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HYDROGRAPHIC MANUAL

by

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U. S. Coast and Geodetic Survey



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PREFACE

The Hydrographic Manual has been prepared and is issued to provide a textbook in which modern methods of hydrographic surveying and equipment are described. In it are, stated the general requirements of the United States Coast and Geodetic Survey for the execution of hydrographic surveys. It is one of a series of manuals, covering the various survey operations of the Bureau.

This Manual describes in detail for the first time instruments and methods used in echo sounding and Radio Acoustic Ranging. Many of the methods and details contained herein are based on the reports of officers and employees of the Bureau, too numerous for individual mention, who by their zeal and ingenuity in devising or developing new methods and equipment have contributed largely to the progress of hydrographic surveying during recent years. This is particularly true of the Radio Acoustic Ranging method of locating the positions of soundings, which has been brought to its present state of efficiency by this Bureau through the untiring efforts of personnel interested in attaining greater accuracy and reliability.

The subject matter in this Manual has been identified by a decimal numbering system and all referencing is by these numbers. The reader should understand the significance of these numbers. There are 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 the heading. For example **7326**, Verification of the Projection, is the sixth heading under the second subject in the third section of chapter 7, entitled "The Smooth Sheet."

This edition of the Hydrographic Manual has been prepared under the direction of Captain Gilbert T. Rude, Chief of the Division of Coastal Surveys. Much valuable assistance and advice have been received from officers and personnel both in the field and Office. Several officers contributed to the actual compilation of the text, but special credit is due to Commander Henry B. Campbell who wrote section **91**, Coast Pilot, and to Lieutenant Commander John C. Mathisson and Mr. Thomas J. Hickley, associate electrical engineer, who wrote most of chapter 5, Echo Sounding, and chapter 6, Radio Acoustic Ranging, and to Mr. Aaron L. Shalowitz, principal cartographic engineer, Division of Charts, for his collaboration in writing chapter 7, The Smooth Sheet, and for his assistance in reviewing and editing the entire manuscript.

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