

SHORE AND SEA BOUNDARIES

Volume Two



FERDINAND RUDOLPH HASSLER
The First Superintendent of the "Survey of the Coast."

SHORE AND SEA BOUNDARIES

WITH SPECIAL REFERENCE
TO THE INTERPRETATION AND USE
OF COAST AND GEODETIC SURVEY DATA

BY

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In Two Volumes



Publication 10-1

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*
COAST AND GEODETIC SURVEY
H. Arnold Karo, *Director*

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1964

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C., 20402 • Price \$5.25

Volume Two

INTERPRETATION AND USE
OF
COAST AND GEODETIC SURVEY DATA

About the Author

AARON L. SHALOWITZ devoted a lifetime as a prelude to the preparation of this two-volume treatise on *Shore and Sea Boundaries*. His early training in engineering, his later training in the law, and his long affiliation with the Coast and Geodetic Survey have prepared him admirably for the writing of this publication. He graduated from the Baltimore Polytechnic Institute in 1911, and in 1916 entered the service of the Coast Survey—first, as a commissioned officer in the field, engaged on geodetic, topographic, and hydrographic surveys in the United States, Alaska, and the Virgin Islands; later, as a cartographic engineer in the Washington Office; and finally, as a special assistant to the Director.

Mr. Shalowitz's interest in legal-technical matters began many years ago when he was called upon to interpret original Bureau surveys and nautical charts in the light of court decisions. Recognizing the close relationship that exists between Coast Survey technical data and riparian boundaries, he began the study of law at night while continuing his regular duties in the Bureau. He received his LL.B. degree (with first honors) from Georgetown University and his LL.M. degree from George Washington University, and is a member of the bar in the District of Columbia and in Maryland. He was technical adviser to the Department of Justice on the boundary aspects of the far-reaching California "tidelands" decision, and was the Government's principal witness on the interpretation of Bureau surveys and charts before a Special Master of the Supreme Court.

He is the author of many technical and legal-technical papers on shore and sea boundaries and related subjects that have been published by the Bureau and in scientific and legal journals. He collaborated in writing the 1942 edition of the Hydrographic Manual of the Coast Survey, and was editor-in-chief of the journal "Surveying and Mapping" and the "Journal of the Coast and Geodetic Survey."

Mr. Shalowitz has served the Bureau with distinction in many capacities for nearly five decades and has furnished guidance and direction to the engineering and legal professions in the highly specialized area of waterfront boundaries, in particular those determined by tidal definition. In 1952, the Department of Commerce awarded him its Gold Medal and Citation for "outstanding contributions to science and technology in the fields of hydrographic and cartographic engineering." Because of his unique training and background, Mr. Shalowitz, at the urging of officials in the Coast Survey, undertook the preparation of *Shore and Sea Boundaries*. Not only is this a monumental achievement, which will stand as a basic reference for years to come, but it is the culmination of a lifetime of dedicated and efficient service to the public.



H. ARNOLD KARO
Rear Admiral, USC&GS
Director

Preface

One of the purposes of the publication *Shore and Sea Boundaries* is to meet a long-felt need, both within and without the Bureau, for a treatise on the technical aspects, interpretation, and use of the surveys and charts of the Coast and Geodetic Survey, with special emphasis on those features that may have legal significance. To this end, the publication is oriented to reflect the many inquiries that the Bureau has had to deal with in the past, and to furnish the technical and legal background for an understanding of the problems that may arise in the future.

In its inception, the primary function of the Coast and Geodetic Survey was to survey the coastal regions of the United States and to publish nautical charts for the safety and promotion of waterborne commerce. Because of the precise methods used and the carefully accumulated observational data, it soon became apparent that the Bureau could serve many collateral interests other than those strictly maritime. This has manifested itself over the years in advice and services rendered, and in the utilization of Bureau records and expert testimony in important waterfront litigations.

Volume One reflected the high point of Bureau participation in this area of collateral interest by recording its long association with the technical and legal-technical problems which the Submerged Lands Cases (sometimes referred to as the "tidelands" cases) and the Submerged Lands Acts posed. The pertinent surveys, charts, and technical data were considered and interpreted in relation to a specific problem—the delimitation of sea boundaries along the California and Gulf coasts. Volume Two extends this area of application to waterfront boundaries in general. Many types of information are shown on the surveys and charts of the Bureau, the significance and import of which are not always apparent. This is true in particular of the early surveys and charts. The present volume aims to provide such basic reference. Interpretation is approached through the early manuscript instructions and the published manuals for field and office work—copies of which are no longer available—so that further reference to these sources should be unnecessary. Photogrammetric and echosounding surveys are not considered in detail because they represent modern developments in topographic and hydrographic surveying and the procedures and techniques for their prosecution are adequately covered in available manuals.

Volume Two is divided into three Parts. Part 1 is introductory in nature and deals with the origin and history of the Coast Survey, its growth and expansion, and its present orientation in the areas of scientific research and oceanography. Also included in Part 1 is a discussion of the types of technical data available in the Bureau for use in establishing shore and sea boundaries. Part 2 deals with the early surveys and charts—their interpretation and use. Significant features and practices are analyzed, particularly those that may have boundary significance. Part 3 treats of the application of Coast and Geodetic Survey data to engineering and legal problems. To provide the background for an understanding of these problems, chapters are included on the judicial structure in the United States and on the basis for land ownership.

The text is subdivided by a decimal system of numbering, and cross-referencing is by these numbers. Each Part is subdivided into not more than nine chapters, each of which is divided into not more than nine sections. Each section is subdivided into not more than nine subjects and each subject into not more than nine numbered headings. The first digit of a number identifies the chapter, the second digit the section, the third digit the subject, and the fourth digit the heading. For example, the number 6581, which identifies the heading “Extreme Low Water,” is the first heading under the eighth subject in the fifth section of Chapter 6, entitled “Interpretation and Use of Nautical Charts.” Further subdivisions of the headings are identified by letters “A,” “B,” etc. Cross-references within any one Part are given by number only, thus (*see* 658), but where the reference is to another Part of the volume, the number of the Part is also given, thus (*see* Part 3, 41).

The form of legal citations follows generally the rules formulated in the manual, *A Uniform System of Citation*, a joint publication of the law reviews of Columbia, Harvard, Pennsylvania, and Yale Universities. Wherever possible, citations are given to cases reported in the National Reporter System.

Shore and Sea Boundaries has been actively undertaken and carried to completion during the incumbency of Rear Admiral H. Arnold Karo as Director of the Bureau, although in concept it antedates this period by many years. The author feels greatly indebted to him for his intense interest in the progress of the work and for his patient and helpful review of the entire manuscript. The opportunity of this undertaking is traceable directly to Admiral Karo’s leadership in recognizing the urgent need for this basic reference work.

April 1964

Aaron L. Shalowitz

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