Chart Coverage in Coast Pilot 5—Chapter 13
NOAA's Online Interactive Chart Catalog has complete chart coverage
https://charts.noaa.gov/InteractiveCatalog/nrnc.shtml
19°N
18°N
65°W
66°W
67°W
68°W
NORTH ATLANTIC OCEAN
CARIBBEAN SEA
PUERTO RICO
Isla de Culebra
Isla de Vieques
Cape San Juan
San Juan
Arecibo
Ponce
Mayaguez
Cabo Rojo
Isla Desecheo
Isla de Mona

Puerto Rico

(1) This chapter describes the islands of the Commonwealth of Puerto Rico, which includes Puerto Rico, Mona, Vieques, Culebra and a few smaller islands. Port information is provided for San Juan, Fajardo, Radas Roosevelt (Roosevelt Roads), Yabucoa, Laguna de Las Mareas, Bahía de Jobos, Ponce, Guayanilla, Guánica, Mayaguez, Arecibo, Isabel Segunda, Ensenada Honda and other smaller ports.

(2) Nine hundred miles east-southeast of Key West, FL, is the island of **Puerto Rico**. Puerto Rico is the smallest and easternmost of the **West Indies** group known as the **Greater Antilles**; the larger islands are Cuba, Jamaica and Hispaniola. To the north of Puerto Rico is the Atlantic Ocean, and on the south is the **Caribbean Sea**.

(3) Puerto Rico, the big island, is about 96 miles long, west to east, and about 35 miles wide. The interior of Puerto Rico is mountainous and very rugged. The highest mountains are nearer the south and east coasts and have elevations up to 4,400 feet. There are many fertile valleys, and along the coasts are more or less narrow strips of lowland from which the higher land rises abruptly.

(4) The sea bottom is similar to the land. Close to the island are narrow banks from which the bottom pitches off rapidly to great depths. Under favorable conditions, the shoals frequently are marked by a difference in the color of the water.

(5)

Caution

(6) Mariners are advised that local fishermen commonly mark the position of their fish nets and fishtraps with plastic bleach bottles. Care should be taken to avoid destroying this fishing gear.

(7) Puerto Rico has several hundred streams, some of good size, but none are navigable for anything but small boats. The mouths of the streams generally are closed by bars except during short periods of heavy rainfall. From the location of the mountain divides, the streams on the south and east sides of the island are short and fall rapidly to the sea, whereas those on the north and west sides are longer and slope more gently.

(8)

COLREGS Demarcation Lines

(9) The lines established for Puerto Rico are described in **33 CFR 80.738**, chapter 2.

(10)

Vessel Traffic Management

(11) (See **33 CFR Part 161, Subpart A**, chapter 2, for regulations requiring notifications of arrivals, departures, hazardous conditions and certain dangerous cargoes to the Captain of the Port.)

(12)

Anchorages

(13) Under ordinary conditions, the first requirement for anchorage is shelter from the east trade winds. Anchorages are numerous. Anchorages are along the south, east and west coasts with no suitable deep-draft anchorages outside of San Juan Harbor along the north coast. Strong north winds and heavy seas may occur from November to April. During the hurricane season gales may strike from any direction. The best hurricane harbors are Bahías de San Juan, de Guánica, de Guayanilla and de Jobos and Ensenada Honda (on Isla de Culebra).

(14)

Currents

(15) Along the Atlantic and Caribbean coasts of Puerto Rico, the currents are greatly influenced by the trade winds. In general, there is a west drift caused by prevailing east trade winds; the velocity averages about 0.2 knot and is said to be strongest near the island. A decided west set has been noted near the 100-fathom curve along the Caribbean coast from Isla Caja de Muertos to Cabo Rojo. Offshore of Bahía de Tallaboa a current of 0.5 knot has been observed setting northeast across and against the east wind. With variable winds or light trade winds it is probable that tidal currents are felt at times along the Atlantic and Caribbean coasts of Puerto Rico. Currents are weak in the passage north of Isla Caja de Muertos and Cayo Berberia.

(16) Predictions of the tidal current in Canal de Guanajibo and at three locations off the east coast of Puerto Rico 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.The times of slack water and of maximums of flood and ebb in the middle of Canal de la Mona are 2 to 3 hours later than in Canal de Guanajibo. The times of south and north currents in the passages east of Puerto Rico, as far as Isla Culebrita, are believed to be about the same as the times of west and east currents, respectively, in Pasaje de Vieques.

(17) In Canal de la Mona, on the northwest end of the bank about 13 miles west of Punta Guanajibo, there is a current velocity of about 1 knot; slacks and strengths occur about 15 minutes later than in Canal de Guanajibo.

(18) In Sonda de Vieques, there are strong tidal currents over the shoals in the west part and around Isla Cabeza de Perro. In Pasaje de San Juan and Pasaje de Cucaracha,

estimated velocities of about 2 knots have been reported. In the wider passages between Cayo Icacos and Cayo de Luis Peña, it is estimated that the current velocity is less than 1 knot. From Isla de Culebra the south current sets toward Punta Este, Isla de Vieques, around which tidal currents are strong.

(19) In Canal de Luis Peña, the southeast current is deflected north of Bahía Tarja and thence sets toward the south end of Cayo de Luis Peña; the current is weak off the entrance to Bahía de Sardinas. The northwest current sets directly through the channel. The current velocity is about 2 knots.

(20)

Weather

(21) Puerto Rico is a tropical, hilly island that lies directly in the path of the east trade winds. Bathed by waters whose temperatures seldom drop below 80°F, the coastal climate is mild year round, with a small daily and annual temperature range. The rugged topography does cause a wide variation over short distances in wind, temperature and rainfall. ODAS weather buoys are at San Juan, Ponce and Rincón. For more information, visit www.caricoos.org.

(22) The outstanding feature of the marine weather is the steadiness of the east trade winds. Northeast through southeast winds blow about 80 percent of the time year round. Easterlies are particularly dominant in summer when the Bermuda High has shifted north. From November through April, northeasterlies are the secondary direction but give way to southeasterlies in spring. The trade-wind regime is occasionally interrupted by cold fronts that have survived a journey from the United States and by easterly waves. As the cold front approaches, winds shift toward the south, and then as the front passes they gradually shift through the southwest and northwest quadrants back to the northeast. The easterly wave passage is characterized by winds out of the east-northeast ahead of it, followed by an east-southeast wind.

(23) Gale-force winds are unlikely but can occur with a strong front, thunderstorm, or tropical cyclone. Summer gales usually blow from the east semicircle, while winter gales are more likely in the northeast quadrant. Windspeeds of 17 to 33 knots blow about 30 percent of the time. In summer, the trades tend to strengthen during the day, and average windspeeds are highest during this season. Morning averages of 12 to 13 knots give way to 13- to 15-knot averages during the afternoon.

(24) Near the coast, a land-sea breeze effect helps exert a diurnal influence on the wind. If the pressure gradients are weak, a land breeze may develop during the night; northeasterly on the south coast and southeasterly on the north coast. The sea breeze develops during the morning hours and reinforces the trades on all but the west coast. Along the west coast, it opposes the trades and tends to weaken them.

(25) Seas in the area usually run less than 8 feet. Waters are roughest off the north and west coasts in winter and midsummer. For example, waves of 8 feet or more are encountered off these coasts 10 to 12 percent of the time in July. High seas are usually associated with strong winds out of the northeast through southeast blowing over a long fetch of water. Extreme wave heights are generated by hurricanes and can reach 40 feet or more in deep water.

(26) The tropical cyclone season extends from June through November. The most active period in this region is from August through the first half of October, although "off-season" storms occasionally brush the area. Most tropical cyclones affecting this area develop east of the Lesser Antilles and move toward the west or northwest. They usually pass north or south of the island; occasionally they pass directly over it as was the case of hurricane Georges in September 1998. In addition to strong winds and rough seas, these storms can bring torrential rains and flooding to the island. Georges raked the island from east to west causing at least $2 billion in damages and 12 deaths, destroying at least 33,000 homes and caused power and water loss to nearly 80% of the island.

(27) Another navigational weather hazard in these waters are thunderstorms. While they can occur in winter, they are most likely from May through November. At sea, they are encountered 2 to 7 percent of the time during this period, while shore stations report thunder on an average of 5 to 15 days each month during the summer. In addition to strong gusty winds, heavy rains may briefly reduce visibilities to near zero. However, visibility problems are infrequent in these waters since fog is a rarity.

(28)

Routes

(29) Vessels bound from Straits of Florida (24°25'N., 83°00'W.) to San Juan can proceed by rhumb lines through the following positions:

(30) 23°34'N., 80°26'W.;

(31) 22°34'N., 78°00'W.;

(32) 22°07'N., 77°24'W.;

(33) 20°50'N., 73°43'W.;

(34) 19°45'N., 69°50'W.;

(35) 18°29'N., 66°08'W.

(36) From the east coast of the United States, the route to San Juan is direct by great circle.

(37) Distances from San Juan are 1,017 miles to Straits of Florida, 1,252 miles to Norfolk, 1,399 miles to New York and 1,486 miles to Boston.

(38)

Pilotage, Puerto Rico

(39) Pilotage is compulsory for all foreign vessels and U.S. vessels under register when entering or leaving the harbors of Puerto Rico. Coastwise vessels having on board an officer licensed as a pilot for the waters of Puerto Rico and all pleasure yachts are exempt from pilotage unless a pilot is actually engaged. The pilot service at each port is under the supervision and direction of a Pilotage Commission: ships' agents should notify the pilot local office 24 hours in advance so a pilot will be available at

(66)

Spanish-English Geographic Glossary		
Agua – Water	Embarcadero – Wharf, Quay	Occidental – Western
Amarillo – Yellow	Ensenada – Bay, Cove	Oeste – West
Anclaje, Ancladero – Anchorage	Escollo – Shelf, Reef	Oriental – Eastern
Arena – Sand	Este – East	Pantano – Marsh
Arrecife – Reef	Estero – Creek, Inlet	Pasaje – Passage
Arroyo – Small Stream	Estrecho – Strait	Península – Peninsula
Bahía – Bay	Exterior – Exterior	Pico – Peak
Bajo – Shoal	Farallón – Rocky Islet	Piedra – Stone, Rock
Banco – Bank	Golfo – Gulf	Playa – Beach
Barra – Bar	Gran, Grande – Great	Pueblo – Town
Blanco – White	Interior – Interior	Puerto – Port, Harbor
Boca – Mouth, Entrance	Isla – Island	Punta – Point
Boquerón – Wide Mouth	Isleta – Islet	Rada – Roadstead
Cabeza de Bajío – Shoal Head	Istmo – Isthmus	Rincón – Inside Corner
Cabeza de la Cumbre – Summit Head	Lago – Lake	Río – River
Cabo – Cape	Laguna – Lagoon	Roca – Rock
Caleta – Cove	Laja – Flat Rock	Roja – Red
Canal – Channel	Largo – Long	Septentrional – Northern
El Arroyo – Creek, Channel	Mar – Sea	Sierra – Mountain Range
Castillo – Castle	Medio – Middle	Sonda – Sound
Cayo – Key	Meridional – Southern	Sur – South
Cerro – Hill	Monte, Montana – Mountain	Tierra – Land
Ciénaga – Marsh	Morro – Headland, Bluff	Verde – Green
Cordillera – Mountain Chain	Negro – Black	Viejo – Old
Costa – Coast	Norte – North	
Desembarcadero – Landing	Nuevo – New	

the expected time of arrival of a vessel. Pilots provide 24-hour service and board vessels from motorboats. Detailed information on pilotage procedures is given in the text for the ports concerned.

(40)

Towage

(41) Large tugs are available at San Juan, Puerto Yabucoa, and Bahía de Guayanilla; smaller tugs are available at some of the other ports. Arrangements for tugs should be made in advance by ships' agents. (See the text for the ports concerned as to the availability of tugs.)

(42)

Quarantine, customs, immigration and agricultural quarantine

(43) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(44) Puerto Rico collects no customs duties on merchandise entering the island from the continental United States or its dependencies. Merchandise entering from foreign countries is subject to the duties of the United States, which are collected at the ports of Puerto Rico by the U.S. Customs Service. Ports of entry are listed in Appendix A. At least 24-hours' advance notice of arrival at a port should be given to the local customs officer.

(45) **Agricultural quarantine laws** are enforced by officials at San Juan, Fajardo, Ponce and Mayaguez.

(46) The United States immigration laws apply to Puerto Rico. Passports and visas are required.

(47)

Ports Authority

(48) The control of all the ports of Puerto Rico is vested in the Commonwealth Government whose authority is exercised through the Puerto Rico Ports Authority. Appointed Commonwealth Captains of the Port have administrative charge of the harbors; they collect the port fees and assign vessels to anchorage or to berths alongside wharves.

(49) At ports where commonwealth and federal officials are not stationed, inspectors usually come from the nearest represented port or from San Juan as required.

(69)

METEOROLOGICAL TABLE – COASTAL AREA OFF CANAL DE LA MONA, PUERTO RICO
Between 17°N to 19°N and 67°W to 69°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1
Wave Height > 9 feet [1]	2.2	2.1	1.9	1.4	0.7	1.2	1.9	1.7	1.5	1.0	2.1	2.7	1.7
Visibility < 2 nautical miles [1]	0.2	0.2	0.2	0.2	0.4	0.3	0.4	0.3	0.6	0.5	0.3	0.2	0.3
Precipitation [1]	2.6	3.2	2.2	2.1	4.6	3.3	3.7	3.1	4.2	4.2	4.4	3.8	3.4
Temperature > 69° F	99.8	99.7	99.8	99.8	99.9	100.0	100.0	100.0	99.9	100.0	99.9	99.9	99.9
Mean Temperature (°F)	78.1	77.6	78.0	79.0	80.5	81.8	82.2	82.8	82.8	82.4	81.2	79.4	80.5
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	81	81	80	80	80	80	78	78	79
Overcast or Obscured [1]	4.6	5.2	4.0	4.9	11.8	10.9	10.7	8.2	9.6	8.8	6.9	5.3	7.6
Mean Cloud Cover (8ths)	3.2	3.2	3.1	3.3	4.2	4.2	4.0	3.8	4.0	3.9	3.6	3.4	3.7
Mean SLP (mbs)	1016	1016	1016	1015	1015	1016	1016	1015	1014	1013	1013	1015	1015
Ext. Max. SLP (mbs)	1031	1030	1029	1030	1028	1026	1029	1029	1026	1026	1025	1029	1031
Ext. Min. SLP (mbs)	1001	1001	1002	1001	1002	1004	1003	1001	1000	1000	999	1001	999
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning [1]	0.5	0.3	0.2	0.6	2.8	3.6	3.7	4.5	6.5	6.6	3.1	1.3	2.9

[1] Percentage Frequency

(50)

Wharves

(51) The ports of San Juan, Yabucoa, Laguna de Las Mareas, Ponce, Bahía de Tallaboa, Bahía de Guayanilla, Ensenada (Bahía de Guanica), Mayaguez and Aguadilla all have wharves where large vessels can go alongside to load and unload cargo. At the other ports, the wharves are only used by small vessels.

(52)

Supplies

(53) All kinds of supplies are available at San Juan, Ponce and Mayaguez. Gasoline, water and marine supplies are available at most of the smaller ports. If necessary, supplies can be trucked from San Juan in a few hours.

(54)

Repairs

(55) San Juan is the only port where major repairs to large ocean-going vessels can be made. A 691-foot graving dock is available. Small vessels, motorboats and yachts can be repaired at some of the marinas around the island.

(56)

Communications

(57) There are good highways to all the principal cities, and roads connect the smaller towns. Regular air service is maintained between San Juan, Ponce and Mayaguez. Air service is also available from San Juan to the Virgin Islands, the United States and some foreign countries.

(58) Many cruise lines operate from San Juan, Ponce and Mayaguez to the United States and foreign ports. Small inter-island vessels operate from most of the ports of Puerto Rico to the Virgin Islands and other West Indies ports.

(59) Telephone is available through all the ports of Puerto Rico. Radio communication to all points, including ships at sea, is available through commercial systems.

(60)

Currency

(61) The monetary unit is the United States dollar.

(62)

Standard time

(63) Puerto Rico uses Atlantic standard time, which is 4 hours slow of Coordinated Universal Time. Puerto Rico does not observe daylight saving time.

(64)

Language

(65) Spanish is the official language of Puerto Rico, although many of the native people are bilingual; most of the island's geographic features have Spanish names. English is a required subject in the schools and is preferred for business purposes by a large part of the commercial community.

(67)

ENC - US3PR10M
Chart - 25640

(68) **Canal de la Mona (Mona Passage)**, 61 miles wide between the west end of Puerto Rico and the east end of Hispaniola, is one of the principal entrances to the Caribbean Sea. Three small islands are located in the passage: Isla de Mona and Isla Monito about midway in the south part and Isla Desecheo about 12 miles west of the extremity of Puerto Rico in the north part.

(70) On the west side of Canal de la Mona, a bank extends from Cabo Engaño, the east extremity of Hispaniola, for 23 miles, with a least depth of 26 fathoms. Depths of 5 to 20 fathoms have been reported on the bank about 7 miles south-southeast of Cabo Engaño. Strong tide rips and heavy swells, caused by the meeting of contrary currents, are visible for many miles and mark the position of this bank. On the east side of the passage, an extensive bank makes off from the west coast of Puerto Rico extending

up to 15 miles offshore. The west coast of Puerto Rico is described later in this chapter.

(71)

Currents

(72) Tidal currents set generally south and north through Canal de la Mona. Varying nontidal flows, depending to a great extent upon the velocity and direction of the wind, combine with the tidal current. An average nontidal current of about 0.2 knot setting approximately north-northwest is generally experienced during all seasons. In summer, when the trade wind has slackened and blows more from the east and east-southeast, a strong countercurrent sets east off the south coast of Hispaniola. This countercurrent occasionally induces a north set in the passage.

(73) A 3.5-knot current, setting approximately west-southwest, has been reported in the passage north of Isla de Mona. Observations made on the northwest edge of the bank about 13 miles west of Punta Guanajibo, Puerto Rico, gave a velocity of about 1 knot for both south and north strengths.

(74) The tidal currents also set with considerable velocity, especially near the shore south of Cabo Engaño, where they have been reported to set with a velocity of 3.5 knots during the month of May, with ebb currents setting northeast for 3 hours and flood currents setting southwest for 9 hours. The duration of these currents has also been reported to be the reverse and at other times to be of the usual duration of 6 hours. 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.

(75) The passage presents little difficulty in navigation, except that caution must be used in the vicinity of Isla Saona off the southeast coast of Hispaniola, which is low and foul. This island should be given a berth of at least 6 miles. Heavy squalls may be expected in the passage, particularly in the summertime.

(76)

Isla de Mona to Punta Sardina

(77) **Isla de Mona** (18°05'N., 67°54'W.), 6 miles long east and west and 4 miles wide, lies in the middle of the south part of Canal de la Mona. Temporary anchorage and landing can be made in places on the south and west sides of the island during good weather, but on many days anchorage and landings are impracticable. The attendants for the Puerto Rico Department of Natural Resources and a state police detachment are the only inhabitants of the island.

(78) The island is composed of limestone and from east appears perfectly flat on top, breaking off abruptly at the water in a vertical whitish cliff about 175 feet high. On the northwest and northeast coasts are extensive caves that run in every direction but are so obstructed by stalactites and stalagmites in places that it is almost impossible to pass. They were used as hideouts by pirates for nearly three centuries. The west, south and southeast sides of the island are fringed with detached coral reefs through which boat passages lead.

(79) The 100-fathom curve lies about 1 mile offshore, except on the southeast side, where it is about 1.7 miles off, and on the southwest side, where it is only about 0.3 mile off. With a strong wind from any direction, the sea draws around the island and generally into all the anchorages. **Anclaje Sardinera**, on the west coast, is the best anchorage during southeast winds, and **Anclaje Isabela**, just south of Punta Arenas, is good during northeast winds. Boat landings can be made at Anclaje Sardinera and Playa de Pájaros.

(80) Isla de Mona and Isla Monito are within a **Designated Critical Habitat** for the Hawksbill Sea Turtle. (See **50 CFR 226.101** and **226.209**, chapter 2, for regulations and limits.)

(81)

Currents

(82) In Anclaje Sardinera the tidal currents set north and south with a velocity of about 0.5 knot. A northerly current with a velocity of 0.5 knot has been experienced off Playa de Pájaros.

(83) **Isla De Mona Light** (18°05'11"N., 67°50'47"W.), 323 feet above the water, is shown from a tower near **Cabo Noroeste** on the north side of the island. The structure of the former Isla de Mona Light on **Punta Este**, the east extremity of the island, remains.

(84) Vertical cliffs with deep water close to shore extend from Punta Este north and west to **Cabo Barrionuevo**, the northwest cape of the island. Here a mass of rock, shaped like two saw teeth on top, projects from the base of the cliff. This feature can be observed from north and southwest.

(85) **Playa de Pájaros**, about 1.5 miles southwest of Punta Este, has a boat harbor with 3 to 8 feet of water inside the reefs. The south and main entrance has reported depths of 7 to 12 feet. The landing place, formerly used by Coast Guard vessels, has 7 to 8 feet alongside, but with south winds a swell sets into the landing.

(86) The southernmost point of the island is surmounted by a large balanced rock. **Punta Arenas (Oeste)**, the westernmost point, is a low, narrow ridge, covered with brush, which projects nearly a mile west of the cliffs; a reef extends 0.3 mile west of the point.

(87) **Isla Monito**, 3 miles northwest of Isla de Mona, is a 213-foot high bare rock 0.2 mile in diameter. The passage between the two islands is deep and clear.

(88) **Isla Desecheo**, 27 miles northeast of Isla de Mona and 12 miles west of Punta Higuero, is a 715-foot high wooded island a mile in diameter. The island is visible for more than 30 miles in clear weather and is one of the best landmarks for Canal de la Mona and the west coast of Puerto Rico. Isla Desecheo is a forest reserve

(108)

METEOROLOGICAL TABLE – COASTAL AREA OFF NORTHERN PUERTO RICO
Between 18°N to 20°N and 65°W to 68°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.2	0.3	0.2
Wave Height > 9 feet [1]	1.9	1.3	1.4	1.2	0.7	0.5	1.7	1.5	1.2	0.8	1.7	3.1	1.4
Visibility < 2 nautical miles [1]	0.2	0.2	0.2	0.2	0.3	0.2	0.4	0.3	0.3	0.3	0.2	0.2	0.2
Precipitation [1]	3.2	2.9	2.3	2.4	3.7	2.9	3.2	3.5	3.8	4.1	4.4	4.2	3.3
Temperature > 69° F	99.6	99.6	99.6	99.8	99.9	99.9	100.0	100.0	100.0	100.0	99.9	99.9	99.8
Mean Temperature (°F)	77.6	77.3	77.7	78.5	80.0	81.6	82.1	82.6	82.7	82.2	80.8	78.9	79.9
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 (%)	77	77	77	78	80	80	80	80	79	79	78	77	78
Overcast or Obscured [1]	4.6	4.7	4.2	5.4	11.2	9.8	9.1	8.1	8.3	7.9	6.8	6.6	7.0
Mean Cloud Cover (8ths)	3.4	3.4	3.2	3.4	4.2	4.1	4.1	3.8	3.9	3.9	3.8	3.7	3.7
Mean SLP (mbs)	1017	1017	1017	1016	1015	1017	1017	1016	1014	1013	1014	1016	1016
Ext. Max. SLP (mbs)	1030	1031	1031	1030	1028	1029	1029	1029	1026	1026	1026	1028	1031
Ext. Min. SLP (mbs)	1000	1001	1002	1001	1002	1003	1003	1000	1001	1000	999	1000	999
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning [1]	0.2	0.2	0.1	0.4	2.2	2.4	2.6	2.8	4.8	5.4	2.8	1.0	1.9

[1] Percentage Frequency

and a native-bird reserve; it is uninhabited and has no anchorages along its shores.

(89) The U.S. Navy has advised that a survey (1974) of Isla Desecheo and adjacent waters revealed the presence of unexploded ordnance resulting from past usage as a target area. Mariners are urged to use extreme caution when in this area.

(90) **Punta Higuero**, the most west point of the mainland of Puerto Rico, is projecting and prominent with the land back of it rising abruptly to rolling hills that ascend gradually to **Pico Atalaya**, 6 miles inland to the southeast. **Punta Higuero Light** (18°21'43"N., 67°16'15"W.), 90 feet above the water, marks the end of the point.

(91) Steep-to reefs with less than 12 feet of water over them extend up to 0.4 mile offshore from Punta Higuero to beyond Punta Borinquen to the northeast.

(92) **Bahía de Aguadilla**, 7 miles northeast of Punta Higuero, is exposed north and west, but with ordinary east trade winds anchorage is smooth. There are frequent rough spells during the winter when the wind is from north.

(93) **Aguadilla** is on the east shore of the bay. Radio towers south of the town are prominent. The 1,208-foot-high naval communication tower (18°24.0'N., 67°10.6'W.) is the most prominent feature from offshore. The small white shaft of the Columbus Monument is about 1 mile south of city hall but is completely obscured by palm trees.

(94) Large vessels load raw sugar and molasses at the conveyor pier with mooring buoys and dolphins 1.1 miles north of Aguadilla; depths of 40 feet or more are at the outer end of the pier.

(95) A U.S. Air Force fuel pier, with pipelines for handling aviation fuels, is 1.8 miles north of Aguadilla. Depths of 30 feet were reported alongside the platforms at the outer end of the pier. Depths of 6 feet and less were reported alongside the emergency crash boat basin finger piers that extend off the southeast end of the fuel pier.

(96)

Pilotage, Bahía de Aguadilla

(97) Pilots for Bahía de Aguadilla are available at Mayaguez. See Pilotage, Puerto Rico (indexed as such) early this chapter.

(98)

Quarantine, customs, immigration and agricultural quarantine

(99) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(100) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(101) Aguadilla is a **customs port of entry.**

(102)

Coast Guard

(103) A U.S. Coast Guard air station is at Borinquen Airport, north of Aguadilla.

(104)

Fish haven

(105) A fish haven with an authorized minimum depth of 11 fathoms is about 1.8 miles northwest of Aguadilla in 18°27'30"N., 67°10'06"W.

(106) The **north coast** of Puerto Rico from Canal de la Mona to San Juan extends in an almost east direction for 60 miles. From Punta Borinquen for 27 miles to Arecibo, there are numerous rocky cliffs with sand beaches and dunes between them. The prominent features are the high hills in the interior and high cliffs along the coast. The hills that terminate a mile west of Arecibo are mostly smooth grassy slopes backed by conical wooded hills up to 800 feet high.

(107) Between Arecibo and San Juan, the coast is indented by several coves and bights, although none of them afford

sheltered anchorage. The first 17 miles to nearly Punta Puerto Nuevo consists of sandy beaches and dunes with occasional rocky bluffs, then there are numerous hummocks and rocky bluffs with short beaches between them in the 16-mile stretch to San Juan. A line of breakers enclosing numerous rocks lies as close as 0.5 mile offshore. A range of conical hills is west of San Juan.

(109) In addition to the marine and aerolights near Punta Borinquen, the marine lights at Arecibo and San Juan, several stacks, radio towers and towns are prominent from offshore along the north coast. All dangers will be avoided by staying a mile or more offshore.

(110) **Punta Borinquen**, at the northwest end of Puerto Rico, is steep-to with deep water within 0.5 mile of shore, but vessels should stay several miles offshore because of a small arms firing area in the vicinity of the light. The extreme west part of the point is low, but it is backed by steep wooded slopes 0.5 mile inland.

(111) **Punta Borinquen Light** (18°29'50"N., 67°08'56"W.), 292 feet above the water, is shown from a gray cylindrical tower. A 200-foot rock bluff begins 0.8 mile southwest of the light and extends northeast and east along the north coast of Puerto Rico.

(112) A boat landing may be made in calm weather in the sandy cove on the west side of **Punta Sardina**, 7.3 miles east of Punta Borinquen Light.

(113)

Punta Penon to Punta Salinas

(114) **Punta Peñón**, 16 miles east of Punta Borinquen Light, is a slight projection with lower land between it and the foothills. A rocky islet lies west of the point and a chain of bare rocks and a small islet extend 0.8 mile east of it.

(115) **Puerto Arecibo**, 26 miles east of Punta Borinquen Light and 33 miles west of San Juan, is an open bight somewhat protected by the headland of **Punta Morrillos** on the east side with a 1,200-foot breakwater extending from it to **Roca Cocinera**. Only fishing vessels, pleasure craft and a chemical supply barge use the port. **Arecibo** is along the southwest shore of the bight.

(116) **Arecibo Light** (18°28'55"N., 66°41'55"W.), 120 feet above the water, is shown from a 120-foot white hexagonal tower attached to a dwelling on the hill close to the shore near the north end of Punta Morrillos. Radio towers and stacks are prominent around Arecibo.

(117) A dredged channel, marked by buoys, leads from the Atlantic Ocean to a bulkhead wharf on the south side of the breakwater of Puerto Arecibo. In 2022, a depth of 24.7 feet was available in the entrance channel with 6.5 to 18.6 feet in the basin off the 400-foot bulkhead wharf.

(118) A pipeline on the wharf is used by barges to supply liquid chemicals to storage tanks of a chemical company. Gasoline can be obtained at the wharf in an emergency. Fishing vessels and small craft anchor south of the wharf.

(119) **Danger zones** for artillery and small-arms ranges extend up to 10 miles offshore in the vicinity of **Punta Puerto Nuevo**, 42 miles east of Punta Borinquen Light. (See **33 CFR 334.1450**, chapter 2, for limits and regulations.)

(120) A boat landing can be made in calm weather inside the rock islets that extend a mile west of Punta Puerto Nuevo. An aero radiobeacon (18°28.2'N., 66°24.8'W.), marked by a flashing red light is prominent southwest of Punta Puerto Nuevo.

(121) Several large dome-shaped structures are prominent on **Punta Salinas**, a narrow projecting point 3 miles west of San Juan. A large blue water tank, 1.9 miles inshore of the point, shows up well from offshore.

(122)

Bahia de San Juan

(123) **Bahía de San Juan**, the most important commercial harbor in Puerto Rico, is about 60 miles east of Punta Borinquen and 30 miles west of Cabo San Juan. It is the only harbor on the north coast that affords protection in all weather. It is protected on the north by the relatively high land of Isla San Juan and on the south, east and west by the adjacent low mangrove swamps of the Puerto Rico mainland.

(124) The bay is about 3 miles long in a southeast direction and varies in width from 0.6 to 1.6 miles, but the entire southwest side is shoal. The southwest shore is divided into two large bights by **Punta Catano**, the point that extends about 0.6 mile northeast into the harbor.

(125) Metropolitan **San Juan**, the capital and principal port of Puerto Rico, includes Isla San Juan on the north side of Bahía de San Juan and the communities surrounding the bay. The principal cruise tourism facilities are on the south side of Isla San Juan (Old San Juan) and on the north side of Isla Grande. Container cargo terminals are located at **Puerto Nuevo** in the southeast part of the bay.

(126) The principal imports into the harbor include foodstuffs, textiles, building materials, machinery, fertilizers and petroleum products. Exports include sugar, molasses, fruit, tobacco, coffee, petrochemicals, pharmaceuticals and alcoholic products. Over half the commerce of Puerto Rico passes through San Juan. Most commercial and government activities are located here.

(127)

Prominent features

(128) **Isla de Cabras**, on the west side of the entrance to Bahía de San Juan, is low with cliffs 32 to 36 feet high at its north end and is marked by an unlighted tower. **Las Cabritas** are three small islands and rocks 0.1 mile northeast of the island. The island is connected to the mainland by a causeway at **Punta Palo Seco**. A small stone structure of **El Canuelo** is on the south extremity of Isla de Cabras. Care needs to be taken to properly identify islands, particularly when approaching from the west, as Isla de Cabras can easily be mistaken for Isla San Juan.

(129) **Isla San Juan**, on the east side of the entrance to the harbor, is generally bold and rocky, with a ridge 100 feet high extending along its north side. At each end of

the island are large stone forts connected by a continuous high wall. **Fort San Cristobal** is on the summit of the ridge in the east part, and **Castillo del Morro** is on the extreme west point of the island at the entrance to the harbor and is protected by a breakwater. The city wall extends from the castle along the channel side of the island to the Governor's Palace.

(130) **Puerto San Juan Light** (18°28'16"N., 66°07'25"W.), 169 feet above the water, is shown from a buff-colored tower on the summit of Castillo del Morro.

(131) The white marble dome of the capitol building, 1 mile east of the light, and a white church 0.4 mile farther east are prominent landmarks.

(132) Several tanks and towers, as well as the dome of a convention center, are prominent on Island Grande; an aerolight is shown from a small air traffic control tower about 750 yards southeast of its northwest end. Many radio towers, stacks and tanks surround Bahía de San Juan.

(133)

COLREGS Demarcation Lines

(134) The lines established for San Juan are described in **33 CFR 80.738**, chapter 2.

(135)

Channels

(136) From deep water in the North Atlantic Ocean, an entrance channel (Bar Channel) leads south into Bahía de San Juan, thence turns southeast (Anegado Channel) and splits into two channels near Punta Catano. Graving Dock Channel continues southeast to a deep-draft anchorage, and Army Terminal Channel turns southward and leads to a turning basin at Bahía de Puerto Nuevo—Puerto Nuevo Channel connects the two basins. San Antonio Channel leads northeast from Anegado Channel to the wharves between Isla San Juan and Isla Grande. Bar Channel, Anegado Channel, Graving Dock Channel and Army Terminal Channel are marked by lighted ranges and lighted and unlighted buoys; San Antonio Channel is not marked with aids to navigation. 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.

(137)

Caution

(138) When approaching the entrance channel (Bar Channel), with quartering and following seas that are especially predominant in winter, speeds of not less than 10 knots are recommended. This requirement for speed permits sufficient time to commence turning into Anegado Channel while maintaining ship control. A cause of confusion and groundings is that the north side Anegado Channel markers are not visible, virtually, until the turn into it should already have been commenced. Positive identification of channel marks is imperative.

(139) Vessels should proceed with caution when dredging is in progress in the channels. (See **33 CFR 162.260**, chapter 2, for regulations.)

(140) **Caño de Martin Peña**, at the southeast end of Bahía de San Juan, is a narrow slough that connects with lakes and lagoons that extend east for 7 miles. An unmarked channel with a reported depth of 3 feet extends 1.5 miles above the entrance. A fixed bridge at the entrance to the slough has a clearance of 21 feet. Two overhead cables about 0.5 mile above the entrance have a least clearance of 31 feet. Two fixed highway bridges 0.75 mile above the entrance have a least clearance of 22 feet. The bridges 1.5 miles above the entrance, the head of navigation, have a least width of 44 feet and a clearance of 7 feet.

(141)

Anchorages

(142) General and special anchorages are in Bahía de San Juan. (See **33 CFR 110.1**, **110.74c**, and **110.240**, chapter 2, for limits and regulations.) A line of mooring dolphins, marked by lights, extends from Isla Grande to just outside the east end of Anchorage E. Care must be maintained during or in the event of a wind shift due to a limited swing area in Anchorage E for larger vessels. Anchorage D at the eastern end of San Antonio Channel is limited to small vessels with low mast height due to the proximity to the Isla Grande airport.

(143)

Dangers

(144) **Bajo Colínas**, on the west side of the entrance to Bahía de San Juan, has depths from 6 to 21 feet, is rocky and extends 700 yards from Isla de Cabras. The shoal area is defined by breakers.

(145) **Bajo Santa Elena**, on the east side of the entrance, has depths of 7 to 18 feet extending 200 yards from shore.

(146) Inside the harbor, the areas outside the channel limits marked by buoys are shallow with depths varying from 4 to 18 feet with many shoals having less than 1 foot over them.

(147)

Currents

(148) The currents along the north shore of Puerto Rico are greatly influenced by the direction and strength of the winds. The prevailing east trade winds generally cause a west drift. In Bahìa de San Juan a slight west flow prevails. When north seas set into the harbor entrance, an undertow and surge may be felt as far as San Antonio Channel.

(149)

Weather

(150) San Juan is located on the northeast coast of the island of Puerto Rico in 18°28'N., 66°07'W. It is surrounded by the waters of the Atlantic Ocean and Bahía de San Juan. Santurce, directly to the east of Bahía de San Juan, is the urbanized section of San Juan. The surrounding terrain is level with a gradual upslope inland. Mountain ranges, with peak elevations of 4,000 feet, extend east and west through the central portion of Puerto Rico and are located

15 to 20 miles east and south of the capital city. This mountain range has a decided influence on the rainfall in the San Juan area, especially summertime thunderstorms.

(151) The climate is tropical marine, slightly modified by insular influences when land breezes blow. Radiational cooling frequently causes land winds at night; consequently, somewhat lower nightime temperatures occur than would normally be experienced with sea breezes. This air drainage from the higher altitudes in the interior of the island to the coastal areas gives delightfully invigorating night temperatures, especially during December to March, inclusive. Minimum temperatures during this period are frequently 2° to 3° higher within the city than at Isla Verde Airport, which is located 6.5 miles east and slightly inland. By the same token, maximum temperatures are 1° to 2° lower in the city.

(152) San Juan has a small annual temperature range, which is a characteristic of all tropical marine climates. The difference between the average temperatures of the warmest and coolest months is about 5.8°F in San Juan and is representative of most of the coastal localities in the island. The average temperature at San Juan is 80.4°F with an average maximum of 86.4°F and an average minimum of 73.8°F. The small seasonal variation in temperature is also true concerning the absolute range of temperature. For the San Juan-Isla Verde Airport area, the highest temperature of record is 98°F, recorded in October 1981, and lowest, 60°F, recorded in March 1959.

(153) San Juan's average annual rainfall is 53 inches, with fairly even distribution throughout the year. May is the wettest month, averaging 5.97 inches, and February is the driest, averaging 2.26 inches. At Isla Verde Airport, about 12 miles west of this mountain range, the annual rainfall is about 64 inches. The heavier monthly amounts normally occur during the period from May to December, inclusive. Rainfall is generally of the showery type except for the continuous rains that occur in connection with the passage of tropical storms, or when the trailing edge of a cold front that has swept across the continental United States penetrates far enough south to have a definite effect upon Puerto Rico rainfall. This infrequently occurs from November to April. Sunshine is plentiful, with only an average of 5 days a year entirely without sunshine, although there is an average of 255 days a year with measurable precipitation. The average duration of the showers is not more than 10 to 15 minutes, although on many occasions, especially in the summer, a series of intermittent showers will extend over a period of an hour or two. Being marine, the climate is naturally humid. Relative humidity averages about 85 percent in the nighttime and 65 percent near midday. Dense fogs never occur in the San Juan area.

(154) The east trade winds, aided by the daily recurrence of the land and sea breezes, constitute the most characteristic feature of the climate for San Juan throughout the year. The wind is almost constantly from the ocean during daylight. Usually, after sunset, the wind shifts to the south or southeast, off the land with lighter winds. This daily variation in the circulation pattern of surface winds is a contributing factor to the delightful climate of the island. The seawater temperature about San Juan ranges from a minimum of 78°F in March to a maximum of about 83°F in September.

(155) Heavy north winds pile up heavy seas and breakers in the harbor entrance.

(156) Puerto Rico is in the tropical hurricane region of the east Caribbean where the season for these storms begins June 1 and ends November 30. Several hurricanes affect this area every season, usually passing the area to the north. In 1928, the National Weather Service's anemometer blew away after recording an extreme wind speed of 139 knots, the highest value in Puerto Rico to date. A hurricane caused considerable loss of life and great property damage in San Juan in 1932, and in 1956, Hurricane Betsy passed over Puerto Rico. Hurricane winds were felt at San Juan, but there was no loss of life reported, and property damage was not great. Hurricane Hugo passed very close to the city in 1989 with 110-knot wind gusts causing significant damage. Since 1950, 20 tropical systems have come within 150 miles of San Juan. In most recent memory, hurricane Georges caused major damage as it crossed Puerto Rico from east to west in 1998. Georges was discussed earlier in the chapter.

(157) Mild temperatures, refreshing sea breezes in the daytime, plenty of sunshine and adequate rainfall make the climate of San Juan enjoyable and exceptionally favorable for tourists and visitors.

(158) The National Weather Service maintains an office at Isla Verde International Airport; **barometers** may be compared there.

(159)

Routes

(160) Owing to the swells and currents on the coast of Puerto Rico, especially during the winter northerlies, inbound vessels should steer for a point about 4 miles north of **Punta del Morro**, the northwest point of Isla San Juan, before lining up on the entrance to Bahía de San Juan. This precaution permits early adjustments to course and speed while still having sea room to do so. A **181°** lighted range and lighted buoys mark the entrance channel into the harbor.

(161) From west, Punta Salinas will appear as an island when first sighted and must not be mistaken for Isla de Cabras.

(162) The harbor is easy of access in ordinary weather, but it should not be entered at night without local knowledge. During winter northers, dangerous conditions may prevent entering the harbor. The bend inside the entrance can be difficult when the northeast trades are blowing strongly, as they may force a vessel almost broadside to swells. Vessels outbound should avoid getting too close to Bajo Colnas; this is particularly so with long vessels in a strong north breeze.

(181)

Facilities at San Juan, Puerto Rico

Name	Location	Berthing Space (feet)	Depths* (feet)	Purpose	Owned/ Operated by:
South side of Isla San Juan					
Pier 1	18°27'42"N., 66°06'50"W.	770	27 to 32	Berthing for cruise ships and military vessels	Puerto Rico Ports Authority
Pier 3	18°27'40"N., 66°06'42"W.	1,102		N/A	Puerto Rico Ports Authority
Pier 4	18°27'40"N., 66°06'36"W.	1,146		N/A	Puerto Rico Ports Authority
Pier 6 (marginal wharf)	18°27'51"N., 66°06'30"W.	947	30	Puerto Rico Pilotage Commission offices	Puerto Rico Ports Authority
Pier 9	18°27'45"N., 66°06'15"W.	• 300 east • 650 west	• 23 • 27		Puerto Rico Ports Authority
Pier 10	18°27'44"N., 66°06'11"W.	600	34	Receipt and shipment of general cargo	Puerto Rico Ports Authority
Pier 11	18°27'42"N., 66°06'04"W.	580	27	Receipt and shipment of general cargo	Puerto Rico Ports Authority
Pier 12	18°27'42"N., 66°05'57"W.	250	34	N/A	Puerto Rico Ports Authority
Pier 13	18°27'42"N., 66°05'50"W.	450	34	Receipt and shipment of general cargo	Puerto Rico Ports Authority
Pier 14	18°27'42"N., 66°05'44"W.	446	34	Receipt and shipment of general cargo	Puerto Rico Ports Authority
Pier 15	18°27'40"N., 66°05'33"W.	900	27	Receipt and shipment of general cargo	Puerto Rico Ports Authority
North side of Isla Grande					
Pan American West Terminal	18°27'32"N., 66°05'44"W.	1,500	34	Container and trailer cargo	Puerto Rico Ports Authority
Pan American East Terminal	18°27'34"N., 66°05'57"W.	1,500	18	Berthing for cruise ships	Puerto Rico Ports Authority
South side of Isla Grande					
Pier 15 "Outfitting Pier"	18°26'58"N., 66°05'21"W.	1,000	34	N/A	Puerto Rico Drydock and Marine Works, Inc.
Pier 16	18°26'54"N., 66°05'14"W.	525	34	Receipt and shipment of general and bulk cargo and containers	Puerto Rico Ports Authority
South Side of Puerto Nuevo Channel					
Puerto Nuevo Docks and Trailership Terminal: (205) Berths A and B	18°26'00"N., 66°06'00"W.	1,000	29	Receipt and shipment of general cargo	Puerto Rico Ports Authority
Berth C, Puerto Rico Maritime Shipping Authority Roll-on/Roll-off Terminal	18°26'00"N., 66°06'00"W.	600	23-28	Receipt and shipment of roll-on/roll-off cargo	Puerto Rico Ports Authority
Berths D, E, F, G, H, J, K, L, and M	18°26'00"N., 66°06'00"W.	5,700	26-31	Receipt and shipment of general and containerized cargo	Puerto Rico Ports Authority
Catano Oil Dock	18°25'45"N., 66°26'38"W.	350	24	Receipt and shipment of petroleum products	Puerto Rico Ports Authority Various Oil Companies
Army Terminal Pier	18°25'46"N., 66°06'30"W.	• 200 face • 600 east & west	• 25-east • 20-west	Receipt and shipment of general cargo	Puerto Rico Ports Authority Trailer Bridge
Puma Energy Oil Dock	18°25'42"N., 66°06'38"W.	400	34	Receipt of petroleum products	Puerto Rico Ports Authority Borinquen Refinery
Molinos Wharf	18°25'57"N., 66°06'37"W.	600	30	Receipt of grain	Puerto Rico Ports Authority
Nutri Mix Wharf	18°26'02"N., 66°06'37"W.	400	30	Receipt of grain	Puerto Rico Ports Authority
Eldelcar Wharf	18°26'06"N., 66°06'37"W.	200	30	Receipt of petroleum products	Puerto Rico Ports Authority
Pan American Mill Wharf	18°26'09"N., 66°06'37"W.	600	30	Receipt of grain	Puerto Rico Ports Authority

* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

(163)

Port Control

(164) All vessels equipped with a radiotelephone approaching Bahía de San Juan shall contact San Juan Port Control on VHF-FM channel 14, giving a 1 to 2 hour notice of ETA.

(165) Vessels preparing to leave their berths shall call the port control tower on VHF-FM channel 14 to obtain clearance to depart.

(166) All vessels, particularly tugs with a tow, are cautioned to closely follow the procedure indicated above to avoid close quarters and risk of collision situations in Bar and Anegado Channels.

(167)

Pilotage, Bahía de San Juan

(168) See Pilotage, Puerto Rico (indexed as such) early this chapter. Pilotage can be arranged by contacting the pilot station on VHF-FM channel 14, by telephone

787–722–1169, or by fax 787–725–3720. Pilot services are generally arranged for at least 24 hours in advance through the ships' agents. If advance arrangements have not been made, a minimum 4-hour notice is required.

(169) Pilots board vessels 3 miles north of Lighted Buoy 2 from motorboats that are painted black with white tops and have the word PILOT or the letter "P" in white on both sides of the bow; 24-hour service is available.

(170) Vessels requiring pilot services are advised to navigate with caution and maintain a safe distance, never closer than 3 miles in a generally north direction from the harbor entrance, and hold that distance until boarded by the pilot. When small-craft warning signals are in place, with heavy seas breaking outside, the harbor is difficult and dangerous to negotiate and the arrival of the pilot on board may be considerably delayed. Pilot boats communicate over the same frequencies as the San Juan Port Control.

(171)

Towage

(172) Tugs up to 6,000 hp are available for docking, undocking and up to 9,000 hp for long-distance towing and salvage. Use of tugs is not compulsory unless required by the pilot.

(173)

Quarantine, customs, immigration and agricultural quarantine

(174) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(175) **Quarantine** is enforced in accordance with the regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.) San Juan has several hospitals.

(176) San Juan is a **customs port of entry**.

(177)

Coast Guard

(178) A **Sector Office** is in San Juan. (See Appendix A for address.) A **security zone** has been established off the coast of La Puntilla in San Juan Harbor around the San Juan Coast Guard sector office. (See **33 CFR 165.776**, chapter 2, for limits and regulations.)

(179)

Wharves

(180) The port of San Juan has numerous wharves and piers of all types, most of which are owned by the Puerto Rico Ports Authority. The major deepwater facilities are listed in the facilities table for San Juan. These piers/wharves are located on the south side of Isla San Juan, the north and south sides of Isla Grande, along the south side of Puerto Nuevo Channel and alongside the Army Terminal Turning Basin at the south end of the harbor. The port has over 200,000 square feet of transit sheds, 1.5 million square feet of open storage, and 73 acres of marshaling yards. Most of the piers have freshwater connections and access to highways; shore power is not available.

(182)

Supplies

(183) All types of marine supplies are available at San Juan. Water can be obtained at nearly all piers. Bunker fuel oil, fuel and diesel is available alongside most piers and at anchorage from barges. Gasoline and diesel fuels are available by tank truck.

(184)

Repairs

(185) San Juan is equipped to make major repairs to ocean-going vessels. A floating drydock with a capacity of 1,100 tons, 150 feet long and 70 feet wide is available; draft, 16 foot wingwalls; operated by PR Drydock and Marine Works, Inc. Heavy mechanical welding, electrical and general ship repairs provided by San Juan Towing and Marine Services, Inc.

(186)

Small-craft facilities

(187) The Club Naútico de San Juan, at the southeast end of Isla San Juan, has limited nonmember berths with electricity, gasoline, diesel fuel, water, ice and pumpout.

(188) About 200 yards south of the club is a marina with berths, gasoline, diesel fuel, electricity, marine supplies, water, ice, and a 60-ton lift for hull, engine, and electronic repairs.

(189) Small craft may anchor northwest of La Puntilla outside of the main channel; however, the primary anchorage is Anchorage D at the east end of San Antonio Channel.

(190)

<Deleted Chart Header>

(191) The north coast of Puerto Rico from San Juan to Cabo San Juan trends in an east by south direction for 30 miles. The shore is low and sandy except for occasional bluffs. The low land extends 2 to 4 miles inland and then the mountains rise to three prominent peaks toward the east part of the island. The coast is indented by many coves with reefs and rocky islets extending 0.5 to a mile offshore; breakers show at many of the reefs. All dangers will be avoided by staying 2 miles or more offshore.

(192)

Punta Cangrejos

(193) The 7.3-mile stretch of coast from San Juan to **Punta Cangrejos** is bold and rugged with outlying rocks and reefs. A shallow inlet with least depths of 2 to 4 feet is west of the reef off Punta Cangrejos. The entrance to the inlet is marked by a lighted buoy and a private **146.5°** lighted range. The privately dredged entrance to **Laguna La Torrecilla**, in the northeast part of the inlet, had a reported controlling depth of 7 feet in 1982. The channel is crossed by a fixed bridge with a clearance of 15 feet. A private yacht club is on the south side of the entrance to the lagoon and a public marina on the north side. Berths, electricity, gasoline, diesel fuel, water, ice, a launching

ramp and minor hull, engine and electronic repairs are available.

(194)

Punta Vacia Talega

(195) **Punta Vacía Talega**, 12 miles east of San Juan, is a 60-foot-high brush-covered ridge with low bluffs at the water's edge. **Río Grande de Loíza**, 14 miles east of San Juan, shows as a wide gap in the trees. It is the largest river in Puerto Rico but cannot be entered because of the sandbar across the entrance.

(196) A rocky patch with a least depth of 2½ fathoms is 1.5 miles north of **Punta Picúa**, 21 miles east of San Juan. The patch breaks in a moderate swell and is marked by a lighted buoy.

(197) Three tall apartment buildings are prominent at **Luquillo** just east of Punta Embarcaderos, 24 miles east of San Juan.

(198) **Sierra de Luquillo**, the mountains in the northeast part of Puerto Rico, are prominent features in clear weather for this part of the coast. **Roca El Yunque**, the westernmost of the three closely connected peaks 5 miles inland and 10 miles from the east end of the island, is the highest and most prominent.

(199)

Cabo San Juan

(200) **Cabo San Juan**, the northeast point of Puerto Rico, is a bluff hill 200 feet high. **Cabezas de San Juan**, two 100-foot clifflike heads, are at the north end of the cape. **Cabo San Juan Light** (18°22'53"N., 65°37'05"W.), 260 feet above the water, is shown from a cylindrical tower on the front of a white rectangular dwelling with a black band around the base on the highest part of the cape.

(201)

Las Cucarachas to Pasaje de Barriles

(202) Beginning 1.5 miles north of Cabo San Juan, a chain of islands, islet, rocks and reefs extends southeast for 20 miles to Isla de Culebra. The chain is nearly steep-to on the north and south sides; the dangers will be avoided by giving both sides a berth of 0.5 mile. Several passages are between the groups of rocks and reefs, but they should be used only with extreme caution because many reefs with little water over them are near the limits of the channels.

(203) **Las Cucarachas**, a group of rocks up to 15 feet high, a mile north of Cabo San Juan, lie at the northwest end of the chain. A light is shown from a skeleton tower, with a green and white diamond-shaped daymark, on a cylindrical concrete base on one of the rocks. A shoal with depths of 14 to 30 feet extends 0.9 mile northwest of the light and a rock awash is 0.2 mile from the light in the same direction.

(204) **Pasaje de San Juan**, between Cabo San Juan and Las Cucarachas, is 0.7 mile wide and has depths of 32 to 72 feet. The passage is one of the principal channels leading into Sonda de Vieques.

(205) **Los Farallones**, a group of rugged bare rocks 30 feet high, are 0.8 mile east of Las Cucarachas. Deep water is close to the north and west sides of the rocks, but a shoal with several bare rocks extends to Cayo Icacos. A reef on which the sea breaks is 0.2 mile south of Los Farallones and continues about 0.4 mile west from the northwest end of Cayo Icacos. The west end of the reef should be given a berth of 300 yards or more.

(206) **Pasaje Cucaracha**, between Las Cucarachas and Los Farallones, is 0.3 mile wide. Depths of 17 to 23 feet extend about 350 yards southeast from Las Cucarachas, and a 23-foot spot is 200 yards west of Los Farallones. A **218°** course for Cabo San Juan Light will lead through the passage over a least depth of 36 feet. It is the best passage for sailing vessels entering the northwest end of Sonda de Vieques with the usual east trade winds.

(207) **Cayo Icacos**, 1.3 miles east of Cabo San Juan and the second largest of the chain, is a 40-foot hummocky island covered with a scrubby growth. A small wharf and buildings of a former limestone quarry are near the southwest point of the island. A prominent tower is in about the center of the island.

(208) **Cayo Ratones**, 250 yards east of Cayo Icacos, is 60 feet high; the east summit is a large bare ledge. A number of bare rocks are off its north side, and a reef awash is between the island and Cayo Icacos.

(209) **Cayo Lobos**, 0.5 mile east-southeast of Cayo Ratones, is 25 feet high with several bare rocks and islets up to 75 feet high off the north side. A chain of bare rocks and islets up to 30 feet high continues southeast for 2.2 miles to Cayo Diablo. A 300-yard-wide channel with depths of 15 to 40 feet is between Cayo Ratones and the bare rocks northwest of Cayo Lobos. A tourist resort and private landing field occupy Cayo Lobos. A concrete pier is on the west side of the island with a lighted gasoline sign located on the pier. A 7-foot-deep unmarked channel leads to the pier from about 0.25 mile west with shoal coral areas to the north and south of the channel.

(210) **Cayo Diablo**, 5 miles southeast of Cabo San Juan, is low with a 40-foot grassy hummock at its east end. White beaches are on the north and south sides.

(211) Between Cayo Diablo and Cayo Lobito, 8 miles east-southeast, are two groups of rocks 2 to 15 feet high known as **Arrecife Hermanos** and **Arrecife Barriles**, with numerous reefs either awash or with little water over them in the chain. **Pasaje de Hermanos**, a 2-mile-wide passage 3.3 miles east-southeast of Cayo Diablo, has shoals of 15 to 30 feet and is only recommended for those with local knowledge. **Pasaje de Barriles**, a 1.5 mile-wide passage 6.7 miles east-southeast of Cayo Diablo and 1.3 miles west of Cayo Lobito, has depths of 36 to 48 feet and may be used by large vessels. Best water is on the east side of the passage. A 28-foot shoal is 1.8 miles west of Cayo Lobito.

(212)

Cayo Lobito to Canal de Grampus

(213) **Cayo Lobito**, 13 miles east of Cabo San Juan, is the westernmost of the chain of islands extending for over 3 miles northwest of Isla de Culebra. **Cayo Tuna** and a bare ledge are close to the northwest end of the island. **Roca Columna** is a detached 75-foot bare pinnacle rock on the south end of the island.

(214) **Cayo Lobo**, a mile southeast of Cayo Lobito, is a triangular island covered with scrub grass, the highest part being at the west end. The three points of the island are high with rocky bluffs.

(215) **La Pasa de los Cayos Lobos**, the 0.5-mile-wide passage between Cayo Lobito and Cayo Lobo, has depths of 60 feet or more.

(216) **Cayo Lobito Light** (18°20'00"N., 65°23'31"W.), 110 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on Cayo Lobito.

(217) **El Mono**, 0.5 mile southeast of Cayo Lobo, is a small irregular 15-foot ledge with several heads. The 0.4-mile-wide passage between Cayo Lobo and El Mono has depths of 36 to 93 feet.

(218) **Las Hermanas**, 1.3 miles off the west coast of Isla de Culebra, consist of three islets. **Cayo Yerba**, the northernmost, 66 feet high, has a smooth grassy slope on the east side and rocky bluffs on the west side. **Cayo Ratón**, the southwesternmost and smallest, 46 feet high, is grassy on top and rocky on the sides; a low rock is close to its southeast side. **Cayo del Agua**, the southeasternmost, is low in the middle and 39 feet high at its east part. The islet is rocky with many large boulders scattered over and near it. A shoal with 5 feet at its end extends nearly 0.1 mile west. The passage between Cayo Ratón and Cayo del Agua should be avoided.

(219) **Cayo de Luis Peña**, off the west side of Isla de Culebra and the largest island of the chain, rises to a peak of 476 feet in the center, with the south and north ends joined to the island by low necks. **Punta Cruz**, the southwest point of the island, has a prominent whitewashed cliff. The 0.3-mile passage between Cayo del Agua and Cayo de Luis Peña has depths of 30 feet or more.

(220) **Isla de Culebra**, 16 miles east of Puerto Rico, is about 6 miles long east and west. The island is fairly high, with broken and ragged terrain. **Monte Resaca**, a mountain about in the center, rises to 650 feet, and **Cerro Balcón**, about 1.5 miles east-southeast of it, is 551 feet high. The island is barren and brown in appearance. The north shore is steep-to, with the 20-fathom curve extending about 1.5 miles off and nearly parallel to it.

(221) Isla de Culebra is a former **Naval Defensive Sea Area and Airspace Reservation**. A **danger area** for aerial gunnery and bombing extends from off the south to off the north sides of the island. (See **33 CFR 334.1460**, chapter 2, for limits and regulations.)

(222) The U.S. Navy reported that it ceased all active gunnery and bombing exercises and weapons training activities within the danger area as of 1975. The Navy advises that since Isla de Culebra and the islands in the vicinity were once used as naval sea and air weapons targets, unexploded ordnance remaining from previous target practice presents a hazard on the northwest peninsula of Isla de Culebra, north of a line running between 18°19'55"N., 65°18'58"W., and 18°19'31"N., 65°14'34"W., and within the immediate offshore vicinity, including Cayo Lobo, Cayo Botijuela, Alcarraza, Los Gemelos, El Ancón, Piedra Stevens, Cayo Ballena, Cayo Tiburón, Cayos Geniqui and in Cabo del Pasaje. **Mariners are advised to exercise extreme caution in the area**.

(223) The main industries of the island of Culebra are tourism, construction and government employment. Vegetables and some tropical fruits are grown in quantities sufficient only for local consumption. The rainy season lasts from June to October, but the rainfall is much lighter than in Puerto Rico. There are no fresh water streams, and rain water stored in cisterns forms the principal water supply. No freshwater is available for vessels. The principal harbor is Ensenada Honda, one of the most secure in the Leeward Islands.

(224) Isla de Culebra and the surrounding keys are within a **Designated Critical Habitat** for the Green Sea Turtle. (See **50 CFR 226.101** and **226.208, chapter 2, for regulations and limits.)**

(225) **Punta Noroeste**, the northwest point of Isla de Culebra, is at the end of a prominent projecting ridge. A reef extends 200 yards northwest from the high bare rock close to the point.

(226) A shoal area with several rocks extends 2.2 miles northwest from Punta Noroeste. **Cayo Botijuela**, 2 feet high, and **Roca Lavador**, awash, are the northwesternmost rocks of the group.

(227) **Alcarraza**, 1.6 miles northwest of Punta Noroeste, is a 144-foot bare round rock with perpendicular sides and a whitish appearance. **Pasaje Lavador**, between Roca Lavador and Alcarraza, is a 0.5-mile-wide passage with depths of 45 feet or more.

(228) **Los Gemelos**, 1.1 miles northwest of Punta Noroeste, consists of a 20-foot rock 50 yards in diameter with a low rock close to its southwest side and another small rock 100 yards northwest. **La Pasa de la Alcarraza**, between Alcarraza and Los Gemelos, is a 0.3-mile-wide passage with depths of 38 feet or more.

(229) **El Ancón**, 0.9 mile northwest of Punta Noroeste, is a rock with 7 feet over it that breaks when there is considerable sea.

(230) **Piedra Stevens**, 0.6 mile north-northwest of Punta Noroeste, is a 30-foot rock 100 yards in diameter with a 27-foot shoal extending 100 yards south of it.

(231) **La Pasa de Los Gemelos**, between Los Gemelos and El Ancon on the west and Piedra Stevens on the east, is a 0.5-mile-wide passage with depths of 45 feet or more; it is the safest passage northwest of Punta Noroeste.

(232) **Canal Piedra Stevens**, between Punta Noroeste and Piedra Stevens, is a 0.3-mile-wide passage with depths of 35 feet or more.

(233) The **north coast** of Isla de Culebra has sandy beaches between rocky bluffs for 2 miles, then the shoreline becomes generally bold and rocky, with sand beaches in the coves and occasional coral reefs fringing the shore. A 23-foot shoal is 1.0 mile east by north of Punta Noroeste, and a 17-foot spot is the same distance east of the point; otherwise depths of 30 feet or more are 0.4 mile off the north coast.

(234) A **danger area** for aerial gunnery and bombing extends 6.5 miles off the coast; limits and regulations are given in **33 CFR 334.1460**, chapter 2.

(235) **Bahía Flamenco**, 1.8 miles southeast of Punta Noroeste, is constricted by reefs.

(236) **Cayo Matojo**, 3.2 miles east by south of Punta Noroeste, is a 20-foot-high island off **Punta Resaca**, a projecting point separating Bahía de Marejada and Bahía de Oleaje.

(237) **Roca Speck**, 100 yards off **Punta Manchita**, 4.8 miles southeast of Punta Noroeste, is low and bare. **Punta Garay** is a projecting point 0.8 mile southeast of the rock.

(238) **Cabeza de Perro**, the east point of Isla de Culebra, is a pointed rocky bluff. A break in the reef 0.3 mile north of the point leads to a boat landing. **Pelá**, 0.5 mile southwest of the point, is a 30-foot-high cay that presents a prominent bluff facing southeast.

(239) **Cayo Norte**, 0.5 mile off the northeast shore of Isla de Culebra, is somewhat oval in shape and covered with a thick scrubby growth. The highest peak, 338 feet high, is in the west part of the island. **Cayo Sombrerito**, a 59-foot rocky islet, extends about 300 yards north of the southeast end of the island.

(240) Several rocky islets and islands extend up to 1.0 mile northeast from Cayo Norte. **Cayo Ballena** and **Cayo Tiburón**, the northwesternmost group, are 10 to 20 feet high with foul ground between. **Cayos Geniqui**, the southeasternmost group, are two connected islands; the 79-foot west island is flat and grass covered on top, the 82-foot east island is pointed on top.

(241) **Isla Culebrita**, 0.6 mile off the east coast of Isla de Culebra, is irregular in shape and about a mile in length. The island is formed by three hills with low land between them and is covered with a scrubby forest growth. **Isla Culebrita Light** (18°18'49"N., 65°13'39"W.), 305 feet above the water, is shown from a stone-colored cylindrical tower with red trim on a flat-roofed dwelling on the summit of the island. A Coast Guard boat landing is on the west side of the island. The east end of the island is a bare high cliff. **Cayo Botella** is a grass-covered 30-foot island on an extensive coral reef that extends 0.5 mile northwest of Isla Culebrita.

(242) The islands, islets and reefs on the east and south sides of Isla de Culebra form a protected passage and several well-protected anchorages.

(243) **Canal de Cayo Norte**, between Cayo Norte and the Isla de Culebra, is a 0.5-mile-wide passage with depths of 28 feet or more through the middle.

(244) **Canal Tiempo**, between Cayo Norte and the reefs northwest of Isla Culebrita, is a 180-yard-wide passage with depths of 30 feet or more. The narrow passage should not be attempted without local knowledge because of the 7- to 12-foot shoals on either side. The approach to Canal Tiempo can be made between Cayo Norte and Cayo Tiburon, or between Cayo Tiburon and Cayos Geniqui. The passages are at least 0.3 mile wide with depths of 30 feet or more.

(245) **Tierra a Medio**, between Isla de Culebra and Isla Culebrita, is a shoal area with depths of 13 to 29 feet that obstructs the south end of Canal de Cayo Norte.

(246) **Canal de Culebrita** and **Canal del Sur** are a continuation of the protected passage on the east and southeast side of Isla de Culebra. The passages have a least width of 0.2 mile and depths of 26 feet or more. **Arrecife Culebrita**, extending nearly 3 miles southwest from Isla Culebrita, protects the inside passage from south. The southwest limit of the reef is marked by a buoy. **Cabezas Puercas** and **Cabezas Crespas**, shoal areas with depths of 2 to 28 feet and nearly awash in places, obstruct the southwest part of Canal del Sur. A buoy marks the southwest end of Cabezas Puercas, and a lighted buoy marks the east side of Cabezas Crespas.

(247)

Anchorages

(248) The best anchorage is in Canal de Culebrita in 60 feet of water with the extreme west end of Cayo Botella in line with the east side of Cayo Sombrerito, and the southeast extremity of Isla Culebrita bearing 067°. Vessels can anchor closer under the lee of Isla Culebrita according to draft.

(249) **Puerto del Manglar**, at the southeast end of Isla de Culebra, is a small but well-sheltered bay. The entrance is constricted to a width of 100 yards by reefs, but once inside vessels can anchor in depths of 18 to 37 feet near the middle of the bay; sand and mud bottom. The sides and head of the bay are shallow.

(250) **Bahía de Almodovar**, on the south side of Puerto del Manglar, is a small bight, well sheltered from all winds, where small boats can anchor in depths of 19 to 24 feet. The bight is entered from Puerto del Manglar over a 10-foot bar 0.2 mile northwest of Pelá.

(251)

Currents

(252) The current velocity is 1.5 knots between Cayo Norte and Cayos Geniqui and sets south and north and 2 knots in Canal del Sur and sets southwest and northeast.

(253)

Routes

(254) To enter Canal de Cayo Norte from north, steer **132°** between Cayo Norte and Isla de Culebra until 300 yards off Punta Garay, then draw in toward the Culebra side to avoid the middle ground, heading **146°** between Tierra a

Medio and Isla de Culebra. The fringing reef off Cabeza de Perro may be avoided by giving the shoal a berth of more than 300 yards.

(255) To enter Canal Tiempo from north, steer toward Cayo Norte and, having passed 150 yards west of Cayo Tiburon, bring the west extremity of Cayo Botella in line with Cabeza de Perro and steer **186°** until Cerro Balcón on Isla de Culebra bears **240°**, then make a sharp turn and head for Cerro Balcón on **241°**, passing midway between the 23-foot spot on the north side and the 12-foot spot on the south side of the channel; continue southwest, swinging to get on course **146°**, passing 300 yards off Punta Garay.

(256) If going through Canal del Sur, after leaving Canal de Culebrita, steer about **224°** with Isla Culebrita Light astern, passing 150 to 200 yards off the northwest side of Cabezas Puercas until west-northwest of Buoy 4, then either swing left to pass midway between Buoys 3 and 4, and thence to Sonda de Vieques, or continue on **237°** with Buoy 3 astern. A clear depth of 35 feet is on the course line, but vessels drawing more than 30 feet should attempt the passage only in calm weather because of frequent swells.

(257) **Bajos Grampus** comprises a group of small coral heads rising from a bank of 60 feet lying 2 to 4 miles from the southeast extremity of Isla de Culebra. The south head, on which there is a depth of 23 feet, lies with Punta del Soldado in range with the south extremity of Cayo de Luis Peña bearing 293°. A lighted buoy is on the south side of Bajos Grampus. A 23-foot spot at the northwest extremity of Bajos Grampus is 2.4 miles north-northwest of the buoy. Virgin Passage is discussed in chapter 14.

(258) **Canal de Grampus** is a channel between this west knoll and Arrecife Culebrita; it is a clear navigable unmarked channel about 0.6 mile wide. The tidal current sets diagonally across Canal de Grampus southwest and northeast.

(259) To pass south of Bajos Grampus, keep on or south of the line of Sail Rock and Signal Hill on St. Thomas Island until Cayos Geniqui show east of Cabo del Pasaje, the northeast point of Isla Culebrita. Bajos Grampus will then be cleared, and the course can be shaped as desired.

(260)

Ensenada Honda to San Ildefonso

(261) **Ensenada Honda**, on the south side of Isla de Culebra between bluff **Punta Vaca** on the east and **Punta del Soldado** on the west, is the most secure anchorage in the area. The harbor is about 1.5 miles long and in some parts 0.5 mile wide but of irregular shape with several small shallow bays indenting the shore. The land around the bay is hilly and partly covered with a scrubby forest growth.

(262)

Channels

(263) The entrance to Ensenada Honda is obstructed by shoals with depths of 4 to 26 feet, but the entrance channels are marked by buoys and unlighted ranges. The controlling depth into the harbor is 26 feet.

(264)

Dangers

(265) **Bajo Amarillo**, 0.8 mile east of Punta del Soldado, is a 0.3-mile-long shoal with a least depth of 7 feet. The southwest end is marked by a lighted buoy.

(266) **Bajo Grouper**, 0.2 mile north of Bajo Amarillo, is 0.3 mile in length with a least depth of 4 feet. A buoy marks the east extremity of the shoal.

(267) **Bajo Camarón**, 0.2 mile south of Punta Vaca, has a least depth of 9 feet over the 0.2-mile-long shoal. A buoy is at the south end.

(268) **Bajo Snapper**, 0.3 mile west of Punta Vaca, has a least depth of 6 feet over the shoal about 300 yards in diameter.

(269) Many other shoals with depths of 18 feet or less are near the limits of the entrance channels.

(270)

Routes

(271) From south, bring the left tangent of Punta Vaca to bear **008°** before the south end of Cayo de Luis Peña closes behind Punta del Soldado and steer for Punta Vaca close up to Bajo Camarón; then swing on to the entrance range bearing **296°**. After passing Buoy 8, avoid approaching the 17-foot shoal on the west side of the channel too closely, and steer in on the inner range bearing **323°**until abeam of Buoy 12, then open the range to the west and anchor according to draft.

(272) From southeast, bring Punta Vaca in range with Monte Resaca, bearing about **322°**, and continue on this course past the buoy marking Cabezas Crespas until the entrance range comes on; then continue as directed in the preceding paragraph.

(273) From west, when 0.5 mile south of Punta del Soldado Light, steer **064°** for about 1.3 miles until the left tangent of Punta Vaca bears **008°**, then head in on that course and follow directions above.

(274) **San Ildefonso** is on the northeast side of Ensenada Honda. A house on a small hill above the wharf is prominent. The wharf is a concrete L-shaped boat landing pier extending about 100 feet offshore. Depths of about 12 feet are alongside.

(275) Only small boats can make a landing at the west end of Ensenada Honda. Vessels calling at Culebra use Bahía de Sardinas.

(276)

Punta del Soldato to Bahia Tarja

(277) The 5.5-mile-long **Southwest Coast** of Isla de Culebra from Punta del Soldado to Punta Noroeste is indented by small coves and reefs, but the dangers are within 0.4 mile of the shore. The coves between Punta Melones and Punta Tamarindo Grande are sheltered by Cayo de Luis Pena.

(278) **Punta del Soldado**, the south point of Isla de Culebra, is wooded and terminates in a rocky bluff. A light is on the west side of the point.

(279) **Bahía de Sardinas**. 1.5 miles northwest of Punta del Soldado, is the harbor for the towns of Culebra and Clark Village. The boat and ferry landing at **Playa de Sardinas** has a depth of 8 feet at the end. Fishing boats use the harbor.

(280) **Culebra**, locally known as **Dewey**, and **Clark Village**, both located on the neck of land between Bahía de Sardinas and the head of Ensenada Honda, are the only towns on Isla de Culebra. A local person is designated to handle insular immigration and customs traffic. Available supplies include gasoline in drums and groceries. Telephone and telegraph communications are available. A ferry service for both passengers and cargo operates between Isla de Culebra, Isla de Vieques, and the town of Fajardo; commercial air transport is available to Puerto Rico.

(281) **Punta Melones**, the northwest point of Bahía de Sardinas, is low and narrow, terminating in a small pinnacle rock.

(282) **Punta Tamarindo Grande**, 1.7 miles northwest of Punta Melones, consists of a 75-foot hill with reddish bluffs at the end and a low neck behind it. Two low detached rocks are off its end.

(283) Cayo de Luis Peña and the chain of islands and reefs to the northwest have been described previously in this chapter.

(284) **Canal de Luis Peña**, between the north end of Cayo de Luis Peña and Isla de Culebra, is a 0.3-mile-wide passage with depths of 21 to 65 feet. Strong currents and baffling winds render the passage hazardous for sailing vessels.

(285)

Anchorages

(286) Good anchorage with ordinary trade winds can be found between Cayo de Luis Peña and Isla de Culebra in depths of 30 to 79 feet. The rocky patch with depths of 42 to 53 feet, 0.6 mile west of Punta Melones, should be avoided in anchoring. A comfortable anchorage for small vessels in depths of 20 to 30 feet is in the entrance to **Bahía Tamarindo**, a mile northwest of Punta Melones. A fair anchorage in depths of 40 to 55 feet is about 0.3 mile off the northwest side of Cayo de Luis Peña.

(287)

Currents

(288) In Canal de Luis Pena the southeast current is deflected north of **Bahia Tarja**, just north of Punta Melones, and thence sets toward the south end of Cayo de Luis Pena; it is weak at the entrance to Bahia de Sardinas. The northwest current sets directly through the passage. The current velocity is about 2 knots.

(289)

Sonda de Vieques to Punta Boca Quebrada

(290) **Sonda de Vieques** extends from the east coast of Puerto Rico to Virgin Passage between the chain of islands and reefs including Isla de Culebra on the north and Isla de Vieques on the south. The sound is about 20 to 22 miles long and from 8 to 15 miles wide. The east part is clear with depths of 7 to 17 fathoms, except for Bajos Grampus southeast of Isla de Culebra. The west part has numerous shoals and reefs extending as much as 8 miles off the east coast of Puerto Rico.

(291) A **danger area** for aerial gunnery and bombing extends about 6.5 miles north and 4 miles southwest of Isla de Culebra. (See **33 CFR 334.1460**, chapter 2, for limits and regulations.) In 2007, it was reported that this area is no longer used for bombing and gunnery target exercises.

(292) **Explosives anchorages** are in Sonda de Vieques north of Isla de Vieques. (See **33 CFR 110.1** and **110.245**, chapter 2, for limits and regulations.) In 2009, it was reported that this area is no longer used for Naval weapons practices.

(293) **Isla Palominos**, 3.5 miles southeast of Cabo San Juan, is a small 165-foot-high island with a rounded grassy summit and surrounded by steep-to reefs up to 0.6 mile from shore. A lighted buoy is on the northeast side.

(294) Good anchorage is afforded about 0.5 mile off the west side of the island in about 40 feet on the following bearings: Cabo San Juan Light 313°; Las Cucarachas Light 331°; and Punta Águila, the extreme northwest point of Isla Palominos, 037°.

(295) **Bajo Blake**, 2 miles east of Isla Palominos, is 0.4 mile in diameter and has a least depth of 20 feet. The south side is marked by a buoy.

(296) **Bajo Hodgkins**, 7 miles southeast of Isla Palominos, is a narrow 0.8-mile-long ridge with a least depth of 27 feet.

(297) The area between Bajo Hodgkins and the east coast of Puerto Rico is full of shoals and should be used only with local knowledge. Many of the shoals have rocks awash or reefs on which the sea breaks while others have rocks that show 1 to 15 feet.

(298)

Anchorages

(299) Deep-draft vessels can find good anchorage in 28 to 60 feet during ordinary weather in **Rada Fajardo**, in the northwest end of Sonda de Vieques between Cabo San Juan and Isla Palominos.

(300)

Routes

(301) Vessels bound from San Juan to Isla de Culebra and east frequently enter Sonda de Vieques through Pasaje de San Juan and proceed south of the chain of islands and reefs to gain comparatively smooth water.

(305)

METEOROLOGICAL TABLE – COASTAL AREA OFF ISLA DE VIEQUES ISLAND
Between 18°N to 19°N and 65°W to 66°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	0.2	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.2	0.0	0.3	0.1	0.1
Wave Height > 9 feet [1]	0.9	0.3	0.4	0.4	0.2	0.3	0.6	0.7	0.9	0.5	0.4	2.1	0.6
Visibility < 2 nautical miles [1]	0.1	0.2	0.1	0.3	0.6	0.1	0.2	0.4	0.3	0.1	0.2	0.3	0.2
Precipitation [1]	3.0	2.2	2.7	2.8	4.7	3.1	3.8	4.4	4.7	3.0	5.2	4.7	3.4
Temperature > 69° F	99.9	99.8	99.6	99.8	99.8	99.9	99.9	100.0	100.0	100.0	99.9	100.0	99.9
Mean Temperature (°F)	78.1	77.9	78.0	79.1	80.4	82.0	82.6	82.9	83.0	82.7	81.3	79.4	80.0
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 (%)	77	76	75	76	80	79	79	79	79	80	78	75	77
Overcast or Obscured [1]	3.9	3.1	3.7	4.8	11.8	10.3	8.3	9.2	8.2	7.4	6.1	7.4	6.3
Mean Cloud Cover (8ths)	3.4	3.4	3.3	3.5	4.3	4.3	4.1	4.0	4.1	4.0	3.8	3.9	3.7
Mean SLP (mbs)	1017	1017	1017	1016	1015	1017	1017	1015	1014	1013	1013	1015	1016
Ext. Max. SLP (mbs)	1028	1030	1028	1026	1023	1028	1027	1026	1025	1025	1023	1022	1030
Ext. Min. SLP (mbs)	1002	1001	1002	1001	1002	1003	1007	1002	1001	1000	1000	1000	1000
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	NE	E
Thunder and Lightning [1]	0.1	0.1	0.0	0.1	1.2	1.2	1.7	1.5	3.6	4.1	2.2	0.4	1.0

[1] Percentage Frequency

(302) A buoyed north-south route along the east coast of Puerto Rico is used by vessels with a draft of 22 feet or less. Large deep-draft vessels bound for the south coast of Puerto Rico usually enter Sonda de Vieques through Pasaje de San Juan and continue around the east coast of Isla de Vieques. Vessels from northeast points use Virgin Passage and pass south of Isla de Vieques to go to ports on the south coast of Puerto Rico.

(303)

<Deleted Chart Header>

(304) **Isla de Vieques**, 6 miles off the nearest point of the east coast of Puerto Rico, forms the south side of Sonda de Vieques. It is 18 miles long east and west and 3.5 miles wide near its middle. A range of hills extends the entire length of the island with a prominent hill at each end—**Monte Pirata** near its west end and **Cerro Matias Jalobre**, 3 miles from the east end. The island is wooded in places, especially its east half and around Monte Pirata.

(306) Principal products are horses and cattle. Vegetables and tropical fruits are grown for local consumption. The rainy season lasts from May to October, but the rainfall is less than in adjacent parts of Puerto Rico. The island is subject to drought; the principal water source is rainfall stored in cisterns.

(307) Boats carrying supplies and passengers dock at Isabel Segunda on Bahía de Mulas on the north coast. When the trade wind is north of east a heavy surf runs and landing is difficult on the open north coast.

(308) **Naval restricted areas** extend 1,500 yards offshore around the west part of the island. (See **33 CFR 334.1480**, chapter 2, for limits and regulations.) In 2009, it was reported that this area is no longer used for Naval weapons practices.

(309) **Explosives anchorages** are off the north and west coasts of the island. (See **33 CFR 110.1** and **110.245**, chapter 2, for limits and regulations.) In 2009, it was reported that this area is no longer used for Naval weapons practices.

(310) **Pasaje de Vieques** is the strait lying between Puerto Rico and Isla de Vieques. **Radas Roosevelt** is the open-water portion of the passage lying within the shoals and banks north of the west end of Isla de Vieques and between that island and Puerto Rico. The current velocity is about 0.7 knot in the passage and floods southwest and ebbs northeast.

(311) **Punta Arenas**, at the northwest end of Isla de Vieques, is low and covered with a scrubby growth, with a white spit at its end. The point changes shape continually; at times the outer coconut trees are in the water.

(312) At the west end of Isla de Vieques, south of Punta Arenas, there is a smooth anchorage with east winds but exposed to the south and west.

(313) **Escollo de Arenas** is a continuation northwest of a shoal that fringes the north side of Isla de Vieques to a distance of about 1 mile and extends east nearly to Punta Mulas. The west edge of the shoaler part of the bank extends 3.3 miles north-northwest from Punta Arenas to its outer end, where it is marked by a lighted buoy. Spots with depths of 5 feet are on the bank for 0.8 mile north of Punta Arenas, and thence to the lighted buoy, the bank is steep-to with about 40 feet on each side. The bank sometimes shows by discolored water and rips.

(314)

Currents

(315) A strong southwest set is noted frequently north of Escolla de Arenas. The bank itself is generally indicated by the tide rips.

(316) A 1.2-mile causeway extends from shore at **Desembarcadero Mosquito**, 3.9 miles east of Punta Arenas. A pier extends from the west side of the causeway about 350 yards from the seaward end. The causeway and pier are marked at the outer ends by Navy-maintained lights.

(317) **Arrecife Mosquito**, a reef awash, is 1.9 miles to the northeast of Desembarcadero Mosquito. The reef is steep-to, and the sea always breaks on it. A shoal with a depth of 17 feet is about 0.5 mile west-northwest from the reef. During ordinary weather a fairly smooth anchorage is 0.3 mile south of Arrecife Mosquito, in 40 feet, sandy bottom. Several spots with a least depth of 9 feet are in the approaches to the anchorage, and vessels drawing more than that depth should use it only with local knowledge.

(318) **Arrecife Corona**, a reef awash, is about 0.3 mile long and about 0.3 mile east of Arrecife Mosquito. Several shoals are around the reef, including a 9-foot spot 0.2 mile south. **Bajo Merail**, a shoal with least depth of 2 feet lies 0.8 mile south of Arrecife Corona.

(319) **Caballo Blanco**, a low grassy islet, marked by a light, is 1.7 miles northwest of Punta Mulas. Several shoals surround the islet, the outer of which are 0.6 mile north and 0.2 mile south. **Bajo Comandante**, a shoal about 600 yards in extent with a least depth of 7 feet, lies about midway between Caballo Blanco and the shore. There are spots with a least depth of 23 feet in the channel between Caballo Blanco and Bajo Comandante.

(320) **Bahía de Mulas**, 8 miles east of Punta Arenas and 10 miles west of Punta Este, is an open bight on the north coast of Isla de Vieques. **Isabel Segunda** (P.O. Vieques), the principal town on the island, is on the southeast side of the bay.

(321) **Punta Mulas Light** (18°09'16"N., 65°26'37"W.), 68 feet above the water, is shown from a 32-foot white octagonal tower on a dwelling on a low bluff point on the northeast side of the bay. An old Spanish brick fort and building is prominent on a hill 0.5 mile southeast of the light. A depth of 12 feet can be taken to the 300-foot pier on the east side of the bay. Depths of 4 to 12 feet are along the pier.

(322) Small vessels and schooners anchor north and south of the pier at Isabel Segunda according to draft. Large vessels anchor 0.5 mile or more offshore in the bay. The outer anchorage is exposed, but the small-boat anchorage affords fair shelter during ordinary weather. With north winds a heavy sea makes into the bay causing small craft to drag anchor. The nearest hurricane anchorages are Ensenada Honda (Isla de Culebra) and Ensenada Honda (east coast of Puerto Rico).

(323) The approach to Bahía de Mulas is obstructed by numerous unmarked shoals with depths of 5 to 30 feet. The chart is the best guide.

(324) A local person is designated to handle insular immigration and customs traffic. Supplies and passengers are landed at the pier. Some cattle are exported. Available supplies include gasoline in drums and groceries. Telephone and telegraph communications are available. A ferry carries passengers and supplies between Isabel Segunda, Isla de Culebra and Fajardo; the mail is delivered by airplane.

(325) A **danger area** of a bombing and target area is off the northeast and southeast coasts of Isla de Vieques. (See **33 CFR 334.1470**, chapter 2, for limits and regulations.) The northeast corner and the west boundaries of the north and south parts of the area are marked by buoys. In 2003, the Navy ceased all active gunnery, bombing and weapons training activity within the danger area. Unexploded ordnance remains present a hazard; extreme caution is advised.

(326) Schedules of all operations by the U.S. Marine Corps and the Navy on Isla de Vieques and vicinity are promulgated weekly and distributed to local authorities on Isla de Culebra, Isla de Vieques and Fajardo by the Commanding Officer, Atlantic Fleet Weapons Training Facility, Roosevelt Roads, PR.

(327) **Cabellos Colorados**, 3.1 miles east of Punta Mulas, is rocky and steep-to. **Puerto Negro** is a boat landing 4.8 miles east of Punta Mulas Light. It can be entered only by small craft with local knowledge. The entrance through the reefs is about 100 yards wide, with depths of 6 to 18 feet, and is generally indicated by breakers on either side. Anchorage space is limited; most of it is foul. **Punta Brigadier**, 0.6 mile west of the entrance, is marked by **Roca Roja**, a large bare rock close-in. **Punta Goleta** is the east entrance point.

(328) **Roca Cucaracha** 3.4 miles west-northwest of Punta Este Light, consists of two small rocks, close together, about 3 feet high. The rocks are about 0.3 mile from shore, and the depths inside them are 6 to 14 feet.

(329) **Caño Hondo** extends 0.6 mile east of Roca Cucaracha to the reefs forming Bahía Salinas. It is open north and has depths of 18 to 42 feet. It has no sheltered anchorage except for small craft, which can anchor at its southeast end. A narrow channel with a depth of 8 feet south of **Isla Yallis**, about 15 feet high and 250 yards from shore, leads from Cano Hondo to Bahía Salinas.

(330) **Bahía Salinas**, 1.6 miles west of Punta Este, has an anchorage with depths of 12 to 24 feet. It is the best landing along the north coast east of Bahía de Mulas. It affords good shelter for small craft with local knowledge but should not be attempted by strangers. The bay is protected on the north by a reef 0.6 mile long, the highest part of which is awash. The entrance from east is between the reef and those reefs which fringe the shore. About 1.5 miles northwest of Punta Este is a high bluff point with bare white cliffs to the east.

(331) **Punta Este**, the east point of the island, is moderately low and grassy, with rocky bluffs at the water. A light, 43 feet above the water, is shown from a tower with a red and white diamond-shaped daymark on the point.

(332) The south coast of Isla de Vieques is irregular and indented by sandy bays. **Bahía Salina del Sur**, 2 miles west of Punta Este, is 0.5 mile in diameter and affords a boat landing with the wind north of east. **Roca Alcatraz** consists of several rocks 10 to 15 feet high, 0.4 mile from the points at the entrance. A larger islet, **Cayo Conejo**, about 40 feet high, wooded on top and with a large bare rock close to its southeast end, lies 0.3 mile off the west entrance point. Anchorage is in the west half of the bay in 18 to 24 feet, sheltered from winds north of east. The clearer entrance is between Roca Alcatraz and the island

off the west point of the bay. For 1 mile west of the island, shoals with 18 feet and less extend nearly 0.5 mile from shore.

(333) **Ensenada Honda**, about 6 miles west of Punta Este, is 1.2 miles wide and has several bare rocks and reefs awash. The bay is rough with southeast winds, but with the wind north of east it affords a good boat landing. Owing to the foul ground in the bay, it should be avoided without local knowledge. A reef bare at low water is off the entrance 0.8 mile east-northeast from **Punta Conejo**, the west entrance point. **Cayo Jalovita** and **Cayo Jalova** are small Islands on the east side of the harbor.

(334) In 1978, three submerged rocks were reported to be about 1.4 and 1.9 miles south-southwest of Punta Conejo.

(335) **Bahía de la Chiva** is a shallow bight on the west side of Punta Conejo. **Isla Chiva**, about 30 feet high, is a cay in the entrance to the bight. A reef with 2 to 18 feet of water over it extends nearly 0.5 mile from shore 1.5 to 2.1 miles west of Punta Conejo. **Bahía Tapón**, a bight north of the reef, has depths of 2 to 3 feet. In 2013, unexploded ordnance was reported about 600 yards south of Bahía de la Chiva in the waters surrounding Isla Chiva. Vessels are cautioned not to transit or anchor around Isla Chiva.

(336) An offshore fueling line, marked by buoys, extends about 700 yards from the tank west of Bahía de la Chiva.

(337) A naval **restricted area** is off the south shore of Isla de Vieques. (See **33 CFR 334.1480**, chapter 2, for limits and regulations.)

(338) **Puerto Ferro**, 9 miles west of Punta Este, is a boat harbor with 6 to 8 feet of water at the entrance and 7 to 15 feet inside. Its entrance is 250 yards wide, with high land on both sides, and is prominent. A sunken rock lies about 0.5 mile inside the entrance in 18°06'21"N., 65°25'30"W.

(339) **Puerto Mosquito** is a boat harbor about 1 mile west of Puerto Ferro Light. Least depths in the narrow entrance are 2 to 3 feet. A sunken rock is on the west side of the entrance in 18°05'43.5"N., 65°26'32.5"W.

(340) **Ensenada Sun Bay**, 2.3 miles west of Puerto Ferro Light, is about 0.6 mile wide. It offers anchorage in 18 to 24 feet exposed to winds from southeast to southwest. A shoal extends 200 yards west from the east point of the bay, and a shoal with 17 feet over it lies west from the middle of the entrance. The depths in the south half of the bay are 17 to 27 feet. Several sunken rocks are about 100 and 250 yards west and southwest, respectively, off the east entrance point.

(341) **Puerto Real**, on the south coast of Isla de Vieques 3 miles west of Puerto Ferro Light, provides good anchorage in ordinary weather. The port is somewhat protected by **Punta de Tierra** on the east and **Cayo Real** on the south; depths are 15 to 25 feet. A pier in the northeast part of Puerto Real has 10 feet alongside and is marked on the seaward end by a private light. The radio tower lights 0.3 mile inshore are prominent.

(342) The principal outlying danger is a large area covered 13 to 15 feet, about 0.7 mile south of the island and 0.9 to 1.3 miles west-southwest from the south end of Cayo Real. A smaller area, covered 23 feet, is about 0.4 mile southwest from the south end of Cayo Real. A detached area, covered by 15 feet of water, is 0.2 mile from the island and 0.6 mile west from the north point of Cayo Real. Vessels can anchor in 35 feet, about 550 yards west of Cayo Real.

(343) **Punta Vaca**, 3 miles west of Puerto Real, is the southernmost point of the island. Outlying rocks are a short distance offshore.

(344) **Punta Boca Quebrada**, 2.9 miles west-northwest of Punta Vaca, is a low wooded point that terminates in a dry ledge outside of a white sand beach. From Punta Boca Quebrada the coast trends north for 1 mile to Punta Arenas.

(345)

<Deleted Chart Header>

(346) The **east coast** of Puerto Rico extends 10 miles south from Cabo San Juan to Punta Puerca and then 22 miles southwest to Punta Tuna. The coast is very irregular with projecting rocky bluffs separating the numerous small shallow coves and bays and with grass-covered or mangrove hills within a mile of the shore. Reefs awash or bare at low water and shoals with less than 10 feet over them extend more than a mile offshore in places. A depth of 24 feet can be carried through a partially buoyed channel from 2 to 5 miles off the east coast, but entrance caution is necessary to avoid the shoals near the route. The principal ports on the east coast are Fajardo and the private oil-handling facilities at Puerto Yabucoa.

(347)

Playa Canalejo to Bahia de Fajardo

(348) **Playa Canalejo**, 0.2 mile south-southeast of Cabo San Juan Light, is a shallow indentation leading to the ruins of a small pier.

(349) **Punta Gorda**, 1.4 miles south of Cabo San Juan Light, is a conspicuous high head. A 360-foot hill, 0.4 mile west-northwest from the point, is the north end and highest part of a high ridge that extends southwest nearly to Playa de Fajardo.

(350) A channel, marked by a light and daybeacons, leads to a small-boat harbor.

(351) **Punta Batería**, 2.2 miles south of Cabo San Juan Light, is a rocky 70-foot cliff from which a grassy ridge makes inland.

(352) **Bahía de Fajardo**, 2.5 miles south of Cabo San Juan Light, affords good shelter for medium-draft vessels. It is somewhat protected on the east and south by two islands and surrounding reefs. Ferry service for both passengers and cargo operates between Playa de Fajardo, Isla de Culebra, Isla de Vieques and the Virgin Islands. Commercial air transport is available to the Virgin Islands. Small interisland vessels trade in general cargo, building materials and livestock.

(353)

Prominent features

(354) Cabo San Juan Light is the principal landmark in making the approach to Bahía de Fajardo. A hotel with two cupolas, each marked by a red light, just south of Punta Gorda, and two stacks of a sugar central and a radio tower near Fajardo are prominent.

(355)

Channel

(356) The principal entrance to Bahía de Fajardo is from north through the unmarked channel west of Bajo Laja, although small vessels can enter from east and south with local knowledge. The north entrance has a controlling depth of 23 to 30 feet to Buoy 3, thence 11 feet to the public pier. The controlling depth from east is 17 feet to Buoy 3, and from south, 9 to 11 feet to the public pier.

(357)

Anchorages

(358) Large vessels anchor northeast of Punta Bateria according to draft. During ordinary weather the protection is fair and the holding ground is good. Small vessels anchor inside the bay on either side of the entrance channel.

(359) The hurricane anchorages for large vessels are Ensenada Honda (Isla de Culebra) and Ensenada Honda, 10 miles south of Fajardo. Small vessels can anchor south of Isleta Marina.

(360)

Dangers

(361) The approaches to Bahía de Fajardo have reefs that usually show breakers and shoals with 7 to 18 feet over them. Inside the bay depths range from 3 to 24 feet.

(362) **Bajo Laja**, with least depths of 7 to 10 feet over it, lies on the east side of the north entrance and is unmarked.

(363) **Isleta Marina**, with surrounding reefs up to 0.5 mile, is on the east side of the bay.

(364) **Arrecife Corona Carrillo** and a long reef to the west obstruct the south entrance to the bay. **Bajo del Río**, a bank with depths of less than 5 feet, extends more than 0.2 mile offshore along the south entrance to the bay.

(365)

Currents

(366) The current velocity is 0.3 knot in the south-southeast direction on the flood and 1.1 knot in a north-northwest direction on the ebb in the channel in Bahía de Fajardo.

(367)

Pilotage, Bahía de Fajardo

(368) See Pilotage, Puerto Rico (indexed as such) early this chapter. A local pilot is available.

(369)

Towage

(370) Tugs are not available at Fajardo.

(371)

Quarantine, customs, immigration and agricultural quarantine

(372) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(373) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(374) Fajardo is a **customs port of entry**. A deputy collector of customs handles customs matters and acts as immigration inspector. The customhouse is on the waterfront at Playa de Fajardo.

(375)

Harbor regulations

(376) Local regulations are enforced by a Commonwealth Captain of the Port.

(377)

Wharves

(378) The landing facilities are at **Playa de Fajardo** on the southwest side of Bahía de Fajardo. The westerly 300-foot public pier has 12 feet at the outer end and 8 feet alongside; two private lights are off the outer end of the pier. An 80-foot bulkhead pier with 12 feet alongside for the ferry boat is 100 yards west of the public pier.

(379) A privately owned pier 125 yards east of the public pier is 400 feet long with 5 feet at the outer end. The former limestone pier to the east is in ruins.

(380)

Supplies and repairs

(381) Water is available and gasoline can be trucked in. Groceries can be obtained from **Fajardo**, 1.5 miles inland. Limited facilities are available for repairs. The principal source of marine supplies is San Juan, 38 miles by highway from Playa de Fajardo.

(382)

Small-craft facilities

(383) A marina on Isleta Marina, on the east side of Bahía de Fajardo, has facilities for small craft. Depths of 8 to 12 feet can be taken to the marina. Berths, electricity, gasoline, diesel fuel, water, ice and marine supplies are available at the finger piers. Lifts to 100 tons and a 100-foot marine railway can haul out vessels for hull, engine and electronic repairs. Vessels to 65 feet long can be accommodated at the marina.

(384) Three private marinas at Playa Sardinera, north of Playa de Fajardo, have facilities for small craft. Reported depths of 8 to 12 feet can be taken to the berths inside a 700-foot breakwater that is marked on the seaward end by a light. Gasoline, diesel fuel, water, ice and marine supplies are available.

(385) A marina at the hotel just south of Punta Gorda has berthing facilities inside a manmade basin. A depth of 12 feet can be taken through the lighted entrance and then 12 to 7 feet to the berths. Berths, electricity, gasoline, diesel fuel, water and ice are available.

(386)

Isla de Ramos to Punta Puerca

(387) **Isla de Ramos**, 4 miles south of Cabo San Juan Light, is 0.2 mile in diameter and covered with palm trees except on its summit, which is a grassy 35-foot knoll with a house on top. A reef surrounds the island to a distance of 200 to 300 yards. A buoyed shoal with a least depth of 16 feet is 0.6 mile east-southeast of the island.

(388) **Cayo Largo**, 1.5 miles east of Isla de Ramos, consists of a narrow 1.8-mile-long ridge steep-to on all sides. The south half is awash at low water, and the sea always breaks on it; the north half has depths of 4 to 15 feet. Buoys mark the west side. The velocity of the current is 0.5 knot in the channel west of Cayo Largo; it floods south and ebbs northwest.

(389) **Isla Pineros**, 8 miles south of Cabo San Juan Light, is a 1-mile long wooded island with a 249-foot peak near the middle. **Isla Cabeza de Perro**, just east of Isla Pineros, has a large detached rock off the rocky bluff northeast end. **Cabeza de Perro Light** (18°14'59"N., 65°34'35"W.), 80 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the east point of the island. **Pasaje Medio Mundo**, west of Isla Pineros, is foul, but a depth of 15 feet can be taken through the narrow crooked channel by small boats with local knowledge.

(390) **Punta Puerca**, 10 miles south of Cabo San Juan, is a prominent bold wooded head with a high rock bluff at the shoreline. The highest point, 0.3 mile inland, is the site of several large white dish-shaped radar tracking units. The units show up well from offshore.

(391)

Small-craft facilities

(392) A marina at Bahía Demajagua has facilities for small craft. Fuel, water, electricity, pumpout, repairs, a marina store and a lift capacity to 100 tons are available among other services. Vessels to 200 feet can be accommodated at the marina.

(393)

Ensenada Honda

(394) **Ensenada Honda**, 10 miles south of Cabo San Juan Light, is the site of the **Roosevelt Roads United States Naval Station**. In 2007, the naval station was reported closed. The harbor is well protected by the circular shore and the reefs, which constrict the entrance to 0.3 mile. The harbor is included in a **restricted area** that extends from **Punta Figueras**, 3.5 miles north of Ensenada Honda, to 2 miles west of the entrance. (See **33 CFR 334.1480**, chapter 2, for limits and regulations.)

(395) **Bahía de Puerca**, a mile northeast of Ensenada Honda, has depths of 37 feet or more, leading to a pier with 37 feet alongside at the head of the bay. A 26-foot spot is 150 yards southwest of the pier. The 1,000-foot pier consists of a series of caissons connected by walkways; a large inactive graving dock is inshore of the pier.

(396) **Isla Cabras**, on the east side of the entrance to Ensenada Honda, has a rocky bluff on the east side. The island is connected to the mainland by a causeway. **Cabra de Tierra** is the southernmost point of a low neck covered with mangroves and palms separating Ensenada Honda from Bahía de Puerca.

(397) **Punta Cascajo**, the west point at the entrance to Ensenada Honda, has rocky cliffs on the south side and a bare reef 250 yards off the southeast side. Many houses are on the high part of the point, and trees fringe the shoreline. An unnamed cove just northwest of the point is blocked at the entrance by a permanent shark net.

(398) The southwest approach to Ensenada Honda is marked by a **025°24'** lighted range. (The front range light is on Isla Cabras and the rear range light is on Punta Puerca.)

(399)

Channels

(400) A dredged channel, marked by lighted and unlighted buoys, a light and a **315°** lighted range, leads to a large turning basin in Ensenada Honda. Vessels anchor inside the harbor according to draft; the holding ground is soft mud, which may cause some dragging during a hurricane. In 1990, a controlling depth of 40 feet was available in the channel and turning basin.

(401)

Wharves

(402) **Pier 1**, U.S. Navy fuel pier, the more west pier on the northeast side of Ensenada Honda, is 450 feet long with 32 feet along the west side and 36 feet along the east side; water is available. A small boat landing with about 15 feet alongside is inshore of the east side of the fuel pier.

(403) **Pier 2**, U.S. Navy cargo pier, southeast of Pier 1, is 398 feet long with 32 feet alongside; water is available. An LST landing ramp is about 400 yards southeast of the cargo pier.

(404) **Pier 3**, a 1,200-foot-long U.S. Navy aircraft carrier pier marked at its seaward end by fixed red lights, is 0.25 mile south of Pier 2. Depths of about 39 feet are alongside.

(405)

Quarantine, customs, immigration and agricultural quarantine

(406) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(407) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(408) **Customs** and **immigration** services are handled by representatives from Fajardo.

(409) An **agricultural quarantine** official is at the Roosevelt Roads Naval Station.

(410)

Puerto de Humacao to Puerto de Naguabo

(411) **Puerto de Humacao**, 15 miles south-southwest of Cabo San Juan Light, affords some shelter for medium-draft vessels. The port is exposed southeast and south, and a heavy sea sometimes makes in with southeast winds. Small boats can make a landing at the port during good weather.

(412)

Prominent features

(413) **Punta Lima**, 3 miles northeast of Puerto de Humacao, is a projecting wooded hill with low land back of it. A reef 0.5 mile east of the point usually shows breakers on it.

(414) **Cayo Santiago**, 0.7 mile southeast of the waterfront at **Playa de Humacao**, is the most prominent feature when approaching the port. The island is low at the north end, rising to 162 feet at the south end. The Caribbean Primate Research Center maintains a monkey colony for experimental purposes on the island; no visitors are permitted.

(415) **El Morrillo**, 1.8 miles southwest of the port, is a small rocky hill that rises abruptly from the water and the lowland around it.

(416) **Morro de Humacao**, 3.5 miles southwest of the port, is a 100-foot rocky point with higher ground inland. Grass-covered **Cayo Batata** is 0.4 mile off the point. A bare ledge, with five rocks and a reef, awash and steep-to, extends up to 0.2 mile east and south of Cayo Batata.

(417)

Channels

(418) The principal entrance to Puerto de Humacao is from south through an unmarked channel leading west of **Bajo Parse** and **Bajo Evelyn**; small vessels can enter from north.

(419)

Anchorages

(420) Large vessels can anchor within 2.3 miles south of Cayo Santiago, as close inshore as draft permits.

(421) Ensenada Honda, 10 miles northeast, is the nearest hurricane anchorage.

(422) Small vessels anchor in depths of 3 to 10 feet in the northeast part of **Puerto de Naguabo**, 2 miles northeast of Puerto de Humacao. Good anchorage is afforded except with southeast or south winds. A boat landing in about 7 feet of water can be made at a small pier southeast of Puerto de Naguabo. Gasoline is available nearby.

(423)

Dangers

(424) Several shoal spots with depths of 12 to 18 feet are in the approaches to Puerto de Humacao. The 12-foot shoal 1.2 miles east of Cayo Santiago and the shoals at the south entrance are unmarked. The chart is the best guide. A shoal area with depths of 1 to 6 feet extends for 0.4 mile from Cayo Santiago towards the waterfront at Playa de Humacao. A wreck reportedly covered 8 feet is 300 yards southeast of the ruins of the long pier.

(425)

Small-craft facilities

(426) Berths with electricity, gasoline, diesel fuel, water, ice and marine supplies are available. A 50-foot marine railway and a 35-ton lift can handle craft for hull and engine repairs. Some groceries are available at Playa de Humacao, but most supplies must be obtained from **Humacao**, 6 miles inland. The principal source of marine supplies is San Juan, 44 miles by highway from Playa de Humacao.

(427) Humacao is a **customs port of entry**.

(428)

Palmas del Mar to Puerto Yabucoa

(429) **Palmas del Mar**, 21 miles south-southwest of Cabo San Juan Light, is a small-craft harbor enclosed by a breakwater. The entrance to the harbor is marked by private lights. A yacht club on the east side of the harbor along the breakwater provides berths with electricity, diesel fuel, and pumpout. A marina on the west side of the harbor provides berths with electricity, gasoline, diesel fuel, water, ice and marine supplies. A 50-foot marine railway and a 35-ton hoist can handle vessels for hull and engine repairs. It is reported that strong easterly winds cause breaking seas in the harbor entrance and surge inside the harbor.

(430) **Puerto Yabucoa**, 23.5 miles southwest of Cabo San Juan Light and 6 miles northeast of Punta Tuna Light, is an open bay with numerous reefs and sunken rocks with depths of less than 5 feet between rocky **Punta Guayanes** on the north and **Punta Quebrada Honda** on the south. The port is the site of a deep-draft oil-handling facility. Large tankers call here to deliver crude petroleum and load petroleum and petrochemical products.

(431)

Channels

(432) A privately dredged 500-foot channel leads from deepwater to a turning basin and petroleum wharf. A jetty extending about 200 yards from the northeast side of the basin entrance is marked by a light. The channel is marked by private lighted buoys, lights and a **296°50'** lighted range. In 2013, the reported controlling depth was 38 feet in the entrance channel and turning basin with 28 feet reported in the smaller basin to the west.

(433) The storage tank farm and several tall stacks are conspicuous northwest of the turning basin.

(434)

Anchorages

(435) A suitable anchorage is available for several deep-draft vessels southeast of Punta Guayanes.

(436)

Dangers

(437) The area seaward of the dredged channel is relatively open and free from dangers, but care should be exercised

(460)

METEOROLOGICAL TABLE – COASTAL AREA OFF SOUTHERN PUERTO RICO
Between 16°N to 18°N and 65°W to 68°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.2	0.2	0.1	0.2
Wave Height > 9 feet [1]	1.7	1.4	1.1	1.0	0.7	1.6	2.4	1.7	1.3	0.2	2.0	2.1	1.4
Visibility < 2 nautical miles [1]	0.2	0.2	0.2	0.3	0.4	0.2	0.4	0.4	0.5	0.3	0.5	0.3	0.3
Precipitation [1]	2.6	2.4	2.5	2.0	4.1	2.1	3.8	3.1	4.7	4.9	4.7	3.8	3.3
Temperature > 69° F	99.7	99.9	99.7	99.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9
Mean Temperature (°F)	78.5	78.0	78.2	79.3	80.8	82.0	82.3	82.8	82.9	82.6	81.4	79.8	80.5
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	77	78	78	80	80	80	80	80	80	79	78	79
Overcast or Obscured [1]	3.1	2.8	4.6	4.1	10.6	8.0	9.9	8.1	10.0	8.5	5.7	4.3	6.4
Mean Cloud Cover (8ths)	3.2	3.3	3.3	3.4	4.2	4.1	4.0	3.9	4.0	3.9	3.7	3.5	3.7
Mean SLP (mbs)	1016	1016	1016	1015	1015	1016	1016	1015	1013	1013	1013	1014	1015
Ext. Max. SLP (mbs)	1032	1031	1030	1030	1028	1028	1027	1028	1025	1025	1026	1029	1032
Ext. Min. SLP (mbs)	1001	1001	1002	1001	1002	1004	1004	1000	1001	1000	999	1001	999
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning [1]	0.3	0.3	0.1	0.3	2.0	1.8	2.2	3.2	5.1	5.9	2.4	0.9	1.9

[1] Percentage Frequency

in approaching the channel as depths shoal extremely rapidly at the channel entrance. Outcrops of hard seafloor material exist close to the edges of the channel; give the edges of the channel a good berth. A shoal area that is partially bare with breakers is 0.5 mile southwest of the channel. Prevailing winds from east-southeast cause a good swell in the basin most of the time.

(438)

Pilotage, Puerto Yabucoa

(439) See Pilotage, Puerto Rico (indexed as such) early this chapter. Local pilots are available. Pilots board inbound vessels about one mile seaward of the channel entrance.

(440)

Towage

(441) The use of a tug is compulsory for arriving and departing vessels. Tugs up to 3,800 hp are available.

(442)

Quarantine, customs, immigration and agricultural quarantine

(443) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(444) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(445)

Harbor regulations

(446) Local regulations are enforced by the local Commonwealth Captain of the Port.

(447)

Wharves

(448) The petroleum wharf on the north side of the main basin is 450 feet long with turning and berthing dolphins extending off the ends. Depth alongside is 50 feet. The barge and dry cargo wharf on the south side of the basin just inside the entrance is 200 feet long with a depth of 10 feet reported alongside.

(449) A pipeline trestle pier in ruins, formerly used for loading molasses, is at **Playa de Guayanes** in the north part of Puerto Yabucoa.

(450)

Supplies and repairs

(451) Bunker C, diesel oils and water are available at the petroleum wharf. Limited marine supplies are available in Puerto Yabucoa. Stores and supplies can be ordered through the ship agents for delivery to the vessel with at least 48 hours advance notice.

(452) No repair facilities are available.

(453)

Punta Veguas to Arrecife Sargent

(454) **Punta Yeguas**, 1.2 miles south of Punta Quebrada Honda, is a low point with a rocky bluff at the end, which rises gradually in a smooth grassy ridge that joins the east end of Cuchilla de Panduras.

(455) **Punta Toro**, the point 1.4 miles west-southwest of Punta Yeguas, is a 500-foot-high spur of **Cuchilla de Panduras**, which has elevations of over 1,800 feet to the north.

(456) **Punta Tuna Light** (17°59'18"N., 65°53'07"W.), 111 feet above the water, is shown from a white octagonal tower on a dwelling, near the end of the point. The point projects as a high cliff; a 400-foot hill 0.5 mile north is prominent.

(457) **Arrecife Sargent**, 0.5 mile southeast of Punta Tuna is 1.8 miles long and 0.3 mile wide at its widest point. Because it breaks the force of the southeast swell, the reef affords some protection from the southeast for vessels anchored well in by Punta Tuna where the reef is from 0.3 to 0.2 mile from shore. A bare part of the reef, 0.7 mile east of the light, has the appearance of a rowboat

and black can buoy. Other parts of the steep-to reef have depths of 5 to 17 feet. The break on the reef does not show well except when there is considerable sea, and on parts of it the sea rarely breaks. The natural channel between the reef and the shore is not recommended for strangers.

(458)

<Deleted Chart Header>

(459) The south coast of Puerto Rico from Punta Tuna to Cabo Rojo extends in an almost west direction for 75 miles. The coast is very irregular with projecting brush-covered points between shallow coves and bays; fringing reefs close to shore make landing difficult and often dangerous in most places. Except at the east and west ends of Puerto Rico, the land is generally low near the shore with prominent high hills in the interior. Many reefs and islands are from 2 to 5 miles offshore, then the bottom increases rapidly to great depths, making soundings of little use to indicate danger or distance from shore. Numerous lights and other prominent features along the coast can be used for position determination. Safety will be ensured by giving a berth of at least 3 miles to the coast and to Isla Caja de Muertos. Small vessels with local knowledge sometimes hug the coast inside the outer reefs to avoid heavy seas outside.

(461)

Puerto Arroyo

(462) **Puerto Arroyo**, 11 miles west of Punta Tuna Light, is an open bay exposed to south winds.

(463) **Punta Figuras** is a projecting point on the east side of Puerto Arroyo. **Cerro Range**, 3 miles north of Punta Figuras, is a distinct sharp conical hill. The stacks of several sugar centrals are also prominent.

(464) The principal entrance channel is from southwest. Several shoals with depths of 24 to 30 feet are in this approach, and the bottom is irregular. There is a small-boat passage from east between Punta Figuras and Arrecife Guayama; the passage should be used only with local knowledge. Depths of 24 to 30 feet can be taken to the anchorage area, thence about 5 feet to the private pier at **Arroyo**. The east passage has depths of 13 to 30 feet to the anchorage.

(465) The best anchorage is in 23 to 30 feet a mile west-southwest of Punta Figuras. The prevailing southeast wind is always felt in the anchorage, although the force is somewhat broken by the outlying reef. Some small fishing vessels anchor near Arroyo according to draft. Bahía de Jobos, 10 miles west, is the nearest hurricane anchorage.

(466) **Arrecife Guayama**, 1 to 1.5 miles off Punta Figuras, is nearly 3 miles long and is dangerous to approach. The east part is awash and the sea usually breaks on it; the middle part has little water on it with patches awash on which the sea breaks. **Arrecife Corona**, 1.4 miles west of Punta Figuras, has a least depth of 5 feet.

(467) **Arrecife Algarrobo**, 2.3 miles west of Punta Figuras, is a coral reef that covers and uncovers. Another coral reef that uncovers is 0.3 mile west-southwest of Arrecife Algarrobo. A submerged coral reef with a least depth of 6 feet is 1.1 mile southwest of Arrecife Algarrobo. **Punta Barrancas** is the point on the west side of Puerto Arroyo and 3.8 miles west of Punta Figuras. A reef with a least depth of 11 feet extends 0.4 mile south of the point.

(468)

Small-craft facilities

(469) Berths, gasoline by truck, water, some marine supplies and engine repairs are available at Arroyo.

(470) Local harbor regulations for Puerto Arroyo are enforced by a Commonwealth Captain of the Port.

(471)

Laguna de Las Mareas

(472) **Laguna de Las Mareas** about 6.5 miles west of Punta Figuras is the site of a deep-draft oil-handling facility. Large tankers call here to deliver crude petroleum products and load petrochemicals and motor fuels.

(473)

Channels

(474) A privately dredged channel leads through the reef from deepwater to the facilities' basin and pier in Laguna de Las Mareas. The breakwater extending from the east entrance point, **Punta Ola Grande**, is marked at the seaward end by a light. The channel is marked by private lighted aids and a **017.7°** lighted range. Extreme caution is advised when entering the harbor.

(475) The 1,100-foot pier in the basin extends from the north shore and consists of a series of connected mooring and breasting dolphins with a 90-foot loading platform (pierhead) near its center. Depths of 38 feet were reported alongside.

(476)

Pilotage, Laguna de Las Mareas

(477) See Pilotage, Puerto Rico (indexed as such) early this chapter. Pilots board vessels 1.5 miles north of Lighted Buoy LM. A 48-hour and a 24-hour notice of time of arrival are requested.

(478)

Towage

(479) Tugs up to 3,800 hp are available for docking vessels. The tugs monitor VHF-FM channel 16.

(480)

Quarantine, customs, immigration and agricultural quarantine

(481) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(482) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(483) A hospital is at nearby Guayama.

(484)

Repairs

(485) The nearest port for major repairs is San Juan; limited emergency above-the-waterline repairs are available at Ponce.

(486)

Supplies

(487) No bunkers are available; in emergencies bunkers and lube oils may be delivered from Ponce. Limited quantities of water and facilities for offloading waste water are available at the pier. Marine supplies are available on 48-hour notice.

(488)

Bahia de Jobos to Punta Petrona

(489) **Bahía de Jobos**, 20 miles west of Punta Tuna Light, is a good hurricane anchorage. The harbor is formed by **Punta Pozuelo**, a projecting point on the east side, and many islands on the south and southwest sides. The shore and islands are low and are covered with thick brush and mangroves. The east part of the bay is shallow and is used only by local fishing boats.

(490)

Prominent features

(491) A light on the east end of **Cayos de Ratones** marks the entrance to Bahía de Jobos. The stacks at Central Aguirre show up well from offshore.

(492)

Channels

(493) The principal entrance to Bahía de Jobos is from the west between **Cayo Morrillo** and Cayos de Ratones, and thence through a channel leading to a turning basin and facilities of a power plant. The channel is marked by lighted and unlighted buoys.

(494) **Boca del Infierno**, a small-boat entrance into Bahía de Jobos between **Cayos Caribes** and **Cayos de Barca**, has a depth of 11 feet over the bar that breaks with a heavy sea. This passage should be used only with local knowledge.

(495)

Anchorages

(496) Vessels sometimes anchor just inside the entrance between Cayo Morrillo and Cayos de Ratones to await daylight. There is a good anchorage in depths of 24 to 35 feet with grassy bottom northeast of **Cayos de Pájaros**. The anchorage inside the bay is east of the marked channel leading to the barge loading platform of the power plant in depths of 19 to 23 feet, soft mud bottom. A slight swell makes in through Boca del Infierno with south winds.

(497)

Dangers

(498) Numerous wooded islands with reefs awash and steep-to surround the south and southwest part of Bahía de Jobos up to 1.5 miles from the mainland. There are passages between some of the island groups, but only the principal entrance east of Cayos de Ratones should be used by large vessels and small boats without local knowledge.

(499)

Pilotage, Bahía de Jobos

(500) See Pilotage, Puerto Rico (indexed as such) early this chapter. Pilots from Ponce serve this harbor. Vessels are boarded off Cayos de Ratones, 3.1 miles southwest of Bahía de Jobos Light.

(501)

Quarantine, customs, immigration and agricultural quarantine

(502) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(503) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(504) Puerto Jobos is a **customs port of entry**.

(505)

Wharves

(506) The fuel oil barge loading platform of the power plant, on the northwest side of the turning basin, has about 300 feet of berthing space with dolphins. Depths of 17 feet were reported alongside.

(507)

Supplies and repairs

(508) Supplies have to be obtained from inland towns; San Juan is 67 miles by highway. Some above-the-waterline emergency repairs can be made by the machine shop at Central Aguirre.

(509)

Small-craft facilities

(510) A small-craft facility is on the south side of Bahía de Jobos about 0.7 mile east of Punta Rodeo. The entrance channel to the facility is very narrow and should be navigated with caution. Gasoline, water, ice and a launching ramp are available.

(511) **Bahía de Rincón**, 26 miles west of Punta Tuna Light, is a 5-mile-wide bay used only by local fishing boats that anchor near **Playa de Salinas** in the northeast part. There is a good anchorage in depths of 24 to 30 feet in the east part of the bay during ordinary weather. The bay shoals to 18 feet and less within 1 mile of the shore in some places.

(512) **Arrecife Media Luna** and **Cayo Alfenique** obstruct the entrance to Bahía de Rincón from south. The reefs are partly bare or awash, steep-to, and the sea breaks on them. The west side is obstructed by **Cayos de Caracoles** and **Cayos Cabezazos**. Reefs awash or bare and nearly steep-to surround the islands, and the sea always breaks on their south sides. Foul ground with depths of 1 to 6 feet extends north to **Punta Petrona**, the west point of the bay.

(513) Depths of 23 to 28 feet can be taken to anchorage in Bahía de Rincón on either side of Arrecife Media Luna; avoid the 12-foot shoal 0.4 mile northwest of Cayos de

Ratones. Small vessels with local knowledge also use the narrow channel north of Cayos de Ratones.

(514)

Playa Santa Isabel to Isla del Frio

(515) The 15-mile indentation in the coast between Bahía de Rincón and Bahía Ponce is obstructed by islands and shoals up to 5 miles offshore. The stacks of several sugar centrals and several water tanks are prominent along the coast line. Anchorage in depths of 15 to 30 feet can be found within 0.5 mile of the shore during ordinary weather. Small local fishing boats anchor near the settlements along the shore.

(516) **Playa Santa Isabel**, 31 miles west of Punta Tuna Light, is a small settlement near the beach where water can be obtained. A depth of 4 feet can be taken to the landing. Gasoline, groceries and some supplies are available at **Santa Isabel**, 0.7 mile inland.

(517) **Cayo Berberia**, 33 miles west of Punta Tuna Light, is 2 miles offshore and is surrounded by a reef and shoals. The fringing reef, on which the sea breaks on the south and east sides, extends up to 0.4 mile from the island. A shoal with depths of 2 to 12 feet extends for 0.2 mile north of the island and over a mile west of it. In ordinary weather, a good anchorage in 45 to 60 feet of water 1 mile northwest of the island was reported by the NOAA Ship MT. MITCHELL. Care must be taken when approaching the area because of shoals with depths of 15 to 18 feet, 2 miles northwest of the island.

(518) **Isla Caja de Muertos**, about midway of the 75-mile stretch of coast between Punta Tuna Light and Cabo Rojo, is 5 miles offshore and prominent. The southwest end is low except for a 170-foot steep hill at the extreme southwest end. When viewed from a distance the 170-foot hill appears to be a separate island. At such times the hill is easily mistaken for Isla Morrillito. Care should be taken when shooting tangents to these islands. Landings can be made on the west side of the island during ordinary weather. **Isla Morrillito** is a small 31-foot flat-topped island 200 yards off the southwest point.

(519) **Isla Caja de Muertos Light** (17°53'35"N., 66°31'16"W.), 297 feet above the water, is shown from a 63-foot gray cylindrical tower on the summit of the island.

(520) Shoal water with depths of 3 to 18 feet extends up to 0.5 mile from the shore of Isla Caja de Muertos and Isla Morrillito. A reef extends about 0.4 mile seaward in all directions from a point on the northeast end of Isla Caja de Muertos in 17°54.0'N., 66°30.6'W. A bar with a least depth of 13 feet extends northeast from Isla Caja de Muertos gradually curving east and joins the shoal area west of Cayo Berberia. The sea rarely breaks on the bar; it is dangerous to approach.

(521) A passage north of Cayo Berberia and Isla Caja de Muertos is used in the daytime by small coasting vessels with local knowledge. There are several shoals with depths of 14 to 17 feet along the route.

(522) A good anchorage in ordinary weather in 90 to 115 feet of water about 0.8 mile northwest of the center of Isla Caja de Muertos was reported by the NOAA Ship MT. MITCHELL. The island offers a good lee.

(523) **Isla del Frio**, 4.3 miles north-northwest of Isla Caja de Muertos and 0.4 mile offshore, is surrounded by a 0.4-mile-long reef that is steep-to on the south edge.

(524)

Bahia de Ponce

(525) **Bahía de Ponce**, 43 miles west of Punta Tuna Light and 32 miles east of Cabo Rojo Light, is the most important commercial harbor on the south coast and one of the three leading ports of Puerto Rico. The harbor is protected from the prevailing east trade winds by Punta Peñoncillo and Isla de Gata with their surrounding reefs, but it is exposed to the south causing a swell at times in the anchorage. The port facilities are in the east part of the 3.5-mile-wide bay, which is surrounded by shoals and reefs; the north part of the bay shoals to less than 18 feet within 0.4 mile of the shore in places.

(526) **Ponce**, the second largest city in Puerto Rico, is 2 miles inland from the port at **Playa de Ponce**, and 71 miles by highway from San Juan. Most cargo is landed at the municipal pier and bulkhead on Punta Peñoncillo. The principal imports include foodstuffs, textiles, building materials and machinery. Exports include sugar, cement and canned fish.

(527)

Prominent features

(528) Isla Caja de Muertos with the light on its summit is the most prominent feature in the approach. The stacks of the cement factory west of Ponce, the large microwave tower in Ponce, the hotel on the hill back of Ponce and the radio towers and stacks surrounding the bay can be seen from well offshore. Also prominent is the aerolight at Mercedita Airport, about 2.5 miles east of Ponce.

(529) **Isla de Cardona**, in about the middle of the entrance to Bahía de Ponce, is marked by a light shown from a white tower near the middle of the island. **Isla de Gata**, south of the municipal pier on **Punta Peñoncillo**, is connected by a dike to **Punta Carenero**.

(530)

Channels

(531) The principal entrance is east of Isla de Cardona. A federal project provides for a 600-foot-wide entrance channel 36 feet deep, then an inner channel 200-foot-wide 36 feet deep leading to an irregular-shaped turning basin, with a 950-foot turning diameter adjacent to the municipal bulkhead. (See Notices to Mariners and latest editions of charts for controlling depths.)

(532) The entrance channel is marked by a **015°** lighted range, lights and buoys; do not confuse the rear range light with the flashing red radio tower lights back of it. A 0.2-mile-wide channel between Isla de Cardona and Las Hojitas is sometimes used by small vessels with local knowledge.

(533)

Anchorages

(534) The usual anchorage is northeast of Isla de Cardona in depths of 30 to 50 feet; however, vessels can anchor in 30 to 40 feet northwest of Las Hojitas, taking care to avoid the submerged sewer outfall. A small-craft anchorage is northeast of Las Hojitas in depths of 18 to 28 feet. (See **33 CFR 110.1** and **110.255**, chapter 2, for limits and regulations.) A well-protected anchorage for small boats in depths of 19 to 30 feet is northeast of the yacht club on Isla de Gata. A comfortable anchorage with little swell during ordinary weather in depths of 18 to 30 feet can be found in **Caleta de Cabullones**, the bight east of Isla de Gata.

(535) Bahía de Ponce is not safe as a hurricane anchorage because it is exposed to the south. The nearest hurricane anchorages are at Bahía de Jobos, 28 miles east, Bahía de Guayanilla, 8 miles west and Bahía de Guanica, 16 miles west.

(536)

Dangers

(537) **Bajo Tasmanian**, an extensive bank on the east side of the principal harbor entrance, is about a mile long with a least depth of 17 feet. The west part of the bank extends close to the range line and has a least depth of 19 feet.

(538) The bank on the west side of the entrance extends almost to Isla de Cardona and has general depths of 25 to 40 feet. There are a few detached spots of 16 and 17 feet within an area 0.5 mile southwest of the island.

(539) **Bajo Cardona** extends 600 yards east-southeast from Isla de Cardona with a least depth of 13 feet. A bare reef on which the sea breaks extends 300 yards northeast of the island; an area with a least depth of 8 feet continues in the same direction for 200 yards.

(540) A reef bare at low water and steep-to extends 300 yards west and southwest from Isla de Gata. The sea always breaks on the outer side of this reef.

(541) It is reported that with an east wind of 25 knots or more, the mud from the reef off Isla de Gata discolors the water across the channel to Isla de Cardona and beyond making the channel off the piers at Punta Peñoncillo appear shoal.

(542) Other unmarked shoals and reefs are dangerous in approaching Bahía de Ponce through any of the inshore passages. A reef with four islets extends southwest, 0.4 mile from Punta Cabullones, 2.5 miles east of Isla de Cardona. The reef is steep-to, and the sea breaks on the south side. **Roca Ahogado**, a rock in the middle of Caleta de Cabullones, has shoal water of 4 to 18 feet extending up to 0.2 mile from it.

(543) **Las Hojitas**, northwest of Isla de Cardona, is 0.8 mile long, oriented in a northeast-southwest direction. A coral reef is just below the surface on the southwest end. The remainder of the reef has depths of 2 to 11 feet.

(544) **Cayo Viejo**, 0.8 mile west of Isla de Cardona, is about 0.3 mile in diameter and has a least depth of 3 feet.

(545) **Isla de Ratones**, on the west entrance to Bahía de Ponce and a mile offshore, is a low island with a reef that bares at low water extending a mile east-southeast of it. **Cayo Arenas**, 0.5 mile east of Isla de Ratones, is surrounded by a reef and shoals that extend up to 200 yards from its shore. Crooked channels with a least depth of 10 feet are between these islands and the shore; they should be used only with local knowledge.

(546)

Weather

(547) The tropical climate of Bahia de Ponce features average rainfall of about 33 inches annually, a small diurnal and annual temperature range and pleasant summer sea breezes. Most of the rain is in the form of showers or thunderstorms, which are frequent from May through November. Thunder is heard on about 6 to 12 days each month; September is the most active month. Monthly precipitation extremes range from over five inches in October to less than one inch in January through March. Maximum temperatures range from the mid-80s in winter to around 90°F in August and September. Summer highs climb to 90°F or more on only 7 to 10 days each month, thanks to the sea breeze; however, 90°F or greater has been recorded in every month. The average annual temperature at Ponce is 78.8°F with an average maximum of 88.7°F and an average minimum of 68.4°F. The mean temperature difference between the warmest month (July) and the coolest month (January) is only 6.1°F. Winds are usually out of the southeast and east from spring to fall and northeast and east the remainder of the year. Windspeeds of 17 knots or more blow up to 2 percent of the time in March, April and July. Visibilities are generally good, except in showers.

(548)

Routes

(549) From east: When 3 miles south of Isla Caja de Muertos Light steer **303°** for 8 miles until Isla de Cardona Light bears 005°, distant 2.5 miles, then head in on the lighted range bearing **015°**. From west: When 4 miles south of Punta Brea, steer **079°** for 15.4 miles to the position off the entrance of Bahía de Ponce.

(550)

Pilotage, Bahía de Ponce

(551) See Pilotage, Puerto Rico (indexed as such) early this chapter. Pilots board vessels 1 mile from the entrance buoys.

(552)

Towage

(553) Tugs are available from South PR Towing in Guyanilla Harbor on VHF-FM channels 16 and 11.

(554)

Quarantine, customs, immigration and agricultural quarantine

(555) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(556) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(557) Ponce is a **customs port of entry**. The customhouse is at Playa de Ponce. The deputy collector of customs and his inspectors act as immigration inspectors.

(558)

Harbor regulations

(559) A Commonwealth Captain of the Port with an office at Playa de Ponce enforces the local rules and regulations for Bahia de Ponce.

(560)

Wharves

(561) The municipal pier and wharf on Punta Peñoncillo are administered by a board with a dock superintendent in charge. The municipal pier on the southeast side is 450 feet. An obstruction, with a least depth of 23 feet, consisting of submerged piles is, on the southeast side of the the pier. Transit sheds and pipelines for water, molasses and bulk cement are on the pier. Immediately northwest of the pier is a 63-foot-wide loading ramp that slopes to about 1 foot above the water.

(562) On the north side of Punta Peñoncillo is a 1,900-foot bulkhead wharf, locally known as Ponce Pier 1 and 2, has depths of 31 to 35 feet alongside; transit sheds and pipelines for water and diesel oil are on the wharf; general cargo is received.

(563) About 300 yards north of the Ponce Pier 1 and 2, the 610-foot Trailer Terminal pier has reported depths of 36 feet alongside.

(564) About 350 yards east of the municipal pier is an L-shaped pier with a 350-foot face that had reported depths of 30 feet alongside and 31 feet in the approach. Pipelines on the pier handle water and vegetable oil and unload polluted water from fishing vessels.

(565) A maneuvering basin extends 250 yards north of the municipal wharf, the northerly limits marked by buoys. The basin had reported depths of 35 to 50 feet with shoaling to lesser depths in the east end.

(566)

Supplies

(567) Most supplies are available at Ponce. If necessary, additional supplies can be brought in by truck from San Juan in a few hours. Freshwater, bunker C oil and diesel oil are available at the municipal pier; gasoline is available by truck.

(568)

Repairs

(569) Above-the-waterline repairs and minor electrical and small-engine repairs are available in Ponce. There is no drydock or large marine railway available at the port.

(570)

Small-craft facilities

(571) Berths with electricity, gasoline, diesel fuel, water, ice and a launching ramp are available. A 65-foot marine railway and a 50-ton lift can handle craft for hull, engine and electronic repairs.

(572)

Bahía de Tallaboa to Bahía de Guayanilla

(573) **Bahía de Tallaboa**, 27 miles east of Cabo Rojo Light, is an open bay somewhat protected by islands and surrounding reefs.

(574)

Prominent features

(575) The beach is intensely developed with tank farms, cracking towers, buildings and stacks. The most prominent objects are two large cracking towers, a large elevated water tank southeast of the cracking towers and a castlelike house on a hill above the extreme west edge of the bay. The two red and white striped stacks of the South Coast Steam Plant on the northeast shore of Bahía de Guayanilla and the large sugar mill stack northwest of Bahía de Guayanilla are also prominent from offshore.

(576)

Channels

(577) The principal entrance channel, marked by buoys, leads into Bahía de Tallaboa between **Cayo Caribe** on the east and **Cayo María Langa** and **Cayo Palomas** on the west. It is recommended that inbound vessels, when abeam of Buoy 4, steer directly for Buoy 6 until Buoy 5 is abeam to the west. This avoids the danger of being set onto the bank west of the channel by strong prevailing east winds. Shoals and reefs with depths of 10 feet and less extend from the islands nearly to the buoyed channel.

(578) It is reported 34 feet can be taken to the pier north of Cayo Río.

(579) There are numerous private piers and boathouses for yachts and small craft along the northeast shore of Bahía de Tallaboa extending from 66°42.2'W., to 66°43.0'W. This area is mostly foul with unmarked coral heads and reefs. Small craft should not attempt passage without local knowledge.

(580)

Anchorages

(581) Holding ground in Bahía de Tallaboa, charted as sticky, is poor, and dragging should be expected in winds greater than 25 knots. Bahía de Guayanilla, 1.5 miles west, is a good hurricane anchorage.

(582) Pilotage, towage, quarantine, customs, immigration agricultural quarantine services and harbor regulations for Bahía de Tallaboa are the same as for Bahía de Guayanilla (indexed as such), which is discussed later in this chapter.

(583)

Wharves

(584) A 2,100-foot pier, marked by a light at the seaward end, is in the north part of the bay about 0.3 mile northeast of Cayo Río. In 2012, a reported controlling depth of 34 feet was available along the outer 1,100 feet of the east

side. Crude petroleum and chemicals are received and petroleum products are shipped.

(585) A 35-foot-long barge wharf with dolphins is at the mouth of a 100-yard-wide outlet canal about 0.6 mile north of the tanker loading platform. In 1977, the controlling depth was 20 feet in the approach to the canal, thence in 1970, about 3 feet reported in the canal. The mouth of the canal is subject to silting.

(586) Anchorage should not be attempted shoreward of the loading platform as there is a possibility of rupturing the submerged chemical lines leading to the platform.

(587) **Bahía de Guayanilla**, 25 miles east of Cabo Rojo Light, is the largest hurricane harbor and one of the best in Puerto Rico. The reefs and islands to the southeast break the sea but not the wind; some dragging can be expected. The harbor, between low and wooded **Punta Guayanilla** on the east and bluff-faced **Punta Verraco** on the west, is protected at its entrance by extensive reefs that extend 1 mile or more offshore. The east part of the bay is a continuation of the industrial complex at Bahía de Tallaboa; large vessels call here to deliver and load petroleum and bulk chemical products.

(588)

Prominent features

(589) The features discussed for Bahía de Tallaboa are also prominent approaching Bahía de Guayanilla. The tanks of Punta Pepillo, the LNG tank of Eco Eléctrica and a large stack south of **Guayanilla**are conspicuous. A square white tower and a large white bulk storage tank bear 356° directly down the channel from the entrance.

(590) **Cerro Toro**, on the southwest side of Punta Verraco, has a 100-foot hill with a bluff head at its west end and a gentle slope northeast to the low part of Punta Verraco. There is a bright yellow spot in the bluffs on the southeast side. A low break separates the hills from **Punta Ventana**, 0.4 mile to the southwest. The hill and point usually show well.

(591)

Channels

(592) The entrance channel, marked by lighted and unlighted buoys and a **358.1°** lighted range, leads into Bahía de Guayanilla between shoals extending 0.4 mile from Cayo María Langa on the east and 1.4 miles from Punta Verraco on the west. Private lighted bouys and a **014°** private lighted range mark the channel to the pier in the north part of the bay. An obstruction, determined to be a metal plate, with a depth of 24 feet is on the east side of the pier. Another obstruction, a metal pipe, with a depth of 24 feet is near the approach to the offshore piers in the east part of the bay.

(593)

Anchorages

(594) The usual anchorage is 0.5 to 1 mile northeast of Punta Verraco in depths of 35 to 50 feet, although vessels can anchor any place in the bay according to draft. There is good holding bottom of thick mud. Small fishing boats anchor in the north end of the bay. A good hurricane anchorage for small craft drawing less than 10 feet can be had in the center of the cove about 1 mile 035° from Punta Gotay. The approach channel to the cove is about 200 yards north of Cayo Mata, thence east between two jutting points of land. Local knowledge is advised before attempting to navigate the channel.

(595)

Dangers

(596) Cayo María Langa is surrounded by reefs on which the sea breaks. The 30-foot curve is 0.3 mile south and about 0.6 mile east-southeast from the island, descending abruptly to great depths.

(597) **Arrecife Fanduco**, the southwest end of the shoal that extends 0.6 mile south of Punta Guayanilla and 0.4 mile west of Cayo María Langa, is partly bare at low water, and the sea always breaks on it. A shoal with depths of 8 to 12 feet extends 0.2 mile south-southwest from **Punta Gotay**, the west end of Punta Guayanilla. The outer end of the shoal is marked by the Entrance Range Front Light.

(598) **Arrecife Guayanilla** and **Arrecife Unitas**, on the west side of the entrance to Bahía de Guayanilla, form the south and southeast sides of the reefs, which extend 1.1 miles from Punta Verraco. The reefs are mostly bare at low water, and the sea always breaks on them. The 30-foot curve is about 0.2 mile from the south side, and the slope is abrupt to great depths. It has been reported that several deep-draft vessels have grounded on the 30-foot and shallower banks off the southeast end of Arrecife Guayanilla while approaching the harbor entrance.

(599)

Routes

(600) Vessels approaching in the daytime from east or west can follow the coast at a distance of 2.5 miles until the entrance to Bahía de Guayanilla is recognized, then follow the channel marked by buoys into the harbor. At night vessels should keep well offshore to avoid the reefs off the entrance until the entrance buoys are identified.

(601)

Pilotage, Bahía de Guayanilla

(602) See Pilotage, Puerto Rico (indexed as such) early this chapter. Vessels are usually boarded 3 miles outside the entrance buoys for Bahía de Guayanilla and Bahía de Tallaboa. Pilots can be contacted on VHF-FM channels 11 and 16. At least 2 hours' advance notice of arrival should be given.

(603)

Towage

(604) Tugs up to 4,000 hp are available for Bahía de Guayanilla and Bahía de Tallaboa. The tugs monitor VHF-FM channel 16.

(605)

Quarantine, customs, immigration and agricultural quarantine

(606) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(607) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(608)

Harbor regulations

(609) Local regulations are enforced by a Commonwealth Captain of the Port whose office is at Playa de Guayanilla.

(610)

Wharves

(611) An offshore pier extends southwest from the south end of Punta Guayanilla to deep water near the entrance channel. There is a main ship berth at the outer end and, from there, pipelines extend north and south. The total berthing area is about 1,300 feet. The pier is used for shipment of liquid natual gas.

(612) **Pierless Oil Wharf**, on the west side of Punta Guayanilla at Punta Gotay, is 100 feet long with dolphins and had a reported depth of about 38 feet alongside.

(613) Two piers at the end of a causeway, 0.4 mile southwest of Punta Pepillo, provide about 2,700 feet of berthing space. Depths alongside are reported to be about 36 feet. The ends of the piers are marked by private lights. There are pipelines on the piers for water and petroleum products. A 250-foot work-barge wharf with dolphins 0.1 mile east of the north pier has a reported depth of about 16 feet alongside.

(614) **Pierless distributing plant wharf** off Punta Pepillo is about 820 feet long with dolphins. Depths of 30 feet were reported alongside. Private lights mark the wharf.

(615) **The Demaco Company** has a 1,100-foot pier in the north part of the bay. The privately dredged approach channel leading to the pier is marked by private lighted buoys and a private **014°** lighted range. In 2012, a reported controlling depth of 30 feet was reported in the approach channel, thence depths of 39 feet were reported alongside the pier. A 200-foot-long tug pier is about 0.1 mile east of the pier.

(616)

Supplies

(617) Bunker C, light diesel oil, other petroleum products and at times marine diesel oil are available at the two piers at the end of the causeway, 0.4 mile southwest of Punta Pepillo; 3 days advance notice is required to obtain the marine diesel oil. Any bunker or diesel can be delivered by truck at South PR Towing. Groceries and marine supplies can be obtained from Ponce, 12 miles by highway from Bahía de Guayanilla.

(618)

Repairs

(619) No repair facilities are available. Above-the-waterline and minor electrical and small engine repairs can be made in Ponce.

(620)

Bahía de Guánica

(621) **Bahía de Guánica**, 16 miles east of Cabo Rojo Light, is small but one of the best hurricane harbors in Puerto Rico. The bay is protected by the steep, high and wooded shores on the east and west sides. Large vessels call to load fertilizer at **Guánica**.

(622)

Prominent features

(623) An abandoned lighthouse tower on Punta Meseta is prominent in the daytime. Power transmission towers located on either side of the channel and a 39-foot water tower northwest of **Punta Meseta** are visible from seaward. Once inside the harbor, the most prominent objects are two stacks at the former sugar mill, a cupola at a large house near the former sugar mill and a fixed crane at the fertilizer wharf 0.5 mile north of Punta Meseta.

(624)

Channels

(625) The approach to Bahía de Guánica is about 1 mile southeast of **Punta Brea** (17°56.0'N., 66°55.2'W.), thence through a channel leading north to a turning basin. The channel continues from the turning basin northwest to the town of **Ensenada**. The entrance channel is marked by lighted bouys and a **354.9°** lighted range; buoys mark the turning basin.

(626) An overhead power cable with a clearance of 150 feet crosses the channel about 0.4 mile inside the entrance.

(627)

Anchorages

(628) Vessels may anchor any place in the bay according to draft. The bottom is soft and holding ground is good, except in the entrance. Small fishing boats anchor off Playa de Guánica.

(629)

Dangers

(630) **Cayos de Cana Gorda**, 2 miles east of the entrance to Bahía de Guánica, extend 0.8 mile southwest from **Punta Ballena**. They are low and covered with mangrove and do not show well from seaward. Reefs partly bare at low water surround them to a distance of 0.3 mile.

(631) **Arrecife Coral**, a mile east of the entrance, is an extensive coral reef partly bare at low water. The west end of the reef is nearly a mile southeast from Punta Meseta. Foul ground is between it, the north shore and Cayos de Cana Gorda.

(632) **Corona La Laja**, 0.9 mile south of Punta Meseta, is about 0.2 mile in diameter with 8 to 17 feet over it; the sea seldom breaks on the shoal. A ridge with depths of 22 to 24 feet extends over 0.3 mile west of the shoal almost to the buoyed channel.

(633) Between the west side of the entrance channel and Punta Brea are several detached spots from 20 to 30 feet; the chart is the best guide.

(634) **Ensenada las Pardas**, an open bay north of Punta Brea, is fringed with reefs, mostly bare at low water on which the sea breaks; the reefs make out as much as 0.4 mile from the shore.

(635)

Routes

(636) From a position 2.5 miles south of Punta Meseta, pass Entrance Lighted Buoy 2, thence steer to pass midway between Buoy 3 and Lighted Buoy 4, thence pass Buoy 5 and steady on the **354.9°** lighted entrance range into the harbor. Care should be taken to avoid 20-foot shoals west of Buoy 3 and east of Lighted Buoy 4.

(637)

Pilotage, Bahía de Guánica

(638) See Pilotage, Puerto Rico (indexed as such) early this chapter. Pilots from Bahía de Guayanilla serve Bahía de Guánica. Vessels are usually boarded 1.2 miles south of the entrance Lighted Buoy 2. Pilots may be contacted on 2182 and 2738 kHz. Several hours' notice must be given to allow the pilot to come from Guayanilla.

(639)

Towage

(640) Tugs from Bahía de Guayanilla are available if necessary.

(641)

Quarantine, customs, immigration and agricultural quarantine

(642) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(643) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(644) Guánica is a **customs port of entry**.

(645)

Harbor regulations

(646) Local regulations are enforced by a Commonwealth Captain of the Port whose office is near Playa de Guánica.

(647)

Wharves

(648) A 440-foot fertilizer bulkhead wharf with a conveyor, 0.5 mile north of Punta Meseta, has 28 feet reported alongside. A chemical pier with dolphins, 0.7 mile north of Punta Meseta, has 24 feet reported alongside; a conveyor system and pipelines are available.

(649)

Punta Jorobado to Bajo Casabe

(650) The 13.5-mile stretch of coast between Punta Jorobado and Cabo Rojo includes numerous cays, islets and reefs, some of which extend as much as 4 miles offshore. The area is important as a commercial fishing ground; many small fishing boats base in the coves and fishing villages.

(651) A range of high hills shows up inland for virtually the whole distance. The highest points are **Cerro Vertero**, 4.4 miles northwest of Punta Jorobado, and **Cerro Mariquita**, 6 miles northeast of Cabo Rojo.

(652) **Punta Jorobado**, 2 miles west of Punta Brea, is a small projecting point with a hummock 92 feet high. **Arrecife Baúl** is a reef lying 0.7 mile southeast of the point. **Turrumoto II**, a mile west of Punta Jorobado, is a sandy islet 300 yards wide surrounded by reefs. **Bahía Montalva**, the bay about 2.8 miles northwest of Punta Jorobado, offers some protection behind **Arrecife Romero** and **Arrecife Enmedio** for craft drawing up to 12 feet, but care is required in entering. **Turrumote I**, an islet 3.6 miles west of Punta Jorobado, is small and sandy, with shoals of 9 to 21 feet deep extending southeast and southwest.

(653) At **La Parguera**, 8.5 miles east of Cabo Rojo Light, there is a somewhat protected harbor for small boats. Depths of 6 to 10 feet can be taken to the landing. Berths, electricity, gasoline and some groceries are available. A small marine railway can handle craft up to 60 feet for hull repairs only.

(654) **Arrecife Margarita**, 9 miles west of Punta Jorobado, is 1.5 miles south of **Punta Tocón**, and its west end is about 2 miles southeast of Cabo Rojo. Rocks awash and depths up to 28 feet are on this reef, which extends nearly 4.5 miles in an east-west direction.

(655) **Cabo Rojo**, the southwest point of Puerto Rico, is a low neck 1.5 miles long, at the south end of which are two hills with yellow bluff faces; the east hill is 118 feet high, and the west hill is 75 feet high. **Cabo Rojo Light** (17°56'01"N., 67°11'32"W.), 121 feet above the water, is shown from a gray hexagonal tower attached to a flat-roofed dwelling on the southeast point of the cape.

(656) The **west coast** of Puerto Rico extends 26 miles north from Cabo Rojo to Punta Higuero and then 11 miles northeast to Punta Borinquen. The coast is irregular with projecting wooded points between shallow bays. Places for small boat landings can be found in ordinary weather, but landing is dangerous in rough weather. In the south part the land is low near the shore with prominent high hills in the interior. Between Cabo Rojo and Bahía de Mayaguez reefs with depths of 30 feet or less extend up to 13 miles offshore; lighted buoys mark the extension of the shoal area. North of Bahía de Mayaguez the dangers are within 1 to 2 miles of the shore. Small vessels with local knowledge use an 18-foot buoyed passage 1 to 2 miles offshore between Cabo Rojo and Bahía de Mayaguez.

(657) **Punta Águila**, 1.7 miles northwest of Cabo Rojo Light, consists of 2 small bluff heads with lower land behind them. A shoal with depths of 12 to 16 feet extends 1 mile west from the point. Water and gasoline are available at a fishing village a mile north of the point.

(658) **Bajo Casabe** is a shoal that makes off between Punta Aguila and Punta Melones. The 18-foot curve is about 0.4 mile from shore at Punta Melones. Depths of 24 to 42 feet are near the west edge, which is fairly steep-to. A shoal with 22 to 28 feet extends west from the south part of Bajo Casabe, its west end lying about 2.7 miles west-northwest from Punta Águila.

(659)
Bahia de Boqueron

(660) **Bahía de Boqueron**, 6 miles north of Cabo Rojo, is a good harbor for vessels passing through Canal Guanajibo. It is easily entered but is rarely used, except by small local boats. The better hurricane anchorage is at Guánica. The bay is 2.6 miles wide at the entrance between Punta Melones and Punta Guaniquilla and extends 2 miles to its head where it is a mile wide. There are two entrances, north and south of **Bajo Enmedio**, the latter a rocky area with depths of 4 to 17 feet that lies across the middle of the bay. A lighted buoy marks its south edge.

(661) **Punta Melones**, the south point, is a bluff at the water's edge, backed by a 230-foot hill. Punta Guaniquilla, the north point, is sharply projecting and prominent.

(662) For 0.6 mile inside Bajo Enmedio the depths are 21 to 35 feet. A ridge with depths of 20 to 23 feet extends in a north and south direction near the middle of the bay between Bajos Roman and Ramito. The depths east of the ridge decrease gradually from 26 to 12 feet.

(663) **Canal Norte** is the channel leading into the bay between Punta Guaniquilla and the north end of Bajo Enmedio. It has a least width of about 350 yards, with depths of 21 to 28 feet. Owing to its nearness to the shore, this channel is easily followed and is the better one for strangers. **Canal Sur**, the south channel, leads between Bajos Enmedio and Palo. It is 350 yards wide between the 30-foot curves, with depths of 34 to 39 feet in the middle.

(664) Anchorage can be had with soft bottom anywhere in Bahía de Boqueron, except on the shoals where the bottom is hard.

(665) **Bajo Palo** is a shoal that extends nearly 0.7 mile north from the south shore of the bay, between 0.4 and 0.8 mile northeast of Punta Melones. A depth of 5 feet is 0.3 mile from shore, and north of this the water deepens gradually from 8 to 13 feet at its north end. The west side of the shoal is steep-to.

(666) **Bajo Ramito** is a small shoal with a depth of 7 feet and 20 to 24 feet close-to, 0.5 mile from the south side of the bay, and 1.7 miles northeast from Punta Melones. **Roca Velasquez**, a rock that should be avoided by all vessels, lies nearly 0.2 mile west from the village of Boqueron. Several submerged rocks are scattered throughout a 0.5-mile radius west and southwest of the village. **Bajo Roman** is a small patch on which the least depth is 11 feet, with a surrounding depth of 27 feet. It lies about 0.4 mile from the north shore and 1 mile southeast from Punta Guaniquilla.

(667) **Boqueron**, a small fishing settlement on the north side at the head of the bay, is principally a bathing resort for Mayaguez. A private boating club has depths of 3 to 5 feet alongside. Berths, electricity, gasoline, diesel fuel, water, ice, a launching ramp and some marine supplies are available.

(668)
Canal de Guanajibo to Cayo Fanduca

(669) **Canal de Guanajibo**, a buoyed passage inside the reefs between Punta Aguilla and Bahía de Mayaguez, has a least depth of 18 feet at its north end on the ridge extending northeast from Escollo Negro. The least depth at the south end of the channel is 23 to 24 feet on a bank making west from Bajo Casabe. The current velocity is about 1 knot and sets north and south in the channel.

(670) **Bajos Resuello**, the shoals off the entrance to Bahía de Boqueron, consist of three shoals separated by channels having depths of 36 to 49 feet; the south extremity of the shoals is west from Punta Melones and is marked by a buoy.

(671) **Bajo Corona Larga** consists of two shoals with depth of 24 to 66 feet between them. The northwest shoal, 1.3 miles long, is 4.5 miles west from Punta Guaniquilla; it has a least depth of 12 feet at its north end. The southeast shoal is 1 mile long and has depths on the coral heads of 16 to 18 feet.

(672) **Punta Carenero**, the north point at the entrance to Puerto Real, is low with many coconut trees, and at the water is a fringe of mangrove. **Punta La Mela**, the south point of Puerto Real, is low and covered with coconut trees that extend south to **Punta Boca Prieta**. A good anchorage in 36 feet is 0.5 mile west of Punta La Mela.

(673) **Cerro Buena Vista**, an 850-foot hill 3.4 miles east of Puerto Real, is a prominent and useful landmark for many miles, especially from west. From that direction it shows a knob at the summit, with a steep convex slope on its north side.

(674) **Puerto Real**, 8 miles north of Cabo Rojo, is a circular basin 0.7 mile in diameter used by local fishing vessels and small pleasure craft. Depths in the basin are 6 to 15 feet with shoal water toward the east end. **Puerto Real**, a small fishing community, is on the north shore of the basin. Water, gasoline and some groceries are available. A small marine railway can haul out craft for minor repairs.

(675) **Escollo Media Luna**, a rocky patch with a least depth of 25 feet, is 12 miles northwest of Cabo Rojo and 6.5 miles offshore. **Las Coronas** consists of a shoal of numerous heads with depths of 9 to 14 feet, the south end of which is 3.2 miles northwest of Punta Guaniquilla. The shoal extends 1 mile north and 2.5 miles east-northeast toward Punta Ostiones and, together with the shoals extending off that point, forms a ridge across Canal de Guanajibo. The depths are 9 to 15 feet on the shoalest section of this ridge 3 miles west-southwest from Punta Ostiones, and depths of 13 to 17 feet are along the center portion of the ridge.

(676) **Escollo Negro** is the north shoal on the west side of Canal de Guanajibo. It is about 2.2 miles long in a northeast direction and about 1.3 miles wide. Depths are 7 to 12 feet. A buoy marks an 18-foot passage across the ridge into Canal de Guanajibo.

(677) **Arrecife Tourmaline** extends 5 miles west from Escollo Negro, with a width of 2.7 miles, its northwest end lying 9.2 miles west from Punta Guanajibo. On the west and south parts of the reef are depths of 30 to 42 feet, decreasing to 18 and 24 feet on its northeast part. A 30-foot spot off the northwest end of the reef is marked by a lighted buoy.

(678) **Punta Ostiones**, 9.5 miles north of Cabo Rojo and 1.3 miles north of the entrance to Puerto Real, is projecting and prominent, especially as seen from south. **Cayo Fanduca**, 0.8 mile southwest from Punta Ostiones and about 0.5 mile from shore, consists of a few bare rocks. A narrow channel between it and the shore has a depth of about 3 feet, but it should not be attempted by strangers.

(679)

Bahia de Mayaguez

(680) **Bahía de Mayaguez**, about halfway along the 34-mile stretch of the west coast between Cabo Rojo and Punta Borinquen, is one of the three leading ports of Puerto Rico. The open roadstead is easy to enter day or night and is a good harbor in all but hurricane weather. The shipping terminal is in the north part of the 3.8-mile-wide bay which is protected somewhat by the shoals that extend across the entrance. Depths of 30 to 60 feet are in the north part of the bay, but the south part is shoal.

(681) **Mayaguez**, the largest city on the west coast of Puerto Rico, is a mile south of the terminal and 101 miles by highway from San Juan. The principal imports include foodstuffs, building materials, machinery, fertilizers, textiles and some petroleum products. Exports include clothing, fruit, vegetables and tuna fish.

(682)

Prominent features

(683) **Punta Guanajibo**, 14 miles north of Cabo Rojo Light, is a 165-foot flat-topped ridge on the south side of Bahía de Mayaguez. A reform school on the point shows well from south.

(684) **Cerro Anterior**, a 433-foot saddle-shaped hill 1.5 miles inshore at Mayaguez, is conspicuous, and **Pico Montuoso**, a dome-shaped peak 9 miles eastward of the bay, is readily identified from west.

(685) The city hall clock tower and a church are conspicuous above the other buildings at Mayaguez. Several red and white radio towers are visible along the south shore of the bay. A tall blue water tank is prominent behind the radio towers.

(686) Storage tanks and two closely positioned stacks are visible.

(687) A group of storage tanks and a tall boom on a conveyor pier are prominent about 750 yards southeast of **Punta Algarrobo**.

(688)

Channels

(689) The principal entrance channel is between the lighted buoys marking Manchas Grandes and Manchas Interiores. Federal project depths in the Approach and Terminal Channels are 30 feet. (See Notice to Mariners and latest editions of charts for controlling depths.) The approach to the terminal is marked by a lighted **092°** range, and the approach to the anchorage is marked by a daybeacon 0.2 mile south of Punta Algarrobito.

(690) A secondary channel with depths of 18 feet or more leads into the bay from north inside of Manchas Exteriores and Manchas Interiores and west of Arrecife Algarrobo.

(691)

Anchorages

(692) The usual anchorage is southwest of the shipping terminal in depths of 30 to 50 feet; the holding ground is good. The nearest hurricane anchorage is on the south coast of Bahía de Guánica, a distance of 60 miles.

(693) Small fishing boats anchor in depths of 3 to 12 feet along the shore south of the shipping terminal. Pleasure craft anchor in depths of 7 to 12 feet along the shore 1.2 miles south of the terminal. Some small boats use Puerto Real, 10 miles south of Bahía de Mayaguez, as a hurricane anchorage.

(694)

Dangers

(695) **Escollo Rodriguez**, a bank with depths of 3 to 18 feet extending north for 2.5 miles from Punta Guanajibo, has a reef at the west end that is awash and always breaks. **Roca Blanca**, 0.7 mile northeast of the reef, has 9 feet over it with deep water close-to.

(696) **Manchas Grandes**, on the south side of the principal entrance, has depths of 10 to 20 feet and extends south to Escollo Rodriguez.

(697) **Manchas Interiores** and **Manchas Exteriores** with depths of 12 to 18 feet extend in a northwest direction for 2 miles on the north side of the principal entrance. The west side of the shoals are steep-to, but broken ground on the east side extends to within a mile of the shore; some spots have depths of 18 feet.

(698) **Arrecife Algarrobo**, a mile northwest of the terminal, has a few heads that bare at low water; the sea frequently breaks on the reef.

(699) **Bajo Mondongo**, 500 yards southwest of the terminal, is a small shoal partly awash. A sunken wharf is off **Punta Algarrobito**, 0.4 mile south of the terminal.

(700) When winds are out of the west or southwest, a surge is felt in the harbor causing vessels to pound against the terminal wharf. Smaller vessels are forced to anchor off under such conditions.

(701)

Currents

(702) The current velocity is about 1 knot and sets north and south across the entrance to Bahía de Mayaguez.

(703)

Weather

(704) The tropical climate of Bahía de Mayaguez features average rainfall of more than 78 inches annually, a small diurnal and annual temperature range and a sea breeze

that opposes the trade winds. About 8 to 11 inches of rain falls on 11 to 14 days each month from May through October. Thunder is heard on 12 to 15 days each month during this period. Maximum temperatures range from the mid-80s (°F) in winter to around 90°F in summer and climb to 90°F or above on 10 to 19 days each month from April through October. Winds mainly blow out of the east-northeast, and sea breezes are not common. Visibilities are good, except in showers.

(705)

Routes

(706) From south: When abeam of Arrecife Tourmaline Lighted Buoy 8, steer **060°** for about 7.5 miles, then head in on the lighted entrance range bearing **092°**. Note that this range leads to the north edge of the Approach Channel. If proceeding to the shipping terminal leave the range when abeam of Lighted Buoy 5 and steer **096°** to line up with the Terminal Channel. If proceeding to anchorage leave the range just after passing between the buoys marking Manchas Interiores and Manchas Grandes and head for the daybeacon 0.2 mile south of Punta Algarrobito, then anchor according to draft.

(707) From north: When Punta Higuero Light bears 120°, distant 2.3 miles, steer **153°** for about 10.7 miles and enter on the lighted range.

(708)

Pilotage, Bahía de Mayaguez

(709) See Pilotage, Puerto Rico (indexed as such) early this chapter. Vessels are boarded 1.1 miles west of the entrance Lighted Buoy 3.

(710)

Quarantine, customs, immigration and agricultural quarantine

(711) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(712) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(713) Mayaguez is a **customs port of entry**. The deputy collector of customs and his inspectors act as immigration officers.

(714) **Agricultural quarantine** officials are stationed in Mayaguez. (See Appendix A for address.)

(715)

Harbor regulations

(716) A Commonwealth Captain of the Port with an office on the Ports Authority shipping terminal wharf enforces the local rules and regulations for Bahía de Mayaguez.

(717)

Wharves

(718) The **Ports Authority Terminal**, in the north part of the bay, is under the control of the City Government and Private Administration.

(719) The 1,280-foot bulkhead wharf (18°13'12"N., 67°09'39"W.) has a reported depth of about 28 feet alongside. Covered transit sheds, pipelines for water, fuel oil, molasses and conveyors are available. General cargo is received.

(720) About 750 feet northwest of the terminal wharf, a bulkhead wharf extends about 1,300 feet.

(721) The easternmost wharf is about 525 feet long with 20 feet alongside; covered storage, pipelines for water and diesel fuel are available.

(722) Immediately northwest of the easternmost wharf, 595 feet long with about 30 feet alongside; fresh water is available.

(723) Immediately northwest of the middle wharf, 200 feet long with about 30 feet alongside; fresh water is available.

(724) The **Pecuarias de Puerto Rico conveyor pier** (18°13'27"N., 67°10'10"W.) is a 31-foot pier with dolphins with depths of 25 feet reported alongside. A conveyor system is used to receive bulk grains.

(725)

Supplies

(726) Most supplies are available at Mayaguez. If necessary, supplies can be brought in from San Juan by truck in a few hours. Water and diesel oil are available at the terminal; gasoline can be trucked in.

(727)

Repairs

(728) Machine shops in Mayaguez can make above-the-waterline repairs to vessels.

(729) **Bahía de Anasco**, 4.5 miles northwest of Bahía de Mayaguez, is somewhat foul in the north part for about a mile from shore. There are shoals with 16 to 17 feet over them inside the 10-fathom curve. A tall stack, 1.8 miles inland, is prominent, and the entrances to the several rivers that empty into the bay show as breaks in the coconut groves.

(730) **Punta Cadena**, together with the **Cerros de San Francisco** extending east, is quite prominent. The dome-shaped hills slope upward to **Pico Atalaya**, 3 miles inland. From the point to Punta Higuero many rocks and coral reefs extend up to 0.6 mile offshore, then the bottom increases rapidly to great depths, making soundings of little use to indicate danger or distance from shore.

(731) Canal de la Mona and the west coast of Puerto Rico north of Punta Higuero has been described previously in this chapter.

(732)

Navassa Island

(733) **Navassa Island** (18°24'N., 75°01'W.), a United States possession claimed in 1857, formally annexed by presidential proclamation in January 1916, and under the jurisdiction of the U.S. Fish and Wildlife Service, is about 527 miles southeast of Key West and about 30 miles west of Hispaniola. The island is about 1.9 miles long and 1.1 miles wide. The shoreline consists of steep, jagged, undercut rock formations that rise as much as 50 feet from the sea. The interior comprises about 1.8 square miles of terrain sloping steeply upward to a lofty, undulating

tableland with scattered trees and cactus. The island is uninhabited except for a few wild goats. There is no water on the island, and the terrain is extremely rugged. The island is reported visible on radar at 22 miles.

(734) **Lulu Bay**, a small indentation on the southwest side, fronts the ruins of a former phosphate mining operation. Small craft can anchor here, but caution should be exercised due to the close proximity of the undercut rock and the frequent surge that has been observed to be as much as 7 to 10 feet. In 2006, significant tide rips were reported on the northwest and southeast points of the island. The rips were most prominent prior to sunrise and after sunset. Vessels can anchor about 0.4 mile west-southwest of Lulu Bay with the light bearing about 080°; sand and coral bottom.

(735) Requests to visit Navassa Island should be made to the Commander, Seventh Coast Guard District, Miami, FL. (See Appendix A for address.)

(736) Navassa Island is also described in Pub. No. 147, Sailing Directions (Enroute), Caribbean Sea, published by the National Geospatial-Intelligence Agency.