

5. SECTION V sets forth the information which it is necessary to include in the Sailing Directions either for the preparation of directions corresponding to new surveys, or for the correction of existing directions or those referring to existing charts. Rules are given for the drafting of Sailing Directions: General Description of the Coast; Detailed Description of the Coast; Descriptions of Seaports; Units of Measurement; Nomenclature; definitions of Geographical Terms to be used.

6. SECTION VI deals with the rules to be followed for correspondence and returns forwarded to the Hydrographic Department, namely, weekly and monthly general accounts of proceedings from officers in charge of surveys; reports on searches for shoals, etc.; reports to be made to Commanders-in-Chief; annual and periodical returns to be made to the Hydrographer (see pp. 93-94 of manual); various contingent accounts.

7. SECTION VII describes the programme for the training of Surveying Assistants; training and advancement to the different classes, 3rd class - 2nd class - 1st class, (pp. 98 to 100 of manual); mention is made of special courses in meteorology, the gyro-compass and echo sounding which are delivered periodically at some of the Naval establishments. This section also includes the drawing up of annual returns to be rendered stating the qualifications of each Surveying Officer below the grade of 1st class Assistant with a view to his advancement.

8. The selection and training of surveying recorders is described in SECTION VIII.

9. Miscellaneous questions are treated in SECTION IX such as Notices to Mariners concerning surveying operations, the promulgation of positions of floating beacons, co-operation between aircraft and surveying vessels, rewards to fishermen and others for information leading to the discovery of rocks, and the various signals to be used by surveying ships at anchor.

The book contains a large number of blank pages for inscribing personal notes and is completed by an alphabetical index.

From the above outline of the various paragraphs it will be seen that although not, properly speaking, a text-book of hydrography, this manual nevertheless provides the necessary foundation for developing the detailed results of surveys in a methodical form which is to be standardized among the various hydrographic surveyors; such a form renders it possible to group systematically, to check and to compare, operations carried out by different surveying parties.

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## ANALES HIDROGRAFICOS

Vol. I, 1932.

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Commander J. A. GÜIML, Director of the Hydrographic Office, outlines the object of this publication in a foreword in which he says:

"This volume initiates the publication of the *Anales Hidrográficos* of this Service.

"The principal aim of this first number is to make known the work carried out by this Institute and primarily to collate into a single volume everything which may be of use to the Officers who do hydrographic work, such as the description and handling of the appliances used, methods of work, calculations, etc.

"In succeeding volumes the subjects dealt with in this one will be amplified and completed and, also, notice will be given of work and research which have been carried out up to the dates of their publication.

"The Officers of the Navy may collaborate in the preparation of these *Anales* by publishing therein theses dealing with Hydrography in general. Such collaboration will be heartily welcomed by the special Section which is charged with this work".

Thus, as will be gathered from the second paragraph of this foreword, this first volume is intended primarily to be a general text-book on Hydrography for the use of Uruguayan Surveyors.

The book is divided into five parts and the first part contains a brief history of the Naval Hydrographic Service since its creation, a list of charts prepared up to 1932 and the Regulations governing the Service (see page 12). It continues with a general outline of the surveys which are to be made, including the methods to be employed and guiding rules for the operators, the construction of marks, triangulation and bases, both primary and secondary, traverses, topography, levelling, tide gauges, sounding, drawing up of plans, charts and sailing directions.

Part II gives detailed reports on certain hydrographic surveys carried out from 1925 to the end of 1932.

Part III is entitled "Methods of Observation, Measurement and Calculation" and is divided into two sections the first of which deals with the measurement of a base and the second with the triangulation. This part closes with a chapter on MERCATOR'S projection and the preparation and graduation of the sheets.

Part IV — "Geodetic Astronomy" — deals with the observations for and calculation of Latitude, Longitude and Azimuth. The last chapter contains a description of the KERN-AARAU Universal Theodolite.

The last part is devoted to oceanographic information relative to Maldonado Bay such as the physical and chemical conditions of the water and certain marine biological studies.

G. S. S.

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## RUSSIAN HYDROGRAPHIC EXPEDITION IN SIBERIA, 1933

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In the *Biulletin arkticheskovo Instituta SSSR* (Bulletin of the Arctic Institute U.S.S.R.), No. 1, Leningrad, 1934, is a summary account of the expedition of the Russian Hydrographic Administration to the northern coasts of the Union, under the general direction of V. I. VOROBIEV, hydrographer.

The whole expedition had at its disposal the following ships: *Circule* (465 tons), *Farvater* (271 tons), *Chronometer* (411 tons), *Stativ* (110 tons), *Shiroa* (195 tons) and *Shturman* (195 tons), besides the *Pioneer* (50 tons).

The *Circule* and the *Farvater* operated in the Kara Sea sector; ice conditions prevented work being begun until the month of August, when Dickson Island could be approached. The ships then visited Stone I., Sverdrup I., Vilkitzky I., White I., Neupokoyev I., Wardroper I., Minin Skerries, Zveroboy I. and the Plavnikovoy and Scott-Hansen Islands, as well as Two Bears Cape, Rastorguyev I. and Piassina Bay. The *Circule* and the *Farvater* completed their programme of work on 4th October.

The Yenissey detachment took systematic soundings of the Yenissey River northward of Igarka; 110 cross tacks were made and also a survey of the shores of the Yenissey from Igarka to Nikolsk, accompanied by buoyage work and pilotage duties.

The Ob detachment was engaged in buoyage work and the erection of marks. During the work in the Malyguin Strait the *Chronometer* ran aground and was seriously damaged. She was hauled off by S.S. *Circule* and towed to Novy Port. The *Stativ* worked in the region of Tazov Bay and made a survey of the shores of the Nadym Ob.

The chief results obtained by the work of the expedition are as follows:—

15 astronomical points have been determined (Sverdrup I., West Kamenny I., Rastorguyev I., Zveroboy I., Baranov I., Wardroper I., Scott-Hansen I., Minin Skerries, Cape Zveroboy, Ust-Piassinsk, the Novo-Morjovo winter camp, Two Bears Cape, Vilkitzky I., Neupokoyev I., Cape Kusnetzovsky (in the Yenissey Gulf). 1642 kilometres of shore have been surveyed, of which 618 km. are in the N.E. part of the Kara Sea and Piassina Bay, 135 km. in the Guidayama District, 74 km. in the Yenissey Gulf, 661 km. in the Yenissey River and 154 km. in the Ob River. Ship soundings have been obtained; total length of courses run, 2393 miles. 21 navigation marks have been erected, of which 12 are of the tower type. The bar of the Piassina River has been investigated, also the approaches to Cape Ragozin where a wireless station was established in 1933.