically no current.

(1156)

Weather, French Frigate Shoals

(1157) The northeast trades prevail throughout the year, but west blows can be expected during the winter. The average wind velocity is 12 knots, with monthly averages of about 16 knots in December to 9.5 knots in August.

Gales have been experienced in July and September. Occasional heavy showers of short duration cut visibility to about 2 miles (4 km).

(1159)

Brooks Banks and St. Rogatien Bank

(1160) **Brooks Banks** and **St. Rogatien Bank** are a group of five coral banks between French Frigate Shoals and Gardner Pinnacles. The banks extend 50 miles in a northwest direction, have depths of 11 to 59 fathoms and are separated by channels several miles wide and more than 100 fathoms deep. The largest of these banks lies 60 miles 305° from La Perouse Pinnacle, is about 12 miles in diameter and has depths of 12 to 56 fathoms. The southeasternmost bank, the smallest in the group, is 27 miles 297° from La Perouse Pinnacle, is about 2 miles in diameter and has depths of 28 fathoms. The northwesternmost bank is 75 miles 311° from La Perouse Pinnacle, is about 6 miles long and 4 miles wide and has depths of 30 to 43 fathoms.

(1161) Unprotected anchorage can be had on the shoaler areas, but the holding ground is only fair. The sand and coral bottom is plainly visible. There are no known dangers.

(1162)

Currents

(1163) The oceanic flow is variable but usually sets west. Sixty half-hourly current observations indicate a northwest nontidal current of about 0.5 knot, combined with a tidal current of 0.8 knot at strength. The tidal current is somewhat rotary, turning clockwise. The largest velocity observed was nearly 1.5 knots setting west. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1164)

Gardner Pinnacles

(1165) **Gardner Pinnacles** (25°00'N., 168°00'W.) are 120 miles northwest of La Perouse Pinnacle. They were discovered by Captain Allen of the whaler MARO in June 1820. The pinnacles are solid, volcanic, rocky islets; the larger pinnacle is 190 feet high and about 200 yards in diameter, and the smaller about 100 yards from the northwest side of the larger. The rocks are barren of vegetation and are covered with guano, giving them a snow-capped appearance. The only off-lying dangers are a small rock just off the northwest side of the larger pinnacle and two 20-foot patches, one of which is about 100 yards south of the larger pinnacle and the other just north of the smaller pinnacle. From an east approach, the pinnacles are reported visible at a distance of 20 miles.

(1166) Anchorage can be had anywhere on the bank that surrounds the pinnacles, but there is no protection; in general, the holding ground is poor. In comparatively smooth weather, landings can be made just north of the bight on the west side of the larger pinnacle. Because of its exposed position, most times the surf breaks high up its sides and landings are extremely hazardous and generally impossible. Some sea birds nest on its higher elevations.

(1167)

Currents

(1168) Current observations taken at a number of locations in the vicinity of Gardner Pinnacles show a west-northwest oceanic drift of about 0.2 knot combined with a rotary tidal current, turning clockwise, of 0.2 knot at strength. Velocities of about 2 knots setting west-southwest were measured during east winds.

(1169) Gardner Pinnacles lie near the northeast side of a bank about 50 miles long, in a north-south direction, and about 20 miles wide near the north end. The bank has depths of 10 to 25 fathoms, and the sand and coral bottom is plainly visible.

(1170)

Raita Bank

(1171) **Raita Bank** (25°32'N., 169°28'W.) is about 85 miles 291° from Gardner Pinnacles. It was discovered in 1921 by the French schooner RAITA. The bank is about 20 miles long in a north-northeast direction and has a maximum width of about 10 miles. Depths range from 9 to 20 fathoms, and the sand and coral bottom is plainly visible under ordinary weather conditions. At the 20-fathom curve, the bottom drops off rapidly to great depths. In heavy weather, the swells seem to lump up slightly over the shoaler areas, but there are no known dangers. Large schools of ulua fish and sharks have been observed on the bank. Anchorage can be had on the bank in the open sea with fair holding ground.

(1172)

Currents

(1173) Variable currents are reported in the vicinity of Raita Bank. Observations in the vicinity indicate a rotary tidal current turning clockwise. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1174)

Maro Reef

(1175) **Maro Reef** (25°25'N., 170°35'W.) is about 60 miles west of Raita Bank. It was discovered by Captain Allen of the whaler MARO in June 1820. The large, oval-shaped coral bank is about 31 miles long in a northwest direction and about 18 miles wide. The center of the bank is a large area of reefs awash. This broken area, about 12 miles long in a northwest direction and 5 miles wide, is extremely foul, with many coral heads awash and channels of deep

water between. Only one very small rock, about 2 feet high and on the north side of the reef, shows above high water. The broken part of the reef is practically always marked by breakers. The wide shelf of the bank is outside the broken part of the reef.

(1176) Breakers, or the light blue-green color of the area within the broken portions of the reef, give the first warning of the proximity of danger. All maneuvering in the vicinity of the broken area must be done with extreme caution and with the sea and light such that shoal spots can be seen and avoided. Ordinarily, spots with less than 6 fathoms of water are plainly visible.

(1177) There are no known dangers more than 3.3 miles from the general outline of broken portions of Maro Reef, thus leaving a navigable shelf with depths of 12 to 20 fathoms on all sides but the northeast where depths of 7 to 10 fathoms are found.

(1178)

Currents

(1179) In the vicinity of Maro Reef the prevailing current sets west, but variable currents have been noted. Over the bank a rotary tidal current, turning clockwise, has been reported. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1180)

Laysan Island

(1181) **Laysan Island** (25°46'N., 171°44'W.) is a low sand island about 65 miles west-northwest of Maro Reef. The island is 1.6 miles long in a north-south direction, about 1 mile wide, and 35 feet in elevation at its highest point near the north end. In the center of the island is an extremely hypersaline, foul-smelling lake about 0.9 mile long. The island, mostly soft white sand, is partly covered with low vines and grass, and walking over it is tiring because of innumerable sea-bird nesting holes. The island is marked by an ironwood tree behind a wooden refuge warning sign on the west side of the island, and by a grove of coconut palms on the north edge of the lake. The rock that bares about 3 feet, located on the reef northwest of the island presents a good radar target in mild weather. The wreck of a steel fishing boat is on the south shore of the island in 25°45.4'N., 171°44.4'W., but does not present a good radar target. Water can be obtained by digging shallow wells. The island is uninhabited and is seldom visited. As with other islands in the Leeward Islands, an entry permit is required. It is home to countless sea birds. Millions of flies make a visit there unpleasant most of the year.

(1182) A coral reef, a few hundred yards wide, fringes the island. About 0.3 mile off the northwest shore is a small, sharp rock, about 3 feet high. Coral heads, covered with 4 to 7 fathoms of water, are numerous in the area within 1 mile of the island. The sand and coral bottom can usually be seen in depths less than 10 fathoms, and often in greater depths. When approaching closer than 1 mile, a sharp lookout must be maintained to detect the coral heads.

(1183) Vessels can anchor in depths of 8 to 15 fathoms 1 to 1.5 miles off the island on all sides, depending upon which side affords the best protection. During the trades, anchorage can be had 0.5 to 1 mile off the west side in depths of 8 to 15 fathoms, fair holding ground. In 1976, the Coast Guard Cutter MALLOW found good anchorage in 45 feet of water, sand and coral bottom, in 25°46'22"N., 171°45'15"W., with the ironwood tree bearing 084°, 1,390 yards. However, the anchor chain is subject to fouling on the coral heads because of the rotary currents. The coral heads are large and present a problem to vessels as they can foul ground tackle. It may be advisable to remain underway while attempting to land a small boat. Small craft drawing not over 12 feet can lie at anchor inside the reef and off the ironwood tree on the west side of the island, but this anchorage affords no protection from west winds. In 1978, the NOAA Ship TOWNSEND CROMWELL found anchorage with good holding ground, sand and coral bottom, and fair protection from strong west and northwest winds accompanied by heavy seas and swell in 25°46.3'N., 171°43.0'W. and 25°45.8'N., 171°43.5'W. Surf of 10 to 15 feet was observed breaking on the west side of the island, and a 3- to 5-foot surf was observed on the reefs on the east and northeast side.

(1184) During northeast and southeast weather, the best landing can be made off the ironwood tree on the west side of the island on a sloping sandy beach. An alternate landing site on the west side of the island is about 0.5 mile south of the primary landing site, where the reef narrows close to shore. A poor landing can be made near the northeast end of the island during light west winds. Caution is advised when attempting a landing on this side of the island. Clear sand beaches are almost nonexistent, and approaches to the beach must be made between breakers on the outer reef and the shore. Summer is the best for landing, as the northeast trades prevail during this period.

(1185)

Currents

(1186) A current velocity of about 1 knot and a rotary tidal current, turning clockwise, have been reported. The current is believed to depend to a great extent upon the wind. In 1976, the Coast Guard Cutter MALLOW observed the current to round the south side of the island in a clockwise direction on the flood and to round the north tip of the island in a counterclockwise direction on the ebb. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1187) Laysan Island is just southeast of the center of a circular bank 14 miles in diameter, with depths of 9 to 23 fathoms, beyond which the water deepens rapidly.

(1188) **Northampton Seamounts**, unsurveyed seamounts with a least known depth of 15 fathoms, are about 35 miles southwest of Laysan Island.

(1189)

Lisianski Island to Pioneer Bank

(1190) **Lisianski Island** (26°04'N., 173°58'W.) is a small, low, sandy island, about 120 miles west of Laysan Island. Captain Lisianski, of the Russian ship NEVA, discovered the island on October 15, 1805, when his ship grounded on the reef and was nearly wrecked. The island is about 1.2 miles long in a north-northwest direction, 0.5 mile wide and 20 feet in elevation at its highest point on the northeast side. The shores are white sand except for two stretches of rock ledge at the waterline on the east side of the island. Behind the sand beach, the island is overgrown with vines and bushes. One coconut palm tree in the northeast part of the island is prominent from north. In 1976, a small boat was reported wrecked on the northeast end of the island and two groves of palm trees were observed near the middle of the island. Brackish water may be obtained by digging shallow wells. Large numbers of sea birds nest on the island, and, as at Laysan, large numbers of flies make a stay there unpleasant. Although the island is uninhabited and seldom visited, a permit is required for landing as the Hawaiian Monk Seal is protected here. Visits should be made during the summer, when the northeast trades prevail, but small-boat landings have been made on the east side of the island at other times, although this is very risky.

(1191) A reef circles around to the southwest from off the north side of the island. It is marked near its offshore end by a coral ledge that bares at times and over which the seas break. The south end of this ledge is 1.7 miles 260° from the north end of the island. About 0.5 mile southwest of this point is another ledge that is marked by a breaker in most weather. Midway between these ledges or breakers is a passage leading to the lagoon between the island and the reef. The passage has an uneven bottom with depths of 11 to 22 feet. About 350 yards southwest of the north ledge is a small shoal with a depth of 3 feet over it. These shoal spots are easily seen and avoided by small boats making the passage into the lagoon, but vessels should not enter without local knowledge. Once inside, anchorage can be had in depths of 3 to 6 fathoms, taking care to avoid the scattered coral heads with only a few feet of water over them. The coral heads are large and vessels anchoring here are cautioned because of the danger of fouling the ground tackle. Landing can be made on the west side and south end of the island in all but southwest and west weather.

(1192) **Neva Shoal**, with innumerable coral ledges, extends about 8 miles southeast from Lisianski Island. This reef, which is about 4 miles wide, has its west extremity about 4 miles south-southwest of the island. The south end of the reef is usually marked by breakers, and many of the ledges break in almost all weather. The shoal has areas of deeper water between the ledges, and small boats can maneuver but with difficulty over many parts of the reef. It must be avoided entirely by larger vessels.

(1193) In addition to Neva Shoal, there are many coral heads with depths of 3 to 6 fathoms over them within 3 miles of all sides of the island. A small coral ledge, with an islet on it and nearly always marked by breakers, is 2.7 miles 254° from the south end of the island. Between this ledge and the island are depths as great as 8 fathoms and a scattering of coral heads, some of which are nearly awash. The lagoon could be entered between this ledge and the ledge marking the south side of the previously described opening 1 mile north. A rock covered 14 feet, about 1.5 miles north-northeast of the island, is marked by breakers only during heavy weather. Under favorable conditions dangerous coral heads can be seen for several hundred yards.

(1194)

Anchorage

(1195) Anchorage can be had in trade-wind weather about 3 miles west of the island in depths of 11 to 15 fathoms, sand and coral bottom, with the north end of the island bearing 080°. During southwest weather, vessels can find anchorage 3 to 4 miles east of the north end of the island in depths of 8 to 15 fathoms. Small boats can anchor in the lagoon, as described previously.

(1196) Vessels may approach to within 3 miles of Lisianski Island from the north on courses between 270° and 090°. The island and Neva Shoal should be given a wide berth when passing south of them, as the island is seldom seen from the south limits of the shoal. Vessels approaching from the southwest should keep about 5 miles west of the meridian of the island until the island bears 090° and then approach the anchorage.

(1197)

Currents

(1198) One-half day of current observations taken 3 miles west of Lisianski Island indicate a rotary tidal current, turning clockwise, of 0.8 knot velocity at strength. A prevailing northwest current is reported in the vicinity of the island.

(1199) Lisianski Island and Neva Shoal lie just southeast of the center of a bank about 25 miles long in a northwest direction and about 15 miles wide. Outside the reefs, general depths on the bank are 9 to 47 fathoms.

(1200) **Pioneer Bank** (26°02'N., 173°26'W.) is about 30 miles east of Lisianski Island. The bank is about 8 miles in diameter, and soundings of 18 fathoms have been obtained near its center. No breakers or dangers were observed during a preliminary survey, but, as the least depth may not have been obtained, vessels should avoid the area.

(1201) An unsurveyed bank with least known depths of 30 fathoms is reported to be about 36 miles northwest of Lisianski Island.

(1202)

Pearl and Hermes Atoll

(1203) **Pearl and Hermes Atoll**, about 145 miles northwest of Lisianski Island, is an extensive oval-shaped atoll about 40 miles in circumference, 17 miles long in a northeast direction, and 9 miles wide. The reef was discovered on April 26, 1822, by the British whalers PEARL and HERMES, which were wrecked on the same night within 10 miles of each other. Within the outer reef is a lagoon in which are numerous coral reefs with deep water between. The remains of a wreck stranded on the east side of the reef are still visible, but over the years most have been beaten down by breakers. There are no known dangers outside the heavy breakers on the outer reef.

(1204) Within the outer fringing reef are several small islets, most of which are on the south side; the exception is **North Island**. There are also several sandbanks that are awash at high water. **Southeast Island** (27°47'N., 175°49'W.) is the largest of the group; five other named islands are scattered along a 7-mile stretch to west. Though uninhabited and vegetated by low plants and shrubs, a permit is required for landing as the Hawaiian Monk Seal is protected here. Large numbers of sea birds nest on the island.

(1205) The 6-mile opening on the northwest side of the outer reef has depths of 1 to 6 feet between the numerous coral heads and is hazardous to negotiate with a small boat. The small-boat channel between Southeast Island and **Bird Island**, next islet to the west, has a least depth of 4 feet; the channel between Bird Island and **Sand Island** has 19 feet. The eastern portion of the lagoon is maze-like and could be dangerous to the navigator without local knowledge. Caution is advised when making entry.

(1206)

Anchorage

(1207) Anchorage can be had off the west entrance to the lagoon in depths of 8 to 12 fathoms or on the east side of the reef. Vessels have anchored midway between the south entrances and about 0.6 mile off Bird Island in depths of 25 fathoms.

(1208)

Currents

(1209) The current appears to set north between Lisianski Island and Pearl and Hermes Atoll.

(1210)

Salmon Bank to Ladd Seamount

(1211) **Salmon Bank** is about 60 miles southwest from Southeast Island on Pearl and Hermes Atoll. The least known depth on the bank is 30 fathoms.

(1212) **Gambia Shoal**, position doubtful, is about 50 miles west-northwest of Southeast Island on Pearl and Hermes Atoll. The shoal has a depth of 14 fathoms, and the bottom can be plainly seen. About 25 miles north of the charted position of Gambia Shoal is **Ladd Seamount**, a bank with a least known depth of 35 fathoms.

(1213) In 1923, breakers were reported observed about 180 miles south of Kure Atoll in about 25°23'N., 178°04'W., by the American vessel ETHAN ALLEN. The master reported that the swell appeared to mount up and occasionally break as though over a shoal extending for about 2 or 3 miles in an east-west direction.

(1214)

Midway Islands

(1215) **Midway Islands**, 1,150 miles west-northwest of Honolulu, were discovered in 1859 by Captain N. C. Brooks, an American shipmaster on the Hawai‘ian vessel GAMBIA; possession was taken on behalf of the United States on September 30, 1867, by Captain William Reynolds of the U.S.S. LACKAWANNA. The circular atoll is 6 miles in diameter and encloses two islands. The coral reef does not completely enclose the lagoon; there is a natural opening on the west side, and another opening has been dredged on the south side. The reef rises abruptly from deep water and there are no off-lying rocks or shoals; breakers mark all seaward sides of the reef. The enclosed islands average 12 feet high with a maximum height of 45 feet. Numerous birds, especially albatross, nest on the islands and are sometimes a hazard to landing or departing airplanes.

(1216) The Midway Islands, not part of the State of Hawaii, are under the administration of the Department of the Interior **Midway Atoll National Wildlife Refuge** established by Executive Order No. 13022 of October 31, 1996. Copies of the Executive Order directing the **Management** and **General Public Use** of the National Wildlife Refuge System can be obtained from Refuge Manager, Hawai‘ian/Pacific Islands National Wildlife Refuge Complex, U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, P.O. Box 50167, Honolulu, HI 96850.

(1217) Requests for emergency entry of vessels in distress should be made by any means possible to the Joint Rescue Coordination Center (JRCC), Honolulu, Hawaii (808–535–3333). JRCC will then obtain entry approval or denial from the USFWS Refuge Manager and provide a response to the requester.

(1218) Non-emergency entry requests must be approved in advance by contacting the USFWS Refuge Manager. Additionally, the Midway harbormaster can be reached by VHF-FM radio channel 16.

(1219) **Eastern Island**, at the southeast end of the atoll, is triangular in shape, about 1.2 miles long, and 6 to 12 feet high.

(1220) **Sand Island**, on the south side of the atoll, is about 2 miles long in a southwest direction and is composed of white coral sand. Prominent from offshore are the towers, tanks and radio masts of the naval installations

(1238)

METEOROLOGICAL TABLE – COASTAL AREA OFF MIDWAY ISLAND
Between 27°N to 28°N and 176°W to 179°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	4.1	3.0	2.2	0.8	0.1	0.0	0.2	0.0	0.1	0.3	1.3	3.4	1.4
Wave Height > 9 feet [1]	11.0	12.2	4.7	2.8	1.6	0.2	1.0	0.9	1.4	2.0	7.3	11.2	5.3
Visibility < 2 nautical miles [1]	0.9	0.4	0.6	0.8	0.7	1.1	0.1	0.0	0.1	0.2	1.1	0.8	0.6
Precipitation [1]	7.6	6.2	5.3	6.6	4.0	4.5	5.9	5.3	5.9	4.7	6.5	6.0	5.7
Temperature > 69° F	23.9	17.0	27.2	38.6	65.6	96.4	99.7	99.8	99.8	97.0	81.6	49.5	64.5
Mean Temperature (°F)	67.7	66.8	68.1	69.4	72.5	76.9	79.3	80.2	79.7	76.7	73.8	70.4	73.2
Temperature < 33° F [1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean RH (%)	77	77	79	79	80	80	80	80	78	78	78	78	79
Overcast or Obscured [1]	24.3	21.9	22.6	22.0	16.6	13.3	7.4	9.4	13.2	12.8	17.3	21.2	17.1
Mean Cloud Cover (8ths)	5.3	5.0	5.0	5.1	4.9	4.5	4.3	4.5	4.5	4.6	4.8	5.0	4.8
Mean SLP (mbs)	1015	1016	1019	1021	1019	1019	1020	1019	1017	1018	1017	1017	1018
Ext. Max. SLP (mbs)	1030	1033	1032	1044	1030	1029	1032	1033	1035	1029	1030	1035	1044
Ext. Min. SLP (mbs)	987	998	993	1001	998	1002	1008	1002	1002	1002	1001	983	983
Prevailing Wind Direction	W	W	E	E	E	E	E	E	E	E	E	SW	E
Thunder and Lightning [1]	0.9	0.2	0.4	0.3	0.0	0.0	1.3	0.4	0.7	0.3	0.5	0.1	0.4

[1] Percentage Frequency

and a group of trees on the north side of the island. An aerolight is on top of the tallest tank in the north central part of the island.

(1221) **Welles Harbor** is the area inside the gap in the barrier reef on the west side of the atoll. The harbor was formerly used to a considerable extent as an anchorage by ships calling at Midway, but since the dredging of the ship channel and harbor between Sand and Eastern Islands, Welles Harbor is little used. Navigation in this area should not be attempted.

(1222)

Channels

(1223) An entrance channel leads through the south reef to basins on the east and northeast sides of Sand Island. A separate channel branches off the entrance and leads to a small-craft basin on the west side of Eastern Island. The entrance channel is marked by a lighted buoy, unlighted buoys and a **359.8°** range. (Consult the United States Fish and Wildlife Service, Notice to Mariners, and latest editions of charts for controlling depths.)

(1224)

Anchorages

(1225) The established anchorage area is northeast of Sand Island. Outside anchorage is available in depths of 15 to 25 fathoms east of the main channel sea buoy; this anchorage is fair during northeast winds but should not be attempted during winds from other quadrants. Anchorage south of Sand Island is prohibited to avoid possible fouling of the San Francisco-Honolulu-Midway-Guam-Manila cable.

(1226)

Routes

(1227) Vessels approaching Midway Islands are reminded that entry into the Midway Atoll National Wildlife Refuge is prohibited without prior approval. In approaching from any direction, vessels will remain 3 miles off until south of the entrance. Then vessels should steer a course to pass through a position (28°09'25"N., 177°21'15"W.) about 2 miles south of Midway Channel Entrance Lighted Buoy 1, then steer a north course heading directly between Sand and Eastern Islands until the channel is made out, then steer on the range. Due to the prevailing east winds and west set of current, caution must be exercised in entering. Drift and leeway should be anticipated, and sufficient speed should be maintained at all times to control the vessel. (See discussion of currents in the channel.)

(1228)

Radar Navigation

(1229) Radar and visual contact have been frequently made with the radio towers on Sand Island at distances in excess of 20 miles.

(1230) The best radar returns are the southeast edge of Sand Island, the stranded wreck on east edge of the entrance channel, the radio towers on Sand Island, an unlighted platform on the north side of the atoll and the west tip of Eastern Island.

(1231)

Currents

(1232) The current off the main entrance channel usually sets west with a velocity of about 2 knots. Within the channels, the current changes direction with velocities of 2 to 8 knots, depending on the weather; extreme caution is necessary to avoid being carried outside the channel limits. It is reported that during heavy gales Welles Harbor is full of strong currents caused by the sea forced over the reefs.

(1233)

Weather, Midway Islands

(1234) During the summer the winds are generally variable and light, either from northeast, southeast or southwest until about the middle of July, when fresh to strong northeast trades set in, continuing through July and August. Southwest winds are always accompanied with a low barometer, rain and squalls. Rain also comes occasionally with northeast and southeast winds and a high barometer. northwest winds following southwest storms generally indicate clearing weather.

(1235) During the winter from October to April, gales frequently occur, working around from southeast through southwest to northwest. Occasionally a few days of fine weather will prevail, but a rough west sea is always present.

(1236) The average temperature at Midway is 73°F (22.8°C). The average maximum is 76°F (24.4°C) while the average minimum is 68°F (20°C). The record high is 92°F (33.3°C) recorded in September 1979, July and August 1984 and August 1987. The record low is 49°F (9.4°C) recorded in January 1980. On average, only one day each year is 90°F (32.2°C) or warmer and 137 days each year are 80°F (26.7°C) or warmer.

(1237) Precipitation is moderate at Midway and averages 41.3 inches (1050 mm) each year. June is the driest month and January the wettest. On average, six thunderstorms each year affect Midway.

(1239)

Pilotage, Midway Islands

(1240) Vessels required by law to have a licensed master should consult the Captain of the Port, Honolulu (808–842–2640) to determine specific pilotage requirements. Pilots are not required for public vessels of the United States.

(1241)

Harbor facilities

(1242) Two deepwater piers are on the northeast side, and one smaller pier is in the inner harbor on the east side of Sand Island; a small-craft pier is on the west side of Eastern Island.

(1243) Provisions, jet fuel (JP-5) and water are not available for commercial use, except in case of emergency. Limited emergency repairs can be made to vessels, but there are no drydocking facilities. Tugs are available; there is a 20-ton mobile crane for use in emergencies.

(1244)

Nero Seamount

(1245) **Nero Seamount** is about 30 miles west-southwest from Midway Islands. Nero Seamount, formerly Pogy Bank, extends about 8.5 miles in an east-west direction, about 7 miles in a north-south direction, and has a least depth of 37 fathoms.

(1246)

Kure Atoll

(1247) **Kure Atoll** (28°25'N., 178°20'W.) is 50 miles west-northwest of Midway Islands, which it closely resembles both in formation and appearance. Kure Atoll is 4.5 miles in diameter, and a nearly continuous coral reef encloses a lagoon in which reefs and coral heads alternate with deep water. A mile-wide break in the southwest side of the barrier reef provides an entrance of sorts to the lagoon.

(1248)

Anchorage

(1249) Good anchorage in 15 fathoms may be found on the northwest side of the atoll.

(1250) Entry upon Kure Atoll must be approved by the State of Hawaii, Department of Land and Natural Resources and Commander, 14th Coast Guard District, Honolulu, HI. These restrictions apply to all civilian and military agencies as well as individuals.

(1251) **Green Island**, on the southeast side of the atoll, has a highest elevation of 20 feet and is covered with scaevola brush.

(1252) The island is a wildlife refuge and entry upon the island must be by approval of the State of Hawaii Department of Land and Natural Resources. This restriction applies to civilian and military agencies as well as individuals. The Coast Guard has reported that Green Island presents a good radar target at 22 miles and the reef line presents a good target at 7.5 miles. Another good radar target, reported by NOAA Ship TOWNSEND CROMWELL, is a large wreck in about 28°27.0'N., 178°18.9'W., on the northeast side of the atoll. West of Green Island are small sand islets, the largest of which is 8- to 10-foot-high **Sand Island**. These islands continually shift and change with weather and sea action.

(1253) The best anchorage is on the west side, at the southwest corner of the atoll with depth of 8 to 15 fathoms, rocky bottom. Boats may then be taken to a concrete pier with 3 to 5 feet alongside, located at about the midpoint of the lagoon side of Green Island. Vessels also anchor about 0.3 to 0.5 mile south-southwest of the south tip of Green Island in depths up to 15 fathoms. Landings can be made in good weather through a break in the reef to a sand beach at the southwest tip of Green Island; depths to the landing are 5 to 6 feet between small coral heads and ledges.

(1254) A bank with depths of 20 to 30 fathoms surrounds Kure Atoll. No dangers have been observed outside the reef; however, the reef is inadequately surveyed. From the appearance of the islands, it may be assumed that they are sometimes visited by severe storms, the sand being thrown into numerous cones and pyramids.

(1255)

Currents

(1256) A set to the south has been observed between Kure Atoll and Midway Islands. In the vicinity of Kure Atoll

a continuous east current of about 2 knots during west weather has been reported.

(1257)

Weather

(1258) Weather for Kure Atoll is similar to that for the Midway Islands.

(1259)

ENC - US1HA01M
Chart - 540

(1260) A vessel reported (1944) sighting a suspected shoal in position 14°30'N., 179°02'W. The discolored water covered an area 29 by 75 feet, and was estimated to have depths of 5 to 7 fathoms. A shoal, the existence of which is doubtful, is shown on the chart at position 13°33'N., 170°24'W. In 1946, a vessel reported finding no indication of shoaling in this position.

(1261)

Johnston Atoll

(1262) **Johnston Atoll** (16°45'N., 169°31'W.) is a Naval Defensive Sea Area and Airspace Reservation and a National Wildlife Refuge. It is about 780 miles west-southwest of the Island of Hawai‘i and consists of four islets that lie on a reef about 9 miles long in a northeast-southwest direction. Johnston Island, the largest island, lies about 2 miles inside the southwest end of the reef. **Sand Island** and **Hikina Island** lie about 1 and 2 miles northeast of Johnston Island, respectively; **Akau Island** is about 1.5 miles north of Sand Island. The atoll is closed to the public and unauthorized traffic and shall not be navigated within 3 miles of the perimeter.

(1263) **Johnston Atoll National Wildlife Refuge** encompasses all lands and waters within 12 miles from emergent land; the emergent land is currently under the administrative jurisdiction of the U.S. Air Force. Entry to the refuge is strictly prohibited without prior approval from the U.S. Air Force and the Pacific Reefs National Wildlife Refuge Complex (See Appendix A, Department of Interior for address.) Johnston Atoll National Wildlife Refuge is managed as a highly restricted marine reserve to prevent the introduction of invasive species and protect nesting seabirds, sea turtles, other sensitive wildlife and coral reef habitats and is subject to federal regulations (See 50 CFR Parts 25-38 and 665). More information can be found at *fws.gov/refuge/johnston_atoll*.

(1264)

Channels

(1265) The main entrance channel is entered south of Johnston Island and leads to the harbor. The harbor consists of a turning basin within the lagoon about midway between Johnston and Sand Islands. In 1964, the entrance channel was dredged to a depth of 35 feet. The turning basin and harbor area have a depth of 35 feet. The berthing area alongside the main pier has a depth of 29.8 feet. Maximum draft for vessels entering the harbor under normal conditions is 28 feet. The largest vessel to enter was 656 feet long. Vessels should not enter at night or when cross-channel winds exceed 25 knots. Vessels bound for the entrance channel should approach from the south, passing through position 16°41'N., 169°31'W.

(1266)

Dangers

(1267) A barrier reef surrounds Johnston Island and extends in an arc from about 2 miles west to about 7 miles northeast of the island. Depths outside the reef drop off to 100 fathoms about 0.4 mile off. With heavy breakers on the reef, a 2- to 3-foot surge exists inside the lagoon. From the northeast, via south to southwest, is a foul area with a very irregular bottom. The 100-fathom curve, lies 4 miles south of the center of Johnston Island; however, there are 5-fathom shoals lying as close as 0.3 mile inside the curve and depths shallower than 10 fathoms can be found as far as 10 miles east and 6 miles southeast of Johnston Island.

(1268)

Currents

(1269) In the main entrance channel there is usually a flow to the north during the flood and a flow to the south during the ebb, at a rate of 1 to 2 knots. The high water interval is 3 hours and 15 minutes. The mean range of the tide is 2 feet. When there is a heavy swell on the barrier reef, there may be a strong east set at the junction of the main entrance channel and basin, especially with the ebb tidal current. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(1270)

Weather

(1271) Winds average 10 to 15 knots in summer and 15 to 25 knots in winter. They are from the east to northeast about 90 percent of the time. The occasional Hawai‘ian Island storms are characterized by stormy south or southwest winds and heavy rains. Brief showers occur frequently, but protracted bad weather is rare. Visibility is good, usually over 12 miles.

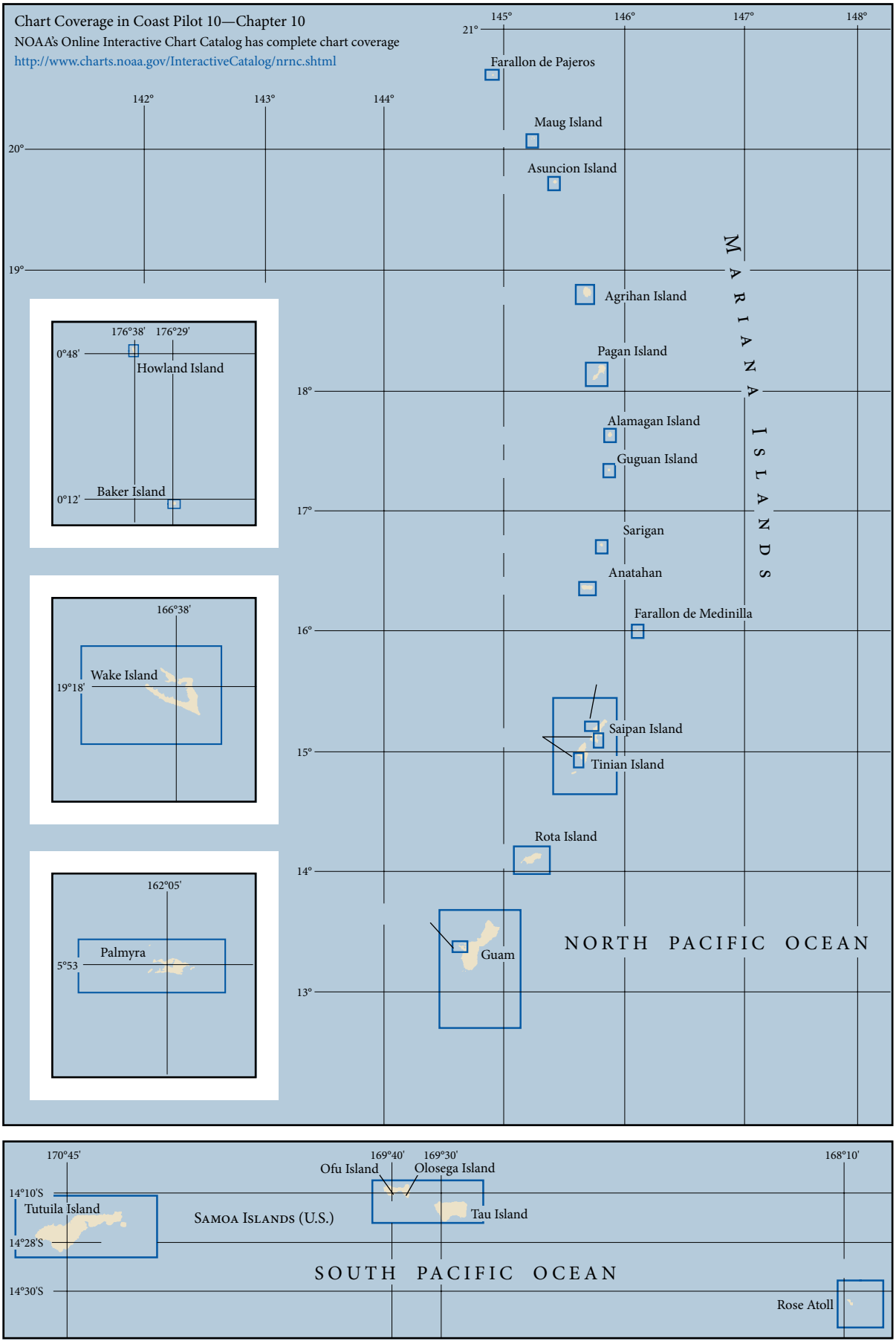


Chart Coverage in Coast Pilot 10—Chapter 10
NOAA's Online Interactive Chart Catalog has complete chart coverage
http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml
145°
146°
147°
148°
21°
Farallon de Pajeros
142°
143°
144°
Maug Island
20°
Asuncion Island
19°
MARIANA ISLANDS
Agrihan Island
176°38'
176°29'
0°48'
Howland Island
Pagan Island
18°
Alamagan Island
Guguan Island
0°12'
Baker Island
17°
Sarigan
Anatahan
166°38'
Farallon de Medinilla
16°
Wake Island
19°18'
Saipan Island
15°
Tinian Island
Rota Island
162°05'
14°
Palmyra
5°53
Guam
NORTH PACIFIC OCEAN
13°
170°45'
169°40'
169°30'
168°10'
Ofu Island
Olosega Island
14°10'S
Tutuila Island
Samoa Islands (U.S.)
Tau Island
14°28'S
SOUTH PACIFIC OCEAN
14°30'S
Rose Atoll

Pacific Islands

(1) Islands and Pacific waters discussed in this chapter are other than those of the Hawai‘ian Archipelago.

(2)

National Wildlife Refuges

(3) The U.S. Department of the Interior, Fish and Wildlife Service, National Wildlife Refuge System, Pacific Reefs National Wildlife Refuge Complex manages ten National Wildlife Refuges in the Pacific region. Eight of these Refuges consist of waters and submerged and emergent lands. The remaining two refuges, the **Marianas Arc of Fire** and the **Mariana Trench National Wildlife Refuges**, consist only of submerged lands.

(4) The eight National Wildlife Refuges are Rose Atoll (American Samoa), Johnston Atoll, Wake Atoll, Howland Island, Baker Island, Jarvis Island, Kingman Reef and Palmyra Atoll. The refuge boundaries extend outward 12 miles, except at Rose Atoll. The refuges are managed as highly restricted marine reserves to prevent the introduction of invasive species (e.g., rats, insects, plants) and protect nesting seabirds, sea turtles, other sensitive wildlife and coral reef habitats.

(5) The waters and submerged and emergent lands of National Wildlife Refuges are subject to the regulations governing the National Wildlife Refuge System found in Title 50 of the Code of Federal Regulations, parts 25–38. Therefore, except as provided by international law, these areas are closed to all forms of entry, other than innocent passage, unless specifically authorized by a Special Use Permit issued by the U.S. Fish and Wildlife Service. An entry permit is obtained from Pacific Reefs National Wildlife Refuge Complex (see Appendix A, **Department of Interior** for address). For more information, visit the U.S. Fish and Wildlife Service National Wildlife Refuge and Marine Monuments at *www.fws.gov/pacificislandsrefuges*.

(6)

Samoa Islands

(7) The **Samoa Islands** (Navigator Islands) (13°25'S. to 14°30'S.; 168°00'W. to 173°00'W.) consists of two groups of islands, which are commonly referred to as **American Samoa** and **Western Samoa**. The islands comprising American Samoa are **Tutuila Island**, **Aunuu Island**, **Ofu Island**, **Olosega Island**, **Ta'u Island** and **Rose Atoll**. Western Samoa comprises the islands of **Upolu Island** and **Savai'i Island**.

(8) The Samoa Islands have been populated for 3,000 years but known to the western world for little more than two centuries. American Samoa, the only U.S. territory south of the equator, consists of five rugged, highly eroded volcanic islands and two coral atolls. The land area of the territory is 76 square miles. The islands have a population of approximately 65,000, with most people living on Tutuila Island. Tuna fishing and canning are the major industries.

(9) The **National Marine Sanctuary of American Samoa**, established in 1986 and expanded in 2012, consists of six distinct units. These units include Larsen Bay (Fagalua/Fogama‘a), Fagatele Bay and the waters surrounding Swains Island, Rose Atoll (Muliava), Annu’u Island (partial) and Ta’u Island (partial). The precise boundaries are defined by regulation. The Sanctuary contains a unique and vast array of tropical marine organisms, including corals and a diverse tropical reef ecosystem with endangered and threatened species. The Sanctuary also contains areas such as near-shore, mid-shore, deep reef, seamount, open pelagic waters and other habitats and areas of historical and cultural significance. (See **15 CFR 922.1** through **922.50** and **Subpart J**, chapter 2, for limits and regulations.)

(10)

COLREGS Demarcation Lines

(11) The lines established for U.S. Pacific Island Possessions are described in **33 CFR 80.1495**, chapter 2.

(12)

Weather, Samoa Islands

(13) The prevailing winds, or so-called trade winds, come from a direction more nearly east, blowing between east-southeast and north-northeast. They are fairly constant through the dry season, but during the wet season they are fitful and are frequently broken by periods of calm. The islands lie within the typhoon area of the west Pacific. Typhoons occur from January to March and occasionally up to the middle of April. The year divides itself distinctly but not sharply into a dry season (May to November) and a wet season (November to April.) The wettest month, January, has a range of 5 to 65 inches of precipitation. The annual rainfall has also varied this much. The climate varies little from year to year because of the great area of water surrounding the group. December is the hottest month, with an average excess of only about 2° over the mean temperature for July, the coldest month.

(14)

Caution

(15) Caution should be exercised in the vicinity of American Samoa, as several Fish Aggregating Devices have been moored at off-lying, deep-water locations around Tutuila Island and other positions around the group. The devices

may drift off position, and/or concentrations of fishing vessels may be found in their vicinity. The devices are comprised of aluminum catamaran floats painted orange and white. Each device carries a white daymark, fitted with the letter designation of the device, and a flashing white light. The devices offer good radar returns.

(16) **Rose Atoll** (14°33'S., 168°09'W.), the farthest east of the Samoa Islands, is nearly square in shape; its sides are about 1.5 miles in length. Sand Island, inside the reef on the north extremity, is merely a sand spot. A large clump of trees, 65 feet high, stands on Rose Island. A boat channel leading inside the atoll is close west of the north extremity of the reef. This channel is very dangerous to navigate and should only be attempted in an emergency.

(17) **Rose Atoll Marine National Monument** incorporates approximately 13,451 square miles within its boundaries, which extend 50 miles from the mean low water line of Rose Atoll. Permission is not required for innocent passage through these waters; however, mariners should exercise extreme caution to avoid close proximity (within 1 mile) to reefs and emergent land, disturbance to wildlife, sensitive habitats, introduction of invasive species or accidental grounding. Commercial fishing is prohibited within the Monument (See **50 CFR 665**). More information can be found at *fws.gov/refuge/rose_atoll_marine_national_monument*.

(18) **Rose Atoll National Wildlife Refuge** encompasses all lands and waters within the mean low water line of the outer reef. Entry to the refuge is strictly prohibited without prior approval from the Pacific Reefs National Wildlife Refuge Complex (See Appendix A, Department of Interior for address.) Rose Atoll National Wildlife Refuge is managed as a highly restricted marine reserve to prevent the introduction of invasive species and protect sensitive wildlife and coral reef habitats and is subject to federal regulations (See **50 CFR Parts 25-38**). More information can be found at *fws.gov/refuge/rose_atoll*.

(19)

Tides and currents

(20) Tidal currents off Rose Atoll are reported to set northeast and southwest, with the southwest or ebb current being the stronger. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov*.

(21) The **Manu'a Islands** (14°13'S., 169°33'W.) consists of three islands, Ofu, Olosega, and Ta'ū Island, which extend over an area of about 17 miles in an east-southeast/west-northwest direction. The islands are about 60 miles east of Tutuila Island. Ofu and Olosega are joined by a bridge. These islands are sparsely populated. The villages on the islands have only a few hundred people. There is a national park on Ofu and Ta'ū Island.

(22) **Ta'ū Island** (14°15'S., 169°28'W.) is the farthest east of the three islands which comprise the Manu'a Islands. The island is about 5.8 miles long, east to west, is dome-shaped and rises to a height of 3,170 feet. It is covered with vegetation. **Maafee Island** is located close offshore, about 0.3 mile south of the west extremity of the island.

(23) **Ta'u Harbor** (14°14.5'S., 169°30.6'W.), on the west shore, has an entrance channel, marked by a **045°** unlighted range, and leads northeast to a turning basin in the harbor. In 2012, the controlling depth was 14.5 feet in the entrance channel, thence depths of 10 to 13 feet were available in the basin (except for lesser depths to 7 feet in the south corner.) Permission to enter the harbor along with directions must be obtained from the harbormaster in Pago Pago Harbor.

(24) The entrance channel to the harbor is cut through a reef. Waves routinely break along this reef on either side of the harbor entrance and may be encountered in the channel during moderate surf conditions. In transiting the entrance channel, attempts to time incoming swells may be difficult due to the unpredictable nature of wave systems in the vicinity. If there is a necessity to transit the channel during periods of moderate surf, low tide may present safer conditions. Faleāsao Harbor may also provide more favorable conditions when wind and seas are out of the southeast.

(25) **Faleasao Harbor** (14°13.02'S., 169°30.10'W.) is located at the northwest point of Ta'u Island. Severe storms have damaged the jetty, and mariners are advised to avoid the jetty while transiting the channel. Numerous coral heads and a shallow bottom present a danger to navigation. In 2005, the controlling depth was 10 feet in the entrance channel (except for lesser depths to 7 feet along the edges), thence the harbor basin had depths of 9 to 10 feet with lesser depths in the northwest corner. The entrance is marked by a **200.5°** unlighted range. Permission to enter the harbor along with directions must be obtained from the harbormater in Pago Pago Harbor.

(26)

Anchorage

(27) **Faleāsao**, on the northwest side of the island, affords sheltered anchorage, in 14.5 fathoms, during the trade winds, but a vessel should be prepared to weigh anchor with any change. Anchorage may be obtained, in 13 fathoms, coral, 0.4 mile west of **Fiti'uta Point**, the northeast extremity of the island.

(28)

Caution

(29) An area with a least depth of 23 fathoms is about 1.3 miles west from the northwest extremity of Ta'u Island. This area has experienced submarine volcanic activity.

(30)

Currents

(31) The tidal currents at the Faleasau anchorage flow southwest on the ebb at 1 to 2 knots, and the flood flows northwest at 1 to 2 knots. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov*.

(32) **Olosega Island** (14°11'S., 169°37'W.), 6 miles northwest of Ta'u Island, rises nearly perpendicular on its west side to a height of 2,095 feet. The coral reef surrounding the island consists of two regular shelves,

one beyond the other. There is fair anchorage, except during the trade winds, in 18 fathoms, coral, south of the west extremity of Olosega Island, and in 14.5 fathoms, sand, northeast of the west extremity of the island.

(33) **Ofu Island** (14°11'S., 169°39'W.) is separated from Olosega Island by Asaga Strait, which is about 0.2 mile wide. Ofu Island is nearly 3 miles long in an east-west direction and about 1.5 miles at its widest point. The island rises to 1,621 feet on its southeast part. Two islets lie off the west side of the island. The coastal reef extends about 0.2 mile from Ofu Island to these islets. Lights are on the northwest end of the island. There is good anchorage, except during strong trade winds, in 17 fathoms, sand, northwest of **Sunuitao Peak**, at the east end of the island.

(34) **Ofu Harbor** (14°09.8'S., 169°40.9'W.) is on the northwest point of Ofu Island. A dredged entrance channel leads east to a turning basin inside the harbor. In 2015, the controlling depth was 18 feet in the entrance channel to the basin, thence depths of 14 to 16 feet were available in the basin with lesser depths in the southeast corner. Storms have damaged the seawalls, and mariners are advised to stay clear. Offloading and loading of cargo is not advised during high tide. Permission to enter the harbor along with directions must be obtained from the harbormaster in Pago Pago Harbor.

(35) **Tutuila Island** (14°19'S., 170°42'W.) is about 17 miles long in an east-northeast/west-southwest direction, 5 miles wide, and rises to a height of 2,142 feet. A wooded mountain ridge extends nearly the entire length of the island and is extremely rugged, especially in the east. The north coast is bold and precipitous. The 100-fathom curve lies from 0.1 to 2.3 miles off the south coast, about 4.3 miles off the west extremity, and from 1.3 to 2.5 miles off the north coast. There are several shoal areas, especially off the south coast, which are best seen on the chart. The south coast of the island extends from **Cape Matātula**, the east extremity of the island, in a west-southwest direction about 14 miles to **Steps Point**, the south extremity, and then about 5.8 miles northwest to **Cape Taputapu**, the west extremity. From Cape Matātula to **Matuli Point**, 1.5 miles south, the coast is fronted by a reef that extends about 0.1 mile offshore.

(36) **Auasi Harbor**, about 0.5 mile west-southwest of Matuli Point, is protected by a jetty on the southwest side and a breakwater to the northeast. An entrance channel leads northwest, between the jetty and breakwater, into the harbor to a turning basin. In 2005, the controlling depths were 9 feet in the left half and 3 feet in the right half of the entrance channel, thence depths of 5 to 8 feet were available in the basin.

(37)

Currents

(38) Currents near the coast set south-southwest, particularly with northeast winds; velocities of 4 knots have been observed. Between Tutuila Island and Upolo Island (Western Samoa), a northwest current with a velocity of less than 0.5 knot has been found to exist. A current setting southwest from Cape Taputapu is said to produce overfalls.

(39) **Aunuu Island** (14°17'S., 170°33'W.) is 0.7 mile south-southeast of Matuli Point. The island has two peaks, and there is a village at its west end.

(40) **Aunuu Harbor** is located on the west side of Aunuu Island. Aunuu Harbor is a feeder port for the island. Small boats from **Auasi Harbor** on Tutuila Island frequently transit between the islands. Mariners should be aware that the light off the northwest corner of the island, near the harbor, marks the entrance and is on the south jetty, not the north jetty. Permission to enter the harbor along with directions must be obtained from the harbormaster in Pago Pago Harbor.

(41) A dredged entrance channel leads east between a revetted mole on the north and a breakwater on the south to a mooring basin. In 2012, the controlling depth was 9 feet in the entrance channel, thence depths of 7 to 8 feet were in the basin.

(42)

Caution

(43) A cable area extends across the channel between Aunuu and Tutuila Islands and is best seen on the chart; vessels should avoid anchoring in the vicinity. **Nāfanua Bank**, with a least charted depth of 3½ fathoms, extends 1.5 miles in a southwest direction from Aunuu Island. A rock, covered 1¾ fathom, is about 0.4 mile south-southeast of **Cape Fogausa**. A rock, covered 3 fathoms, is about 1.2 miles southwest of Cape Fogausa between **Faga'itua Bay** and **Narragansett Passage**. The chart should be consulted for other depths.

(44) **Breakers Point** (14°17.4'S., 170°39.8'W.), 3.5 miles west-southwest of Cape Fogausa, is the east entrance point to Pago Pago Harbor and is marked by a light. In 1989, discolored water was reported in the south approach to the harbor in about 14°22.2'S., 170°40.7'W. **Tāemā Bank**, with a least depth of 4 fathoms, lies about 1.6 miles south-southeast of the entrance to Pago Pago Harbor. The bank is about 2.3 miles long in an east-northeast/west-southwest direction and is marked on the west end by a lighted buoy. Narragansett Passage is between Tāemā Bank and Nāfanua Bank to the east. There are several banks in the vicinity of the passage whose positions may best be seen on the chart. The passage is not recommended due to the age of survey.

(45) **Pago Pago Harbor** (14°17'S., 170°40'W.), a natural harbor located on the south shore of Tutuila Island, is entered between Breakers Point and **Niuloa Point**. **Pago Pago**, on the northwest side of the harbor, is the largest village on the island and is the capital of American Samoa; it is the only port of entry for American Samoa. The village of **Utulei** is close southeast of the government administration buildings, and the village of **Fagatogo** is close west of the same buildings.

(46)

Prominent features

(47) Easily identified landmarks include Aunuu Island; Steps Point, the south extremity of the island; the sharp peak of **Matafao Peak**, 2,142 feet high, 1.3 miles south of Pago Pago; the flat, dome shape of **North Pioa Mountain**, 1,718 feet high, on the east side of the harbor; and **Fatu Rock**, 102 feet high, 0.2 mile south of Niuloa Point. **Tauga Rock**, about 1 mile east of Breakers Point, is 89 feet high and prominent.

(48)

Routes

(49) Vessels approaching from the east should pass about 2 miles east and 1.5 miles southeast of Aunuu Island, thence a course of **256°** should be steered until **Breakers Point Light** (14°17'23"S., 170°39'49"W.) bears about **025°**, thence alter course to the north to pass west of Tāemā Bank. When clear of the bank, steer a northeast course to intersect the entrance range, thence steer **342°** and enter the harbor the range. This range line passes east of **Whale Rock** and west of **Toasa Rock**. Vessels and deep-draft vessels approaching from the west or south should keep outside the 100-fathom line until reaching 14°21.0'S., 170°41.5'W., thence steer **025°** to clear the west end of Tāemā Bank, then proceed as directed above. Mariners should stay well clear of Tāemā Bank. Locals have noted breakers over Tāemā Bank during rough weather.

(50)

Anchorage

(51) There is good anchorage in the inner harbor, in 6 to 25 fathoms, mud and sand. The best anchorage for large vessels is at midchannel off the Main Dock. Vessels of 1,000 gross tons or more should not anchor in less than 15¾ fathoms, as the harbor becomes narrow and there is no room to swing.

(52)

Dangers

(53) The shores of the harbor are fringed by reefs, which on the west and east sides of the entrance extend up to 0.3 mile offshore. In most parts the reefs are steep-to and their edges are marked by surf. The depths in the harbor are from 17 to 37 fathoms. A dangerous submerged wreck is about 0.1 mile south of Breakers Point. **Whale Rock**, covered 2 fathoms and marked by a lighted buoy on the east side and Toasa Rock covered 2 feet and marked by a buoy on the southwest side, are the two principal dangers in the harbor.

(54)

Tides

(55) The mean tidal range is 2.3 feet, while the spring range is 3 feet.

(56)

Pilotage

(57) Pilotage is not compulsory but is advisable; a pilot is available day or night. Pilotage fees are charged whether or not a pilot is used. It is recommended that large vessels request a pilot if docking in inclement weather. A radio request for a pilot should be made 24 hours prior to the ETA. The pilot boards in 14°17.27'S., 170°40.16'W., south of Whale Rock. In calm weather, the pilot will embark 0.75 mile south of Fatu Rock. Entrance at night is not encouraged; however, if previous arrangements are made and weather permits, a pilot will embark during hours of darkness. Port officials board incoming ships alongside the dock.

(58)

Harbormaster

(59) Pago Pago Harbor Control and the harbormaster may be contacted on VHF-FM channel 16 or 6. Pago Pago Harbor Control also monitors 2182 kHz. Required notifications to the Officer in Charge, Marine Inspection and/or the Captain of the Port, Honolulu, may be made in American Samoa to:

(60) U.S. Coast Guard Liaison Office, American Samoa

(61) P.O. Box 249

(62) Pago Pago, AS 96799

(63)

Wharves

(64) Station Wharf (Main Wharf), on the south side of the inner harbor, has depths of 5¼ to 6 fathoms alongside; however, in 1987, a vessel reported a least depth of 5 fathoms alongside. A deep-draft container wharf, 787 feet long, is situated between Station Wharf and the oil dock. The oil dock has depths of 5¼ fathoms alongside. In 1992, Station Wharf and the oil dock were reported to be in poor condition. The customs pier has a depth of 1½ fathoms at the southwest end and 3¾ fathoms at the northeast end. The facilities on the north shore of the inner harbor are reserved for the fishing fleet serving the canneries.

(65) From Pago Pago Harbor, the shore trends southwest 6.8 miles to **Steps Point** (14°22.4'S., 170°45.6'W.) Midway along this stretch of shore, near the airport, a reef extends about 0.3 mile offshore; the sea breaks continuously on this reef.

(66) The shore from Steps Point to **Pupualoa Point**, about 2 miles northwest, is formed partly by perpendicular rocks and partly by blocks of lava, which extend some distance seaward and upon which the sea breaks. **Leone Bay** is entered between Pupualoa Point and **Fagaone Point**, and is open to the south-southwest. There is anchorage west of the village of **Leone**, in 15 to 20 fathoms, but it is dangerous when winds are from the south or south-southwest.

(67) **Cape Taputapu** (14°19'S., 170°51'W.), the west extremity of Tutuila Island, lies 1.5 miles west-northwest of Fagaone Point. It is a mass of high, steep rocks, fronted by some rocky islets. Taputapu Island lies on the reef close southwest of Cape Taputapu. The following banks, with the indicated least depths, lie in the approach to Cape Taputapu:

(68) a. 14 fathoms – 3.3 miles southeast.

(69) b. 11 fathoms – 2.3 miles south-southeast.

(70) c. 15 fathoms – 3.8 miles southwest.

(71) d. 18 fathoms – 3.5 miles west.

(72) The north coast of Tutuila Island is described from east to west. From Cape Matātula to **Pola Island**, 6.5 miles west, the coast is indented by numerous bays. The coast then trends west-southwest 11 miles to Cape Taputapu; this coast is also indented with bays. **Aoa Bay** (14°15.0'S., 170°35.4'W.), affords anchorage, in 16 fathoms, midway between the entrance points. **Masefau Bay**, entered west of **Tiapea Point**, 1.5 miles west of Aoa Bay, affords anchorage, in 17 fathoms. The surrounding reefs and **Nuusetoga Island**, off the west entrance point, narrow the anchorage. **Āfono Bay**, 1.5 miles west of Nuusetoga Island, is reported to provide good anchorage, in 14 fathoms, coral, except in north winds.

(73) **Pola Island** (14°14.0'S., 170°40.2'W.), 1.5 miles northwest of Afona Bay, is located off the northernmost part of Tutuila Island. **Matalia Point**, the north extremity of Pola Island, leads down from a ridge of rocks that are high, indented, and steep. An area with a least depth of 11 fathoms is just over 1 mile east-northeast of Matalia Point, and an area with a least depth of 14 fathoms is about 1.5 miles west of the point.

(74) **Fagasā Bay** is about 4 miles southwest of Matalia Point. Anchorage, protected from the trades, can be had in 13 fathoms between the east and west points of the bay. Between Fagasā Bay and **Aoloau Bay**, 3 miles west-southwest, there are two small bays backed by mountains. Aoloau Bay affords good anchorage, in 14 fathoms in mid-bay, but vessels should be prepared to leave on short notice when the winds shift to the north. Aoloau Bay is small and surrounded by high mountains. A 12-fathom area is 1.5 miles north-northeast of Aoloau Bay. Similar depths are charted to a distance of 4.8 miles west of the 12-fathom depth.

(75) **Poloa Bay** (14°19.0'S., 170°50.6'W.), 4 miles southwest of Aoloau Bay, affords good anchorage during east winds, in 16 fathoms, midway between the entrance points. Vessels should be prepared to leave on short notice when the wind shifts to the west. In this bay there is a 1 to 4 knot current that runs in a southwest direction. Cape Taputapu is located close southwest of Poloa Bay.

(76) **Swains Island** (11°03'S., 171°04'W.), about 195 miles north-northwest of Tutuila Island (American Samoa), is a circular-shaped island, with a diameter of about 1.5 miles. The island is administered by the government of American Samoa. A steep reef surrounds the island and uncovers at low water. The island is covered with heavy vegetation including palm trees reaching 100 feet at the northwest corner and 70 to 80 feet on the east side.

(77) Swains Island provides no sheltered anchorage; deep-draft vessels are advised to remain at least 0.4 mile offshore as depths shoal rapidly. There is anchorage for small vessels, north of the village of **Taulaga**, on the west side of the island. A charted landing, marked by a flagpole, is at Taulaga.

(78)

Pacific Remote Islands Marine National Monument

(79) The **Pacific Remote Islands Marine National Monument** incorporates approximately 86,888 square miles within its boundaries, which extend 50 miles from the mean low water lines of Howland, Baker and Jarvis Islands; Johnston, Wake and Palmyra Atolls; and Kingman Reef. Permission is not required for innocent passage through these waters; however, mariners should exercise extreme caution to avoid close proximity (within 1 mile) to reefs and emergent land, disturbance to wildlife, sensitive habitats, introduction of invasive species or accidental grounding. Commercial fishing is prohibited within the monument. More information can be found at *fws.gov/refuge/pacific_remote_islands_marine_national_monument* and *www.fpir.noaa.gov*.

(80)

Palmyra Atoll

(81) **Palmyra Atoll** (5°53'N., 162°05'W.), about 870 miles south-southwest of the Island of Hawai'i, is an atoll that consists of many small islets lying on a barrier reef enclosing three distinct lagoons. The reef surrounding the atoll is 5 miles long, east to west, and 2 miles at its widest part. Shoal water extends 1.8 miles east from the southeast end of the reef and the same distance from the northwest and southwest ends. The islets are low, about 6 feet high, and covered with coconut and other trees reaching heights of 98 feet and visible 12 to 15 miles.

(82)

Channels

(83) A dredged entrance channel leads through the southwest side of the atoll to West Lagoon; it is the only entrance to the atoll. In 2006, a depth of 18 feet was reported in the channel. Depths in the lagoon vary from 10 to 174 feet. Reefs and shoals within the lagoon are shown on the chart. A pier along the northeast edge of West Lagoon is in poor condition with depths of 19 to 23 feet alongside. A current is reported to set west in the entrance channel. It is not advisable to enter the channel between sunset and sunrise.

(84)

Anchorage

(85) The atoll should be approached from the west and anchor on the bank, in 72 feet, sand and coral, with the northwest extremity of the island bearing 071°, 2.5 miles distant, or farther in, in 48 feet, sand and coral, with the point on the same bearing 2 miles distant. It is not advisable to attempt to anchor between sunset and sunrise. In 1988, a 2 knot current setting south was observed during a northwest fresh at the anchorage. Anchorage in West Lagoon may be had only with permission from the Refuge Manager.

(86)

Caution

(87) An explosive dumping area is situated with its center about 15 miles west-southwest of Palmyra Atoll.

(88)

Tides and currents

(89) The tidal rise at Palmyra Atoll is about 2 feet at MHHW and 0 feet at MLW. Strong and variable currents can be expected in the vicinity of the atoll. Caution is advised if approaching the atoll from the southwest as dangerous tide rips have been reported 5 miles southwest of the atoll. A current sets northwest across the entrance channel and is particularly strong southwest of Sand Island.

(90)

Weather

(91) Palmyra Atoll has unfavorable weather and is the only island/atoll in its latitude where fresh west winds occur. A tropical front, a result of the Northeast and Southeast Trades converging, hovers in the vicinity of the atoll. Northeast Trades prevail, with an average velocity of 10 to 12 knots. There are frequent squalls of short duration and occasional winds up to 22 knots; typhoons are infrequent. Rainfall is heavy and humidity high, ranging from 100 to 180 inches annually. Rain occurs almost daily and heavy squalls come up suddenly from the southwest, but there are no severe storms.

(92) Palmyra Atoll is a U.S. possession and a National Wildlife Refuge under the jurisdiction of the U.S. Fish and Wildlife Service. The refuge encompasses all other islands, waters and submerged lands within 12 miles from emergent land. Visiting vessels are welcome but only with prior approval from the Pacific Reefs National Wildlife Refuge Complex (See Appendix A, Department of Interior, for address.) Palmyra Atoll National Wildlife Refuge is managed as a highly restricted marine reserve to prevent the introduction of invasive species and protect sensitive wildlife and coral reef habitats and is subject to the National Wildlife Refuge System regulations (See **50 CFR Parts 25-38**). More information can be found at *fws.gov/refuge/palmyra_atoll*. Some islands of the atoll are privately owned, including Cooper Island, which is administered by The Nature Conservancy; personnel on the island monitor VHF-FM channel 16.

(93)

Kingman Reef

(94) **Kingman Reef** (6°25'N., 162°26'W.) is located about 33 miles north-northwest of Palmyra Atoll. It is triangular in shape with its apex to the north and is about 9 miles long east and west and 5 miles north and south. The reef dries on its northeast, east and southeast edges with small islets, reported to not be permanent, forming on these sides. The remainder of the atoll is contained within the ridge with depths of 10 to 20 fathoms. Breaks in the reef are on the north and south sides. Outside the ridge the bottom slopes steeply to over 100 fathoms.

(95) The reef has been reported to be difficult to identify, both visually and by radar. It has also been reported to be visible at 7 miles with optimal conditions; in weather it is very difficult to see. In 2007, with 8 to 10-foot seas, an island was sighted at about 3 miles out.

(96) Kingman Reef is within the belt traversed by the equatorial countercurrent, which sets east at a rate of 1.3 to 1.8 knots in this area.

(97) Kingman Reef is a U.S. possession and a National Wildlife Refuge under the jurisdiction of the U.S. Fish and Wildlife Service. The refuge encomapasses all lands and waters within 12 miles from emergent land. The reef is also a Defensive Sea Area and Airspace Reservation and is closed to the public. Kingman Reef National Wildlife Refuge is managed as a highly restricted marine reserve to prevent the introduction of invasive species and protect sensitive wildlife and coral reef habitats and is subject to federal regulations (See **50 CFR Parts 25-38** and **665**). More information can be found at *fws.gov/refuge/kingman_reef*.

(98)

Jarvis Island to Baker Island

(99) **Jarvis Island** (0°22'S., 160°00'W.), an island of sand and coral formation, is located about 460 miles south-southeast of Palmyra Atoll. The island is 1.8 miles long east to west and about 1 mile wide; it rises to a height of 20 feet. A narrow fringing reef, which dries in places and has breakers along the south shore, encircles the island. There are two breaks in the reef on the west side. A daybeacon is near the middle of the west shore.

(100) A shoal with a least depth of 2½ fathoms extends about 0.6 mile from the east side of the island. The depths drop rapidly outside the shoal area. The highest ground lies on the west end of the island. Low shrubs cover most of the island; however, it has been observed without much vegetation.

(101) Jarvis Island has been reported to lie 1 mile northeast (1991), 1.6 miles east (1992), and 1.3 miles east-northeast (1996) of its charted position.

(102) Jarvis Island is a U.S. possession and a National Wildlife Refuge under the jurisdiction of the U.S. Fish and Wildlife Service. The refuge encompasses all lands and waters within 12 miles from emergent land. Entry to the refuge is strictly prohibited without prior approval from the Pacific Reefs National Wildlife Refuge Complex (See Appendix A, Department of Interior, for address.) Jarvis Island National Wildlife Refuge is managed as a highly restricted marine reserve to prevent the introduction of invasive species and protect sensitive wildlife and coral reef habitats and is subject to federal regulations (See **50 CFR Parts 25-38** and **665**). More information can be found at *fws.gov/refuge/jarvis_island*.

(103) **Baker Island** (0°12'N., 176°29'W.) is nearly flat but rises to an elevation of 20 feet at its southwest end. At this point there is a steep, sandy beach that extends some distance north; elsewhere, the island is fringed by a coral

reef. An extensive shoal with depths of 3 to 7 fathoms extends about 0.8 mile from the island on the north and east sides. The surf breaks heavily on the east side and the southwest extremity of the island.

(104) Baker Island is a U.S. possession and a National Wildlife Refuge under the jurisdiction of the U.S. Fish and Wildlife Service. The refuge encompasses all lands and waters within 12 miles from emergent land. Entry to the refuge is strictly prohibited without prior approval from the Pacific Reefs National Wildlife Refuge Complex (See Appendix A, Department of Interior, for address.) Baker Island National Wildlife Refuge is managed as a highly restricted marine reserve to prevent the introduction of invasive species and protect sensitive wildlife and coral reef habitats and is subject to federal regulations (See **50 CFR Parts 25-38** and **665**). More information can be found at *fws.gov/refuge/baker_island*.

(105)

Anchorage

(106) There is no sheltered anchorage. Vessels lie off the island and discharge to landing craft. The fringing coral reef surrounding Baker Island makes landing difficult. The south point of the island can be used for landing when winds are from the northeast. A daybeacon is near the middle of the west shore. Tangent bearings of the island are unreliable.

(107)

Weather

(108) The west side of the island is leeward of prevailing wind conditions. Winds from the east predominate throughout the year. From December to May, the prevailing winds are sometimes interrupted by west winds and bad weather.

(109) **Howland Island** (0°48'N., 176°37'W.), about 38 miles north-northwest of Baker Island, is a low, flat island devoid of vegetation other than a few stunted trees. It is ringed by a relatively flat coral reef almost completely exposed at low water extending out to about 0.1 mile, except on the west side where the reef averages about 80 yards in width. Outside this reef is a coral shelf extending about 0.3 to 0.5 mile on the north, east and south sides and about 0.1 mile on the west side. The depths on this shelf vary between 2 and 15 fathoms.

(110) A broad, sandy, and in some places, gravelly beach slopes upward at a slight angle on the west side of the island. On the windward or east side, there is practically no beach and the island rises abruptly from the reef to an average height of 12 feet, with the highest point about 18 feet in the north part. Amelia Earhart Daybeacon is situated near the center of the west side of the island.

(111) Howland Island is a U.S. possession and a National Wildlife Refuge under the jurisdiction of the U.S. Fish and Wildlife Service. The refuge encompasses all lands and waters within 12 miles from emergent land. Entry to the refuge is strictly prohibited without prior approval from the Pacific Reefs National Wildlife Refuge Complex (See Appendix A, Department of Interior, for address.) Howland Island National Wildlife Refuge is managed as a highly restricted marine reserve to prevent the introduction of invasive species and protect sensitive wildlife and coral reef habitats and is subject to federal regulations (See **50 CFR Parts 25-38** and **665**). More information can be found at *fws.gov/refuge/howland_island*.

(112)

Anchorage

(113) In 1966, a vessel anchored 0.4 mile from the north end of the island in 30 fathoms, with the east tangent of the island bearing **144°**, the west tangent bearing **185°**, and the daybeacon bearing **167.5°**. In 1967, a vessel anchored about 0.3 mile north-northeast of the north end of the island in 13 fathoms, with the east tangent of the island bearing **153°**, the west tangent bearing **213°**, and the daybeacon bearing **176°**, distance 1 mile. If an easterly swell is present, anchorage is not advisable at the north end of the island.

(114)

Weather

(115) Winds from the east predominate throughout the year. From December to May, the prevailing winds are sometimes interrupted by west winds and bad weather.

(116)

Wake Island

(117) **Wake Island** (19°17'N., 166° 37'E.) lies in the Pacific Ocean on the direct route from Hawaii to Hong Kong. It is a U.S. possession with an area of only 3 square miles, consisting of three islands about 21 feet high. The islands form all but the northwest side of an atoll enclosing a shallow lagoon. The higher parts of the islands are covered with fairly heavy growth of scrub brush and ironwood trees. The entire island group is surrounded by a shallow reef interspersed with coral pinnacles. There is no natural fresh water.

(118) Wake Island is jointly administered by the Department of the Interior and activities on the island managed by the U.S. Air Force (USAF) Pacific Regional Support Center (PRSC). The restrictions imposed upon entry into the Wake Island Naval Defensive Sea Area have been largely suspended, except for the entry of foreign flag vessels and foreign nationals; however, the restrictions may be re-established without notice at any time. Any vessel without purpose to visit Wake Island requires approval prior to entering the Wake Island Defensive Sea Area. Wake Island PRSC Detachment 1 Commander can be hailed at VHF-FM channel 16, by phone at 808–424–2222/2468, or by email at *PACAF.PRSC.Det1@us.af.mil*. Emergency information on Wake Island can be provided by Coast Guard Sector Honolulu Command Center at 808–842–2600.

(119) Outside of Department of Defense actions, the U.S. Fish and Wildlife Service manages Wake Atoll as a National Wildlife Refuge. The refuge encompasses the lands and waters out to 12 miles from the mean

low water line of the islands, and the Marine National Monument extends out 200 miles from shore to the U.S. Exclusive Economic Zone (EEZ). Entry to the refuge and fishing within the Marine National Monument is strictly prohibited without prior approval and permits from the Pacific Reefs National Wildlife Refuge Complex (See Appendix A, Department of Interior, for address.) Wake Atoll National Wildlife Refuge is managed as a highly restricted marine reserve to prevent the introduction of invasive species and protect sensitive wildlife and coral reef habitats and is subject to federal regulations (See **50 CFR Parts 25-38** and **665**). More information can be found at *fws.gov/refuge/wake_atoll*.

(120)

Prominent features

(121) Two large fuel storage tanks are situated near the west end of Wake Island. Several current and abandoned military buildings can be seen on the island on the approach. It was reported that a ship obtained radar contact with Wake Island from a distance of 35 miles. The complete outline of the island was observed from a distance of 25 miles.

(122)

Channels

(123) On the southwest side of the atoll, between Wake Island and Wilkes Island, there is a channel leading to a small boat basin at the west extremity of Wake Island. The boat basin can accommodate three small craft, which support island operations. Vessels with prior approval should radio their ETA 48 hours in advance. An unloading wharf is situated on the southwest side of the basin, and a boat landing is at the head of the basin. Two mooring buoys, supporting cargo operations, are just outside the boat basin entrance channel. Sea conditions often permit a vessel to lie offshore and discharge cargo; this is reported to be the safest and best method for large vessels. Oil is discharged through a hose, floated out on barrels and connected to a fuel jetty at the east entrance point of the boat channel.

(124)

Anchorage

(125) The depths drop off sharply outside the atoll reef, making it unsuitable for anchorage. The lagoon itself is inaccessible. The mooring facility outside the boat basin is available to all vessels having permission to call at Wake Island but is considered hazardous. The use of an anchor is not recommended when using the mooring buoys. Vessels should not attempt to secure at the mooring buoys in an onshore or south wind. If secured to one buoy when the wind shifts to blow onshore, slip the mooring and leave the area. Any vessels moored to only one buoy must have engines on standby. Vessels should be secured to the mooring buoys with the bow headed east-southeast. Small craft usually assist in mooring operations, with the best times being at either high water or low water slack.

(126)

Currents

(127) A south-southwest current of 0.5 to 1 knot has been observed in the vicinity of Wake Island. There have been occasions when the currents are erratic and onshore sets have been observed. Vessels should carefully note the set and the drift of the tidal currents before attempting to moor. The tidal currents in the vicinity of the mooring buoys have been observed to set parallel to the shore at a rate of about 0.8 knot. The tidal range is from 2 to 4 feet. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(128)

Weather

(129) Winds from the east and northeast prevail throughout the year, with average velocities of 10 to 13 knots. Gales occur on an average of 10 days a year. By reason of its position, the atoll is subject to typhoons and tropical storms; thunderstorms seldom occur.

(130) At Wake Island, the influence of the higher latitude is noticeable, and the means vary between a low of 77°F in January and February and a high of 82°F in September. In August the mean maximum reaches 88°F. Extremes above 95°F are rare.

(131) The annual average rainfall is only 37 inches, showing a great decrease in precipitation from that occurring in the lower latitudes. The monthly totals range from a January average of 1 inch in the dry season to 7 inches in August.

(132)

Mariana Islands

(133)

Mariana Islands

(134) Mariana Islands are comprised of the **Northern Marianas** and **Guam**. The Northern Marianas, a self-governing U.S. commonwealth, consists of a chain of 16 volcanic islands, which extend in a north and south direction for a distance of about 450 miles. The islands in the group from north to south are Farallon de Pajaros, Maug, Asuncion, Agrihan, Pagan, Alamagan, Guguan, Sarigan, Anatahan, Farallon de Medinilla, Saipan, Tinian, Aguijan and Rota. Except for Maug, which is a cluster of three tiny islands, all are single islands that rise precipitously as mountain peaks of rocky, volcanic material and are conspicuous from the offing. They are a good radar target from a distance of 14 miles but are reported to give a poor return from a distance of 28 miles. Their total area is approximately 184 square miles. The three principal islands, Saipan (47 square miles), Tinian (39 square miles) and Rota (32 square miles) form two-thirds of the land area of the group.

(135) **Marianas Trench Marine National Monument** incorporates approximately 95,216 square miles and is comprised of the Trench, Volcanic and Island Units. Only the Islands Unit includes the waters as well as submerged lands out approximately 50 miles from the mean low water lines of the northernmost Mariana Islands of Farallon de Pajaros, Maug and Asuncion. The emergent lands of these three northern islands are not included in the monument and are under the jurisdiction of the Commonwealth of the Northern Mariana Islands. Permission is not required for innocent passage through these waters; however, mariners should exercise extreme caution to avoid close proximity (within 1 mile) to reefs and emergent land, disturbance to wildlife, sensitive habitats, introduction of invasive species or accidental grounding. Commercial fishing is prohibited within the monument; however, sustenance, recreational and traditional indigenous fishing within the Islands Unit is under consideration with a valid permit (See **50 CFR 665**).

(136) **Mariana Trench National Wildlife Refuge** and **Mariana Arc of Fire National Wildlife Refuge** are units of the Marianas Trench Marine National Monument and include only the submerged lands but not the overlying water column. Entry to the refuges is strictly prohibited without prior approval from the Pacific Reefs National Wildlife Refuge Complex (See Appendix A, Department of Interior, for address.) The refuges are managed as highly restricted marine reserves to protect sensitive deep-sea wildlife and geologic features of significant scientific interest and are subject to federal regulations (See **50 CFR Parts 25-38**).

(137)

Caution

(138) Fish aggregating devices in the Northern Marianas Islands consist of an orange-colored float showing a number. Some are fitted with a white flashing light and/or a radar reflector.

(139)

Weather, Mariana Islands

(140) The islands of the Marianas Archipelago have similar weather conditions. Under ordinary circumstances, the wind and seas in the vicinity of Guam are easterly due to the Northeast Trades. Westerly winds are at times experienced during the summer months as Guam is barely within the limits of the Southwest Monsoon. These winds are light as a rule. In the vicinity of Guam, northeasterly and east-northeasterly winds prevail for 6 months of the year. These winds blow from the northeast to east 65% of the time between December and May and are strongest during these months. Between June and November, the surface winds are quite variable; calms are rare. In the southerly islands, the winds show a slight southerly trend as early as May.

(141) In the vicinity of the islands of Saipan and Tinian, the steadiest winds occur when the winter monsoon and the Northeast Trades reinforce each other. Between November and April, northeast and easterly winds prevail 70% of the time at rates of 10 to 12 knots. During the summer monsoon (May to October) easterly winds predominate, but southerly to westerly winds also occur. Wind velocities are about 10 to 11 knots from May to July and 8 knots from August to October. Land mass effect modifies the maritime diurnal variations so that the surface winds are strongest at 0300 and weakest at 1400.

(142) In the vicinity of Pagan Island, the winds are steadiest during the Northeast Monsoon (November through March). They blow mostly from the northeast at an average rate of 15 knots. From April through June, the monsoon weakens and the prevailing winds become more easterly. During the wet season (June through November), easterly winds continue to predominate but with considerable percentages from southerly to westerly directions. The winds are mostly light, the only strong winds occurring with typhoons.

(143) Precipitation increases decidedly during the summer months, especially in the southern islands. The wet season (July through October) has a mean monthly average of 10 inches (254 mm) or more. The major rainfall consists of heavy showers. As a rule, the rainfall diminishes as the latitude increases.

(144) The rainy season at Guam is from the first of July until the early part of November, with a monthly average of 11 to 15 inches (279 to 381 mm). January through June is the driest period, with an average monthly fall of 3.9 to 6.5 inches (99 to 165 mm). March is the driest month with an average precipitation amount of 3.9 inches (99 mm). The mean average rainfall is about 101 inches annually (2,565 mm) but has ranged from 165 inches (4,191 mm) in 1976 to 67 inches (1,702 mm) in 1973. An average of 30 thunderstorms each year affect the island of Guam. The most active month is August.

(145) The rainy season at the islands of Saipan and Tinian is from July to November; the dry season lasts from December through June. During the rainy season, with the doldrums belt lying almost directly over these islands, there are increased showers and numerous thunderstorms and squalls. The dry season is characterized by fair weather, interrupted by fronts associated with northerly low pressure centers and some showers. Saipan Island has an average rainfall of 86 inches (2,184 mm) per year with a monthly average of 13 inches (330 mm). During the rainy season (July through October) it averages 13 inches (330 mm) per month. Throughout the rest of the year, the average is about 4 inches (102 mm) per month. April is the driest month with an average of about 2¾ inches (70 mm).

(146) Typhoons frequently form south and east of the Mariana Archipelago and routinely pass in the vicinity of these islands. They are apt to occur more often during the summer months and are accompanied by high winds and torrential rains. They seldom occur during the winter months.

(147) Tropical disturbances often occur in the vicinity of Guam. Since 1842, at least 51 tropical cyclones have come within 25 miles (46 km) of Guam and another 49 have come within 50 miles (93 km) of the island. Since 1980, nine tropical cyclones have come within 25 miles (46 km) of the island and another 11 within 50 miles (93 km) of the island. As recently as August 1992, before attaining super typhoon status, Typhoon Omar raked the island with winds of 105 knots and gusts in excess of 140 knots. Omar was the most damaging typhoon to strike Guam since Typhoon Pamela in 1976. Omar caused an estimated $457 million of damage and destroyed or severely damaged over 2,158 homes.

(148) Tropical disturbances occur between August and January in the vicinity of the islands of Saipan and Tinian. Since 1842, at least 51 tropical cyclones have come within 25 miles (46 km) of Saipan and another 53 have come within 50 miles (93 km) of the island. Since 1980, 15 tropical cyclones have come within 25 miles (46 km) of the island while an additional 15 have come within 50 miles (93 km) of the island. As recently as December 3, 1986, Super Typhoon Kim passed only 18 miles (33 km) north of Saipan and raked the island with 135 knot winds and record rainfall.

(149) Tropical disturbances usually pass well to the south of Pagan Island, but several have been experienced. August, September and October are the most likely months. January through April is the only period believed to be entirely free of such storms. Probably not more than one a year pass close enough to affect Pagan Island.

(150) Gales, other than those of tropical origination, seldom occur in the vicinity of the islands of Tinian and Saipan. Winds reach gale force in the vicinity of Pagan Island from 2 to 4% of the time.

(151) Thunderstorms occur frequently from July to the early part of November. December through May are the months that are relatively free from thunderstorms.

(152) In Guam, the mean temperature is 79°F (26.1°C), the mean maximum is 86°F (30°C) and the mean minimum is 72°F (22.2°C). The temperatures for the rest of the Mariana Islands are quite uniform throughout the year. January and February are the coolest months. The nights are cooler in the northern islands. Temperatures above 85°F (29.4°C) normally occur from 25 to 28 days a month between April and August. The daily minimums seldom fall below 74°F (23.3°C) during the summer months. The yearly range of temperatures is 3°F (2°C) in the south and 7°F (4°C) in the north. The daily range is about 10°F (6°C). The extreme maximum temperature on Guam is 95°F (35°C) recorded in September 1957 and the extreme minimum is 54°F (12.8°C) recorded in March 1965.

(153) In Saipan, the mean temperature is 82°F (27.8°C), the mean maximum is 86° (30°C) and the mean minimum is 77°F (25°C). Extremes include a maximum of 104°F (40°C) recorded in May 1977 and September 1987 and an extreme minimum of 60°F (15.6°C) recorded in March 1975.

(154) Humidity is high throughout the year, but there is somewhat less humidity from December through May. The yearly average is about 76%. The January average is 68% and the June average is 84%.

(155) Fog and mist are rarely reported in the Guam, Saipan and Tinian areas. Visibility of less than ¼ miles (2 km) can be expected on less than one day per month. The occurrence of fog averages only one to two days each year.

(156) The yearly average cloud cover is about 7/10 (70%). The maximum coverage of 8/10 to 9/10 occurs during the summer months (July to October). Cloudiness is higher over the islands than over the adjacent seas. Clouds are more frequent during the daytime.

(157)

Tides and currents

(158) See **Sailing Directions (Planning Guide)** for the **Pacific Ocean and Southeast Asia (Pub. 120)** for general information on tides, currents and tidal currents in the region.

(159) Currents in the vicinity of the Mariana Islands are for the most part westerly. They are strongest near to and south of Saipan Island and gradually become weaker north of that island. In June, the Equatorial Drift Current was reported to be strongest during that season in the parallel of 13° N. and to run to the northwest at a maximum rate of 1 knot. In October, a westerly current of 1 knot to 1½ knots was reported to have been experienced up to 20 miles east of Guguan Island, but little or no current was experienced north of that island.

(160) Variable currents are sometimes encountered near the islands. These are caused by the physical makeup of the island and by the additional force of the tidal currents.

(161) An almost constant southwesterly set has been reported along the northwest coast of Guam during the Northeast Trades. This current has been felt up to 10 miles offshore.

(162) In the vicinity of the Mariana Islands, the flood current usually sets westerly and ebb easterly; the tidal currents turn at the approximate times of high and low water. These currents are usually weak, except in narrow passages, and their directions and rates are sometimes variable. The tidal currents are usually confused and irregular off the east sides of these islands, due to the configuration of the land. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(163)

Guam

(164) **Guam** (13°25'N., 144°44'E.), a U.S. territory since 1898, is not included in the Commonwealth of the Northern Marianas. The largest and southernmost island of the Marianas Archipelago, Guam is about 30 miles

long and varies from 4 to 8 miles in width. The north end of the island is a plateau of rolling hills set on vertical cliffs rising to about 490 feet above sea level; the plateau is covered with a thick growth of jungle.

(165) Over a greater part of its shoreline, Guam is fringed by a reef that dries in spots. From a distance the island appears flat and even. The east side is bordered by steep cliffs. The south end of the island consists of high volcanic hills which are, for the most part, covered with sword grass. The highest hills are found in the central and south parts of the island. The highest peaks are Mount Lamlam, 1,332 feet high, and Jumullong Manglo, with a height of 1,282 feet, lying 5.5 miles north-northwest of the south end. In the central range are Mount Tenjo, 1,020 feet high, about 5.8 miles north-northeast of Jumullong Manglo; Mount Alutom, about 1 mile north-northeast of Mount Tenjo, 1,074 feet high; and Mount Chachao, close north of Mount Alutom, 1,042 feet high, are the highest peaks in that range. The north end of the island is a plateau of rolling hills set on vertical cliffs rising to about 490 feet above sea level. The plateau is covered with a thick growth of jungle.

(166) **Cocos Island** (13°14'N., 144°39'E.) is located on the south part of **Cocos Lagoon**, a reef that projects about 2.5 miles southwest from the southwest end of Guam. **Babe Island** stands on the reef, about 0.8 mile east of Cocos Island.

(167) **Port Merizo**, suitable only for small craft, is entered through **Mamaon Channel**, on the north side of Cocos Lagoon. Two private lighted buoys mark the entrance to the channel.

(168) **Umatac Bay** (13°18'N., 144°39'E.), entered about 0.5 miles north of the southwest end of Guam, is small and exposed to west winds and seas. A reef extends about 0.1 mile west of the south entrance point of the bay. The north entrance point is an isolated rocky elevation, on which there is a ruined fort. A ruined fort stands on the hill northeast of the point. Magellan's Monument stands at the head of the harbor. A prominent church spire is situated northwest of the monument.

(169) Anchorage can be taken, in 7.5 fathoms, sand and shells, with **Machadgan Point** bearing 163°, distant 0.17 mile.

(170) **Cetti Bay**, entered about 0.8 mile north of Umatac Bay, has depths over 4.5 fathoms for about halfway inside the entrance, where it shoals quickly to the head.

(171) **Facpi Point** (13°20'N., 144°38'E.) terminates in an isolated rock joined to the shore by a drying reef; an elevated tank stands near the point.

(172) The entrance channel to **Agat Small-Boat Harbor** is 1.5 miles north of Facpi Point. The entrance channel leads northeast from deep water into a turning basin and access channel protected by a detached breakwater. The entrance channel is marked by two lighted buoys, and the basin is marked by private lights and daybeacons. In March 2017, the controlling depths in the entrance channel were 8 feet, thence 8 feet in the turning basin, and 5 feet in the access channel.

(173) **Agat Bay**, entered about 4 miles north of Facpi Point, affords good sheltered anchorage during northeast and east winds. **Apaca Point** stands at the head of the bay. A shoal, with a depth of 2.5 fathoms, lies about 0.4 mile west of Apaca Point.

(174)

Apra Harbor – Guam

(175) **Apra Harbor**, situated midway along the west coast of Guam, is the main berthing facility on the island, consisting of a commercial harbor, a naval complex and a repair facility. The harbor is comprised of two main areas; **Apra Inner Harbor** and Apra Outer Harbor. **Apra Outer Harbor** is the principal commercial port for the island. Apra Inner Harbor houses the U.S. Naval facility and a commercial ship repair facility. **Glass Breakwater** forms the north and northwest sides of Apra Outer Harbor and acts as a barrier against most ocean swells from the north and west. The seaward end of the breakwater is marked by a light. The harbor is extensive and safe, except during typhoon season. During this time, vessels should be prepared to get underway at short notice. Vessels are urged to contact the local authorities and the pilot for the latest information on depths, currents and regulations concerning entry and navigation of this harbor.

(176)

Prominent features

(177) **Orote Point**, the west end of **Orote Peninsula**, is a sharp bluff about 210 feet high. **Orote Island** lies close off the north side of the point. **Orote Point Light** (13°26'47"N., 144°37'11"E.), 226 feet above the water, is shown from a concrete tower with a black and white diamond-shaped dayboard on Orote Point. The light may be obscured by land features on a southern approach. A 200-foot radio tower is southwest of Orote Point Light in about 13°26'45"N., 144°37'10"E.

(178)

COLREGS Demarcation Lines

(179) The lines established for Apra Harbor are described in **33 CFR 80.1490**, chapter 2.

(180)

Routes

(181) Vessels from the north should keep 5 miles offshore until Orote Point bears 180°, then steer for a position 2 miles west of the harbor entrance. Approaching from the west, Mount Alutom, bearing 097° and in line with Orote Point, leads to a position 2 miles west of the harbor entrance but is not easily identified. Vessels should enter Apra Outer Harbor on the entrance range, passing midway between the two lighted buoys at the entrance. Vessels are cautioned to give the breakwater a wide berth because of the currents and possible submerged broken-off segments.

(182)

Anchorages

(183) Anchorage outside Apra Harbor is impossible due to the great depths and rapid shoaling of the bottom.

(184) Naval, explosive, special and general anchorages are in Apra Outer Harbor. (See **33 CFR 110.1**, **110.238** and **110.129a**, chapter 2, for limits and regulations.)

(185)

Channels

(186) The approaches to the harbor are free and deep, as is the channel between the breakwaters. The entrance to Apra Outer Harbor is marked by lights, lighted buoys and a **083.7°** lighted range. The entrance to Apra Inner Harbor is marked by lighted buoys, a **141°** lighted range and a **176°** lighted range. In the morning when the sun is high, the aids to navigation here are difficult to identify due to haze and refraction. The range marking the channel through Outer Harbor is readily visible within 2 miles of the harbor entrance in normal haze conditions.

(187)

Regulated navigation areas

(188) **Regulated navigation areas** have been established in the approach and in Apra Outer Harbor. (See **33 CFR 165.1405**, chapter 2, for limits and regulations.)

(189) **Safety zones** and **security zones** have been established in Apra Outer Harbor. (See **33 CFR 165.1401**, **165.1402** and **165.1404**, chapter 2, for limits and regulations.)

(190) Apra Inner Harbor and an area just west of the entrance to the Inner Harbor are included in a **restricted area**. (See **33 CFR 334.1** through **334.6** and **334.1430**, chapter 2, for limits and regulations.) A **harbor security barrier gate**, marked by two uncharted buoys, has been installed across the entrance to Apra Inner Harbor between the outermost ends of Wharves L and B.

(191)

Caution

(192) The restricted area of a **Firing Danger Zone** extends offshore about 1 mile south of Orote Point and off the southwest coast of the island. (See **33 CFR 334.1420**, chapter 2, for limits and regulations.) An acoustic range facility is south of the restricted area and a submarine operating area surrounds most of the island. Submerged submarine operations are conducted at various times in these waters; proceed with caution.

(193)

Tides and currents

(194) The mean tidal range at Apra Harbor is 1.6 feet, while the spring range is 2.3 feet. On the approach to Orote Point, the southwest current associated with the Northeast Trades tends to curve to the south and southeast. The rate of the current is greatly affected by the force of the wind. During the typhoon season, the outgoing current from the harbor augments the southwest current and reduces any northeast current that may occur. Strong rips may be observed under these conditions. The prevalent set of the current at the harbor entrance is usually south or southwest regardless of the tidal currents, but a set to the north or northeast may be experienced, especially during the summer months. The flood current in the harbor entrance sets north to north-northeast at a maximum rate of 1.5 knots. The ebb current sometimes attains a maximum rate of 3 knots. Slack water occurs 30 minutes before low water and 45 minutes before high water. Heavy west swells sometimes make the entrance of Apra Outer Harbor dangerous. This condition occurs when a typhoon builds up in the area, progresses to the northwest and then curves northeast. Beacons and buoys are sometimes destroyed or carried away at such times. The currents and tidal currents within the harbor are weak and variable.

(195) A cross-current is often experienced in the entrance. Care should be taken to keep on the entrance range. A speed of not less than 10 knots is recommended through the entrance to avoid the excessive set by the currents off the entrance. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(196)

Pilotage

(197) Pilotage is compulsory for vessels over 500 gross tons and all vessels entering the port for the first time and after daylight hours. Pilot services are available on a 24-hour basis for Apra Harbor. Pilots are required to board inbound vessels and leave outbound vessels at Alpha Hotel Pilot Station (13°26'52"N., 144°35'16"E.), about 2 miles west of Orote Point, to ensure that the vessel is properly aligned on the entrance range; the station is unmarked.

(198)

Towage

(199) Tugs to 3,200 hp are available in Apra Harbor.

(200)

Quarantine, customs, immigration and agricultural quarantine

(201) Apra Harbor is a customs and U.S. immigration port of entry. U.S. immigration regulations apply and are enforced by U.S. Customs and Border Protection; telephone 671–472–7138, fax 671–472–7139. U.S. Customs regulations are enforced by:

(202) Department of Customs, Government of Guam

(203) Customs and Quarantine Agency

(204) PO Box 21828

(205) GMF, Barrigada, GU 96921

(206) telephone 671–475–6202

(207)

Coast Guard

(208) The Coast Guard Communications Center is a full-service communications station. The center is monitored 24 hours and can be contacted on VHF-FM channel 16 or 9, call sign **NRV**. A Sector Office and Station are located

on the U.S. Naval base and can also be contacted on VHF-FM channel 16 or 9 (24 hours); telephone 671–355–4821.

(209)

Harbor regulations

(210) All operations in Apra Outer Harbor are under the jurisdiction of The Port Authority of Guam and the United States Coast Guard. Prior to entry all vessels must establish communications with Guam Port Control Harbormaster's office on VHF-FM channels 12, 13 or 16; call sign WRV-574. The phone number for Guam Port Control Harbormaster's Office is 671–477–8697.

(211) All operations in Apra Inner Harbor are under the jurisdiction of the U.S. Navy Port Control Harbormaster's Office with communication on VHF-FM channels 14 and 16. The phone number is 671–339–6141.

(212) Vessels entering, leaving or shifting berth are required to give a minimum of 24 hours notice to **The Port Authority of Guam Harbor Master and U.S. Coast Guard Captain of the Port**. Failure to give such notice is a basis for denying entry. No vessel shall enter or leave the harbor without radio clearance from the Harbormaster. Vessels must be ISPS/MTSA compliant.

(213) A tug boat (or tugs) shall be used by all commercial vessels exceeding 250 feet in overall length entering, leaving or operating within the harbor, except research vessels and vessels up to 300 feet in overall length equipped with an operational bow thruster. A fishing vessel's use of a skiff boat in lieu of a tug boat is permitted provided there is constant communication between the skiff operator and the vessel Master.

(214) Speed is limited to no more than 12 knots in Outer Harbor and no more than 5 knots in Inner Harbor, except in emergency situations.

(215)

Wharves

(216) Guam's commercial port is situated on **Cabras Island** in Outer Harbor. The Port Authority of Guam, an autonomous agency of the Government of Guam, is responsible for the management of the port's 33-acre site. The facility offers 0.15 mile of docking space for container, break-bulk, fishing and passenger vessels. The Guam Economic and Development Authority administers the Cabras Island Industrial Park adjacent to the Commercial Port, which includes a fuel wharf and a floating dry dock. The commercial port offers alongside depths of 5.3 to 10.8 fathoms.

(217) Tank vessels discharge at the Mobil Pier (Wharf G), which has a length of 223 feet and an alongside depth of 9.6 fathoms, and also at the GIROCO Pier (Wharf F-1), which has a length of 797 feet and an alongside depth of 10.8 fathoms. The Mobil Pier is situated about 0.2 mile west of the root of Glass Breakwater, while the GIROCO Pier is positioned about 0.3 mile southeast of the Mobil Pier.

(218)

Supplies

(219) Apra Harbor is the principal supply center for the region. Water is available at most wharves. Bunker fuel is available at Golf Pier, Berths F-1 and F-3 and by tanker truck.

(220)

Repairs

(221) Apra Harbor has a floating dry dock that can handle a maximum LOA of 700 feet. Guam Shipyard, PO Box 13010, Bldg. 20 Comnavmar, Santa Rita, GU 96915-3010; telephone 671–339–1101 or 671–339–5258.

(222)

Asan Point to Ajayan Bay

(223) **Asan Point** (13°28'N., 144°42'E.) is rocky, steep and fringed by a reef. A large rock stands on the outer end of the reef.

(224) **Hagåtña Bay**, 8 miles north-northeast of Apra Harbor, is formed by a slight indentation of the coast between **Adelup Point** and **Oca Point**. The shores of the bay are low, sandy and fringed by a wide reef. Hagåtña, the capital of Guam, stands along the shores of the bay. The city consists of a large number of buildings, some of considerable height.

(225) Hagåtña small boat harbor is on the south side Hagåtña Bay and is approached from the north directly offshore through the reef. An entrance channel leads south between two breakwaters to a turning basin inside. In 2017, the controlling depths were 12 feet in the entrance channel with 10 to 12 feet in the turning basin. The entrance through the reef is marked by lights and a **186.8°** lighted range. Mariners unfamiliar with the channel should not attempt entrance without assistance or during other than daylight hours with favorable conditions. Assistance can be requested from the Hagåtña Harbor Patrol on 2136 kHz daily from 0600 to 1400.

(226) Anchorage, with winds between the east-northeast and south, may be obtained in Hagåtña Bay; however, it is an open roadstead with a steep-to bottom and great depths. A strong current has been reported off Adelup Point.

(227) The shore between **Oca Point** (13°30'N., 144°46'E.) and **Ritidian Point**, the north extremity of Guam, is rocky and steep.

(228) **Tumon Bay** is entered between **Ypao Point** and **Amantes Point** and is nearly inaccessible, except for boats with local knowledge. A water tank, painted red, stands about 0.5 mile inland of the bay's head.

(229) The north coast of Guam, between **Ritidian Point** and **Pati Point**, is reef fringed and fully exposed to the Northeast Trades.

(230) The east shore of Guam, from **Pati Point** to **Talofofo Bay**, is rugged and steep. This stretch of coastline affords no shelter—the only openings being Ylig Bay and Pago Bay—and should be avoided during the Northeast Monsoon.

(231) **Ylig Bay** is entered through a deep channel, about 197 feet wide. The reef on either side of the entrance uncovers at half tide and is marked by breakers. The bottom shoals abruptly midway between the outer reef and the head of the bay. Reefs, foul ground and shoals are found along the side of the channel. The **Ylig River** discharges into the head of the bay. A narrow sandy beach extends north from its mouth. A vessel anchored in 40 fathoms, good holding ground, just outside the entrance of the bay.

(232) **Talofofo Bay** (13°20'N., 144°46'E.), entered nearly 4 miles south of Ylig Bay, affords shelter in its entrance in depths of 8 fathoms, mud; depths decrease gradually to its head. This bay has steep hills on all sides. Those on the north side rise sharply to 410 feet, with a prominent cliff forming the summit. The **Talofofo River**, the largest in Guam, discharges into the head of the bay.

(233) **Inarajan Bay**, entered about 4 miles southwest of Talofofo Bay, is open to the southeast but affords shelter to small craft with local knowledge during west winds. The reef fringing the southwest side of the harbor is steep-to. There is a sandy beach at the head of the bay. The spire of a church near the village of **Inarajan**, situated on the southwest side of the harbor, is prominent. The depths decrease sharply from 12 to 3 fathoms when within about 0.2 mile of the entrance. Reefs and foul ground are found on each side of the inner bay. A shoal, with a depth of 2.8 fathoms, lies close offshore, south of the south entrance point.

(234) **Agfayan Bay**, lying 1.5 miles north-northeast of **Aga Point**, open east and small, is only suitable for small vessels with local knowledge. This bay may afford anchorage for vessels with drafts less than 15 feet with local knowledge. There is a prominent rock on the south side of the bay.

(235) **Ajayan Bay**, entered on the west side of Aga Point, the southeast end of Guam, is obstructed by reefs and is dangerous to approach if there is any sea.

(236)

Rota Island

(237) **Rota Island** (14°10'N., 145°12'E.), of volcanic formation, is about 32 miles northeast of Guam. The northeast part consists of a plateau 522 feet high; the southwesterly part is a low sandy isthmus. The shore of Rota is generally steep and rocky except at the southwest tip; a narrow coral reef nearly fringes the entire island. Rota rises to 1,611 feet in its west-central part.

(238)

Caution

(239) A naval operating area is off the northeast shore of Rota.

(240)

Tidal currents

(241) The diurnal inequality is considerable. The flood attains a rate of ½ knot. The flood sets southerly, the ebb northerly, turning at about the time of high and low water. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(242) **Harnom Point (Puntan Taipingot)** (14°07'N., 145°07'E.) is the south end of **Taipingot**, a prominent headland with a distinct "wedding cake" shape, which forms the southwesterly end of Rota Island.

(243) **Sasanlagu**, situated on the northwest side of the Taipingot Peninsula, affords some shelter during southeasterly winds. **Rota West Harbor**, on the southeast side of Sasanlagu and 0.5 mile southwest of the village of Rota (Song Song), is the only commercial port serving the Commonwealth of the Northern Mariana Islands. An entrance channel, marked by a **118°** lighted range, leads southeast to a turning basin inside the harbor. In 2007, the entrance channel had a controlling depth of 18 feet and the turning basin had depths of 11 to 14 feet except for shoaling to 6 feet in the east corner of the basin. A strong current runs along the coast in a southwest direction. It is funneled between Mafuiion Rock and the fringing reef, causing extreme difficulties in bringing vessels into the port. Entering the port except at slack tide is not recommended without local knowledge.

(244) Pilotage is compulsory for vessels greater than 300 gross tonnage. There are no pilots in Rota, but pilotage can be arranged by contacting Saipan Marine Corporation at 670–322–7345/46/51. Arrival at night is not permitted. There is no anchorage inside Rota West Harbor; however, anchorage can be permitted outside the harbor by contacting Rota Port Control on VHF-FM channels 13 or 16. Tugs and barges are not available in Rota. Pilots require a vessel with twin screws or a single screw with strong bowthruster to enter the harbor. Vessels over 236 feet do not have swinging room inside the basin.

(245) Rota West Harbor has two berthing facilities: Berth 1 is 150 feet in length, 16 feet alongside; and Berth 2 is 100 feet in length, 11 feet alongside. Forklifts to 3 tons and an 80-ton crane are available at the harbor. Stevedoring services are available by Rota Terminal & Transfer (RT&T), Monday–Saturday, and can be contacted at 670–532–3117 or 670–532–5270. The harbor is owned and operated by the Commonwealth Ports Authority (CPA). Hours of operation are Monday–Saturday 0730 to 1630. Other times may be arranged by contacting the CPA (670–532–9497/89) and other agencies needed to provide port services. Advance notice of at least 24 hours is required to provide adequate services. A boat ramp and several small boat slips are available in the harbor.

(246)

Quarantine, customs, immigration and agricultural quarantine

(247) Customs, quarantine and immigration offices are in Rota West Harbor. Hours of operation are Monday–Saturday 0730 to 1630 for customs and quarantine,

(265)

Monday–Friday 0730 to 1630 for immigration. Other times may be arranged by calling customs office 670–532–9484/88, quarantine office 670–532–3415/9494, immigration office 670–532–9436.

(248) **Sasanhaya** is a bay on the east side of Taipingot and south of the village of Rota. Anchorage can be had in Sasanhaya; however, a swell sets in with winds from any direction except northeast. When northeasterly winds are strong, they often blow down from the steep slopes at the inner part of the bay. Anchorage may be found in depths of 16 fathoms, about 0.4 mile south of the village of Rota (Song Song). During northeasterly winds, good anchorage may be found on the east side of the bay.

(249)

Off-lying danger

(250) A bank with a depth of 22 fathoms is about 120 miles, 273° from Harnom Point (Puntan Taipingot).

(251)

Aguijan Island

(252) **Aguijan Island** (14°51'N., 145°33'E.) is about 022°, 42 miles from Rota Island. The shore of Aguijan Island is steep and inaccessible. Naftan Rock is about ½ mile southwest of the island's southwest end.

(253)

Off-lying banks and dangers

(254) **Esmeralda Bank**, about 17 miles northwest of Aguijan Island, has a least depth of about 33 fathoms and can be recognized by the discoloration of the water, which has the appearance of sulphur being emitted. A 30-fathom bank, marked by boiling sulphur, is about 20 miles northwest of Aguijan Island. Other banks with greater depths are charted in this vicinity.

(255) A bank with a depth of 19 fathoms over it is about 5 miles southwest of Aguijan Island.

(256) **Tatsumi Reef**, centered about 2 miles southeast of the southern end of Tinian Island, is on the northeast side of Tinian Channel. A patch with a depth of 13 fathoms over it is 14 miles west of the north end of Tinian Island.

(257)

Tinian Island

(258) **Tinian Island** (15°00'N., 145°38'E.) is northeast of Aguijan Island and it is separated from it by Tinian Channel. The north end of the island is low and flat.

(259) Tinian Island is an experimental cattle raising center. The island is extensively cultivated; vegetables and produce are shipped to Guam. Tinian is a transfer point for tuna purse seiners. An inter-island tug and barge reportedly visits the island several times a week. The population was 3,540 (2000).

(260)

Prominent features

(261) **Lasso Hill**, 564 feet high, is the summit of the island and lies about 3¾ miles south of the north end of Tinian Island. **Maga Hill**, a mile northwest of Lasso Hill, is joined to the latter by a ridge. The land south of this ridge is sloping and for the most part cultivated. Several radio towers are prominent on the slope west of Maga Hill.

(262) An extensive ridge is located along the east side of the south part of the island, between **Puntan Carolinas** and **Puntan Masalok**. The coast between these points is faced by a sheer cliff. The broad and cultivated land in the central part of the island gives way to narrow and successively lower terraces near the coast. These levels are separated by steep slopes or cliffs. Sandy beaches are found near the town of Tinian and in the bay between Puntan Masalok and Puntan Asiga.

(263) Many charted landmarks were either nonexistent or were overgrown with foliage (1963).

(264) **Tinian Harbor** is the name given to the area lying off the southwestern shore of Tinian Island, fronting the town, and including the swept area best shown on the chart.

(266) The inner harbor area off Tinian is protected from the sea by a breakwater constructed on the reef that fronts the town. The north end of the breakwater was in ruins (2005). An entrance channel, marked by lighted and unlighted buoys, is entered about ½ mile south of the head of the breakwater and leads northeast and northwest to a basin off the town of Tinian. A smokestack is about 0.6 mile north-northwest of the inner harbor in about 14°58'25"N., 145°36'55"E.

(267)

Routes

(268) A course of **035°** leads through the first leg of the channel to a position southeast of the outer end of the breakwater, then a course of **336°** leads to the main quay.

(269)

Anchorages

(270) Anchorage may be found in depths of 10 to 20 fathoms, sand and coral, good holding ground, off Tinian; however, it is unsafe during the Southwest Monsoon. During westerly winds anchorage may be found in a bay on the northeast side of Tinian Island between Puntan Masalok and Puntan Asiga, in depths of 15 to 25 fathoms; however, this anchorage is reported untenable during strong easterly and northeasterly winds.

(271) **Explosive anchorages** are off the west shore of Tinian Island, off **Puntan Diapblo** (See **33 CFR 110.239**, chapter 2, for limits and regulations.)

(272) A **security zone** is off the west shore of Tinian Island, between Puntan Diapblo and the village of Tinian (See **33 CFR 165.1403**, chapter 2, for limits and regulations).

(273)

Tides and currents

(274) At times the tides will become diurnal around the time of the moon's maximum declination. The currents set northwest on the flood and southeast on the ebb, attaining rates of about a knot and turning at about the times of high and low water.

(275)

Pilotage

(276) Vessels must obtain permission and acquire a pilot from the authorities at Saipan before entering the harbor. Entering and exiting port is permitted only during daylight hours, and "Tinian Port Control" monitors VHF-FM channel 16.

(277)

Wharves

(278) The Main Quay has a length 2,000 feet with depths of 17 to 20 feet alongside. Pier 1 and Pier 2, off the northwest side of Main Quay, were reported in ruins and unserviceable in 2005.

(279)

Saipan Island

(280) **Saipan Island** (15°10'N., 145°45'E.), the second largest of the Mariana Islands, is northeast of Tinian Island and is separated from it by **Saipan Channel**. Saipan Channel is deep and clear of known dangers.

(281)

Prominent features

(282) A chain of mountains, the summit of which is **Okso' Takpochao**, 1,555 feet high, a conspicuous, conical, extinct volcano, lines the center of the island in a north-south direction. The east peninsula and the south part of the island are low flat plateaus. Some relatively level areas are found on the north end and northwest and west sides of the island, between the coast and the lower slopes of the ridge. These areas are for the most part cultivated. The land on the west and northwest sides slopes down to the beaches. The northeast and southeast shores of the island are formed by rugged, rocky cliffs.

(283) The west and northwest shores are fronted by barrier reefs, within which are shallow lagoons. Detached dangers and foul ground containing many coral heads, with depths of 3 fathoms or less, extend about a mile southwest from the southwest extremity of the barrier reef that fronts the northwesterly end of the island. A number of detached dangers lie south of this foul ground, along the edges of the swept anchorages areas.

(284) Vessels approaching the island will first sight Okso' Takpochao. Vessels passing south of the island will next sight **Fina' Sisu**, the 295-foot summit, located 2¾ miles south-southwest of the above peak. This summit, when first seen, appears as a detached island. **Isleta Managaha**, located off the northwest coast, appears as a destroyer when viewed from the west.

(285) An abandoned lighthouse, 43 feet high a white circular concrete structure, stands at an elevation of 375 feet, about a mile northeastward of the pier at Garapan. Two radio masts, marked by obstruction lights, are close to the abandoned lighthouse. Five radio towers are on

(288)

Puntan Agingan and are reported to serve as one of the most visible landmarks on Saipan.

(286) Saipan Harbor is reported to be radar conspicuous at a distance of about 20 miles.

(287) **Saipan Harbor** (15°12'N., 145°41'E.), lying on the west side of Saipan Island, includes the outer anchorage, **Garapan Anchorage**, and the inner harbor, **Puetton Tanapag**.

(289)

Routes

(290) Vessels entering Puetton Tanapag should make the approach with the light on Isleta Managaha ahead bearing **044**°, passing on either side of the fairway buoy. When approaching Lighted Buoy No. 3, course should be altered to **088°** with the harbor entrance lighted range lined up. This course leads into and through the harbor.

(291)

Channels

(292) The northern part of Saipan Harbor, **Puetton Tanapag**, is entered through a dredged channel that leads northeast, then turns east to a turning basin. The entrance channel is marked by lighted buoys and a sector light—the channel to the turning basin is marked by lighted buoys and a **088.1°** lighted range. In 2009–2010, the controlling depth was 36 feet in the channel to the basin, thence depths of 32 to 40 feet were available in the basin.

(293) Vessels are urged to contact the local authorities and pilots for the latest information on depths, currents and regulations concerning entry and navigation of this harbor.

(294)

Anchorages

(295) The outer anchorage affords shelter during prevailing easterly winds but none during infrequent westerly storms. This anchorage, which lies from 3 to 5 miles offshore, is suitable only as a temporary anchorage for large vessels. The inner anchorage, which includes Garapan Anchorage, contains numerous berths with depths ranging from 25 to 100 feet, holding ground fair to good, with coarse coral sand. This anchorage lies from 1 to 2 miles offshore. Vessels can anchor in 10 fathoms, sand bottom, about 0.8 mile offshore, abreast Fina‘ Sisu, off the village of **Chalan Kanoa**. Vessels can anchor in 12 to 14 fathoms, coral bottom, in a position about 1.5 miles off **Garapan**. The anchorage area in Puetton Tanapag has depths ranging from 12 to 30 feet. A seaplane landing area is northward of the anchorage area.

(296)

Regulated navigation area

(297) A security zone has been established in Saipan Harbor. (See **33 CFR 165.1405**, chapter 2, for limits and regulations.)

(298)

Caution

(299) A sewer outfall extends from a position about 200 yards southwest of the southwest corner of Pier C to a position about 600 yards north-northwest of the northwest corner of the same pier.

(300) Unexploded ordnance has been reported to lie within Anchorage Berth L8.

(301) **Okino Reef** (15°12'41"N., 145°41'48"E.), an isolated shallow area in Garapan Anchorage, has a least depth of 6 feet and is marked by a buoy on the west side.

(302) Some mooring buoys and many wrecks are in the harbor.

(303) Two mooring buoys are just outside the reef off **Puntan Susupi**.

(304)

Tidal currents

(305) The mean maximum tidal range is about 2.6 feet and the minimum range is about 0.7 feet. Tidal currents in Saipan Channel set northwesterly at a rate of 2½ knots on the flood and southeasterly at 1¼ knots on the ebb, turning at about the times of high and low water. In the outer anchorage of Saipan Harbor, the tidal currents are irregular, with a maximum west-northwest set of about 2 knots during the flood. In Garapan Anchorage, the tidal currents set northerly at rates of ½ to 1 knot during the flood and southwesterly at rates of ½ to ¾ knot during the ebb. In Puetton Tanapag the tidal currents set north on the flood and south on the ebb, neither exceeding a rate of ¾ knot. They appear to turn at times of high and low water. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(306)

Pilotage

(307) Pilotage is compulsory for vessels of 300 gross tons and over. Pilots require a 24-hour notice and board vessels in the vicinity of Tanapag Harbor Approach Lighted Buoy T.

(308)

Harbormaster

(309) The Harbormaster Control Tower is manned 24 hours and may be contacted on VHF-FM channel 16 or 670–322–9973.

(310)

Wharves

(311) The port provides 2,600 linear feet of berthing space and a 22-acre container yard. Water, fuel, electricity and sewage pump-out are available. A marina is about 0.5 mile southwest of the port facilities.

(312) **Bahia Laolao** (Bahia Laulau) is on the southeast side of Saipan Island, affording the only shelter with the wind between west and north, but due to excessive depths it can't be recommended. Vessels may obtain anchorage in a depth of about 30 fathoms, about 600 yards offshore, south of the village of Laulau.

(313)

Off-lying banks and dangers

(314) A bank, with a least depth of depth of 28 fathoms is about 9½ miles north-northeast of **Puntan Sabaneta** (15°17'N., 145°49'E.).

(315)

Arakane Reef to Supply Reef

(316) **Arakane Reef** (15°38'N., 145°45'E.), about 175 miles west of Saipan Island, is a coral reef with a least depth of 5 fathoms. In 1945, a heavy swell was observed over Arakane Reef; discoloration was very noticeable.

(317) **Farallon de Medinilla** (16°01'N., 146°05'E.) 265 feet high and guano covered, has steep coasts forming precipes. Deep caves are found on the south and west shores. A chasm, located in the southern part of the island, separates that part from the north. Farallon de Medinilla was reported to be radar conspicuous from a distance of 23 miles.

(318) A rocky bank, with a least depth of 8.7 fathoms, is about 0.3 mile northeast of the north end of the island. Another bank with least depth of 3.9 fathoms is about 1.3 miles north of the island; the bank is marked by breakers in heavy weather. In 1964, a depth of 10 fathoms was reported about 9 miles west-northwest of the north end of Farallon de Medinilla.

(319)

Caution

(320) Farallon de Medinilla is used as a bombing and strafing target complex by the U.S. Navy. Mariners are advised to avoid the area by as wide a margin as is practicable.

(321) **Anatahan Island** (16°22'N., 145°40'E), 2,585 feet high, is about 20 miles northwest of Farallon de Medinilla and is of volcanic formation. The crater of a dormant volcano, which contains a wide grass-covered field, forms the summit of the island. The crater wall has a peak on its east and west sides, the west one being quite sharp.

(322) Small vessels can anchor off the northern part of the west coast of Anatahan Island, about 600 yards offshore. A bank, with a depth of 37 fathoms over it, is about 18 miles east of Anatahan Island. In 1974, another bank with a depth of 35 fathom was reported to lie about 10 miles farther north-northeast of the island.

(323) A 12-fathom depth is in 17°09'27"N., 143°13'19"E. An 8-fathom depth has been reported to be in 16°30'18"N., 143°09'04"E.

(324) **Sarigan Island** (16°43'N., 145°47'E.), lying about 20 miles northeast of Anatahan Island, is cone-shaped, wooded and of volcanic origin; rising to a height of 1,801 feet in its southern part.

(325) **Zealandia Bank**, about 11 miles north-northeast of Sarigan Island, is comprised of two rocks that dry, lying ½ mile apart. The sea breaks on these rocks at all times and

the breakers can be seen from a distance. It was reported that there was a depth of 11 fathoms around both rocks and that there are no other dangers.

(326) **Guguan Island** (17°19'N., 145°51'E.), lying about 35 miles north of Sarigan Island, has two summits; the southern is 988 feet and the north is 814 feet high and is an active volcano. Guguan Island is reported to be a good radar target from a distance of 27 miles. A large quantity of sulphur covers the ground around the crater. When seen from east or west, the northern summit appears to be covered with snow. The coasts are steep, and there is vegetation and breadfruit trees.

(327) **Alamagan Island** (17°36'N., 145°50'E.), lying 15 miles north of Guguan Island, is an inactive volcano with two peaks, the higher being 2,441 feet. The island is reported to be radar conspicuous at a distance of 31 miles. The shores are lined with rocks and the southeast side is a steep slope of bare lava. There is a hot spring at the north end of the west coast.

(328) Shoals with depths 35 and 26 fathoms were reported (1946 and 1970, respectively) to lie about 165 miles west of Alamagan Island. A bank, with a least depth of 4 fathoms over it, is in about 18°05'58"N., 143°07'36"E.

(329)

Anchorage

(330) Anchorage may be found, during northeasterly winds, off the southwest side of Alamagan Island, about 600 yards offshore, in 12 fathoms, sand bottom.

(331) **Pagan Island** (18°07'N., 145°47'E.) lying about 30 miles north of Alamagan Island, has two active volcanoes. **Mount Pagan**, 1,870 feet high, rises in the northern and larger segment of the island. Several volcanic cones, some of which give off steam, are located in the southern part of the island. A hot spring lies on the eastern side of the southern part of the island. The two parts of the island are connected by a narrow, but high, isthmus. The island is rugged, except for a low level marshland lying south of Mount Pagan. Two lakes are located between the mountain and the northwest coast. The western lake, which is separated from the sea by a sand bar 50 yards wide, is salty. The shores of the island are steep and rocky, except for some sandy beaches along Apaan Bay. Casuarina and coconut trees grow along most of the coastline and lower slopes, but the upper and steeper slopes of the volcanoes appear almost barren. **Apaan Bay** is an open bight off the middle of the west side of Pagan Island. The beach is for the most part steep, exposed to surf and has a thick growth of shrubs. **Shomushon**, a settlement that contains most of the population of the island, is located at the head of a small inlet that indents the northern end of the bay.

(332)

Anchorage

(333) Anchorage may be found in Apaan Bay in a depth of about 9 fathoms, southwest of **Bandeera Rock**, a prominent rock, 161 feet high, lying 600 yards northwest of Shomushon. This anchorage is sheltered from winds between northeasterly and easterly, but during westerly winds heavy seas set in, making the anchorage dangerous.

(334) **Agrihan Island** (18°46'N., 145°40'E.), lying about 33 miles north of Pagan Island, has two peaks. The highest peak rises to 3,166 feet. The island is of volcanic origin and has a large crater. The southwest side forms a gentle slope with a shore of black sand. **Agrihan**, a small settlement, is located near the southwest end of the island. A prominent church is about a mile northwest of the southern extremity of Agrihan Island. It was reported that the island was visible from a distance of 26 miles. Agrihan Island serves as a good radar target from a distance of 31 miles. A westerly current with a rate of 1¼ knots was observed in August, in a position about 6 miles northwesterly of Agrihan Island.

(335)

Anchorage

(336) Anchorage may be taken in 14 fathoms, sand and gravel bottom, about 650 yards off the beach fronting the settlement of Agrihan; however, it is unsafe during strong southerly or westerly winds, when there is a heavy swell.

(337) **Asuncion Island** (19°40'N., 145°24'E.), lying about 55 miles north of Agrihan Island, is a volcanic cone rising steeply to a height of 2,923 feet. White smoke occasionally emits from this cone. On the northeast and east sides there are some prominent crevices and broken cliffs, from the cracks in which smoke emits. The slope is gentle at the southwestern foot of the mountain, and coconut palms grow sparsely amongst dense stunted trees. The south coast is fronted by a pebble beach; the remaining coasts are precipitous.

(338) In 1955, breakers and discolored water were reported to extend about ½ mile offshore from the northeast end of the island.

(339) Asuncion Island is reported to be radar conspicuous from a distance of up to 48 miles.

(340) In 1969, it was reported that Asuncion Island lay 2 miles north of its charted position.

(341) In 1953, a bank with a depth of 27 fathoms over it was reported to lie about 5½ miles southeast, and another with a depth of 58 fathoms over it lies 16 miles south of Asuncion Island.

(342) In 1945, depths of 52 and 60 fathoms were reported to lie about 85 miles west-southwest of Asuncion Island.

(343) **Maug Islands** (20°01'N., 145°14'E.), lying about 24 miles north-northwest of Asuncion Island, are comprised of three rocky, uninhabited islands named North, East and West. This group has the appearance of a conical volcanic peak that has partially collapsed. **North Island**, 748 feet high, is the highest but smallest. This island, together with **East Island** and **West Island**, form a circle that encloses a lagoon. The steep sides of East Island are covered with grass and low bushes, and the higher slopes are covered with trees and coconut palms. A tower is on the summit of East Island. In 1958, the ruins of what appeared to be a fishing station were reported on the north end of the

same island. In 1977, Maug Island was reported to be a fair radar target from distances up to 38 miles.

(344)

Local magnetic anomaly

(345) A local magnetic anomaly amounting to 3°W has been observed near East Island and up to 7° near West Island.

(346) Tidal currents set easterly across the south entrance of the lagoon at a rate of ¾ knot during the flood. They set north through the entrance at a rate of ¼ knot during the ebb.

(347)

Depths-limitations

(348) South Passage, about 600 yards wide and swept to depths of 59 feet and 48 feet, is the best passage leading into the lagoon. The northeast passage, which has been swept to 15 feet over a width of 150 yards, is not recommended, as it is fully exposed to the prevailing winds. The northwest passage is foul.

(349)

Anchorages

(350) In 1941, it was reported that safe anchorage could be found, in depths of 20 to 40 fathoms, about halfway between the west end of North Island and the southwest end of East Island, rock bottom.

(351) Vessels can anchor off the northern part of the west side of East Island.

(352) A vessel reported anchoring in 16 fathoms, black sand bottom, with the northern point of East Island bearing 056°. However, this anchorage was reported unsafe due to swells rolling in through the northeast passage.

(353) **Supply Reef**, with a depth of 5 fathoms, lies about 10 miles northwest of North Island. Supply Reef is reported to be a circular reef of about 300-yard diameter, marked by discolored water and by breaking seas.

(354)

Farallon de Pajaros to Stingray Shoal

(355) **Farallon de Pajaros** (20°32'N., 144°54'E.), lying about 36 miles north-northwest of Maug Islands, is the most northern of the Mariana Islands, and it is an active volcano, its summit forming a regular cone of ashes 1,047 feet high.

(356) In 1974, a shoal, with a depth of 10 feet over it, was reported to lie 115 miles northwest of Farallon de Pajaros. Submarine volcanic activity has been reported in this vicinity.

(357) Farallon de Pajaros is reported to be visible from a distance of 40 miles; at night the crater glow can be seen for 15 miles. In 1967, it was reported that the volcano appeared as a well-defined shadow at night from a distance of 27 miles. Farallon de Pajaros is radar conspicuous from a distance of 29 miles. The northern, southern and eastern coast are precipitous. All coasts are rocky and steep-to. There is no anchorage. The island is barren, except near the high rock on the southeast side, where there is some coarse grass. Several smaller rocks, one of which is prominent, are located about 150 yards southeast of the high rock.

(358) **Stingray Shoal**, having a depth of 8 fathoms, is located in approximate position 20°30'N., 142°26'E. The shoal has not been examined and should be given a wide berth.

Navigation Rules

(1) Following is an amalgamation of the **International (72 COLREGS) and Inland Navigation Rules**, their Annexes, and associated Federal rules and regulations.

(2) Text unique to Inland Rules is *italicized* and set apart in a text box or within *‹‹ double angle brackets ››*. International Rules are set apart in a text box or denoted with ‹ single angle brackets ›.

(3) Text within {curly brackets} denotes additions made by the U.S. Coast Guard Office of Navigation Systems.

(4) Disparate paragraph or section numbering are shown side by side separated by a dagger, i.e. (a)ǂ(b).

(5) Instances of "…§§83.xx / in / with / of … this section / subpart / part of this Rule, etc." are redacted, and herein are shown as the enumerated rule(s) they referred to, i.e.72 COLREGS Rule 18(e) states: "...with the Rules of this Part" and the same Inland Rule states: "...with the Rules of this Subpart (Rules 4-19) (§§83.04 through 83.19)", but, herein it is stated as "...with Rules 4-19.

(6) Instances of paragraph / section (x) are redacted, and herein are shown as §(x).

(7) Rules denoted with an asterisk also have an associated implementing or interpretative rule (i.e. 33 CFR 81-90), which can be found in chapter 2.

(8)

Part A—General

(9)

Rule 1—Application (International)
(a) These Rules shall apply to all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels.
(b) Nothing in these Rules shall interfere with the operation of special rules made by an appropriate authority for roadsteads, harbors, rivers, lakes, or inland waterways connected with the high seas and navigable by seagoing vessels. Such special rules shall conform as closely as possible to these Rules.
(c) Nothing in these Rules shall interfere with the operation of any special rules made by the Government of any State with respect to additional station or signal lights, shapes or whistle signals for ships of war and vessels proceeding under convoy, or with respect to additional station or signal lights or shapes for fishing vessels engaged in fishing as a fleet. These additional stations or signal lights, shapes or whistle signals shall, so far as possible, be such that they cannot be mistaken for any light, shape, or signal authorized elsewhere under these Rules.

Rule 1—Application (International)
(d) Traffic separation schemes may be adopted by the Organization for the purpose of these Rules.
(e) Whenever the Government concerned shall have determined that a vessel of special construction or purpose cannot comply fully with the provisions of any of these Rules with respect to number, position, range or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signaling appliances, such vessel shall comply with such other provisions in regard to number, position, range or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signaling appliances, as the Government shall have determined to be the closest possible compliance with these Rules in respect to that vessel.

(10)

Rule 1—Application (Inland)
(a) These rules apply to all vessels upon the inland waters of the United States, and to vessels of the United States on the Canadian waters of the Great Lakes to the extent that there is no conflict with Canadian law. These Rules have preemptive effect over State or local regulation within the same field.
(b)(i)These rules constitute special rules made by an appropriate authority within the meaning of Rule 1(b) of the International Regulations for Preventing Collisions at Sea, 1972, including annexes currently in force for the United States ("International Regulations"). *(ii) All vessels complying with the construction and equipment requirements of the International Regulations are considered to be in compliance with these Rules.*
(c) Nothing in these Rules shall interfere with the operation of any special rules made by the Secretary of the Navy with respect to additional station or signal lights and shapes or whistle signals for ships of war and vessels proceeding under convoy, or by the Secretary with respect to additional station or signal lights and shapes for fishing vessels engaged in fishing as a fleet. These additional station or signal lights and shapes or whistle signals shall, so far as possible, be such that they cannot be mistaken for any light, shape or signal authorized elsewhere under these Rules. Notice of such special rules shall be published in the Federal Register and, after the effective date specified in such notice, they shall have effect as if they were a part of these Rules.
(d) Traffic separation schemes may be established for the purposes of these Rules. Vessel traffic service regulations may be in effect in certain areas.

Rule 1—Application (Inland)

(e) Whenever the Secretary determines that a vessel or class of vessels of special construction or purpose cannot comply fully with the provisions of any of these Rules with respect to the number, position, range, or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signaling appliances, the vessel shall comply with such other provisions in regard to the number, position, range, or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signaling appliances, as the Secretary shall have determined to be the closest possible compliance with these Rules. The Secretary may issue a certificate of alternative compliance for a vessel or class of vessels specifying the closest possible compliance with these Rules. The Secretary of the Navy shall make these determinations and issue certificates of alternative compliance for vessels of the Navy.

(f) The Secretary may accept a certificate of alternative compliance issued by a contracting party to the International Regulations if it determines that the alternative compliance standards of the contracting party are substantially the same as those of the United States.

(g) The operator of each self-propelled vessel 12 meters or more in length shall carry, on board and maintain for ready reference, a copy of these Rules.

(11)

Rule 2—Responsibility

(12) (a) Nothing in these Rules shall exonerate any vessel, or the owner, master, or crew thereof, from the consequences of any neglect to comply with these Rulesor of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

(13) (b) In construing and complying with these Rules due regard shall be had to all dangers of navigation and collision and to any special circumstances, including the limitations of the vessels involved, which may make a departure from these Rules necessary to avoid immediate danger.

(14)

Rule 3—General Definitions

(15) For the purpose of these Rules, except where the context otherwise requires:

(16) (a) The word "vessel" includes every description of watercraft, including non-displacement craft, WIG craft, and seaplanes, used or capable of being used as a means of transportation on water.

(17) (b) The term "power-driven vessel" means any vessel propelled by machinery.

(18) (c) The term "sailing vessel" means any vessel under sail provided that propelling machinery, if fitted, is not being used.

(19) (d) The term "vessel engaged in fishing" means any vessel fishing with nets, lines, trawls, or other fishing apparatus which restrict maneuverability, but does not include a vessel fishing with trolling lines or other fishing apparatus which do not restrict maneuverability.

(20) (e) The term "seaplane" includes any aircraft designed to maneuver on the water.

(21) (f) The term "vessel not under command" means a vessel which through some exceptional circumstance is unable to maneuver as required by these Rules and is therefore unable to keep out of the way of another vessel.

(22) (g) The term "vessel restricted in her ability to maneuver" means a vessel which from the nature of her work is restricted in her ability to maneuver as required by these Rules and is therefore unable to keep out of the way of another vessel. The term "vessels restricted in their ability to maneuver" shall include but not be limited to: (i) A vessel engaged in laying, servicing, or picking up a navigational mark, submarine cable or pipeline; (ii) A vessel engaged in dredging, surveying or underwater operations; (iii) A vessel engaged in replenishment or transferring persons, provisions or cargo while underway; (iv) A vessel engaged in the launching or recovery of aircraft; (v) A vessel engaged in mine clearance operations; (vi) A vessel engaged in a towing operation such as severely restricts the towing vessel and her tow in their ability to deviate from their course.

(23)

Rule 3h (International)

(h) The term "vessel constrained by her draft" means a power-driven vessel which because of her draft in relation to the available depth and width of navigable water is severely restricted in her ability to deviate from the course she is following.

(24) (i) The word "underway" means that a vessel is not at anchor, or made fast to the shore, or aground.

(25) (j) The words "length" and "breadth" of a vessel mean her length overall and greatest breadth.

(26) (k) Vessels shall be deemed to be in sight of one another only when one can be observed visually from the other.

(27) (l) The term "restricted visibility" means any condition in which visibility is restricted by fog, mist, falling snow, heavy rainstorms, sandstorms, or any other similar causes.

(28) (m) The term "Wing-In-Ground (WIG)" craft means a multimodal craft which, in its main operational mode, flies in close proximity to the surface by utilizing surface-effect action.

(29)

Rules 3n–3s (Inland)

(n) "Western Rivers" means the Mississippi River, its tributaries, South Pass, and Southwest Pass, to the navigational demarcation lines {30 CFR 80} dividing the high seas from harbors, rivers and other inland waters of the United States, and the Port Allen-Morgan City Alternate Route, and that part of the Atchafalaya River above its junction with the Port Allen-Morgan City Alternate Route including the Old River and the Red River.

Rules 3n–3s (Inland)
(o) "Great Lakes" means the Great Lakes and their connecting tributary waters including the Calumet River as far as the Thomas J. O'Brien Lock and Controlling Waters (between mile 326 and 327), the Chicago River as far as the east side of the Ashland Avenue Bridge (between mile 321 and 322), and the Saint Lawrence River as far east as the lower exit of Saint Lambert Lock.
(p) "Secretary" means the Secretary of the Department in which the Coast Guard is operating.
(q) "Inland Waters" means the navigable waters of the United States shoreward of the navigational demarcation lines {30 CFR 80} dividing the high seas from harbors, rivers and other inland waters of the United States and the waters of the Great Lakes on the United States side of the International Boundary.
(r) "Inland Rules" or "Rules" means these Inland Navigational Rules and the annexes thereto, which govern the conduct of vessels and specify the lights, shapes, and sound signals that apply on inland waters.
(s) "International Regulations" means the International Regulations for Preventing Collisions at Sea, 1972, including annexes currently in force for the United States.

(30) **Implementing Rule**—See **33 CFR 89.25**, chapter 2, for regulations.

(31)

Part B—Steering and Sailing Rules

(32)

I—Conduct of Vessels in Any Condition of Visibility

(33)

Rule 4—Application

(34) Rules 4 through 10 apply in any condition of visibility.

(35)

Rule 5—Lookout

(36) Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

(37)

Rule 6—Safe Speed

(38) Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions. In determining a safe speed the following factors shall be among those taken into account:

(39) (a) By all vessels:

(40) (i) The state of visibility; (ii) The traffic density including concentrations of fishing vessels or any other vessels; (iii) The maneuverability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions; (iv) At night, the presence of background light such as from shore lights or from back scatter from her own lights; (v) The state of wind, sea and current, and the proximity of navigational hazards; (vi) The draft in relation to the available depth of water.

(41) (b) Additionally, by vessels with operational radar:

(42) (i) The characteristics, efficiency and limitations of the radar equipment; (ii) Any constraints imposed by the radar range scale in use; (iii) The effect on radardetection of the sea state, weather and other sources of interference; (iv) The possibility that small vessels, ice and other floating objects may not be detected by radar at an adequate range; (v) The number, location and movement of vessels detected by radar; (vi) The more exact assessment of the visibility that may be possible when radar is used to determine the range of vessels or other objects in the vicinity.

(43)

Rule 7—Risk of Collision

(44) (a) Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.

(45) (b) Proper use shall be made of radar equipment if fitted and operational, including long-range scanning to obtain early warning of risk of collision and radar plotting or equivalent systematic observation of detected objects.

(46) (c) Assumptions shall not be made on the basis of scanty information, especially scanty radar information.

(47) (d) In determining if risk of collision exists the following considerations shall be among those taken into account:

(48) (i) Such risk shall be deemed to exist if the compass bearing of an approaching vessel does not appreciably change.

(49) (ii) Such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large vessel or a tow or when approaching a vessel at close range.

(50)

Rule 8—Action to Avoid Collision

(51) (a) Any action taken to avoid collision shall be taken in accordance with Rules 4 through 19 and shall if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.

(52) (b) Any alteration of course and/or speed to avoid collision shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing visually or by radar; a succession of small alterations of course and/or speed should be avoided.

(53) (c) If there is sufficient sea room, alteration of course alone may be the most effective action to avoid a closequarters situation provided that it is made in good time, is substantial and does not result in another close-quarters situation.

(54) (d) Action taken to avoid collision with another vessel shall be such as to result in passing at a safe distance. The

effectiveness of the action shall be carefully checked until the other vessel is finally past and clear.

(55) (e) If necessary to avoid collision or allow more time to assess the situation, a vessel shall slacken her speed or take all way off by stopping or reversing her means of propulsion.

(56) (f)(i) A vessel which, by any of these Rules, is required not to impede the passage or safe passage of another vessel shall, when required by the circumstances of the case, take early action to allow sufficient sea room for the safe passage of the other vessel.

(57) (ii) A vessel required not to impede the passage or safe passage of another vessel is not relieved of this obligation if approaching the other vessel so as to involve risk of collision and shall, when taking action, have full regard to the action which may be required by Rules 4 through 19.

(58) (iii) A vessel, the passage of which is not to be impeded remains fully obliged to comply with Rules 4 through 19 when the two vessels are approaching one another so as to involve risk of collision.

(59)

Rule 9—Narrow Channels

(60) (a)‹‹*(i)*›› A vessel proceeding along the course of a narrow channel or fairway shall keep as near to the outer limit of the channel or fairway which lies on her starboard side as is safe and practicable.

(61)

Rule 9a (Inland)

(ii) Notwithstanding Rule 9(a)(i) and Rule 14(a), a power-driven vessel operating in narrow channel or fairway on the Great Lakes, Western Rivers, or waters specified by the Secretary, and proceeding downbound with a following current shall have the right-of-way over an upbound vessel, shall propose the manner and place of passage, and shall initiate the maneuvering signals prescribed by Rule 34(a)(i), as appropriate. The vessel proceeding upbound against the current shall hold as necessary to permit safe passing.

(62) (b) A vessel of less than 20 meters in length or a sailing vessel shall not impede the passage of a vessel ‹which ›‹‹*that*›› can safely navigate only within a narrow channel or fairway.

(63) (c) A vessel engaged in fishing shall not impede the passage of any other vessel navigating within a narrow channel or fairway.

(64) (d) A vessel ‹ shall ›‹‹*must*›› not cross a narrow channel or fairway if such crossing impedes the passage of a vessel which can safely navigate only within that channel or fairway. The latter vessel ‹ may ›‹‹*must*›› use the signal prescribed in Rule 34(d) if in doubt as to the intention of the crossing vessel.

(65)

Rule 9e (International)

(e)(i) In a narrow channel or fairway when overtaking can take place only if the vessel to be overtaken has to take action to permit safe passing, the vessel intending to overtake shall indicate her intention by sounding the appropriate signal prescribed in Rule 34(c)(ii). The vessel to be overtaken shall, if in agreement, sound the appropriate signal prescribed in Rule 34(c)(i) and take steps to permit safe passing. If in doubt she may sound the signals prescribed in Rule 34(d).

Rule 9e (Inland)

(e)(i) In a narrow channel or fairway when overtaking, the power-driven vessel intending to overtake another power-driven vessel shall indicate her intention by sounding the appropriate signal prescribed in Rule 34(c) and take steps to permit safe passing. The power-driven vessel being overtaken, if in agreement, shall sound the same signal and may, if specifically agreed to, take steps to permit safe passing. If in doubt she shall sound the signal prescribed in Rule 34(d).

(66) (e)(ii) This rule does not relieve the overtaking vessel of her obligation under Rule 13.

(67) (f) A vessel nearing a bend or an area of a narrow channel or fairway where other vessels may be obscured by an intervening obstruction shall navigate with particular alertness and caution and shall sound the appropriate signal prescribed in Rule 34(e).

(68) (g) Any vessel shall, if the circumstances of the case admit, avoid anchoring in a narrow channel.

(69)

Rule 10—Traffic Separation Schemes

(70) (a) This Rule applies to traffic separation schemes ‹ adopted by the Organization › and does not relieve any vessel of her obligation under any other rule.

(71) (b) A vessel using a traffic separation scheme shall:

(72) (i) Proceed in the appropriate traffic lane in the general direction of traffic flow for that lane.

(73) (ii) So far as is practicable keep clear of a traffic separation line or separation zone.

(74) (iii) Normally join or leave a traffic lane at the termination of the lane, but when joining or leaving from either side shall do so at as small an angle to the general direction of traffic flow as practicable.

(75) (c) A vessel, shall so far as practicable, avoid crossing traffic lanes but if obliged to do so shall cross on a heading as nearly as practicable at right angles to the general direction of traffic flow.

(76) (d)(i) A vessel shall not use an inshore traffic zone when she can safely use the appropriate traffic lane within the adjacent traffic separation scheme. However, vessels of less than 20 meters in length, sailing vessels and vessels engaged in fishing may use the inshore traffic zone.

(77) (ii) Notwithstanding Rule 10(d)(i), a vessel may use an inshore traffic zone when en route to or from a port, offshore installation or structure, pilot station or any other place situated within the inshore traffic zone, or to avoid immediate danger.

(78) (e) A vessel, other than a crossing vessel or a vessel joining or leaving a lane shall not normally enter a separation zone or cross a separation line except:

(79) (i) in cases of emergency to avoid immediate danger;

(80) (ii) to engage in fishing within a separation zone.

(81) (f) A vessel navigating in areas near the terminations of traffic separation schemes shall do so with particular caution.

(82) (g) A vessel shall so far as practicable avoid anchoring in a traffic separation scheme or in areas near its terminations.

(83) (h) A vessel not using a traffic separating scheme shall avoid it by as wide a margin as is practicable.

(84) (i) A vessel engaged in fishing shall not impede the passage of any vessel following a traffic lane.

(85) (j) A vessel of less than 20 meters in length or a sailing vessel shall not impede the safe passage of a power-driven vessel following a traffic lane.

(86) (k) A vessel restricted in her ability to maneuver when engaged in an operation for the maintenance of safety of navigation in a traffic separation scheme is exempted from complying with this Rule to the extent necessary to carry out the operation.

(87) (l) A vessel restricted in her ability to maneuver when engaged in an operation for the laying, servicing or picking up of a submarine cable, within a traffic separation scheme, is exempted from complying with this Rule to the extent necessary to carry out the operation.

(88)

II—Conduct of Vessels in Sight of One Another

(89)

Rule 11—Application

(90) Rules 11 through 18 apply to vessels in sight of one another.

(91)

Rule 12—Sailing Vessels

(92) (a) When two sailing vessels are approaching one another, so as to involve risk of collision, one of them shall keep out of the way of the other as follows:

(93) (i) when each has the wind on a different side, the vessel which has the wind on the port side shall keep out of the way of the other;

(94) (ii) when both have the wind on the same side, the vessel which is to windward shall keep out of the way of the vessel which is to leeward;

(95) (iii) if a vessel with the wind on the port side sees a vessel to windward and cannot determine with certainty whether the other vessel has the wind on the port or on the starboard side, she shall keep out of the way of the other.

(96) (b) For the purposes of this Rule, the windward side shall be deemed to be the side opposite that on which the mainsail is carried or, in the case of a square-rigged vessel, the side opposite to that on which the largest fore-and-aft sail is carried.

(97)

Rule 13—Overtaking

(98) (a) Notwithstanding anything contained in the Rules 4 through 18, any vessel overtaking any other shall keep out of the way of the vessel being overtaken.

(99) (b) A vessel shall be deemed to be overtaking when coming up with a another vessel from a direction more than 22.5 degrees abaft her beam, that is, in such a position with reference to the vessel she is overtaking, that at night she would be able to see only the sternlight of that vessel but neither of her sidelights.

(100) (c) When a vessel is in any doubt as to whether she is overtaking another, she shall assume that this is the case and act accordingly.

(101) (d) Any subsequent alteration of the bearing between the two vessels shall not make the overtaking vessel a crossing vessel within the meaning of these Rules or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

(102)

Rule 14—Head-on Situation

(103) (a) *‹‹Unless otherwise agreed››* when two powerdriven vessels are meeting on reciprocal or nearly reciprocal courses so as to involve risk of collision each shall alter her course to starboard so that each shall pass on the port side of the other

(104) (b) Such a situation shall be deemed to exist when a vessel sees the other ahead or nearly ahead and by night she could see the masthead lights of the other in a line or nearly in a line and/or both sidelights and by day she observes the corresponding aspect of the other vessel.

(105) (c) When a vessel is in any doubt as to whether such a situation exists she shall assume that it does exist and act accordingly.

(106)

Rule 14d (Inland)

(d) Notwithstanding Rule 14(a), a power-driven vessel operating on the Great Lakes, Western Rivers, or waters specified by the Secretary, and proceeding downbound with a following current shall have the right-of-way over an upbound vessel, shall propose the manner of passage, and shall initiate the maneuvering signals prescribed by Rule 34(a)(i), as appropriate.

(107)

Rule 15—Crossing Situation

(108) (a) When two power-driven vessels are crossing so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead of the other vessel.

(109)

Rule 15b (Inland)

(b) Notwithstanding Rule 15(a), on the Great Lakes, Western Rivers, or water specified by the Secretary, a power-driven vessel crossing a river shall keep out of the way of a power-driven vessel ascending or descending the river.

(110)

Rule 16—Action by Give-way Vessel

(111) Every vessel which is directed to keep out of the way of another vessel shall, so far as possible, take early and substantial action to keep well clear.

(112)

Rule 17—Action by Stand-on Vessel

(113) (a)(i) Where one of two vessels is to keep out of the way, the other shall keep her course and speed.

(114) (ii) The latter vessel may, however, take action to avoid collision by her maneuver alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.

(115) (b) When, from any cause, the vessel required to keep her course and speed finds herself so close that collision cannot be avoided by the action of the giveway vessel alone, she shall take such action as will best aid to avoid collision.

(116) (c) A power-driven vessel which takes action in a crossing situation in accordance with Rule 17(a)(ii) to avoid collision with another power-driven vessel shall, if the circumstances of the case admit, not alter course to port for a vessel on her own port side.

(117) (d) This Rule does not relieve the give-way vessel of her obligation to keep out of the way.

(118)

Rule 18—Responsibilities Between Vessels

(119) Except where Rules 9, 10, and 13 otherwise require:

(120) (a) A power-driven vessel underway shall keep out of the way of: (i) a vessel not under command; (ii) a vessel restricted in her ability to maneuver; (iii) a vessel engaged in fishing; (iv) a sailing vessel.

(121) (b) A sailing vessel underway shall keep out of the way of: (i) a vessel not under command; (ii) a vessel restricted in her ability to maneuver; (iii) a vessel engaged in fishing.

(122) (c) A vessel engaged in fishing when underway shall, so far as possible, keep out of the way of: (i) a vessel not under command; (ii) a vessel restricted in her ability to maneuver.

(123)

Rule 18d (International)

(d)(i) Any vessel other than a vessel not under command or a vessel restricted in her ability to maneuver shall, if the circumstances of the case admit, avoid impeding the safe passage of a vessel constrained by her draft, exhibiting the signals in Rule 28.

(ii) A vessel constrained by her draft shall navigate with particular caution having full regard to her special condition.

(124) (e) A seaplane on the water shall, in general, keep well clear of all vessels and avoid impeding their navigation. In circumstances, however, where risk of collision exists, she shall comply with Rules 4 through 19.

(125) (f)(i) A WIG craft shall, when taking off, landing and in flight near the surface, keep well clear of all other vessels and avoid impeding their navigation;

(126) (ii) a WIG craft operating on the water surface shall comply with Rules 4 through 19 as a power-driven vessel.

(127)

III—Conduct of Vessels in Restricted Visibility

(128)

Rule 19—Conduct of Vessels in Restricted Visibility

(129) (a) This Rule applies to vessels not in sight of one another when navigating in or near an area of restricted visibility.

(130) (b) Every vessel shall proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility. A power-driven vessel shall have her engines ready for immediate maneuver.

(131) (c) Every vessel shall have due regard to the prevailing circumstances and conditions of restricted visibility when complying with Rules 4 through 10.

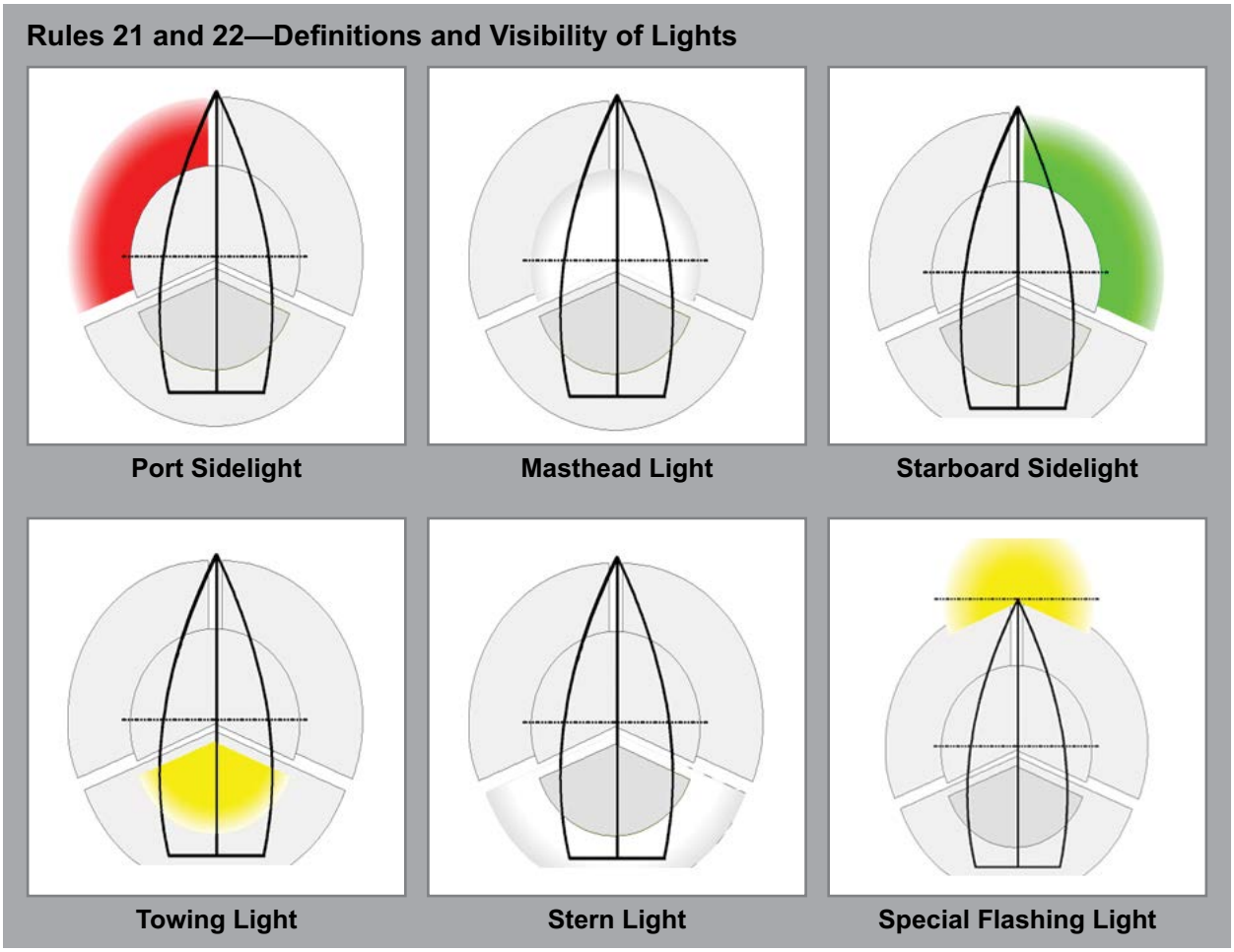
(132) (d) A vessel which detects by radar alone the presence of another vessel shall determine if a closequarters situation is developing and/or risk of collision exists. If so, she shall take avoiding action in ample time, provided that when such action consists of an alteration in course, so far as possible the following shall be avoided:

(133) (i) An alteration of course to port for a vessel forward of the beam, other than for a vessel being overtaken;

(134) (ii) An alteration of course toward a vessel abeam or abaft the beam.

(135) (e) Except where it has been determined that a risk of collision does not exist, every vessel which hears apparently forward of her beam the fog signal of another vessel, or which cannot avoid a close-quarters situation with another vessel forward of her beam, shall reduce her speed to be the minimum at which she can be kept on her course. She shall if necessary take all her way off and in any event navigate with extreme caution until danger of collision is over.

(158)



(136)

Part C—Lights and Shapes

(137)

Rule 20—Application

(138) (a) Rules 20 through 31 shall be complied with in all weathers.

(139) (b) The Rules concerning lights shall be complied with from sunset to sunrise, and during such times no other lights shall be exhibited, except such lights which cannot be mistaken for the lights specified in these Rules or do not impair their visibility or distinctive character, or interfere with the keeping of a proper look-out.

(140) (c) The lights prescribed by these Rules shall, if carried, also be exhibited from sunrise to sunset in restricted visibility and may be exhibited in all other circumstances when it is deemed necessary.

(141) (d) The Rules concerning shapes shall be complied with by day.

(142) (e) The lights and shapes specified in these Rules shall comply with the provisions of Annex I of these Rules.

(143)

Rule 20f (Inland)

(f) A vessel's navigation lights and shapes may be lowered if necessary to pass under a bridge.

(144)

Rule 21—Definitions

(145) (a) "Masthead light" means a white light placed over the fore and aft centerline of the vessel showing an unbroken light over an arc of the horizon of 225° and so fixed as to show the light from right ahead to 22.5° abaft the beam on either side of the vessel *‹‹except that on a vessel of less than 12 meters in length the masthead light shall be placed as nearly as practicable to the fore and aft centerline of the vessel››*.

(146) (b) "Sidelights" means a green light on the starboard side and a red light on the port side each showing an unbroken light over an arc of the horizon of 112.5° and so fixed as to show the light from right ahead to 22.5° abaft the beam on its respective side. In a vessel of less than 20 meters in length the sidelights may be combined in one lantern carried on the fore and aft centerline of the vessel *‹‹, except that on a vessel of less than 12 meters in length the sidelights when combined in one lantern*

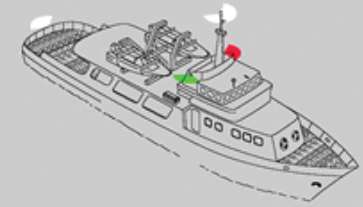
(166)

Rule 23—Power-driven Vessels Underway

23(a) **International/Inland**

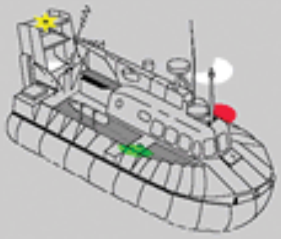
Power-driven Vessel Underway
50 meters or greater in length

23(a) **International/Inland**



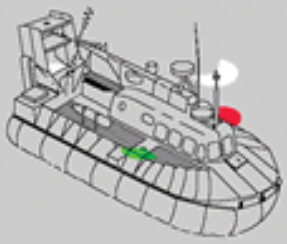
Power-driven Vessel Underway
Less than 50 meters in length

23(b) **International/Inland**



Air-cushion vessel when operating in the *non-displacement* mode—Vessels less than 50 meters in length

23(b) **International/Inland**



Air-cushion vessel when operating in the *displacement* mode—Vessels less than 50 meters in length

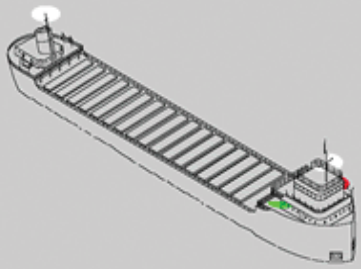
23(d)(i) **International/Inland**

Power-driven Vessel
Less than 12 meters in length

23(d)(ii) **International**

Power-driven Vessel
Less than 7 meters in length

23(e) **Inland**



Power-driven Vessel
on the Great Lakes

shall be placed as nearly as practicable to the fore and aft centerline of the vessel ››.

(147) (c) "Sternlight" means a white light placed as nearly as practicable at the stern showing an unbroken light over an arc of the horizon of 135° and so fixed as to show the light 67.5° from right aft on each side of the vessel.

(148) (d) "Towing light" means a yellow light having the same characteristics as the "sternlight" defined in Rule 21(c).

(149) (e) "All-round light" means a light showing an unbroken light over an arc of the horizon of 360°.

(150) (f) "Flashing light" means a light flashing at regular intervals at a frequency of 120 flashes or more per minute.

(151)

Rule 21g (Inland)

(g) "Special flashing light" means a yellow light flashing at regular intervals at a frequency of 50 to 70 flashes per minute, placed as far forward and as nearly as practicable on the fore and aft centerline of the tow and showing an unbroken light over an arc of the horizon of not less than 180 degrees nor more than 225 degrees and so fixed as to show the light from right ahead to abeam and no more than 22.5 degrees abaft the beam on either side of the vessel.

(152)

Rule 22—Visibility of Lights

(153) The lights prescribed in these Rules (Subpart C) shall have an intensity as specified in Annex I to these

Rules (33 CFR part 84), so as to be visible at the following minimum ranges:

(154) (a) In a vessel of 50 meters or more in length: (i) a masthead light, 6 miles; (ii) a sidelight, 3 miles; (iii) a sternlight, 3 miles; (iv) a towing light, 3 miles; (v) a white, red, green or yellow all-round light, 3 miles; *«and (vi) a special flashing light, 2 miles. »*

(155) (b) In a vessel of 12 meters or more in length but less than 50 meters in length: (i) a masthead light, 5 miles; except that where the length of the vessel is less than 20 meters, 3 miles; (ii) a sidelight, 2 miles; (iii) a sternlight, 2 miles; (iv) a towing light, 2 miles; (v) a white, red, green or yellow all-round light, 2 miles; *«and (vi) a special flashing light, 2 miles. »*

(156) (c) In a vessel of less than 12 meters in length: (i) a masthead light, 2 miles; (ii) a sidelight, 1 mile; (iii) a sternlight, 2 miles; (iv) A towing light, 2 miles; (v) a white, red, green or yellow all-round light, 2 miles; *«and (vi) a special flashing light, 2 miles. »*

(157) (d) In an inconspicuous, partly submerged vessel or objects being towed: (i) A white all-round light, 3 miles. (ii) [Reserved]

(159)

Rule 23—Power-driven Vessels Underway

(160) (a) A power-driven vessel underway shall exhibit: (i) a masthead light forward; (ii) a second masthead light abaft of and higher than the forward one; except that a vessel of less than 50 meters in length shall not be obliged to exhibit such a light but may do so; (iii) sidelights; and (iv) a sternlight.

(161) (b) An air-cushion vessel when operating in nondisplacement mode shall, in addition to the lights prescribed in Rule 23(a) Air Cushion Vessel in Displacement Mode, exhibit an all-round flashing yellow light *‹‹, where it can best be seen››*.

(162) (c) A WIG craft only when taking off, landing and in flight near the surface shall, in addition to the lights prescribed in Rule 23(a), exhibit a high intensity allround flashing red light.

(163) (d)(i) A power-driven vessel of less than 12 meters in length may in lieu of the lights prescribed in Rule 23(a) exhibit an all-round white light and sidelights.

(164)

Rule 23d (International)

(ii) a power-driven vessel of less than 7 meters in length whose maximum speed does not exceed 7 knots may in lieu of the lights prescribed in Rule 23(a) exhibit an all-round white light and shall, if practicable, also exhibit sidelights.

(iii) the masthead light or all-round white light on a power-driven vessel of less than 12 metres in length may be displaced from the fore and aft centre line of the vessel if centreline fitting is not practicable, provided that the sidelights are combined in one lantern which shall be carried on the fore and aft centre line of the vessel or located as nearly as practicable in the same fore and aft line as the masthead light or the all-round white light.

Rule 23e (Inland)

(e) A power-driven vessel when operating on the Great Lakes may carry an all-round white light in lieu of the second masthead light and sternlight prescribed in Rule 23(a). The light shall be carried in the position of the second masthead light and be visible at the same minimum range.

(165) Regulations containing specifics on **Law Enforcement and Public Safety Vessel** lighting are in **Annex V–Pilot Rules, 33 CFR 88.05 and 33 CFR 88.07**, chapter 2.

(167)

Rule 24—Towing and Pushing

(168) (a) A power-driven vessel when towing astern shall exhibit: (i) instead of the light prescribed in Rule 23(a)(i) or 23(a)(ii), two masthead lights in a vertical line. When the length of the tow, measuring from the stern of the towing vessel to the after end of the tow, exceeds 200 meters, three such lights in a vertical line; (ii) sidelights; (iii) a sternlight; (iv) a towing light in a vertical line above the sternlight; and (v) when the length of the tow exceeds 200 meters, a diamond shape where it can best be seen.

(169) (b) When a pushing vessel and a vessel being pushed ahead are rigidly connected in a composite unit they shall be regarded as a power-driven vessel and exhibit the lights prescribed in Rule 23.

(170) **Interpretive Rule**—See **33 CFR 90.3** and **33 CFR 82.3**, chapter 2, for regulations.

(171) (c) A power-driven vessel when pushing ahead or towing alongside, except ‹ in the case of a composite unit *›‹‹as required by Rules 24(b) and (i)››*, shall exhibit: (i) instead of the light prescribed in Rule 23(a)(i) or 23(a)(ii), two masthead lights in a vertical line; (ii) sidelights; and (iii) ‹ a sternlight *›‹‹two towing lights in a vertical line››*.

(172) (d) A power-driven vessel to which paragraphs (a) or (c) of this Rule applies shall also comply with Rule 23 *‹‹(a)(i) and››* (a)(ii).

(173) (e) A vessel or object being towed, other than those ‹ mentioned *›‹‹referred››* in Rule 24(g), shall exhibit: (i) sidelights; (ii) a sternlight; (iii) when the length of the tow exceeds 200 meters, a diamond shape where it can best be seen.

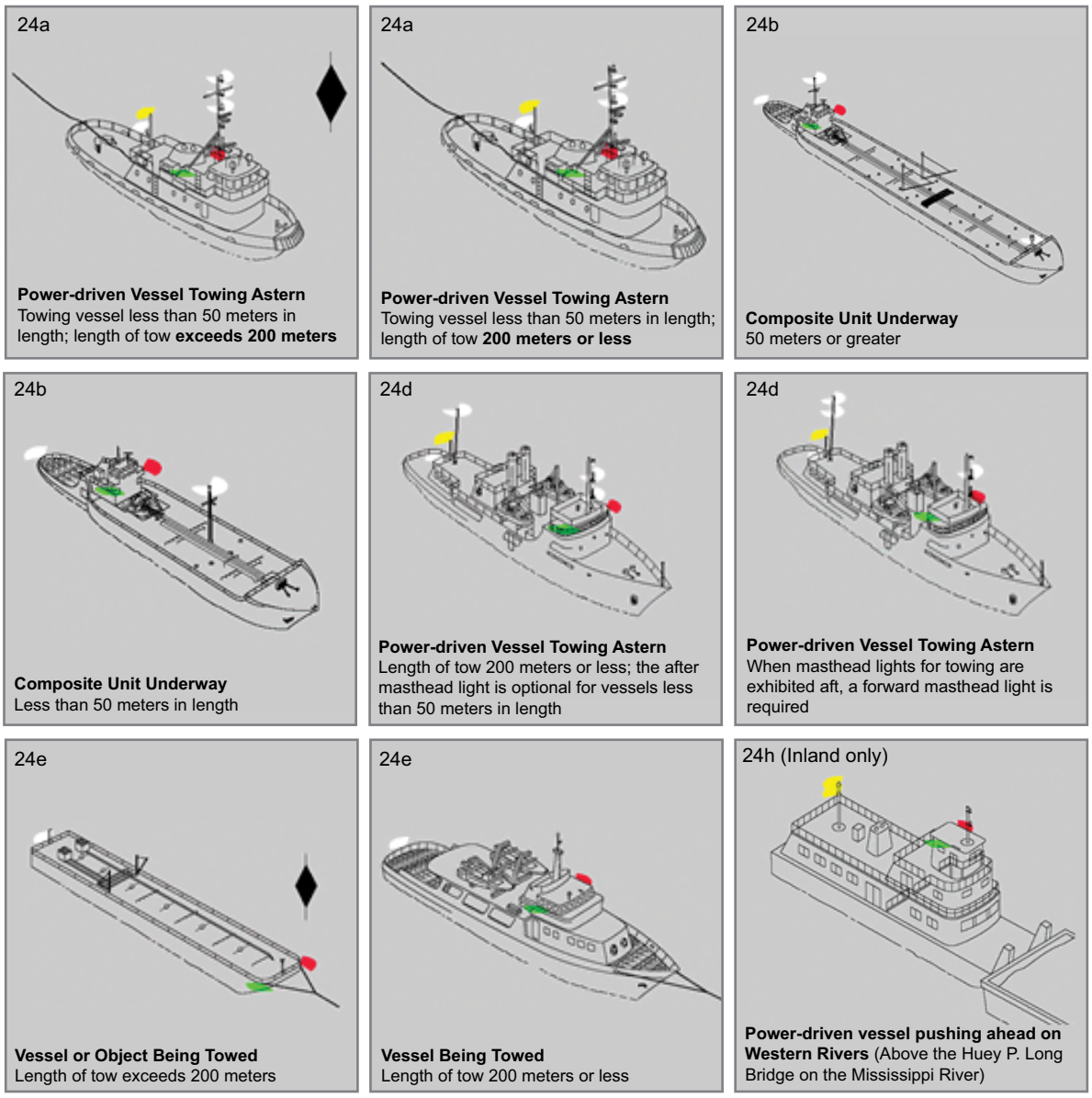
(174) (f) Provided that any number of vessels being towed alongside or pushed in a group shall be lighted as one vessel *‹‹except as provided in Rule 24(f)(iii)››*.

(175) (i) a vessel being pushed ahead, not being part of a composite unit, shall exhibit at the forward end, sidelights, and*‹‹ a special flashing light ››*;

(176) (ii) a vessel being towed alongside shall exhibit a sternlight and at the forward end, sidelights, and*‹‹ a special flashing light ››*;

(188)

Rule 24—Towing and Pushing (International/Inland)



(177)

Rule 24f (Inland)

(iii) when vessels are towed alongside on both sides of the towing vessel a sternlight shall be exhibited on the stern of the outboard vessel on each side of the towing vessel, and a single set of sidelights as far forward and as far outboard as is practicable, and a single special flashing light;

(178) (g) An inconspicuous, partly submerged vessel or object, or combination of such vessels or objects being towed, shall exhibit:

(179) (i) if it is less than 25 meters in breadth, one all-round white light at or near the forward end and one at or near the after end except that dracones need not exhibit a light at or near ‹ the forward ›‹‹each›› end.

(180)

Rule 24g (International)

(ii) if it is 25 meters or more in breadth, two additional all-round white lights at or near the extremities of its breadth;

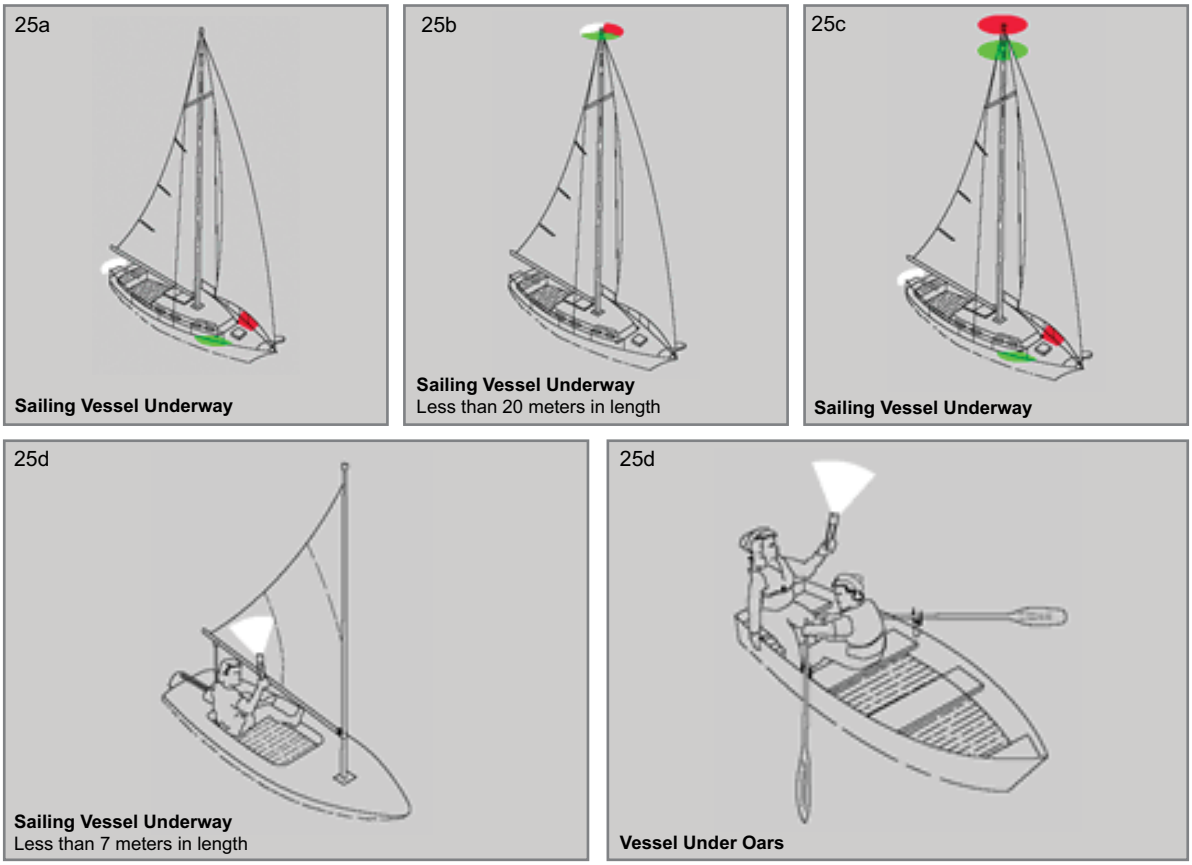
Rule 24g (Inland)

(ii) if it is 25 meters or more in breadth, four all-round white lights to mark its length and breadth;

(181) (iii) if it exceeds 100 meters in length, additional allround white lights between the lights prescribed in Rule 24(g)(i) ‹‹*and (ii)*›› and so that the distance between the lights shall not exceed 100 meters. ‹‹*Provided that any*

(196)

Rule 25—Sailing Vessels Underway and Vessels Under Oars (International/Inland)



vessels or objects being towed alongside each other shall be lighted as one vessel or object››.

(182) (iv) a diamond shape at or near the aftermost extremity of the last vessel or object being towed; and ‹ if the length of the tow exceeds 200 meters an additional diamond shape where it can best be seen and located as far forward as is practicable. ›

(183)

Rule 24g (Inland)

(v) the towing vessel may direct a searchlight in the direction of the tow to indicate its presence to an approaching vessel.

(184) (h) Where from any sufficient cause it is impracticable for a vessel or object being towed to exhibit the lights or shapes prescribed in Rule 24(e) or (g), all possible measures shall be taken to light the vessel or object towed or at least to indicate the presence of ‹ such ›*‹‹the unlighted››* vessel or object.

(185) **Interpretive Rule**—See **33 CFR 90.7 and 33 CFR 82.7**, chapter 2, for regulations.

(186) (i) Where from any sufficient cause it is impracticable for a vessel not normally engaged in towing operations to display the lights prescribed by paragraph (a), (c), *«or (j)»* of this Rule, such vessel shall not be required to exhibit those lights when engaged in towing another vessel in distress or otherwise in need of assistance. All possible measures shall be taken to indicate the nature of the relationship between the towing vessel and the vessel being towed ‹ as authorized by Rule 36, in particular by illuminating the towline ›*«and the vessel being assisted. The searchlight authorized by Rule 36 may be used to illuminate the tow»*.

(187)

Rule 24j (Inland)

(i) Notwithstanding paragraph (c) of this Rule, on the Western Rivers (except below the Huey P. Long Bridge at mile 106.1 Above Head of Passes on the Mississippi River) and on waters specified by the Secretary, a power-driven vessel when pushing ahead or towing alongside, except as paragraph (b) of this Rule applies, shall exhibit: (i) sidelights; and (ii) two towing lights in a vertical line.

(189)

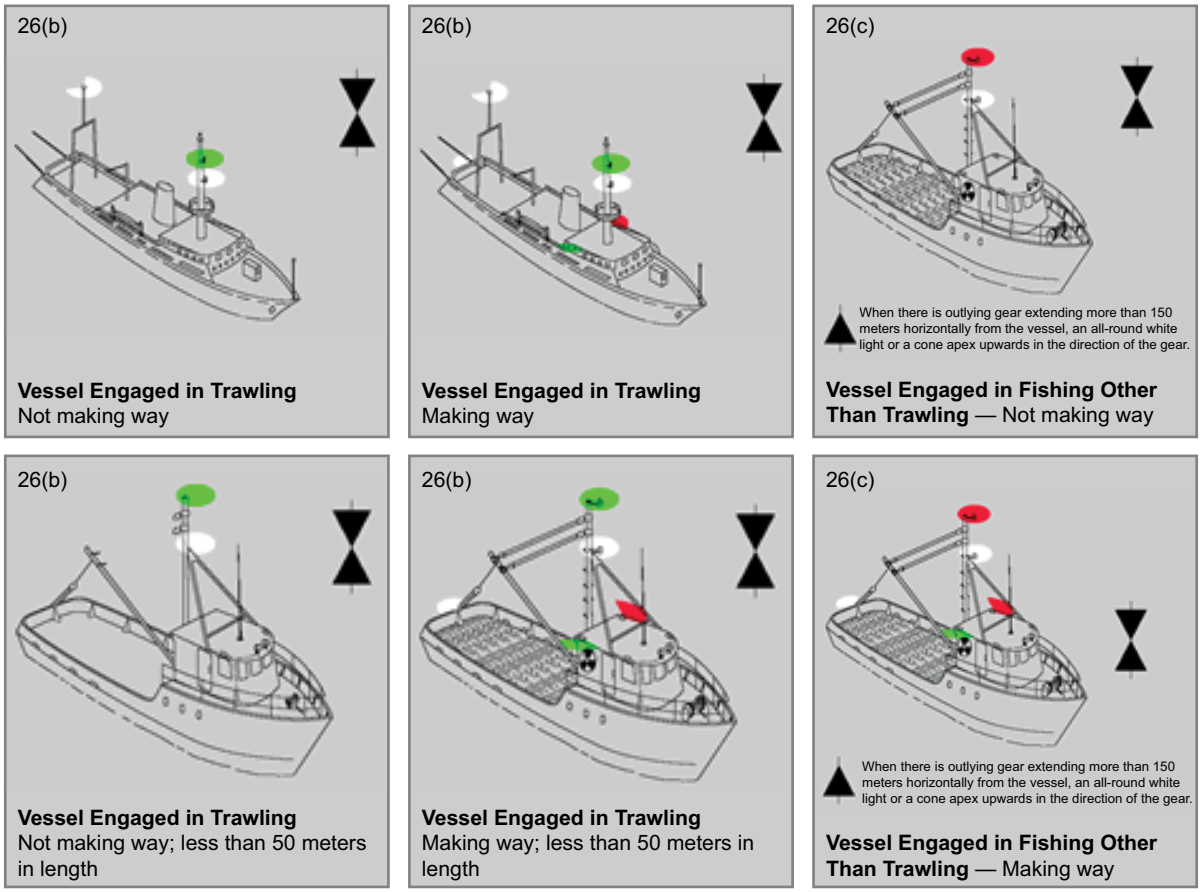
Rule 25—Sailing Vessels Underway and Vessels Under Oars

(190) (a) A sailing vessel underway shall exhibit: (i) sidelights; (ii) a sternlight.

(191) (b) In a sailing vessel of less than 20 meters in length the lights prescribed in Rule 25(a) may be combined in one lantern carried at or near the top of the mast where it can best be seen.

(210)

Rule 26—Fishing Vessels (International/Inland)



(192) (c) A sailing vessel underway may, in addition to the lights prescribed in Rule 25(a), exhibit at or near the top of the mast, where they can best be seen, two allround lights in a vertical line, the upper being red and the lower green, but these lights shall not be exhibited in conjunction with the combined lantern permitted by Rule 25(b).

(193) (d)(i) A sailing vessel of less than 7 meter in length shall, if practicable, exhibit the lights prescribed in Rule 25(a) or (b), but if she does not, she shall«*exhibit an all around white light or*» have ready at hand an electric torch or lighted lantern showing a white light which shall be exhibited in sufficient time to prevent collision.

(194) (ii) A vessel under oars may exhibit the lights prescribed in this rule for sailing vessels, but if she does not, she shall *«exhibit an all around white light or»* have ready at hand an electric torch or lighted lantern showing a white light which shall be exhibited in sufficient time to prevent collision.

(195) (e) A vessel proceeding under sail when also being propelled by machinery shall exhibit forward where it can best be seen a conical shape, apex downwards. *« A vessel of less than 12 meters in length is not required to exhibit this shape, but may do so.»*

(197)

Rule 26—Fishing Vessels

(198) (a) A vessel engaged in fishing, whether underway or at anchor, shall exhibit only the lights and shapes prescribed in this Rule.

(199) (b) A vessel when engaged in trawling, by which is meant the dragging through the water of a dredge net or other apparatus used as a fishing appliance, shall exhibit: (i) two all-round lights in a vertical line, the upper being green and the lower white, or a shape consisting of two cones with their apexes together in a vertical line one above the other; (ii) a masthead light abaft of and higher than the all-round green light; a vessel of less than 50 meters in length shall not be obliged to exhibit such a light but may do so; (iii) when making way through the water, in addition to the lights prescribed in this paragraph, sidelights and a sternlight.

(200) (c) A vessel engaged in fishing, other than trawling, shall exhibit: (i) two all-round lights in a vertical line, the upper being red and the lower white, or a shape consisting of two cones with their apexes together in a vertical line one above the other; (ii) when there is outlying gear extending more than 150 meters horizontally from the vessel, an all-round white light or a cone apex upwards in

the direction of the gear; (iii) when making way through the water, in addition to the lights prescribed in this paragraph, sidelights and a sternlight.

(201)

Rule 26d (International)

(d) The additional signals described in Annex II to these Regulations apply to a vessel engaged in fishing in close proximity to other vessels engaged in fishing.

(202) (e) A vessel ‹when› not engaged in fishing shall not exhibit the lights or shapes prescribed in this Rule, but only those prescribed for a vessel of her length.

(203) *« (f) Additional signals for fishing vessels in close proximity. »* {Same as International Rules Annex II}

(204) 1ǂ(i) The lights mentioned herein shall ‹,if exhibited in pursuance of Rule 26(d),› be placed where they can best be seen. They shall be at least 0.9 meters apart but at a lower level than lights prescribed in Rule 26. ‹(b)(i) and (c)(i)› The lights shall be visible all round the horizon at a distance of at least 1 mile but at a lesser distance from the lights prescribed by ‹these Rules›*«Rule 26(a)-(c)»* for fishing vessels.

(205) 2ǂ(ii) Signals for trawlers.

(206) (a)ǂ(1) Vessels ‹of 20 meters or more in length› when engaged in trawling, whether using demersal or pelagic gear, ‹shall›«may» exhibit: (i)ǂ(A) when shooting their nets—two white lights in a vertical line; (ii)ǂ(B) when hauling their nets—one white light over one red light in a vertical line; (iii)ǂ(C) when the net has come fast upon an obstruction—two red lights in a vertical line.

(207) (b)ǂ(2) ‹A›*«Each»* vessel ‹of 20 meters or more in length› engaged in pair trawling ‹shall›*«may»* exhibit: (i)ǂ(A) by night, a searchlight directed forward and in the direction of the other vessel of the pair; (ii)ǂ(B) when shooting or hauling their nets or when their nets have come fast upon an obstruction, the lights prescribed in Rule 26(f)(2)(a)ǂ(f)(ii)(1).

(208) 3ǂ(iii) Signals for purse seiners.

(209) (a)ǂ(1) Vessels engaged in fishing with purse seine gear may exhibit two yellow lights in a vertical line. These lights shall flash alternately every second and with equal light and occultation duration. These lights may be exhibited only when the vessel is hampered by its fishing gear.

(211)

Rule 27—Vessels Not Under Command or Restricted in Their Ability to Maneuver

(212) (a) A vessel not under command shall exhibit: (i) two all-round red lights in a vertical line where they can best be seen; (ii) two balls or similar shapes in a vertical line where they can best be seen; (iii) when making way through the water, in addition to the lights prescribed in this paragraph, sidelights and a sternlight.

(213) (b) A vessel restricted in her ability to maneuver, except a vessel engaged in mineclearance operations, shall exhibit: (i) three all-round lights in a vertical line where they can best be seen. The highest and lowest of these lights shall be red and the middle light shall be white; (ii) three shapes in a vertical line where they can best be seen. The highest and lowest of these shapes shall be balls and the middle one a diamond; (iii) when making way through the water, a masthead light(s), sidelights and a sternlight in addition to the lights prescribed in Rule 27(b)(i); (iv) when at anchor, in addition to the lights or shapes prescribed in Rule 27(b)(i) and (ii), the light, lights, or shapes prescribed in Rule 30.

(214) (c) A power-driven vessel engaged in a towing operation such as severely restricts the towing vessel and her tow in their ability to deviate from their course shall, in addition to the lights or shape prescribed in Rule 27(b)(i) and (ii), exhibit the lights or shape prescribed in Rule 24.

(215) (d) A vessel engaged in dredging or underwater operations, when restricted in her ability to maneuver, shall exhibit the lights and shapes prescribed in Rules 27(b)(i), (ii) and (iii) and shall in addition when an obstruction exists, exhibit: (i) two all-round red lights or two balls in a vertical line to indicate the side on which the obstruction exists; (ii) two all-round green lights or two diamonds in a vertical line to indicate the side on which another vessel may pass; and (iii) when at anchor, the lights or shapes prescribed in this paragraph instead of the lights or shapes prescribed in Rule 30.

(216)

Rule 27d (Inland)

(iv) Dredge pipelines that are floating or supported on trestles shall display the following lights at night and in periods of restricted visibility.

(1) One row of yellow lights. The lights must be: (A) flashing 50 to 70 times per minute, (B) visible all round the horizon, (C) visible for at least 2 miles, (D) not less than 1 and not more than 3.5 meters above the water, (E) approximately equally spaced, and (F) not more than 10 meters apart where the pipeline crosses a navigable channel. Where the pipeline does not cross a navigable channel the lights must be sufficient in number to clearly show the pipeline's length and course.

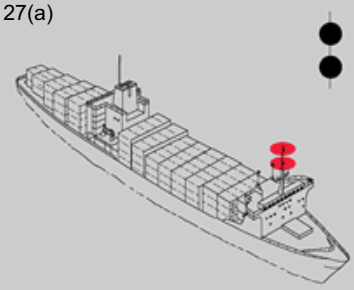
(2) Two red lights at each end of the pipeline, including the ends in a channel where the pipeline is separated to allow vessels to pass (whether open or closed). The lights must be: (A) visible all round the horizon, and (B) visible for at least 2 miles, and (C) one meter apart in a vertical line with the lower light at the same height above the water as the flashing yellow light.

(217) (e) Whenever the size of a vessel engaged in diving operations makes it impracticable to exhibit all lights and shapes prescribed in Rule 27(d), the following shall be exhibited: (i) Three all-round lights in a vertical line where they can best be seen. The highest and lowest of these lights shall be red and the middle light shall be white; (ii) a rigid replica of the International Code flag "A" not less than 1 meter in height. Measures shall be taken to ensure its all-round visibility.

(221)

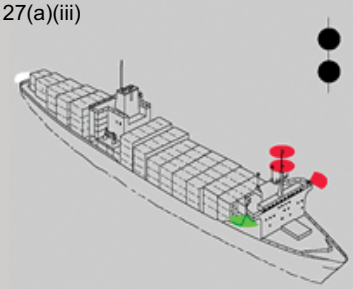
Rule 27—Vessels Not Under Command or Restricted in Their Ability to Maneuver (International/Inland)

27(a)



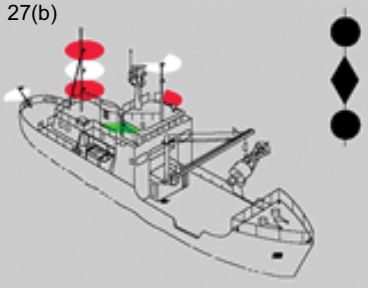
Vessel Not Under Command
Not making way

27(a)(iii)



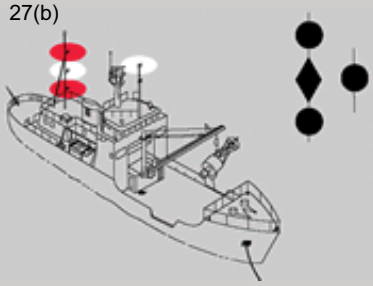
Vessel Not Under Command
Making way

27(b)



Vessel Restricted in Her Ability to Maneuver—Making way; less than 50 meters in length

27(b)

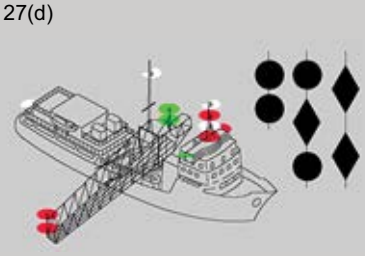


Vessel Restricted in Her Ability to Maneuver—At anchor; less than 50 meters in length

27(c)

Vessel engaged in towing operation which severely restricts towing vessel and her tow in their ability to deviate from their course—Length of tow does not exceed 200 meters; towing vessel less than 50 meters in length.

27(d)

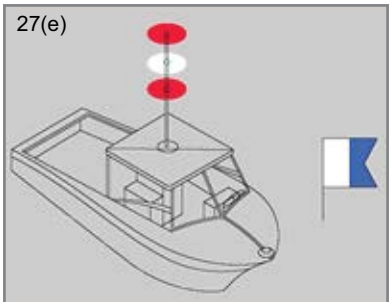


Vessel engaged in dredging or underwater operations when restricted in ability to maneuver—Making way with an obstruction on the starboard side.

27(d)

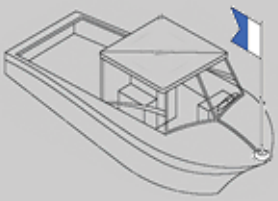
Vessel engaged in dredging or underwater operations when restricted in ability to maneuver—Not making way with an obstruction on the starboard side.

27(e)



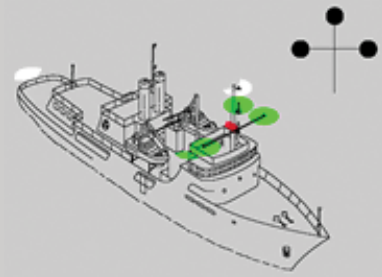
Small vessel engaged in diving operations

27(e)



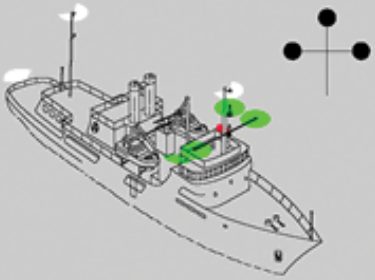
Small vessel engaged in diving operations

27(f)



Vessel engaged in mineclearance operations
Vessel less than 50 meters in length.

27(f)

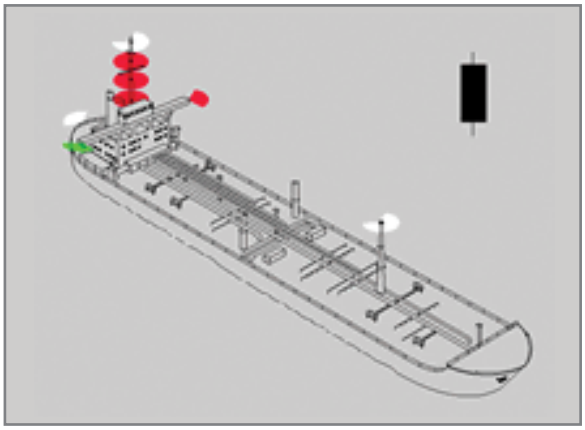


Vessel engaged in mineclearance operations
Vessel 50 meters or greater in length.

(224)

Rule 28—Vessel Constrained by Their Draft (International)

A vessel constrained by her draft may, in addition to the lights prescribed for power-driven vessels in Rule 23, exhibit where they can best be seen three all-round red lights in a vertical line, or a cylinder.



(218) (f) A vessel engaged in mine clearance operations shall, in addition to the lights prescribed for a power-driven vessel in Rule 23 or to the lights or shape prescribed for a vessel at anchor in Rule 30 as appropriate, exhibit three all-round green lights or three balls. One of these lights or shapes shall be exhibited near the foremast head and one at each end of the fore yard. These lights or shapes indicate that it is dangerous for another vessel to approach within 1000 meters of the mineclearance vessel.

(219) (g) Vessels of less than 12 meters in length, except ‹those›«*when*» engaged in diving operations, ‹shall not be›«*is not*» required to exhibit the lights ‹and›«*or*» shapes prescribed in this Rule.

(220) (h) The signals prescribed in this Rule are not signals of vessels in distress and requiring assistance. Such signals are contained in Annex IV to these Rules.

(222)

Rule 28—Vessels Constrained by Their Draft

(223) See graphic, **Rule 28—Vessels Constrained by Their Draft**.

(225)

Rule 29—Pilot Vessels

(226) (a) A vessel engaged on pilotage duty shall exhibit: (i) at or near the masthead, two all-round lights in a vertical line, the upper being white and the lower red; (ii) when underway, in addition, sidelights and a sternlight; (iii) when at anchor, in addition to the lights prescribed in Rule 29(a)(i), the light, lights, or shape prescribed in Rule 30 for vessels at anchor.

(227) (b) A pilot vessel when not engaged on pilotage duty shall exhibit the lights or shapes prescribed for a similar vessel of her length.

(229)

Rule 30—Anchored Vessels and Vessels Aground

(230) (a) A vessel at anchor shall exhibit where it can best be seen: (i) in the fore part, an all-round white light or one ball; (ii) at or near the stern and at a lower level than the light prescribed in Rule 30(a)(i), an all-round white light.

(231) **Interpretive Rule**—See **33 CFR 90.5 and 33 CFR 82.5**, chapter 2, for regulations on vessels at anchor.

(232) (b) A vessel of less than 50 meters in length may exhibit an all-round white light where it can best be seen instead of the lights prescribed in Rule 30(a).

(233) (c) A vessel at anchor may, and a vessel of 100 meters and more in length shall, also use the available working or equivalent lights to illuminate her decks.

(234) (d) A vessel aground shall exhibit the lights prescribed in Rule 30(a) or (b) and in addition, if practicable, where they can best be seen: (i) two all-round red lights in a vertical line; (ii) three balls in a vertical line.

(235) (e) A vessel of less than 7 meters in length, when at anchor not in or near a narrow channel, fairway or where other vessels normally navigate, shall not be required to exhibit the lights or shape prescribed in Rule 30(a) and (b).

(236) (f) A vessel of less than 12 meters in length, when aground, shall not be required to exhibit the lights or shapes prescribed in Rule 30(d)(i) and (ii).

(237)

Rule 30 (Inland)

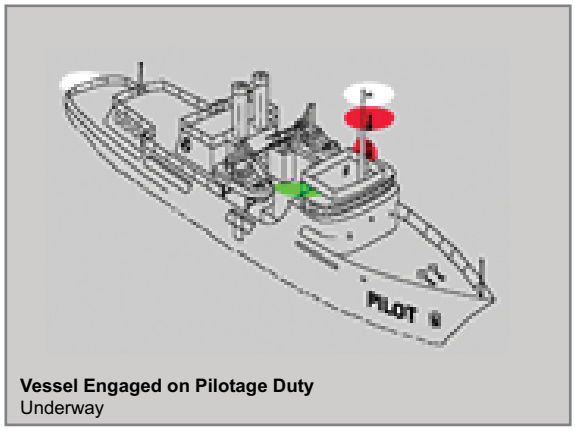
(g) A vessel of less than 20 meters in length, when at anchor in a special anchorage area designated by the Coast Guard, shall not be required to exhibit the anchor lights and shapes required by this Rule.

(h) The following barges shall display at night and if practicable in periods of restricted visibility the lights described in Rule 30(i):
(i) Every barge projecting into a buoyed or restricted channel.
(ii) Every barge so moored that it reduces the available navigable width of any channel to less than 80 meters.
(iii) Barges moored in groups more than two barges wide or to a maximum width of over 25 meters.
(iv) Every barge not moored parallel to the bank or dock.

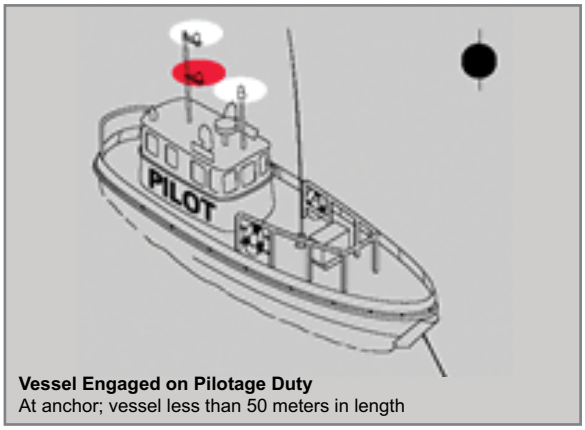
(i) Barges described in Rule 30(h) shall carry two unobstructed all-round white lights of an intensity to be visible for at least 1 nautical mile and meeting the technical requirements as prescribed in Annex I.

(228)

Rule 29—Pilot Vessels (International/Inland)



Vessel Engaged on Pilotage Duty
Underway



Vessel Engaged on Pilotage Duty
At anchor; vessel less than 50 meters in length

Rule 30 (Inland)	
(j) A barge or a group of barges at anchor or made fast to one or more mooring buoys or other similar device, in lieu of the provisions of Rule 30, may carry unobstructed all-round white lights of an intensity to be visible for at least 1 nautical mile that meet the requirements of Annex I and shall be arranged as follows: *(i) Any barge that projects from a group formation, shall be lighted on its outboard corners.* *(ii) On a single barge moored in water where other vessels normally navigate on both sides of the barge, lights shall be placed to mark the corner extremities of the barge.* *(iii) On barges moored in group formation, moored in water where other vessels normally navigate on both sides of the group, lights shall be placed to mark the corner extremities of the group.*	
(k) The following are exempt from the requirements of Rule 30: *(i) A barge or group of barges moored in a slip or slough used primarily for mooring purposes.* *(ii) A barge or group of barges moored behind a pierhead.* *(iii) A barge less than 20 meters in length when moored in a special anchorage area designated in accordance with 33 CFR 109.10.*	
(l) Barges moored in well-illuminated areas are exempt from the lighting requirements of Rule 30. These areas are as follows:	
CHICAGO SANITARY SHIP CANAL	
(1) Mile 293.2 to 293.9	*(15) Mile 314.6*
(2) Mile 295.2 to 296.1	*(16) Mile 314.8 to 315.3*
(3) Mile 297.5 to 297.8	*(17) Mile 315.7 to 316*
(4) Mile 298 to 298.2	*(18) Mile 316.8*
(5) Mile 298.6 to 298.8	*(19) Mile 316.85 to 317.05*
(6) Mile 299.3 to 299.4	*(20) Mile 317.5*
(7) Mile 299.8 to 300.5	*(21) Mile 318.4 to 318.9*
(8) Mile 303 to 303.2	*(22) Mile 318.7 to 318.8*
(9) Mile 303.7 to 303.9	*(23) Mile 320 to 320.3*
(10) Mile 305.7 to 305.8	*(24) Mile 320.6*
(11) Mile 310.7 to 310.9	*(25) Mile 322.3 to 322.4*
(12) Mile 311 to 311.2	*(26) Mile 322.8*
(13) Mile 312.5 to 312.6	*(27) Mile 322.9 to 327.2*
(14) Mile 313.8 to 314.2	
CALUMET SAG CHANNEL	

Rule 30 (Inland)	
(28) Mile 316.5	
LITTLE CALUMET RIVER	
(29) Mile 321.2	*(30) Mile 322.3*
CALUMET RIVER	
(31) Mile 328.5 to 328.7	*(34) Mile 331.4 to 331.6*
(32) Mile 329.2 to 329.4	*(35) Mile 332.2 to 332.4*
(33) Mile 330 west bank to 330.2	*(36) Mile 332.6 to 332.8*
CUMBERLAND RIVER	
(37) Mile 126.8	*(38) Mile 191*

(238)

Rule 31—Seaplanes

(239) Where it is impracticable for a seaplane or a WIG craft to exhibit lights or shapes of the characteristics or in the positions prescribed in Rules 20 through 31 she shall exhibit lights and shapes as closely similar in characteristics and position as is possible.

(240)

Part D—Sound and Light Signals

(241)

Rule 32—Definitions

(242) (a) The word "whistle" means any sound signaling appliance capable of producing the prescribed blasts and which complies with the specifications in Annex III to these Rules.

(243) (b) The term "short blast" means a blast of about one seconds duration.

(244) (c) The term "prolonged blast" means a blast of from four to six seconds duration.

(245)

Rule 33—Equipment for Sound Signals

(246) (a) A vessel of 12 meters or more in length shall be provided with a whistle, a vessel of 20 meters or more in length shall be provided with a bell in addition to a

whistle, and a vessel of 100 meters or more in length shall, in addition be provided with a gong, the tone and sound of which cannot be confused with that of the bell. The whistle, bell and gong shall comply with the specifications in Annex III to these Regulations. The bell or gong or both may be replaced by other equipment having the same respective sound characteristics, provided that manual sounding of the prescribed signals shall always be possible.

(247) (b) A vessel of less than 12 meters in length shall not be obliged to carry the sound signaling appliances prescribed in Rule 33(a) but if she does not, she shall be provided with some other means of making an efficient signal.

(248)

Rule 34—Maneuvering and Warning Signs (International)

(a) When vessels are in sight of one, a power-driven vessel underway, when maneuvering as authorized or required by these Rules, shall indicate that manoeuvre by the following signals on her whistle:
–One short blasts to mean "I am altering my course to starboard"
–Two short blasts to mean "I am altering my course to port"
–Three short blasts to mean "I am operating astern propulsion"

(b) Any vessel may supplement the whistle signals prescribed in Rule 34(a) by light signals, repeated as appropriate, while the maneuver is being carried out:
(i) these signals shall have the following significance:
(ii) the duration of each flash shall be about one second, the interval between flashes shall be about one second, and the interval between successive signals shall not be less than ten seconds.
(iii) the light used for this signal shall, if fitted, be an all-round white, visible at a minimum range of 5 miles, and shall comply with the provisions of Annex I to these Regulations.
–One flash to mean "I am altering my course to starboard"
–Two flashes to mean I am altering my course to port"
–Three flashes to mean "I am operating astern propulsion".

(c) When in sight of one another in a narrow channel or fairway:
(i) a vessel intending to overtake another shall in compliance with Rule 9(e)(i) indicate her intention by the following signals on her whistle:
–Two prolonged blasts followed by one short blast to mean "I intend to overtake you on your starboard side"
–Two prolonged blasts followed by two short blasts to mean "I intend to overtake you on your port side".
(ii) the vessel about to be overtaken when acting in accordance with Rule 9(e)(i) shall indicate her agreement by the following signal on her whistle:
–one prolonged, one short, one prolonged and one short blast, in that order.

(d) When vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by at least five short and rapid flashes.

Rule 34—Maneuvering and Warning Signs (International)

(e) A vessel nearing a bend or an area of a channel or fairway where other vessels may be obscured by an intervening obstruction shall sound one prolonged blast. This signal shall be answered with a prolonged blast by any approaching vessel that may be within hearing around the bend or behind the intervening obstruction.

(f) If whistles are fitted on a vessel at a distance apart of more than 100 meters, one whistle only shall be used for giving maneuvering and warning signals.

(249)

Rule 34—Maneuvering and Warning Signs (Inland)

(a) When power-driven vessels are in sight of one another and meeting or crossing at a distance within half a mile of each other, each vessel underway, when maneuvering as authorized or required by these Rules,
(i) shall indicate that maneuver by the following signals on her whistle:
–One short blasts to mean "I intend to leave you on my port side"
–Two short blasts to mean "I intend to leave you on my starboard side"
–Three short blasts to mean "I am operating astern propulsion"
(ii) upon hearing the one or two blast signal of the other shall, if in agreement, sound the same whistle signal and take the steps necessary to effect a safe passing. If, however, from any cause, the vessel doubts the safety of the proposed maneuver, she shall sound the signal specified in Rule 34(d) and each vessel shall take appropriate precautionary action until a safe passing agreement is made

(b) Any vessel may supplement the whistle signals prescribed in Rule 34(a) by light signals:
(i) these signals shall have the following significance:
(ii) the duration of each flash shall be about one second.
(iii) the light used for this signal shall, if fitted, be an all-round white or yellow, visible at a minimum range of 2 miles, synchronized with the whistle and shall comply with the provisions of Annex I to these Regulations.
–One flash to mean "I intend to leave you on my port side"
–Two flashes to mean "I intend to leave you on my starboard side"
–Three flashes to mean "I am operating astern propulsion"

(c) When in sight of one another:
(i) a power-driven vessel intending to overtake another power-driven vessel shall indicate her intention by the following signals on her whistle:
–One short blast to mean "I intend to overtake you on your starboard side"
–Two short blasts to mean "I intend to overtake you on your port side"
(ii) the power-driven vessel about to be overtaken shall, if in agreement, sound a similar sound signal. If in doubt she shall sound the signal prescribed in Rule 34(d).

(d) When vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by at least five short and rapid flashes.

Rule 34—Maneuvering and Warning Signs (Inland)

(e) A vessel nearing a bend or an area of a channel or fairway where other vessels may be obscured by an intervening obstruction shall sound one prolonged blast. This signal shall be answered with a prolonged blast by any approaching vessel that may be within hearing around the bend or behind the intervening obstruction.

(f) If whistles are fitted on a vessel at a distance apart of more than 100 meters, one whistle only shall be used for giving maneuvering and warning signals.

(g) When a power-driven vessel is leaving a dock or berth, she shall sound one prolonged blast.

(h) A vessel that reaches agreement with another vessel in a head-on, crossing, or overtaking situation, as for example, by using the radiotelephone as prescribed by the Vessel Bridge-to-Bridge Radiotelephone Act (85 Stat. 164; 33 U.S.C. 1201 et seq.), is not obliged to sound the whistle signals prescribed by this Rule, but may do so. If agreement is not reached, then whistle signals shall be exchanged in a timely manner and shall prevail.

(250)

Rule 35—Sound Signals in Restricted Visibility

(251) In or near an area of restricted visibility, whether by day or night the signals prescribed in this Rule shall be used as follows:

(252) (a) A power-driven vessel making way through the water shall sound at intervals of not more than 2 minutes one prolonged blast.

(253) (b) A power-driven vessel underway but stopped and making no way through the water shall sound at intervals of no more than 2 minutes two prolonged blasts in succession with an interval of about 2 seconds between them.

(254) (c) A vessel not under command, a vessel restricted in her ability to maneuver «*whether underway or at anchor*», ‹ a vessel constrained by her draft › , a sailing vessel, a vessel engaged in fishing and a vessel engaged in towing or pushing another vessel shall, instead of the signals prescribed in Rule 35(a) or (b), sound at intervals of not more than 2 minutes three blasts in succession, namely one prolonged followed by two short blasts.

(255)

Rule 35d (International)

(d) A vessel engaged in fishing, when at anchor, and a vessel restricted in her ability to maneuver when carrying out her work at anchor, shall instead of the signals prescribed in Rule 35(g) sound the signal prescribed in Rule 35(c).

(256) (e) A vessel towed or if more than one vessel is towed the last vessel of the tow, if manned, shall at intervals of not more than 2 minutes sound four blasts in succession, namely one prolonged followed by three short blasts. When practicable, this signal shall be made immediately after the signal made by the towing vessel.

(257) (f) When a pushing vessel and a vessel being pushed ahead are rigidly connected in a composite unit they shall be regarded as a power-driven vessel and shall give the signals prescribed in Rule 35(a) or (b).

(258) (g) A vessel at anchor shall at intervals of not more than 1 minute ring the bell rapidly for about 5 seconds. In a vessel 100 meters or more in length the bell shall be sounded in the forepart of the vessel and immediately after the ringing of the bell the gong shall be sounded rapidly for about 5 seconds in the after part of the vessel. A vessel at anchor may in addition sound three blasts in succession, namely one short, one long and one short blast, to give warning of her position and of the possibility of collision to an approaching vessel.

(259) (h) A vessel aground shall give the bell signal and if required the gong signal prescribed in Rule 35(g) and shall, in addition, give three separate and distinct strokes on the bell immediately before and after the rapid ringing of the bell. A vessel aground may in addition sound an appropriate whistle signal.

(260) (i) A vessel of 12 meters or more but less than 20 meters in length shall not be obliged to give the bell signals prescribed in Rule 35(g) and (h). However, if she does not, she shall make some other efficient sound signal at intervals of not more than 2 minutes.

(261) (j) A vessel of less than 12 meters in length shall not be obliged to give the above mentioned signals but, if she does not, shall make some other efficient sound signal at intervals of not more than 2 minutes.

(262) (k) A pilot vessel when engaged on pilotage duty may, in addition to the signals prescribed in Rule 35(a), (b) or (g), sound an identity signal consisting of four short blasts.

(263)

Rule 35 (Inland)

(l) The following vessels shall not be required to sound signals as prescribed in Rule 35(g) when anchored in a special anchorage area designated by the Coast Guard:

(i) a vessel of less than 20 meters in length; and

(ii) a barge, canal boat, scow, or other nondescript craft.

(264)

Rule 36—Signals to Attract Attention

(265) If necessary to attract the attention of another vessel, any vessel may make light or sound signals that cannot be mistaken for any signal authorized elsewhere in these Rules, or may direct the beam of her searchlight in the direction of the danger, in such a way as not to embarrass any vessel.

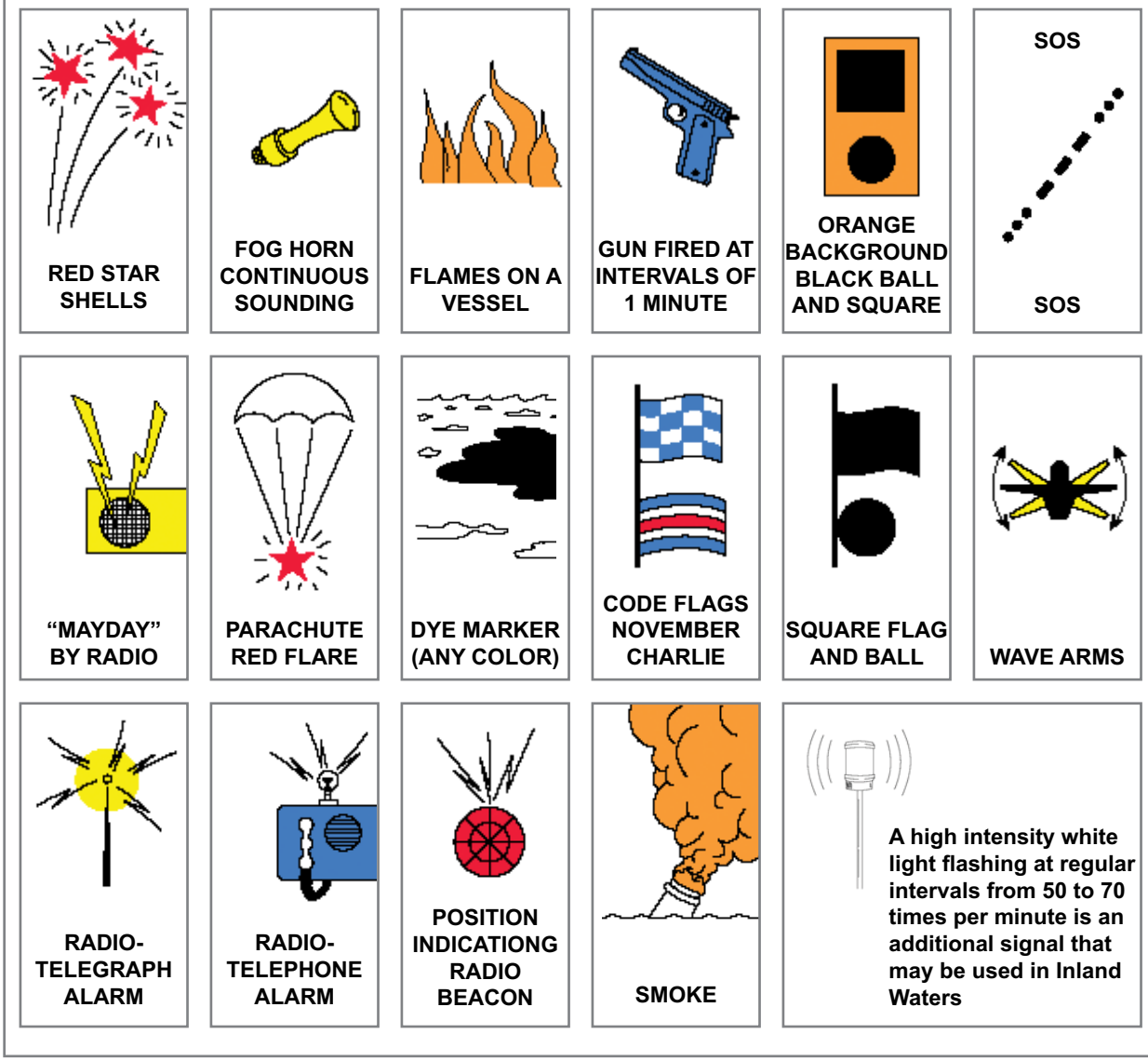
(266)

Rule 36 (International)

Any light to attract the attention of another vessel shall be such that it cannot be mistaken for any aid to navigation. For the purpose of this Rule the use of high intensity intermittent or revolving lights, such as strobe lights, shall be avoided.

(269)

Rule 37—Distress Signals (International/Inland)



(267)

Rule 37—Distress Signals

(268) When a vessel is in distress and requires assistance she shall use or exhibit the signals described in Annex IV to these Rules. (See graphic, **Rule 37—Distress Signals**).

(270)

Part E—Exemptions

(271)

Rule 38—Exemptions (International)

Any vessel (or class of vessel) provided that she complies with the requirements of — the International Regulations for the Preventing of Collisions at Sea, 1960, the keel of which is laid or is at a corresponding stage of construction before the entry into force of these Regulations may be exempted from compliance therewith as follows:

Rule 38—Exemptions (International)

(a) The installation of lights with ranges prescribed in Rule 22, until 4 years after the date of entry into force of these Regulations.

(b) The installation of lights with color specifications as prescribed in §7 of Annex I to these Regulations, until 4 years after the entry into force of these Regulations.

(c) The repositioning of lights as a result of conversion from Imperial to metric units and rounding off measurement figures, permanent exemption.

(d)(i) The repositioning of masthead lights on vessels of less than 150 meters in length, resulting from the prescriptions of §3 (a) of Annex I to these Regulations, permanent exemption.
(ii) The repositioning of masthead lights on vessels of 150 meters or more in length, resulting from the prescriptions of §3 (a) of Annex I to these Regulations, until 9 years after the date of entry into force of these Regulations.

Rule 38—Exemptions (International)

(e) The repositioning of masthead lights resulting from the prescriptions of §2(b) of Annex I to these Regulations, until 9 years after the date of entry into force of these Regulations.

(f) The repositioning of sidelights resulting from the prescriptions of §2(g) and 3(b) of Annex I to these Regulations, until 9 years after the date of entry into force of these Regulations.

(g) The requirements for sound signal appliances prescribed in Annex II to these Regulations, until 9 years after the date of entry into force of these Regulations.

(h) The repositioning of all-round lights resulting from the prescription of §9(b) of Annex I to these Regulations, permanent exemption.

(272)

Rule 38—Exemptions (Inland)

Any vessel or class of vessels, the keel of which was laid or which is at a corresponding stage of construction before December 24, 1980, provided that she complies with the requirements of—

(a) The Act of June 7, 1897 (30 Stat. 96), as amended (33 U.S.C. 154-232) for vessels navigating the waters subject to that statute;

(b) §4233 of the Revised Statutes (33 U.S.C. 301-356) for vessels navigating the waters subject to that statute;

(c) The Act of February 8, 1895 (28 Stat. 645), as amended (33 U.S.C. 241-295) for vessels navigating the waters subject to that statute; or

(d) §§3, 4, and 5 of the Act of April 25, 1940 (54 Stat. 163), as amended (46 U.S.C. 526 b, c, and d) for motorboats navigating the waters subject to that statute; shall be exempted from compliance with the technical Annexes to these Rules as follows:
(i) The installation of lights with ranges prescribed in Rule 22, vessels of less than 20 meters in length are permanently exempt;
(ii) The installation of lights with color specifications as prescribed in §7 of Annex I to these Rules, until 4 years after the effective date of the Inland Navigational Rules Act of 1980 (Pub. L. 96-591), except that vessels of less than 20 meters in length are permanently exempt;
(iii) The repositioning of lights as a result of a conversion to metric units and rounding off of measurement figures, are permanently exempt.
(iv) The horizontal repositioning of masthead lights prescribed by Annex I to these Rules, vessels of less than 150 meters in length are permanently exempted.
(v) Power-driven vessels of 12 meters or more but less than 20 meters in length are permanently exempt from the provisions of Rule 23(a)(i) and 23(a)(iv) provided that, in place of these lights, the vessel exhibits a white light aft visible all-around the horizon.

(273) **Implementing Rule**—See **33 CFR 81.20**, chapter 2, for regulations.

(274)

Part F—Verification of Compliance with the Provisions of the Convention

(275)

Rule 39—Definitions

(276)

Rule 39 (International)

(a) "Audit" means a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

(b) "Audit Scheme" means the IMO Member State Audit Scheme established by the Organization and taking into account the guidelines developed by the Organization*.

(c) "Code for Implementation" means the IMO Instruments Implementation Code (III Code) adopted by the Organization by resolution A.1070(28).

(d) "Audit Standard" means the Code for Implementation.

(277)

Rule 40—Application

(278)

Rule 40 (International)

Contracting Parties shall use the provisions of the Code for Implementation in the execution of their obligations and responsibilities contained in the present Convention.

(279)

Rule 41—Verification of Compliance

(280)

Rule 41 (International)

(a) Every Contracting Party shall be subject to periodic audits by the Organization in accordance with the audit standard to verify compliance with and implementation of the present Convention.

(b) The Secretary-General of the Organization shall have responsibility for administering the Audit Scheme, based on the guidelines developed by the Organization*.

(c) Every Contracting Party shall have responsibility for facilitating the conduct of the audit and implementation of a programme of actions to address the findings, based on the guidelines developed by the Organization*.

(d) Audit of all Contracting Parties shall be:

(i) based on an overall schedule developed by the Secretary-General of the Organization, taking into account the guidelines developed by the Organization*; and

(ii) conducted at periodic intervals, taking into account the guidelines developed by the Organization*.

* Refer to the Framework and Procedures for the IMO Member State Audit Scheme, adopted by the Organization by resolution A.1067(28).

(281)

Annex I—Positioning and Technical Details of Lights and Shapes

(282)

Definitions

(283) (a) The term "height above the hull" means height above the uppermost continuous deck. This height shall be measured from the position vertically beneath the location of the light.

(284)

Annex I (Inland)

(b) High-speed craft means a craft capable of maximum speed in meters per second (m/s) equal to or exceeding: $3.7\nabla^{0.1667}$; where ∇ = displacement corresponding to the design waterline (cubic meters).

Note: The same formula expressed in pounds and knots is maximum speed in knots (kts) equal to exceeding 1.98(lbs) $3.7\nabla^{0.1667}$; where ∇ =displacement corresponding to design waterline in pounds.

(c) The term "practical cut-off" means, for vessels 20 meters or more in length, 12.5 percent of the minimum luminous intensity (Table 14(b)) corresponding to the greatest range of visibility for which the requirements of Annex I are met.

(d) The term "Rule" or "Rules" has the same meaning as in Rule 3(r).

(285)

Vertical Positioning and Spacing of Lights

(286) (a) On a power-driven vessel of 20 meters or more in length the masthead light shall be placed as follows: (i) The forward masthead light, or if only one masthead light is carried, then that light, at a height above the hull of not less than ‹ 6 ›«*5*» meters, and, if the breadth of the vessel exceeds ‹ 6 ›«*5*» meters, then at a height above the hull not less than such breadth, so however that the light need not be placed at a greater height above the hull than ‹12 ›«*8*» meters; (ii) when two masthead lights are carried the after one shall be at least ‹ 4.5 ›«*2*» meters vertically higher than the forward one.

(287) (b) The vertical separation of the masthead lights of power-driven vessels shall be such that in all normal conditions of trim the after light will be seen over and separate from the forward light at a distance of 1000 meters from the stem when viewed from ‹ sea ›« *water* » level.

(288) (c) The masthead light of a power-driven vessel of 12 meters but less than 20 meters in length shall be placed at a height above the gunwale of not less than 2.5 meters.

(289)

Annex I (International)

(d) A power-driven vessel of less than 12 meters in length may carry the uppermost light at a height of less than 2.5 meters above the gunwale. When, however, a masthead light is carried in addition to sidelights and a sternlight or the all-round light prescribed in Rule 23(d)(i) is carried in addition to sidelights, then such masthead light or all-round light shall be carried at least 1 meter higher than the sidelights.

Annex I (Inland)

(d) The masthead light, or the all-round light described in Rule 23(d), of a power-driven vessel of less than 12 meters in length shall be carried at least 1 meter higher than the sidelights.

(290) (e) One of the two or three masthead lights prescribed for a power-driven vessel when engaged in towing or pushing another vessel shall be placed in the same position as either the forward masthead light or the after masthead light, provided that ‹, if carried on the after mast,› the lowest after masthead light shall be at least ‹ 4.5 ›«*2*» meters vertically higher than the «*highest*» forward masthead light.

(291) (f)(i) The masthead lights or lights prescribed in Rule 23(a) shall be so placed as to be above and clear of all other lights and obstructions except as described in §(f)(ii).

(292) (ii) When it is impracticable to carry the all-round lights prescribed by Rule 27(b)(i) ‹ or Rule 28 › below the masthead lights, they may be carried above the after masthead light(s) or vertically in between the forward masthead light(s) and after masthead light(s), provided that in the latter case the requirement of §3(c) shall be complied with.

(293) (g) The sidelights of a power-driven vessel shall be placed at ‹ a height above the hull not greater than three quarters of that ›«*least 1 meter lower*» of ‹ the ›«*than*» forward masthead light. They shall not be so low as to be interfered with by deck lights.

(294)

Annex I (International)

(h) The sidelights, if in a combined lantern and carried on a power-driven vessel of less than 20 meters in length, shall be placed not less than 1 meter below the masthead light.

(295) (i) When the Rules prescribe two or three lights to be carried in a vertical line, they shall be spaced as follows: (i) On a vessel of 20 meters in length or more such lights shall be spaced not less than ‹ 2 ›«*1*» meter apart, and the lowest of these lights shall, except where a towing light is required, be placed at a height of not less than 4 meters above the hull. (ii) On a vessel of less than 20 meters in length such lights shall be spaced not less than 1 meter apart and the lowest of these lights shall, except where a towing light is required, be placed at a height of not less than 2 meters above the gunwale. (iii) When three lights are carried they shall be equally spaced.

(296) (j) The lower of the two all-round lights prescribed for a vessel when engaged in fishing shall be at a height above the sidelights not less than twice the distance between the two vertical lights.

(297) (k) The forward anchor light prescribed in Rule 30(a)(i), when two are carried, shall not be less than 4.5 meters above the after one. On a vessel of 50 meters or more in length this forward anchor light shall be placed at a height or not less than 6 meters above the hull.

(298)

Horizontal Positioning and Spacing of Lights

(299) (a) *«Except as specified in §1(e),»* when two masthead lights are prescribed for a power-driven vessel, the horizontal distance between them must not be less than one- ‹ quarter ›«*half* » of the length of the vessel but need not be more than ‹ 100 ›«*50* » meters. The forward light must be placed not more than one- ‹ quarter ›«*half*» of the length of the vessel from the stem.

(300) (b) On a power-driven vessel of 20 meters or more in length the sidelights shall not be placed in front of the forward masthead lights. They shall be placed at or near the side of the vessel.

(301) (c) When the lights prescribed in Rule 27(b)(i) ‹ or Rule 28 › are placed vertically between the forward masthead light(s) and the after masthead light(s), these all-round lights shall be placed at a horizontal distance of not less than 2 meters from the fore and aft centerline of the vessel in the athwartship direction.

(302) (d) When only one masthead light is prescribed for a power-driven vessel, this light must be exhibited forward of amidships. For a vessel of less than 20 meters in length, the vessel shall exhibit one masthead light as far forward as is practicable.

(303)

Annex I (Inland)

(e) On power-driven vessels 50 meters but less than 60 meters in length operated on the Western Rivers, and those { waters specified by the Secretary }, the horizontal distance between masthead lights shall not be less than 10 meters.

(304)

Details of Location of Direction-Indicating Lights for Fishing Vessels, Dredgers and Vessels Engaged in Underwater Operations

(305) (a) The light indicating the direction of the outlying gear from a vessel engaged in fishing as prescribed in Rule 26(c)(ii) shall be placed at a horizontal distance of not less than 2 meters and not more than 6 meters away from the two all-round red and white lights. This light shall be placed not higher than the all-round white light prescribed in Rule 26(c)(i) and not lower than the sidelights.

(306) (b) The lights and shapes on a vessel engaged in dredging or underwater operations to indicate the obstructed side and/or the side on which it is safe to pass, as prescribed in Rule 27(d)(i) and (ii), shall be placed at the maximum practical horizontal distance, but in no case less than 2 meters, from the lights or shapes prescribed in Rule 27(b)(i) and (ii). In no case shall the upper of these lights or shapes be at a greater height than the lower of the three lights or shapes prescribed in Rule 27(b)(i) and (ii).

(307)

Screens ‹ For Sidelights ›

(308) (a) The sidelights of vessels of 20 meters or more in length shall be fitted with ‹inboard screens painted› matt black, «*inboard screens*» and meet ‹ing› the requirements of §‹9›«*15*». On vessels of less than 20 meters in length, the sidelights, if necessary to meet the requirements of §‹9›«*15*», shall be fitted with ‹inboard› matt black «*inboard*» screens. With a combined lantern, using a single vertical filament and a very narrow division between the green and red sections, external screens need not be fitted.

(309)

Annex I (Inland)

(b) On power-driven vessels less than 12 meters in length constructed after July 31, 1983, the masthead light, or the all-round light described in Rule 23(d) shall be screened to prevent direct illumination of the vessel forward of the operator's position.

(310)

Shapes

(311) (a) Shapes shall be black and of the following sizes: (i) A ball shall have a diameter of not less than 0.6 meter; (ii) a cone shall have a base diameter of not less than 0.6 meter‹s› and a height equal to its diameter; ‹ (iii) a cylinder shall have a diameter of at least 0.6 meter and a height of twice its diameter; › (iv)╪(iii) a diamond shape shall consist of two cones as defined in §(a)(ii) having a common base.

(312) (b) The vertical distance between shapes shall be at least 1.5 meter ‹ s ›.

(313) (c) In a vessel of less than 20 meters in length shapes of lesser dimensions but commensurate with the size of the vessel may be used and the distance apart may be correspondingly reduced.

(314)

Color Specification of Lights

(315) (a) The chromaticity of all navigation lights shall conform to the following standards, which lie within the boundaries of the area of the diagram specified for each color by the International Commission on Illumination (CIE). ‹ , in the "Colors of Light Signals", which is incorporated by reference. It is Publication CIE No. 2.2. (TC-1.6), 1975, and is available from the Illumination Engineering Society, 345 East 47th Street, New York, NY 10017 and is available for inspection at the Coast Guard, Shore Infrastructure Logistics Center, Aids to Navigation and Marine Environmental Response Product Line (CGSILC-ATON/MER), 2703 Martin Luther King, Jr. Ave SE, Mailstop 7714, Washington, DC 20593-7714.

It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*. This incorporation by reference was approved by the Director of the Federal Register. ›

(316) (b) The boundaries of the area for each color are given by indicating the corner coordinates, which are as follows:

(317)

(i) White						
x	0.525	0.525	0.452	0.310	0.310	0.443
y	0.382	0.440	0.440	0.348	0.283	0.382
(ii) Green						
x	0.028	0.009	0.300	0.203		
y	0.385	0.723	0.511	0.356		
(iii) Red						
x	0.680	0.660	0.735	0.721		
y	0.320	0.320	0.265	0.259		
(iv) Yellow						
x	0.612	0.618	0.575	0.575		
y	0.382	0.382	0.425	0.406		

(318)

Intensity of Lights

(319) (a) The minimum luminous intensity of lights shall be calculated by using the formula:

(320)

$I = 3.43 \times 10^6 \times T \times D^2 \times K^{-D}$
I is luminous intensity in candelas under service conditions.
T is threshold factor 2×10^{-7} lux.
D is range of visibility (luminous range) of the light in nautical miles.
K is atmospheric transmissivity. For prescribed lights the value of K shall be 0.8, corresponding to a meteorological visibility of approximately 13 miles.

(321) (b) A selection of figures derived from the formula is given in the following table:

(322)

Range of visibility (luminous range) of light in nautical miles D	Minimum luminous intensity of light in candelas for K = 0.8 I
1	0.9
2	4.3
3	12
4	27
5	52
6	94

(323) ‹ Note: The maximum luminous intensity of navigation lights should be limited to avoid undue glare. This shall not be achieved by a variable control of the luminous intensity. ›

(324)

Horizontal Sectors

(325) (a)(i) In the forward direction, sidelights as fitted on the vessel shall show the minimum required intensities. The intensities shall decrease to reach practical cut-off between 1 and one degrees outside the prescribed sectors.

(326) (ii) For sternlights and masthead lights and at 22.5 degrees abaft the beam for sidelights, the minimum required intensities shall be maintained over the arc of the horizon up to 5 degrees within the limits of the sectors prescribed in Rule 21. From 5 degrees within the prescribed sectors the intensity may decrease by 50 percent up to the prescribed limits; it shall decrease steadily to reach practical cut-off at not more than 5 degrees outside the prescribed sectors.

(327) (b)(i) All-round lights shall be so located as not to be obscured by masts, topmasts or structures within angular sectors of more than 6 degrees, except anchor lights prescribed in Rule 30, which need not be placed at an impracticable height above the hull *« , and the allround white light described in Rule 23(e), which may not be obscured at all».*

(328) (ii) If it is impracticable to comply with §(b)(i) by exhibiting only one all-round light, two all-round lights shall be used suitably positioned or screened so that they *« to »* appear, as far as practicable, as one light at a *« minimum »* distance of 1 *« nautical »* mile.

(329) *«Note: Two unscreened all-round lights that are 1.28 meters apart or less will appear as one light to the naked eye at a distance of 1 nautical mile.»*

(330)

Vertical Sectors

(331) (a) The vertical sectors of electric lights as fitted, with the exception of lights on sailing vessels underway «*and on unmanned barges*», shall ensure that: (i) At least the required minimum intensity is maintained at all angles from 5 degrees above to 5 degrees below the horizontal; (ii) at least 60 percent of the required minimum intensity is maintained from 7.5 degrees above to 7.5 degrees below the horizontal.

(332) (b) In the case of sailing vessels underway the vertical sectors of electric lights as fitted shall ensure that: (i) At least the required minimum intensity is maintained at all angles from 5 degrees above to 5 degrees below the horizontal; (ii) at least 50 percent of the required minimum intensity is maintained from 25 degrees above to 25 degrees below the horizontal.

(333)

Annex I (Inland)
(c) In the case of unmanned barges the minimum required intensity of electric lights as fitted shall be maintained on the horizontal.

(334) (c)╪(d) In the case of lights other than electric lights these specifications shall be met as closely as possible.

(335)

Intensity of Non-electric Lights

(336) Non-electric lights shall so far as practicable comply with the minimum intensities, as specified in the *«Intensity of Lights»* Table.

(337)

Maneuvering Light

(338) *«Notwithstanding the provisions of §2(f)»*, the maneuvering light described in Rule 34(b) shall be placed *«approximately»* in the same fore and aft vertical plane as the masthead light or lights and, where practicable, at a minimum height of ‹ 2 ›*«1.5»* meter vertically above the forward masthead light, provided that it shall be carried not less than ‹ 2 ›*«1.5»* meter vertically above or below the after masthead light. On a vessel where only one masthead light is carried, the maneuvering light, if fitted, shall be carried where it can best be seen, not less than ‹ 2 ›*«1.5»* meters vertically apart from the masthead light.

(339)

High-speed Craft

(340) (a) The masthead light of high-speed craft may be placed at a height related to the breadth«*of the craft*» lower than that prescribed in §2(a)(i), provided that the base angle of the isosceles triangle formed by the sidelights and masthead light when seen in end elevation is not less than 27 degrees.

(341) (b) On high-speed craft of 50 meters or more in length, the vertical separation between foremast and mainmast light of 4.5 meters required by §‹ 2(a)(ii) ›*«2(k)»* may be modified provided that such distance shall not be less than the value determined by the following formula:

(342)

$$y = \frac{y = (a+17\Psi)\ C}{1000} + 2$$

y the height of the mainmast light above the foremast light in meters.

a is the height of the foremast light above the water surface in service condition in meters

Y is the trim in service condition in degrees.

C is the horizontal separation of masthead lights in meters.

Note: Refer to the International Code of Safety for High-Speed Craft, 1994 and the International Code of Safety for High-Speed Craft, 2000.

(343)

Approval

(344) The construction of lights and shapes and the installation of lights on board the vessel ‹ shall be to the satisfaction of the appropriate authority of the State whose flag the vessel is entitled to fly ›*«must satisfy the Commandant, U. S. Coast Guard».*

(345)

Annex II—Additional Signals for Fishing Vessels Fishing in Close Proximity

(346) See Rule 26(f).

(347)

Annex III—Technical Details of Sound Signal Appliances

(348) (a) Frequencies and range of audibility. The fundamental frequency of the signal shall lie within the range 70-700 Hz. The range of audibility of the signal from a whistle shall be determined by those frequencies, which may include the fundamental and/or one or more higher frequencies, which lie within the range 180-700 Hz (+/- 1 percent) for a vessel of 20 meters or more in length, or 180-2100 Hz (+/- 1 percent) for a vessel of less than 20 meters in length and which provide the sound pressure levels specified in §1(c).

(349) (b) Limits of fundamental frequencies. To ensure a wide variety of whistle characteristics, the fundamental frequency of a whistle shall be between the following limits: (i) 70-200 Hz, for a vessel 200 meters or more in length; (ii) 130-350 Hz, for a vessel 75 meters but less than 200 meters in length; (iii) 250-700 Hz, for a vessel less than 75 meters in length.

(350) (c) Sound signal intensity and range of audibility. A whistle fitted in a vessel shall provide, in the direction of maximum intensity of the whistle and at a distance of 1 meter from it, a sound pressure level in at least one onethird octave band within the range of frequencies 180-700 Hz (+/- 1 percent) for a vessel of 20 meters ‹ or more in length, or 180-2100 Hz (+/- 1 percent) for a vessel of less than 20 meters in length ›, of not less than the appropriate figure given in the table below.

(351)

Length of vessel in meters	One-third octave band level at 1 meter in dB referred to 2 x 10^{-5}N/m^2	Audible range in nautical miles
200 or more	143	2
75 but less than 200	138	1.5
20 but less than 75	130	1
Less than 20	120* 115** 111***	0.5

* When the measured frequencies lie within the range 180-450 Hz
** When the measured frequencies lie within the range 450-800 Hz
*** When the measured frequencies lie within the range 800-2100 Hz

(352) The range of audibility in the table is for information and is approximately the range at which a whistle may be heard on its forward axis with 90 percent probability in conditions of still air on board a vessel having average background noise level at the listening posts (taken to be 68 dB in the octave band centered on 250 Hz and 63 dB in the octave band centered on 500 Hz). *«It is shown for informational purposes only.»* In practice, the range

at which a whistle may be heard is extremely variable and depends critically on weather conditions; the values given can be regarded as typical but under conditions of strong wind or high ambient noise level at the listening post the range may be reduced.

(353) (d) Directional properties. The sound pressure level of a directional whistle shall be not more than 4 dB below the ‹ prescribed › sound pressure level ‹ on the axis at ›, *« specified in §(c) »* any direction in the horizontal plane within +/- 45 degrees of the axis. The sound pressure level at «of the whistle in» any other direction in the horizontal plane shall be not more than 10 dB ‹ below the prescribed ›*« less than the »* sound pressure level ‹ on the ›*« specified for the forward »* axis, so that the range *« audibility »* in any direction will be at least half the range *« required »* on the forward axis. The sound pressure level shall be measured in that one-third octave band which determines the audibility range.

(354) (e) Positioning of whistles.

(355) (i) When a directional whistle is to be used as the only whistle on ‹ a vessel, it shall be installed with its maximum intensity directed straight ahead ›*«the vessel and is permanently installed, it shall be installed with its forward axis directed forward».*

(356) (ii) A whistle shall be placed as high as practicable on a vessel, in order to reduce interception of the emitted sound by obstructions and also to minimize hearing damage risk to personnel. The sound pressure level of the vessel's own signal at listening posts shall not exceed 110 dB(A) and so far as practicable should not exceed 100 dB(A).

(357) (f) Fitting of more than one whistle. If whistles are fitted at a distance apart of more than 100 meters, ‹ it shall be so arranged that they are ›*«they shall»* not *«be»* sounded simultaneously.

(358)

Annex IIIg (International)

(g) Combined whistle systems.

If due to the presence of obstructions the sound field of a single whistle or of one of the whistles referred to in §(f) is likely to have a zone of greatly reduced signal level, it is recommended that a combined whistle system be fitted so as to overcome this reduction. The whistles of a combined system shall be located at a distance apart of not more than 100 meters and arranged to be sounded simultaneously. The frequency of any one whistle shall differ from those of the others by at least 10 Hz.

Annex IIIg (Inland)

(g) Combined whistle systems.

(i) A combined whistle system is a number of whistles (sound emitting sources) operated together. For the purposes of the Rules a combined whistle system is to be regarded as a single whistle.

(ii) The whistles of a combined system shall:

(1) Be located at a distance apart of not more than 100 meters;

(2) Be sounded simultaneously;

(3) Each have a fundamental frequency different from those of the others by at least 10 Hz; and

(4) Have a tonal characteristic appropriate for the length of vessel which shall be evidenced by at least 2-thirds of the whistles in the combined system having fundamental frequencies falling within the limits prescribed in §(b) of this section, or if there are only two whistles in the combined system, by the higher fundamental frequency falling within the limits prescribed in paragraph (b) of this section.

Note: If, due to the presence of obstructions, the sound field of a single whistle or of one of the whistles referred to in §(f) of this section is likely to have a zone of greatly reduced signal level, a combined whistle system should be fitted so as to overcome this reduction.

(359) For the purposes of the Rules a combined whistle system is to be regarded as a single whistle. ‹ (ii) › The whistles of a combined system shall:

(360) (1) Be located at a distance apart of not more than 100 meters;

(361)

Annex III(h) (Inland)

(h) Towing vessel whistles

A power-driven vessel normally engaged in pushing ahead or towing alongside may, at all times, use a whistle whose characteristic falls within the limits prescribed by §1(b) for the longest customary composite length of the vessel and its tow.

(362)

Bell or Gong

(363) (a) Intensity of signal. A bell or gong, or other device having similar sound characteristics shall produce a sound pressure level of not less than 110 dB at ‹ a distance of › 1 meter ‹ from it ›.

(364) (b) Construction. Bells and gongs shall be made of corrosion-resistant material and designed to give clear tone. The diameter of the mouth of the bell shall be not less than 300 mm for vessels of 20 meters or more in length. Where practicable, a power-driven bell striker is recommended to ensure constant force but manual operation shall be possible. The mass of the striker shall be not less than 3 percent of the mass of the bell.

(365)

Approval

(366)

Annex III (International)

The construction of sound signal appliances, their performance and their installation on board the vessel shall be to the satisfaction of the appropriate authority of the State whose flag the vessel is entitled to fly.

(367)

Annex IV—Distress Signals

(368)

«*Need of Assistance*»

(369) The following signals, used or exhibited either together or separately, indicate distress and need of assistance:

(370) (a) a gun or other explosive signal fired at intervals of about a minute;

(371) (b) a continuous sounding with any fog-signaling apparatus;

(372) (c) rockets or shells, throwing red stars fired one at a time at short intervals;

(373) (d) a signal made by any signaling method consisting of the group . . . - - - . . . (SOS) in the Morse Code;

(374) (e) a signal sent by radiotelephony consisting of the spoken word "Mayday";

(375) (f) the International Code Signal of distress indicated by N.C.;

(376) (g) a signal consisting of a square flag having above or below it a ball or anything resembling a ball;

(377) (h) flames on the vessel (as from a burning tar barrel, oil barrel, etc.);

(378) (i) a rocket parachute flare or a hand flare showing a red light;

(379) (j) a smoke signal giving off orange-colored smoke;

(380) (k) slowly and repeatedly raising and lowering arms outstretched to each side;

(381) (l) a distress alert by means of digital selective calling (DSC) transmitted on: (i) VHF channel 70, or (ii) MF/HF on the frequencies 2187.5 kHz, 8414.5 kHz, 4207.5 kHz, 6312 kHz, 12577 kHz or 16804.5 kHz;

(382) (m) a ship-to-shore distress alert transmitted by the ship's Inmarsat or other mobile satellite service provider ship earth station;

(383) (n) signals transmitted by emergency position-indicating radio beacons;

(384) (o) approved signals transmitted by radio communication systems, including survival craft radar transponders *«meeting the requirements of 47 CFR 80.109»*.

(385) «*(p) A high intensity white light flashing at regular intervals from 50 to 70 times per minute.*»

(386)

«*Exclusive Use*»

(387) The use or exhibition of any of the foregoing signals except for the purpose of indicating distress and need of assistance and the use of other signals which may be confused with any of the above signals is prohibited.

(388)

«*Supplemental Signals*»

(389) Attention is drawn to the relevant sections of the International Code of Signals, the International Aeronautical and Maritime Search and Rescue Manual, Volume III, ‹ the International Telecommunication Union Radio Regulations, › and the following signals:

(390) (a) A piece of orange-colored canvas with either a black square and circle or other appropriate symbol (for identification from the air);

(391) (b) A dye marker.

(392)

Annex V—Pilot Rules

(393)

§88.01 Purpose and applicability.

(394) This part applies to all vessels operating on United States inland waters and to United States vessels operating on the Canadian waters of the Great Lakes to the extent there is no conflict with Canadian law.

(395)

§88.03 Definitions.

(396) The terms used in this part have the same meaning as the terms defined in part 83 of this subchapter.

(397)

§88.05 Law enforcement vessels.

(398) (a) Law enforcement vessels may display a flashing blue light when engaged in direct law enforcement or public safety activities. This light must be located so that it does not interfere with the visibility of the vessel's navigation lights.

(399) (b) The blue light described in this section may be displayed by law enforcement vessels of the United States and the States and their political subdivisions.

(400)

§88.07 Public safety activities.

(401) (a) Vessels engaged in government sanctioned public safety activities, and commercial vessels performing similar functions, may display an alternately flashing red and yellow light signal. This identification light signal must be located so that it does not interfere with the visibility of the vessel's navigation lights. The identification light signal may be used only as an identification signal and conveys no special privilege. Vessels using the identification light signal during public safety activities must abide by the Inland Navigation Rules, and must not presume that the light or the exigency gives them precedence or right of way.

(402) (b) Public safety activities include but are not limited to patrolling marine parades, regattas, or special water celebrations; traffic control; salvage; firefighting; medical assistance; assisting disabled vessels; and search and rescue.

(403)

Implementing Rules

(404) **Alternative Compliance**—see **33 CFR 81** and **33 CFR 89**, chapter 2, for regulations.

(405) **Vessel Bridge-to-Bridge Radiotelephone Regulations**—see **33 CFR 26**, chapter 2, for regulations.

Appendix A

(1)

Sales Information

(2) NOAA publications, nautical charts and unclassified National Geospatial-Intelligence Agency (NGA) nautical charts are sold by authorized sales agents in many U.S. ports and in some foreign ports. Information on obtaining charting products and a listing of authorized agents can be found at *www.nauticalcharts.noaa.gov*.

(3)

Products and Services–NOAA

(4)

Reporting corrections to nautical charts and Coast Pilots

(5) Users are requested to report all significant discrepancies or additions to NOAA charts and Coast Pilots, including depth information in privately maintained channels and basins; obstructions, wrecks and other dangers; new, relocated or demolished landmarks; uncharted fixed private aids to navigation; deletions or additions of small-craft facilities and any other information pertinent to safe navigation. This information may be submitted using the NOAA Office of Coast Survey site: https://www.nauticalcharts.noaa.gov/customer-service/assist/

(6)

Department of Commerce, NOAA
Nautical Data Branch
N/CS26, Station 7505
1315 East-West Highway
Silver Spring, Maryland 20910
ocs.ndb@noaa.gov

(7)

Nautical Charts

(8) NOAA maintains the nautical charts and publications for the coast of the United States and the Great Lakes. Over a thousand charts cover 95,000 miles of shoreline and 3.4 million square nautical miles of water. Access to charts, publications and chart catalogs is available through *www.nauticalcharts.noaa.gov*.

(9)

Dates of Latest Editions

(10) Information concerning the dates of latest editions for the full suite of NOAA's nautical charts and U.S. Coast Pilot volumes can be found at *https://charts.noaa.gov/MCD/Dole.shtml.*

(11)

Coast Pilots

(12)

U.S. Coast Pilot 1—Atlantic Coast: Eastport to Cape Cod
U.S. Coast Pilot 2—Atlantic Coast: Cape Cod to Sandy Hook
U.S. Coast Pilot 3—Atlantic Coast: Sandy Hook to Cape Henry
U.S. Coast Pilot 4—Atlantic Coast: Cape Henry to Key West
U.S. Coast Pilot 5—Gulf Coast, Puerto Rico and Virgin Islands
U.S. Coast Pilot 6—Great Lakes: Huron, Ontario, Michigan, Erie, Superior, and St. Lawrence River
U.S. Coast Pilot 7—Pacific Coast: California
U.S. Coast Pilot 8—Alaska: Dixon Entrance to Cape Spencer
U.S. Coast Pilot 9—Alaska: Cape Spencer to Beaufort Sea
U.S. Coast Pilot 10—Pacific Coast: Oregon, Washington, Hawaii, and Pacific Islands

(13)

Distance tables

(14) Distances Between United States Ports is available at *https://nauticalcharts.noaa.gov/publications/docs/distances.pdf*

(15)

National Ocean Service Center for Operational Oceanographic Products and Services

(16)

1305 East-West Highway
Silver Spring, Maryland 20910
301–713–2815 (phone)
301–713–4500 (fax)
www.tidesandcurrents.noaa.gov

(17)

National Weather Service offices

(18) The following offices provide forecasts, current conditions, local information and climatological data. This data can be accessed through the websites listed after each office below.

(19)

Hawaii
NWS Forecast Office Honolulu – *www.prh.noaa.gov/pr/hnl* 2525 Correa Road, Suite 250, Honolulu, HI 96822
Guam
NWS Forecast Office Guam – *www.prh.noaa.gov/guam* 3232 Hueneme Road, Barrigada, GU 96913
Oregon
NWS Forecast Office Medford – *www.wrh.noaa.gov/mfr* 4003 Cirrus Drive, Medford, OR 97504
NWS Forecast Office Pendleton – *www.wrh.noaa.gov/pdt* 2001 NW 56th Drive, Pendleton, OR 97801

NWS Forecast Office Portland – *www.wrh.noaa.gov/pqr*
5241 NE 122nd Avenue, Portland, OR 97230

Washington

NWS Forecast Office Seattle – *www.wrh.noaa.gov/sew*
7600 Sand Point Way NE, Seattle, WA 98115

NWS Forecast Office Spokane – *www.wrh.noaa.gov/otx*
2601 North Rambo Road, Spokane, WA 99224

(20)

NOAA Weather Radio

(21) National Weather Service VHF-FM radio stations provide mariners with continuous FM broadcasts of weather warnings, forecasts, radar reports, and selected weather observations. Reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles depending on elevation, terrain, type of receiver, and antenna used. The following VHF-FM radio stations with location of antenna are in or near the area covered by this Coast Pilot:

(22)

Call Sign	Station	Location	Frequency (MHz)
KIH–37	Brookings, OR	42°07'N., 124°12'W.	162.550
WNG-596	Port Orford, OR	42°42'N., 124°27'W.	162.425
KIH–32	Coos Bay, OR	43°23'N., 124°07'W.	162.400
WNG-674	Florence, OR	44°03'N., 124°02'W.	162.50
KIH–33	Newport, OR	44°45'N., 124°02'W.	162.550
WWF-95	Tillamook, OR	45°28'N., 123°56'W.	162.475
KIG–98	Portland, OR	45°34'N., 122°47'W.	162.550
KXI-27	Forks, WA	47°50'N., 124°23'W.	162.425
KIH–36	Neah Bay, WA	48°22'N., 124°40'W.	162.550
WWG-24	Puget Sound, WA	48°02'N., 122°58'W.	162.425
KHB–60	Seattle, WA	47°32'N., 121°55'W.	162.550
WXM–62	Olympia, WA	46°33'N., 122°55'W.	162.475
CFA–240	Mt Tuam, BC*	48°43'N., 123°29'W.	162.400
KBA–99	Oahu, HI	19°44'N., 155°05'W.	162.550
WWG-75	Maui, HI	20°43'N., 156°16'W.	162.400
WWG-27	Honolulu, HI	21°31'N., 158°09'W.	162.550
WWG-74	Kauai, HI	22°07'N., 159°40'W.	162.400

* Canadian Government weather radio station

(23) The National Weather Service provides **Radiofacsimile Weather Information** through Coast Guard Communications Station Pt. Reyes (NMC) and DOD Communication Station Honolulu (KVM70). The frequencies listed here are assigned frequencies. To convert to carrier frequency, subtract 1.9 KHz from the assigned frequency. Broadcasts are made on the following frequencies:

(24) **Pt. Reyes (NMC)**: 4346 KHz (0140-1608 UTC), 8682 KHz (All broadcast times), 12786 KHz (All broadcast times), 17151.2 KHz (All broadcast times), 22527 KHz (1840-2356).

(25) **Honolulu (KVM70):** 9982.5 KHz (0519-1556 UTC), 11090 KHz (All broadcast times), and 16135 KHz (1719-0356 UTC).

(26) For further information on Marine Radiofax Charts, visit: *https://www.weather.gov/marine/radiofax_charts*

(27) **Coastal Marine Forecasts** are issued four times daily by National Weather Service Offices. For further information on coastal marine forecasts as well as additional types of forecasts, visit: *https://weather.gov/marine/forecast* -and- *https://nowcoast.noaa.gov/*

(28)

Space Weather Prediction Center (SWPC)

(29) The Space Weather Prediction Center provides real-time monitoring and forecasting of solar and geophysical events that impact satellites, power grids, communications, navigation and many other technological systems.

(30)

NOAA, National Weather Service
National Centers for Environmental Predictions
Space Weather Prediction Center, W/NP9
325 Broadway
Boulder, Colorado 80305
www.swpc.noaa.gov

(31)

National Weather Service Port Meteorological Officers (PMOs)

(32) Port Meteorological Officers provide assistance on matters of weather chart interpretation, instruments, marine weather communications and requirements affecting ship operations. (See **National Weather Service**, chapter 1, for further details.) PMO offices in the area covered by this Coast Pilot are as follows:

(33) Honolulu, HI – 1845 Wasp Boulevard, Building 176, Honolulu, HI 96818.

(34) Seattle, WA – 7600 Sand Point Way NE, Bin C15700, Seattle, WA 98115.

(35)

Products and Services–Other U.S. Government Agencies

(36) A partial list of publications and charts considered of navigational value is included for the ready reference of the mariner. In addition to the agents located in the principal seaports handling publication sales, certain libraries have been designated by the Congress of the United States to receive the publications as issued for public review.

(37)

Government Publishing Office

(38)

U.S. Government Publishing Office
710 North Capitol Street, NW
Washington, DC 20401-0001
202-512-1800
866-512-1800
www.gpo.gov/
ContactCenter@gpo.gov

(39)

Hydrographic Surveys

(40) U.S. Army Corps of Engineers hydrographic survey activity is available at: *https://www.mvr.usace.army.mil/Missions/Navigation/Hydrographic-Surveys/HydrographicSurveysMap/*

(41)

Nautical Charts

(42) **Apalachicola, Chattahoochee and Flint Rivers Navigation Charts**, **Alabama River Charts** and **Black Warrior-Tombigbee Rivers River Charts**—available from the U.S. Army Corps of Engineers Mobile District for purchase in bound hard copy or as a free download in PDF at *www.sam.usace.army.mil*.

(43) **Flood Control and Navigation Maps of the Mississippi River, Cairo, IL to the Gulf of America**—available from the U.S. Army Corps of Engineers Memphis District as a free download in PDF at *www.mvm.usace.army.mil*.

(44) **Upper Mississippi River Navigation Charts (Mississippi River, Cairo, Illinois to Minneapolis, Minnesota)** and **Charts of the Illinois Waterway, from Mississippi River at Grafton, Illinois to Lake Michigan at Chicago and Calumet Harbors**—available from the U.S. Army Corps of Engineer Rock Island District for purchase in hard copy format or as a free download in PDF at *www.mvr.usace.army.mil*.

(45)

Publications and Services

(46) **Local Notices to Mariners** are posted weekly by the U.S. Coast Guard Navigation Center at *www.navcen.uscg.gov*. The National Geospatial-Intelligence Agency, U.S. Notice to Mariners are available at *msi.nga.mil/NGAPortal/MSI.portal*.

(47) **Special Notice to Mariners** are issued annually in National Geospatial-Intelligence Agency Notice to Mariners 1. These notices contain important information of considerable interest to all mariners. Interested parties are advised to read these notices.

(48) **Light List**—maintained by the United States Coast Guard and available online at *www.navcen.uscg.gov*. Also see **Light List**, chapter 1, for additional information.

(49) **List of Lights**, **Sailing Directions**, **Radio Navigational Aids (Pub. 117)**, **American Practical Navigator (Pub. 9)** and **International Code of Signals (Pub. 102)**—issued by the National Geospatial-Intelligence Agency and available at *msi.nga.mil/NGAPortal/MSI.portal*.

(50) The **Nautical Almanac**, the **Air Almanac**, and **Astronomical Almanac**—available through the United States Naval Observatory —*https://www.public.navy.mil/fltfor/cnmoc/Pages/usno_test_page.aspx* -and- *https://bookstore.gpo.gov/agency/united-states-naval-observatory-usno*

(51) **Dissemination of Marine Weather Information**, maintained by National Weather Service on the internet at *https://www.weather.gov/marine/nws_dissemination* -and- **NWS Marine Weather Services** at *https://www.weather.gov/marine/*

(52) **Navigation Rules and Regulations Handbook**, publication produced by the United States Coast Guard Navigation Standards Branch, which contains International and Inland Rules of theRoad and Navigation Regulations. Available for download or viewing at *www.navcen.uscg.gov.* Navigation Rules are also found near the end of each individual Coast Pilot volume.

(53)

(54)

Offices and Services-Other U.S. Government Agencies

(55)

U.S. Army Corps of Engineers (USACE) Offices

(56)

District/Division Office	Information
Pacific Ocean Division Office Fort Shafter, HI 96858-5440	*www.pod.usace.army.mil*
Portland District Office P.O. Box 2946 Portland, OR 97208-2946	*www.nwp.usace.army.mil*
Seattle District Office P.O. Box 3755 Seattle, WA 98124-3755	*www.nws.usace.army.mil*
Walla Walla District Office 201 North Third Avenue Walla Walla, WA 99362-1876	*www.nww.usace.army.mil*

(57)

Environmental Protection Agency (EPA) Offices

(58)

Regional Areas, States and Information
Region 1 New Hampshire, Vermont, Maine, Massachusetts, Connecticut, Rhode Island *www.epa.gov/aboutepa/epa-region-1-new-england*
Region 2 New Jersey, New York, Puerto Rico, Virgin Islands *www.epa.gov/aboutepa/epa-region-2*
Region 3 Delaware, Maryland, Virginia, District of Columbia, Pennsylvania *www.epa.gov/aboutepa/epa-region-3-mid-atlantic*
Region 4 Alabama, Florida, Georgia, Mississippi, South Carolina, North Carolina *https://www.epa.gov/aboutepa/about-epa-region-4-southeast*
Region 5 Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin *www.epa.gov/aboutepa/epa-region-5*
Region 6 Louisiana, Texas *www.epa.gov/aboutepa/epa-region-6-south-central*
Region 9 California, Hawaii, Guam *www.epa.gov/aboutepa/epa-region-9-pacific-southwest*
Region 10 Alaska, Oregon, Washington *www.epa.gov/aboutepa/epa-region-10-pacific-northwest*

(59)

U.S. Coast Guard Navigation Center (NAVCEN)

(60) The Coast Guard Navigation Center provides cutting edge services for safe, secure, and efficient maritime

transportation. The center operates the Navigation Information Service (NIS), the Maritime Differential GPS (DGPS) and the developing Nationwide Differential Global Positioning System (NDGPS). In addition, NAVCEN serves as the civilian interface for the Global Positioning System and manages other navigation-related projects.

(61) For further information and/or operational questions regarding GPS and DGPS, visit *navcen.uscg.gov*, or contact:

(62)

Commanding Officer
U.S. Coast Guard Navigation Center
NAVCEN MS 7310
7323 Telegraph Road
Alexandria, VA 20598-7310

(63)

Coast Guard District Offices

(64)

Districts and Boundary Description	Contact Information
Thirteenth Coast Guard District Ocean area that is bounded by a line from the California-Oregon state line westerly to 40°N., 150°W., thence northeasterly to 54°40'N., 140°W., thence due east to the Canadian coast.	915 Second Avenue, Seattle, WA 98174-1067. 206–220–7280
Fourteenth Coast Guard District Comprised of the State of Hawaii, the Pacific island possessions of the United Stated south of 40°N., and west of a line that runs from 40°N., 150°W through 5°S., 110°W. The ocean area west and south of a line that runs from 51°N., 158°E to 43°N., 165°E., thence due south to 40°N., thence due east to 150°W., then southeasterly through 5°S, 110°W.	300 Ala Moana Boulevard 9-216, Honolulu, HI 96850-4982 808–541–2316 (day) 808–842–2600 (night)

(65)

Coast Guard Sector Offices

(66) Note: A Sector Office combines the functions of the Captain of the Port and Marine Inspection Office.

(67)

Sectors	Contact Information
Thirteenth Coast Guard District	
Sector Columbia River	2185 SE Airport Road Warrenton, OR 97146-9693
Sector North Bend	2000 Connecticut Avenue North Bend, OR 97459-2399
Sector Puget Sound	1519 Alaskan Way South Seattle, WA 98134-1192
Fourteenth Coast Guard District	
Sector Guam	Victor Pier, CO US Naval Forces Santa Rita, GU 96915
Sector Honolulu	400 Sand Island Parkway Honolulu HI 96819-4398

(68)

Coast Guard Stations

(69) The stations listed are in the area covered by this Coast Pilot. They have search and rescue capabilities and may provide lookout, communication and/or patrol functions to assist vessels in distress. The National VHF-FM Distress System provides continuous coastal radio coverage outwards to 20 miles on channel 16. After contact on channel 16, communications with the Coast Guard should be on channel 1022 (previously channel 22A). If channel 1022 is not available to the mariner, communications may be made on channel 12. Selected stations guard the International Radiotelephone Distress, Safety and Calling Frequencies.

(70)

Hawaii	
Station Honolulu	On the northeast side of Sand Island.
Station Kauai	Inside Nawiliwili Small-Boat Harbor, in Nawiliwili Bay.
Station Maui	Just inside the breakwaters of Maalaea Village in Maalaea Bay.
Station Apra Harbor (Guam)	Victor Pier on the Naval Base.
Oregon	
Station Chetco River	On the east side of the river 450 yards inside the entrance.
Station Coos Bay	On the south side of Charleston Boat Basin.
Station Umpqua River	In East Basin about 2.3 miles from the entrance.
Station Siuslaw River	On the east side of the river, 1.3 miles above the entrance.
Station Yaquina Bay	North side of the bay, 400 yards northeast of the bridge.
Station Depoe Bay	East side of the boat basin.
Station Tillmook Bay	On the north shore west of Garibaldi.
Station Cape Disappointment	At Fort Canby on the east side of the cape.
Station Portland	East side of Willamette Rive in Swan Island Basin.
Washington	
Station Grays Harbor	On the south side of Westhaven Cove.
Station Quillayute River	At La Push.
Station Neah Bay	0.4 mile southwest of Baada Point.
Station Port Angeles	On the south side of Ediz Hook.
Station Bellingham	Northwest side of the I and J Street Waterway.
Station Seattle	South side of Pier 36 Slip.

(71)

Coast Guard Radio Broadcasts

(72) Urgent, safety and scheduled marine information broadcasts are made by Coast Guard stations. In general, these broadcasts provide information vital to vessels operating in the approaches and coastal waters of the United States including the Great Lakes, Puerto Rico and U.S. Virgin Islands. Types of broadcasts are as follows:

(73) **Scheduled broadcasts**–U.S. Coast Guard stations make scheduled broadcasts on a prepublished schedule of 12-hour intervals. After the preliminary announcements on VHF-FM channel 16, the station advises shifting to working frequency VHF-FM channel 1022 (previously channel 22A).

(74) **Safety broadcasts**–U.S. Coast Guard stations that make scheduled broadcasts issue safety broadcasts upon receipt and on the next scheduled broadcast. Safety broadcasts are preceded by the safety signal SECURITY. After the preliminary signal on VHF-FM channel 16, the station may announce shifting to working frequency VHF-FM channel 1022 (previously channel 22A).

(75) **Urgent broadcasts**–U.S.Coast Guard stations that make scheduled broadcasts issue urgent broadcasts upon receipt and on schedule until canceled. Urgent broadcasts are preceded by the urgent signal, PAN-PAN. Both the urgent signal and message may be transmitted on VHF-FM channel 16.

(76)

Coast Guard Radio Station	Scheduled Broadcast Times (UTC)
Port Angeles, WA (NOW)	0615, 1815, on receipt
Portland, OR (NMW-44)	1745, on receipt
North Bend, OR (NOE)	0603, 1803, on receipt
Honolulu, HI (NMO, NMO-2)	0500, 1700
Guam (NRV)	0900, 2100

(77)

U.S. NAVTEXTransmitting Stations

(78) NAVTEX is an international automated medium frequency direct-printing service informing mariners of navigational and meteorlogical warnings and forecasts, as well as urgent marine safety information. Coverage is reasonably continuous to 200 NM off the U.S. East, Gulf and West Coasts; Puerto Rico; Southwest Alaska; Hawaii; and 100 NM off Guam.

(79)

Station	Range (NM)	Broadcast Schedule (UTC)
Kodiak (NOJ) *Areas east of Kodiak*	200	0100, 0500, 0900, 1300, 1700, 2130
Kodiak (NOX) *Areas west of Kodiak*	200	0300, 0700, 1100, 1500, 1900, 2350
Astoria (NMW)	216	0300, 0700, 1100, 1500, 1900, 2340
San Francisco (NMC)	350	0000, 0400, 0800, 1200, 1600, 2020
Cambria (NMQ)	350	0200, 0600, 1000, 1400, 1800, 2240
Guam (NRV)	100	0300, 0700, 1100, 1500, 1900, 2330
Honolulu (NMO)	350	0200, 0600, 1000, 1400, 1800, 2220

(80)

Customs Ports of Entry

(81) Vessels arriving in the United States from a foreign port or place are required to report their arrival to Customs and Border Protection immediately. Field Operations Offices and contact information are listed below.

(82)

Field Operations Office	Contact Information
Portland	33 New Montgomery Street Suite 1600 San Francisco, CA 94105 415–744–1530 ext. 221
Seattle	1000 2nd Avenue Suite 2200 Seattle, WA 98104 206–370–3800

(83)

(84)

Public Health Service Quarantine Stations

(85)

Quarantine Stations and Addresses
CDC Honolulu Quarantine Station Honolulu International Airport 300 Rodgers Boulevard, Terminal Box 67 Honolulu, HI 96819-1897
CDC Seattle Quarantine Station Seattle-Tacoma International Airport c/o CBP 19339 28th Ave South Building D SeaTac, WA 98158

(86) At other ports, quarantine and/or medical examinations are usually performed by Public Health Service contract personnel or by quarantine inspectors from the nearest quarantine station. Inquiries concerning quarantine matters should be directed to the nearest quarantine station.

(87)

Food and Drug Administration (FDA) Regional Offices

(88) **Northeast Region** (New York, Maine, Connecticut, New Hampshire, Vermont, Rhode Island): 830 Third Avenue, Brooklyn, NY 11232.

(89) **Mid-Atlantic Region** (Delaware, Pennsylvania, Virginia, Maryland, Ohio, New Jersey): U.S. Customhouse, 2nd and Chestnut Streets, Philadelphia, PA 19106.

(90) **Southeast Region** (South Carolina, North Carolina, Georgia, Alabama, Louisiana, Mississippi, Florida, Puerto Rico): 60 Eighth Street, N.E., Atlanta, GA 30309. Midwest Region (Illinois, Indiana, Michigan, Wisconsin): 20 N. Michigan Avenue, Chicago, IL 60602.

(91) **Southwest Region (Texas)**: 3032 Bryan Street, Dallas, TX 75204.

(92) **Pacific Region** (California, Hawaii, Alaska, Washington, Oregon): 50 U.N. Plaza, San Francisco, CA 94102.

(93)

Department of Agriculture, Animal and Plant Health Inspection Service (APHIS)

(94) Information on the importation of plants, animals and plant and animal products is available from APHIS, Department of Agriculture, 4700 River Road, Riverdale, MD 20737. See *https://www.aphis.usda.gov* for more information.

(95)

USDA Animal and Plant Inspection Service
Animal Import Centers:
Los Angeles Animal Import Center (LAAIC) 222 Kansas Street El Segundo, CA 90245 310-955-3311
Miami Animal Import Center (MAIC) 6300 NW 36th Street Miami, FL 33122 305-876-2200

USDA Animal and Plant Inspection Service
Animal Import Centers:
New York Animal Import Center (NYAIC) 474 Animal Import Center Newburg, NY 12550 845-838-5500
John F. Kennedy Airport Office 230-59 Rockaway Blvd. Suite 100, Room 101 Jamaica, NY 11413 718-553-3570
Agriculture Select Service Agents 4700 River Road, Unit 2 Riverdale, MD 20737 AgSAS@aphis.usda.gov 301-851-3300 (select option 3)

(96)

Immigration and Naturalization Service Offices

(97) **Hawaii:**

(98) Honolulu: 595 Ala Moana Boulevard 96809.

(99) **Oregon:**

(100) Portland: Federal Office Bldg., 511 Northwest Broadway 97209.

(101) **Washington:**

(102) Bellingham: Federal Bldg., Magnolia and Cornwall Streets 98227.

(103) Blaine: Peace Arch Inspection Station 98230.

(104) Longview: U.S. Postal Service Bldg., 1603 Larch Street 98632.

(105) Port Angeles: U.S. Post Office Bldg., First and Oak Streets 98362.

(106) Seattle: 815 Airport Way South 98134.

(107) Tacoma: U.S. Post Office Bldg., 11th and A Streets 98401.

(108)

Department of Interior

(109) Pacific Remote Islands Marine National Monument, 300 Ala Moana Blvd., Rm 5-231, Honolulu, HI 96850. Telephone: 808–792–9540. Email: Pacific_Reefs@fws.gov

(110) Rose Atoll Marine National Monument, Superintendent, Rose Atoll National Wildlife Refuge, Manager; Mail: Rose Atoll NWR, PO Box 5744, Pago Pago, AS 96799. Telephone: 684-633-7082 ext 15. For further information visit: *https://www.fws.gov/refuge/rose_atoll_marine_national_monument/about/contact_us.html*

(111)

Federal Communications Commission Offices

(112) **District field offices:**

(113) Seattle WA: 11410 NE 122nd Way, Room 312, Kirkland, WA 98034-6927.

(114) Telephone toll-free: 888–225–5322: (888–CALLFCC) to report radio communciations interference issues.

(115)

Radio shore stations providing medical advice

(116) Messages to shore stations may be transmitted in code groups or plain language; messages should be signed by the master and be prefixed: "RADIOMEDICAL." The following stations will provide radio services for medical advice. (See Medical advice, chapter 1.)

(117) **NMC**, San Francisco, CA, U.S. Coast Guard, and

(118) **NMO**, Honolulu, HI, U.S. Coast Guard on HF single-sideband radiotelephone channels 424(4134 kHz), 601(6200 kHz), 816(8340 kHz), or 1205(12242 kHz).

(119) **NOJ**, Kodiak, AK, U.S. Coast Guard, and

(120) **KLB**, Seattle, WA, Mobile Marine Radio, Inc.

(121)

Measured courses

(122) The positions of measured courses are shown on the chart and their description is included in the Coast Pilots when information is reported to the National Ocean Service. Courses are located in the following places covered by this Coast Pilot.

(123) Commencement Bay, on the southwest shore between Ruston and Tacoma.

(124) Dungeness Bay, on the strait side of Dungeness Spit.

(125) Edmonds, north of Edwards Point on the east shore of Puget Sound.

(126) Kāneʻohe Bay, southeast of Moku o Loe Island in south part of bay.

(127) Lake Washington, on pontoon bridge from Foster Island to Evergreen Point.

(128) Lake Washington, on pontoon bridge to Mercer Island.

(129) Parry Bay (Canada), on the northwest shore of the bay.

(130) Port Angeles, in southwest part of the harbor.

(131) Vashon Island, east of Point Beals.

(132) The pages in the text describing the courses can be obtained by referring to the index for the geographic places; the chart number follows the names.

Weekly Record of Updates

Week of	Action	Chapter	Paragraph(s)	User notes
12 JUN 2024				U.S. Coast Pilot 10, 5th Edition has been issued.
16 JUN 2024	**No Correction**			
23 JUN 2024	**No Correction**			
30 JUN 2024	**No Correction**			
07 JUL 2024	**No Correction**			
14 JUL 2024	**No Correction**			
21 JUL 2024	**No Correction**			
28 JUL 2024	**No Correction**			
04 AUG 2024	**No Correction**			
11 AUG 2024	**No Correction**			
18 AUG 2024	**No Correction**			
25 AUG 2024	**No Correction**			
01 SEP 2024	**No Correction**			
08 SEP 2024	**No Correction**			
15 SEP 2024	**No Correction**			
22 SEP 2024	**No Correction**			
29 SEP 2024	**No Correction**			
06 OCT 2024	**No Correction**			
13 OCT 2024	**No Correction**			
20 OCT 2024	**No Correction**			
27 OCT 2024	**No Correction**			
03 NOV 2024	**No Correction**			
10 NOV 2024	**No Correction**			
17 NOV 2024	**No Correction**			
24 NOV 2024	**No Correction**			
01 DEC 2024	**No Correction**			
08 DEC 2024	**No Correction**			
15 DEC 2024	**No Correction**			
22 DEC 2024	**No Correction**			
29 DEC 2024	**No Correction**			
05 JAN 2025	**No Correction**			
12 JAN 2025	**No Correction**			
19 JAN 2025	**No Correction**			
26 JAN 2025	**No Correction**			
02 FEB 2025	**No Correction**			

This record is intended as a log for critical updates applied to this volume. For online versions or Print on Demand (POD) copies, all weekly critical updates issued and applied to this edition at time of download or purchase are listed.
Affected paragraphs within the chapters are indicated by a gray highlight for ease of identification; e.g. (215)

Updates are available from NOAA at http://nauticalcharts.noaa.gov/nsd/cpdownload.htm.

Week of	Action	Chapter	Paragraph(s)	User notes
09 FEB 2025	**No Correction**			
16 FEB 2025	**Change**	1	241	
23 FEB 2025	**No Correction**			
02 MAR 2025	**Change**	4	259	
09 MAR 2025	**No Correction**			
16 MAR 2025	**No Correction**			
23 MAR 2025	**No Correction**			
30 MAR 2025	**No Correction**			
06 APR 2025	**No Correction**			
13 APR 2025	**No Correction**			
20 APR 2025	**No Correction**			
27 APR 2025	**No Correction**			
04 MAY 2025	**No Correction**			

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