

4740

Diag. Cht. Nos. 902 & 904-2

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

....., Director

State: Porto Rico

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. " 4740
Hydrographic }

LOCALITY

So. Coast of Porto Rico

Manabo - Cape Mala Pascua to

Pt. Yeguas

1927

CHIEF OF PARTY

G. C. Mattison

5-25 3v

GOVERNMENT PRINTING OFFICE

4740

DEPARTMENT OF COMMERCE
U.S.COAST AND GEODETIC SURVEY
E. LESTER JONES, DIRECTOR.

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET #11

4740

PORT MANAUBO, P.R.

S.S. RANGER

G.C.MATTISON,
Chief of Party.

1927

DESCRIPTIVE REPORT
to accompany
HYDROGRAPHIC SHEET #11. 4740

Instructions dated July 3, 1926
Feb. 28, 1927.

LIMITS:

Between Lat. 17 57' N. and 18 01' N and between Long.
65 49' W and 65 56' W.

INTRODUCTION:

This sheet is one of a group of surveys of roadsteads in Porto Rico. Its purpose is to furnish information for the construction of a large scale chart. In general, only sufficient soundings were taken to supplement the original work in 1902. Indicated shoals were developed and approaches to anchorages and areas in which vessels moor were sounded out.

METHOD:

The phosphor bronze center hand lead line marked in fathoms and feet was used in this survey. Boats used were the wire drag launch MARINDIN and the thirty (30) foot wire drag tender M4. Soundings were fixed by the use of sextant angles, using triangulation and topographic stations and hydrographic stations whose positions had been determined by a topographic survey in January and February 1927, by a sub-party from the RANGER. These topographic stations are listed in the descriptive report of the topographic survey.

Hydrography was executed on this sheet by a sub-party from the Steamer RANGER. As no suitable quarters were available at Manaubo, the party lived at Guayama, going to and from working grounds in a truck assigned to the party. At the time the work on this sheet was begun the party was engaged in a hydrographic survey of Arroyo. As Manaubo was quite exposed, it was necessary to have favorable weather for the work. Accordingly at the first opportunity, the Arroyo survey was suspended and the launches proceeded to Manaubo. H.V. Rackliff, dragmaster, and C.P. Morrill, marine engineer (motor) stayed aboard the MARINDIN, which was anchored off Manaubo at night. In spite of all precautions to safeguard the boats, the 14 foot dinghy belonging to the MARINDIN parted a painter and went to pieces on the rocks.

Work was begun on May 23 and completed on May 27, 1927. Additional soundings were taken over a questionable sounding on June 7, when the party moved from Arroyo to Humaca.

TIDES:

A portable automatic gauge was installed on the Central Columbia's dock at Port Manaubo for the reduction of the soundings. A series from May 21 to June 7, 1927 was observed and compared to San Juan, P.R. Bench Mark #1, established by a party of R.L. Faris in 1902 was

was recovered but not connected to the present tide staff. Three additional Bench Marks were established in the vicinity of the Central Columbia's warehouse and dock. Their elevations above the zero of the tide staff erected in 1927 are as follows:

B.M. 2	24.710
B.M. 3	28.918
B.M. 4	23.570

The plane of reference used for the reduction of soundings was mean Tide Level minus 0.5 feet and corresponds to a reading of 2.1 feet on the staff.

GENERAL:

POINT YEGUAS, TORO POINT, POINT TUNA AND CAPE MALA PASCUA.

Four points of coastline form three small coves within the limits of this sheet. The two easternmost coves or indentations are of no importance, altho they give some protection from the North East. These two coves have no names. The third and westernmost, formed by Point Tuna and Cape Mala Pascua, is known as PORT MANAUBO and is important only as a loading point for sugar from CENTRAL COLUMBIA.

COLUMBIA SUGAR CENTRAL is located near the town of MANAUBO and is responsible for the extent that PORT MANAUBO is developed. A poorly surfaced road connects MANAUBO and the port. There is a warehouse, molasses tank and dock at Port Manaubo and nothing else except some small dwellings which house the men who work for the Central.

SARGENT REEF, about two miles long and about 1/3 mile wide at it's widest point, breaks the force of the southeast swell and so affords some protection from the southeast for boats anchored well in by POINT TUNA.

TWO FOOT ROCK is a bare portion on SARGENT REEF and is given as a landmark on the form "LANDMARKS FOR CHARTS", submitted under separate cover and with this report. This rock has the appearance of a small row boat or a black canbuoy from a distance and if not charted may be mistaken for such. It lies on the lee or north side of SARGENT SHOAL. It can well act as an aid to navigation for small shallow draft boats passing between the SHOAL and the mainland.

SHOALS:

With the exception of the 17 and 19 foot spots hereinafter described no new shoals were found. Development lines were run over shoals known to exist. As only a limited amount of time could be spent on this sheet, a thorough development could not be made. It was deemed, however, that their importance did not warrant any more work than was actually done. In general, the charted depths on the shoals were verified. Slightly less water than is charted was found on both ends of the ridge forming SARGENT SHOAL.

Nineteen feet of water was found in Lat. 17 59' -10 meters, Long. 65 54' - 515 meters, with deeper water inshore from the sounding. As this was only about 300 meters off shore, however, and out of steamer lanes, it was deemed too unimportant to spend further time on.

In sounding out the approaches to the anchorage as described in the Coast Pilot, a depth of 17 feet was found. This sounding was apparently not verified by the recorder, at the time it was taken. The indicated shoal was not immediately developed as it was necessary for the launch to return to Arroyo for fuel. As the survey was complete with the exception of this development, the Arroyo survey was resumed and it was planned to sound over the 17 foot spot when the launch moved from Arroyo to Humacao.

Accordingly, on June 7, when en-route to Humacao, a stop was made at Port Manaboa, and soundings taken over the shoal, It was a particularly rough day and one not well suited for development work. However, as quarters had been moved from Guayama it was necessary to complete the development, regardless of weather conditions. The boat sheet became soaking wet, and it was difficult to plot the launches course as well as run proposed lines. It was later found on replotting the work that the shoal had been well covered, but the existance of the 17 foot spot was neither definitely proven or disproven. A missed sounding, caused by the launch lurching, plots directly over the 17 foot spot, and a 26 foot sounding plots close by. Inasmuch as there are some 23 foot soundings just east of the 17 foot spot and no indication was found of less water, except for the one sounding, it is the opinion of this officer that the leadsman read the leadline one fathom short.

COAST PILOT AND ANCHORAGES:

Notes for the revision of the Coast Pilot are included in a separate report covering Porto Rico. In view of the uncertainty of the existance of the 17 foot spot described in the preceding paragraph and also on account of the 23 foot soundings found in the vicinity it is deemed advisable to change the third and fourth line from the bottom of page 23, Coast Pilot, to read:- "Point Tuna Lighthouse bearing 75° true (E x N. mag).

No ship's were anchored in Port Manaboa during the period hydrography was in progress but the following anchorage is described by the Captain of the S.S. "DELISLE", Baltimore-Insular Line, Inc. "Anchor in 35 feet, with Point Tuna Lighthouse bearing 47° true and Tall Stack at Columbia Sugar Central bearing 319° true". This anchorage plots well in by Point Tuna with about 28 feet of water instead of 35 feet. The approach with Point Tuna bearing 47° true leads thru good water.

LANDMARKS FOR CHARTS:

The form "LANDMARKS FOR CHARTS" is attached to this report. A copy is mailed under separate cover. Two objects "Stack, Columbia Sugar Central" and "Two Foot Rock on Sargent Shoal" are given

on this form. Their position on a large scale Roadstead chart are deemed of value to the mariner.

A sketch made by the master of the S.S. "DELISLE" showing this anchorage is submitted with the Descriptive Report of the survey of Arroyo Roadstead.

Photographs of ranges for anchorages are submitted in a separate report, "Photographs Showing Anchorage Ranges for Roadsteads in Porto Rico". These photographs were taken by Captain Briggs, master of the S.S. "EDITH", Baltimore-Insular Line.

ADDITIONAL DATA:

A sketch of the Sugar Central Dock at Port Manabo with soundings along outer face and sides is given on page 28, Volume 2 of the Sounding records.

Breakers and Two Foot Rock on Sargent Shoal were cut in from anchorages of the wire drag tender M4 and are given on pages 7,8 and 9 of volume 3, Sounding records.

The position of the Red Nun Buoy #2 west of Sargent Shoal is given on page 10, volume 3, Sounding Records.

Respectfully submitted

R. F. A. Studts
R. F. A. Studts,
Jr. H. & G. Engineer.

Forwarded
G. M. Matthea
Chg. S. S. Ranger.

STATISTICS
Hydro. Sheet #11

Date	Letter	Vol.	Positions.	Soundings	Miles Stat.	Boat
May 23 '27	A	1	46	210	6.1	Marindin
May 24	B	1	103	462	17.7	"
May 25	C	1	129	690	21.5	"
May 26	D	1	54	193	7.0	"
May 26	D	2	5	25	0.6	"
May 26	a	3	27	110	3.0	M4
May 27	E	2	100	444	14.0	Marindin
June 7	F	2	13	68	1.1	"
Total-----			477	2202	71.0	

Total area, 5.0 square stat, miles.

Tides

Automatic Gauge at Manaubo Playa

Plane of reference	M.T.L. -0.5 ft. =	2.1 ft. on staff
Lowest tide observed		2.0 ft. on staff
Highest tide observed		3.1 ft. on staff

Copy for Records Section files.

March 29, 1928.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide reducers are approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET 4740

Locality: PORTO RICO

Chief of Party: G. C. Mattison, 1927.

Plane of reference is M L W

2.2 ft. on tide staff at Manatee

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

H. H. H. H.
Acty Chief, Division of Tides and Currents.

Field Records Section

Report on H. 4740 - Surveyed in 1927

Chief of Party G. C. Mattison - Surveyed by P. F. A. Studde

Projected by A. C. Thorson - Soundings plotted by E. C. Baum

Verified and inked by J. Fleming.

- ① The records conform to the requirements of G. I. except that approximate position relative to some prominent point at beginning and ending of line was not always given
- ② The Plan and Character of the development fulfill the requirements of G. I.
- ③ Sounding line crossings are adequate
- ④ Depth Curves cannot be completely drawn
- ⑤ Field plotting was completed to the extent prescribed in G. I.
- ⑥ Twenty eight sounding values did not agree with corresponding values in the sounding record.
- 7 Five positions were incorrectly plotted
Position 11-D was plotted 140 meters out of true position
Position 6a was plotted up on Sargent Reef and 250 meters out of position
This is considered to be a serious error for, as plotted, 15 ft depths one (or more) shown where there are breakers
Sig. NUDE used in the record was not plotted on smooth sheet
No doubt sig. BAR given in the record for position 1-D is 'WARE'
Sig. MID on Topo is called 'PILE' on the smooth sheet thus giving two signals the same name which is contrary to instructions
None of the rocks or other dangers shown on Topo. 4322 were shown on the smooth sheet and this work was done in the office

A sunken rock is shown about 200 meters N.W. of the four rocks representing Sargent Reef on H. 2583. — This has been transferred to 4740 in pencil only to show relative position —

Red Nav #2 Buoy whose position is given on page 10 - Vol. 3 sounding records was plotted 50 meters out of true position. This was carefully replotted in the position given by the record.

Under remarks page 8 - Vol. 2 opposite 29-E the distance to the buoy is estimated at 250 Meters to the left. The distance to the buoy from sounding 40 FT scales 50 Meters and it is deduced that the estimated distance was 50 Meters but the placing of the figure '2' in the second line was an inadvertence following the writing of #2 in RN#2.

A check on the position of 2' Rock on Sargent Reef using the information given in Vol. 3 Sounding records shows that it plots about 10 Meters South of the position plotted in the field. However the rock was somewhat enlarged in order to stand out more prominently and this to some extent nullifies the error. The outside limits of Sargent Reef as represented by the breaker line in ink are believed to be inaccurate.

Using the information contained in Vol. 3 - Pages 7-8-9 Sounding records cuts were taken on the breakers and the results show that the breakers extend a greater distance in a South Westward direction.

Note that the intersection of cut Breaker #4 Anchorage #2 and Breaker #4 Anchorage #3 is directly on the old line of soundings between positions 5-a and 6-a which were incorrectly plotted.

'2' Rock' was accurately plotted on the smooth sheet and then transferred to Topo 4322.

Attention is called to the spelling of the word Maunabo. On the Topo sheet and descriptive report of same the spelling is 'MAUNABO' but the Hyd. sheet and descriptive report have the spelling 'MANAUBO'.

'Sargent Reef' and '2' Rock' are names not found in Descript Report and Topo sheet 4322.

The ship anchorage and cuts from anchorages of wire drag tender are plotted in pencil for review.

Corrections applied to Sargent Reef
as per letter from Lt. Stoddard dated Oct. 14-1928
Corrections made Oct. 19-1928

Respectfully Submitted
J. G. Fleming
Aug. 9-1928

Arms

10-McC

August 30, 1928.

Return to Hydrog. Div. for filing

To: Lieutenant (j.g.) R. F. A. Studds,
U. S. C. & G. S. Launch ELSIE,
% Postmaster,
Charleston, South Carolina.

From: The Director,
U. S. Coast and Geodetic Survey.

Subject: Location of dock at Port Maunabo, Porto Rico.

On the inclosed copy of a section of hydrographic sheet 4740, surveyed by you in 1927, there is an insert of a dock at Port Maunabo. A copy of the sketch in the sounding book is also inclosed.

You will note that there is no information on either the hydrographic sheet or on topographic sheet 4322 which shows the position or orientation of this dock. The outline of the insert on the scale of 1:20,000 does not correspond to the limits of insert. You are requested to indicate the position and orientation of the dock on the copy of T 4322.

The rock and breakers about 3/4 mile eastward of Point Tuna lighthouse are located by a number of cuts from three positions. At each position the breakers are numbered 1, 2, 3, etc. If the cuts to breaker No. 1, for example, are plotted, they intersect outside of the limits of breakers indicated on the sheet. It is possible that the cuts were numbered consecutively at each station, and cuts to breaker No. 1 are not necessarily cuts to the same breaker.

It is requested that you furnish a statement regarding this matter and any other information which will assist in a proper delineation of these breakers.

(Signed) R. L. Farr

Inclosure

Acting Director.

File with desc report H 4740

POST-OFFICE ADDRESS: Launch ELSIE, c/o Postmaster, Charleston, S.C.

TELEGRAPH ADDRESS: Launch ELSIE, Custom House Dock, Charleston, S.C.

EXPRESS OFFICE: ditto

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

October 14, 1928.

To: The Director,
U.S.Coast and Geodetic Survey,
Washington, D.C.

From: Lieut.(j.g.) R.F.A.Studds,
U.S.Coast and Geodetic Survey.

Subject: Location of dock at Port Maunabo, Porto Rico.

Reference: 10-McC, dated August 30, 1928.

Referring to the above letter in which a request was made to indicate the position and orientation of the dock on the photostat copy of Topographic Sheet T4322, it is believed the following will furnish sufficient information to draw the dock on the topographic sheet.

As I recall, Seaward Gable is the outer gable on a warehouse which is situated on the edge of a cliff and is connected to the dock by an inclined chute. The gable is directly in line with the center line of the chute and dock. Pile is a pile on the southeast corner of the outermost part of the dock. The sketch in the sounding record gives the width of the dock as 23 feet.

The topographer, Lieut.(j.g.) A.C.Thorson, can probably verify this information. The photostat copy of T 4322, with the dock indicated, using the above information, is herewith returned. *

Referring to paragraph 3 of your letter, concerning the location of breakers on Hydrographic Sheet 4740, as determined by sextant cuts from anchorages of the sounding launch, you are respectfully advised that an attempt was made to obtain cuts to the same breaker from the different anchorages and for this reason the breakers were numbered. Inasmuch as the entire area in question is broken water and as the water would not always break in the same place, it was difficult to identify the breakers and impossible to get good intersections. The delineation of

File with desc report H 4740

* The dock has been added to the topo. and hyd. sheets and the photostat destroyed.
S.P.C. Oct. 18, 1928

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

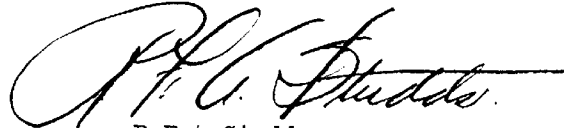
EXPRESS OFFICE:

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

-2-

the breakers should, therefore, be accomplished by using the outermost cuts to show limits and enclosing the whole within the area indicated by soundings on Hydrographic Sheets 2583 and 4740.

All photostat copies are herewith returned.



R.F.A. Studds,
Lieut.(i.g.),
USC&G Survey.

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

DEPARTMENT OF COMMERCE

AND REFER TO No. 11-DRM

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

October 29, 1928.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4740

Maunabo, Porto Rico

Surveyed in 1927

Instructions dated July 3, 1926 and February 28, 1927

Chief of Party, G. C. Mattison.

Surveyed by R. E. A. Studds.

Protracted by A. C. Thorson.

Soundings plotted by E. C. Baum.

Verified and inked by J. Fleming.

1. The records conform to the requirements of the General Instructions except for the frequent omission of description of beginnings and endings of sounding lines. The name "Pile" was given to two signals, which is objectionable.
2. The plan and character of development fulfill the requirements of the General Instructions and the character and extent of the survey satisfy the specific instructions.
3. The information is sufficient for drawing the usual depth curves.
4. The usual field plotting was done by the field party. It was generally good, although there were 5 errors in protracting and 28 in plotting of soundings.
5. The junctions with the previous survey are adequate.
6. The 17 1/2 foot sounding (at 98 E) west of Pt. Tuna was recorded between a 27 and a 28 foot sounding, without comment in the record. The spot was very completely developed subsequently, the least water found being 23 feet. As stated in the descriptive report it is probably in error 1 fathom and is therefore non-existent. However, until this fact is disproved by the drag it should be charted. *This sounding has been removed from the plot. A.L.S. (3-13-29). Recommended that 17 1/2 feet be charted until further evidence is obtained that it does not exist.*

This sounding
See letter
128-1929.
A.L.S.

F. D. Bodin

7. No additional surveying is required, except that the 17 1/2 foot spot noted in the preceding paragraph should be dragged. Also the 45 foot spot 1500 meters southeast of signal Roc should be dragged as it is insufficiently developed.
8. The outline of the breakers on Sargent Reef was laid down by using as tangents the various cuts to breakers. It is not intended to be considered as a reef line, and the hydrography in this area on H. 2583 should be charted.
9. The sunken rock 1150 meters east of Pt. Tuna Lighthouse and the sunken rock 300 meters east of signal Gros were transferred from H. 2583.
10. The character and scope of the surveying are excellent.
11. Reviewed by E. P. Ellis, October, 1928.

Approved:



Chief, Section of Field Records (Charts)



Chief, Section of Field Work (H. & T.)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4740

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 11

REGISTER NO. **4740**

State Porto Rico

General locality South Coast of Porto Rico

Locality Manabo - Cape Mala Pascua to Pt. Yeguas

Scale 1:20,000 Date of survey May ²³⁻ June 7, 1927

Vessel RANGER

Chief of Party G.C. Mattison

Surveyed by R.F.A. STUDDS

Protracted by A.C. Thorson

Soundings penciled by E.C. Baum

Soundings in ~~fathoms~~ feet

Plane of reference M.T.L. -0.5 ft.

Subdivision of wire dragged areas by

Inked by J. Fleming Aug 9th 1928

Verified by J.F.

Instructions dated July 3, 1926 Feb. 28, 1927

Remarks:

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4749

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet . . . 477.
Number of positions checked . . . 144.
Number of positions revised . . . 5.
Number of soundings recorded . . . 2,202.
Number of soundings revised . . . 28.
Number of signals erroneously *none*
plotted or transferred

Date: --- *Aug 9th* --- 1928 ---

Cartographer: --- *J. P. Lansing* ---