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Diag. Cht. No 903

4742

Form 504	
DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY	
....., Director	
State: Porto Rico.....	
DESCRIPTIVE REPORT	
Topographic Hydrographic	} Sheet No. ¹⁴ 4742
LOCALITY	
N. Coast of Porto Rico	
Pt Palmas Altas and Pt. Manati	
1927	
CHIEF OF PARTY	
G. C. Mattison	

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

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET #14 4742

PALMAS ALTAS,

P. R.

S.S. RANGER

G.C. MATTHEWSON,
Chief of Party

1927

DESCRIPTIVE REPORT
to accompany ¹⁴
HYDROGRAPHIC SHEET #~~16~~

Instructions dated July 3, 1928
Feb. 28, 1927.

LIMITS:

The sheet comprises the area between N. Lat. 18 29' and 18 31' and West Long. 66 51' and 66 36'. On the north coast of Porto Rico.

GENERAL DESCRIPTION OF COAST:

The coast in the vicinity of Palmas Altas is low and flat near the beach, with a line of low tree covered hills about three miles inland. In the vicinity of Barrio Palmas Altas the shore line is fringed with tall coconut trees, from which the barrio derives its name. The Points are rocky and have deep water in close. Triangulation station PALMAS marks the highest point on a small hill covered with scattered clumps of palms. From signal JIG to signal ROT and from signal FIG to signal END.

SURVEY METHODS:

Shore party for this survey was located at Palmas Altas. Party consisted of Launch MITCHELL and whale-boat. Benjamin H. Rigg, Lieutenant (jg) in charge and W.R. Porter, Aid - Launch Engineer Pitts, leadsmen Olive and Pearson; three seamen and a cook. Ford truck was furnished party for use in getting supplies and in signal building.

The following signals were used in the survey.

TRIANGULATION

PALMAS.

TOPOGRAPHIC

Last	Pit	Sky	Ben	Kiln	Cat	Tan	Box	Hot	Dok	See	Tin
Sow	Lug	Ram	Tree	How	Put	Tip	Jig	Co	Fig	Bug	Rot
			Can	Rat	Net	Lam	End				

Locations of these signals are listed in the topographic report of Palmas Altas.

When the survey was first started no portable tide gauge was available. A staff was established and hourly heights were taken by the spanish dock foreman the only man available. Some days are missing due to

Carelessness on his part. Observations were simply stopped and the party was not notified. As soon as the tide gauge arrived it was installed on a pole under the concrete dock where it would not be disturbed by the lighters loading sugar. Even with this precaution we were annoyed by curious natives bothering the gauge and staff,

Soundings were taken around the sides and ends of the dock and recorded in volume #1 sounding records for Palmas Altas.

Previous work done in this locality was transferred to the boat sheet from bromides furnished by the office. All red lines marked on the bromides were run by the sounding party and such additional lines as were necessary were added.

Sounding was begun with the whale-boat. Mr. Rigg in charge, W.R.Porter left angle and recording. Olive and Pearson alternating at sounding and coxswain and three seamen at the oars. Work was necessarily slow due to the prevailing wind in this locality during the summer months.

The following shoal spots were found.

A shoal spot with a least depth of 19 feet was found in Lat. 18 29' - 1276 meters, Long. 66 34' - 883 meters. BEN lies .7 mile away and bears 105.9° true.

A shoal spot with a least depth of 19 feet was found in Lat. 18 29' - 1282 meters, Long. 66 34' - 941 meters. BEN lies .72 miles away bears 103.8° true.

A shoal spot of 20 feet was found in Lat. 18 29' - 1372 meters, Long. 66 34' - 797 meters. BEN lies .7 miles away and bears 111° true.

A shoal with a least depth of 25 feet was found in Lat. 18 29' - 1555 meters, Long. 66 34' - 1432 meters. BEN lies 1.1 miles away and bears 108.9° true.

A ridge with a least depth of 17 feet running almost east and west, was found in Lat. 18 29' - 1187 meters, Long. 66 34' - 1108 meters. BEN lies .8 miles away and bears 99.2° true.

RANGE LINES RUN:

Ships anchoring to take sugar, use the spot shown on both the topographic and hydrographic sheets. The spot is located at the intersection of two ranges, both were run by the sounding party. I will call them No. 1 and No. 2. - No. 1 is a tall lone coconut tree on a hill east of Maniti River and the highest point of a dome shaped rock in the groupe of rocks called LA RUVIA on the shore 3/4 mile east of Palmas Altas; this is marked signal RAM on the hydrographic sheet

Range No.2 - the flagpole on the end of the concrete dock at Palmas Altas and the easterly of two tall palms near the beach. Palm is located 80 meters south of the large dwelling at the end of the concrete dock. These two palms are about 10 feet higher than the surrounding grove. Pictures of range No. 1 are included in the Coast Pilot notes of Palmas Altas.

This spot has 8 fathoms of water and allows room enough for a vessel to get up anchor and get out in case of a storm. Should a ship anchor further in and drag anchor the rocks Tres Hermanos are a grave danger.

CHARACTER OF BOTTOM:

There is fair holding bottom at the anchorage, bottom is composed of hard sand. A small boat anchorage in the bight at Palmas Altas and close to the dock has a mud bottom and carries seven feet over the rocks at the entrance. Entrance is gained by running between two iron pipes set in coral heads. Coral heads have three feet of water over them. Smalls make it dangerous for anyone not familiar with the entrance ~~to~~ attempt entrance in a boat of more than five (5) foot draft.

RIVERS:

^a
Maniti River was not surveyed due to danger of breakers near the mouth and lack of water for anchorage. Mouth on topographic sheet shows 202.3 meters width but this is mostly shallow water. A crooked channel carrying six (6) feet with a rock in center can be negotiated in calm weather by persons familiar with it, but as the stream is fed by the mountains and it is liable to freshets in times of heavy rains. It is used only by fishermen in pulling boats on calm days.

TIDES AND CURRENTS:

The mean range of tides at Palmas Altas is .8 feet. The results from the tide gauge at Palmas Altas was used in reducing the soundings.

Currents encountered were easterly and about 2 knots.

WINDS:

The prevailing winds in the summer season are east to North east. Springing up about 8 A.M. and blowing fresh until sundown. In the winter bad storms come from the north-west.

LEAD LINE AND PLANE OF REFERENCE:

Bronze center lead line was used on this survey. No lead line corrections were found.

Soundings were plotted on the sheet in feet; the plane of reference is mean tide level minus 0.5 feet. Tide gauge at Palmas Altas Sugar dock was used for tidal data.

Plane of reference reading on gauge 1.5 feet
Lowest tide observed " " " 0.9 feet
Highest tide observed " " " 2.2 feet.

Respectfully submitted

Benjamin H. Rigg
Benjamin H. Rigg,
Jr. H. & G. Engineer.

Forwarded
G. Mattison
Ch. S. S. Ranger

STATISTICS
Hydrographic Sheet #16¹⁴

Date 1927	Letter	Vol.	Pos.	Soundings	Miles Stat.	Vessel
May 28	A	1	18	18		Whale boat
June 2	B	1	56	329	4.5	" "
" 3	C	1	76	459	6.0	" "
" 4	D	1	56	314	3.9	" "
" 6	E	1	49	263	2.5	" "
" 7	F	1	4	21	0.2	" "
" 8	A	1&2	65	234	7.9	Mitchell
" 9	B	2	105	353	11.7	"
" 10	C	2	71	148	8.9	"
" 11	D	2	92	359	11.0	"
" 12	E	2	32	45	6.7	"
" 13	F	2	56	335	6.4	"
" 14	G	3	48	230	2.4	Whale boat
" 16	H	3	32	154	2.0	" "
" 17	H	4	47	184	4.6	Mitchell
Total			807	3346 ⁴	78.7	

Area surveyed 10.0 square statute miles.

March 28, 1928.

(11)

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 4742

Locality: PORTO RICO, NORTH COAST.

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

Plane of reference is M L W
1.0 ft. on tide staff at Palmas Altas.

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.

Chief, Division of Tides and Currents.

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

AND REFER TO NO. 11-DRM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

July 30, 1928.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4742

Vicinity of Palmas Altas, North Coast of Porto Rico

Surveyed in 1927

Instructions dated July 3, 1926, Sept. 22, 1926, Feb. 28, 1927 (RANGER)

Chief of Party, G. C. Mattison.

Surveyed by B. H. Rigg.

Protracted by J. M. Baker, Jr.

Soundings plotted by E. C. Baum.

Verified and inked by J. T. Walker.

1. The records conform to the General Instructions with the exception that no time nor date was recorded for the soundings taken around the dock at Palmas Atlas. They were therefore omitted from the smooth sheet. These soundings are recorded in Vol. 1, page 2. A number of errors were also made in recording the times of soundings and in numerous cases (Vol. 1) times between positions were entirely omitted. In such cases, of course, equal spacings had to be resorted to.

The verification disclosed several instances of marked variations in speed although no mention is made in the records to that effect. Of course it may also be possible that strong currents were encountered on certain portions of the lines that retarded or increased the speed of the launch through the water.

2. The plan and extent of the survey satisfy the specific instructions with the exception that the work should have been extended about 1000 meters further to the westward so as to take in the limits of the proposed large scale chart No. 936. On account of the character of the bottom it is also believed that more soundings should have been taken in the vicinity of the ship anchorage.
3. The sounding line crossings are generally adequate. There are several instances where the differences in cross lines exceed the

allowable limits, but these may be ascribed to the very irregular and broken character of the bottom as well as the presence of numerous coral heads and pot holes.

4. The usual depth curves could be drawn except those close inshore where the breakers no doubt prevented the sounding lines from running closer to the beach. It would have been very desirable for the chart if the field party had sketched on the boat sheet the line of breakers as estimated from the launch.

In connection with the depth curves it should be noted that those in the anchorage and vicinity are well fixed but the locations of the curves to the eastward of Pt. Palmas Atlas and to the westward of the anchorage are not quite as rigid on account of the sounding lines being run parallel to the shore. However, in most cases the lines are spaced sufficiently close to permit of a fair approximation.

From the 60 foot curve offshore, the curves on this sheet are the result of combining the new survey with the work on H. 2935 (surveyed in 1908). In general, a good agreement exists between the two surveys and the old survey should be used to supplement, where needed, the new work.

5. The usual field plotting was done by the field party and while the protracting and spacing of soundings were carefully done, the work is subject to the following criticism:
 - a. Position numbers were frequently inked too close to the lines, making them practically illegible when the soundings were inked.
 - b. Too hard a pencil was used for the soundings and the curves, practically indenting the paper.
 - c. A bare rock was shown on the smooth sheet between the two outermost rocks of Tres Hermanos. No authority could be found for this either on the topographic sheet or in the sounding records and it was therefore erased from the sheet.
 - d. The line from 5 D to 8 D (Red) was plotted without referring to the boat sheet. The line as plotted using \odot Tree on the left as recorded, gave an entirely improbable location for the line, the soundings on this line being deeper by 4 to 12 feet from cross lines and a closely spaced adjacent line. The boat sheet plotting of the line used \odot Dok on the left, this being the left object recorded for positions 1 to 4 D.

The line was therefore replotted with this signal and the agreement with the surrounding soundings is almost perfect.

6. There are no contemporary surveys joining this sheet.

The junction with the old survey, H. 2935, has already been mentioned under paragraph 4 above.

7. If work is done again here in the future it is recommended that split lines be run in some of the places to the westward of the anchorage where "holidays" exist or where there are marked indications of shoaling.
8. Attention is called to the fact that there are a number of bare rocks shown on this sheet with the notation "awash" appended. These are probably extensive rocks or groups of rocks over which the water plays. They were not changed since they are so shown on the topographic sheet (T. 4324).
9. Reviewed by A. L. Shalowitz, July, 1928.

Approved:

Chief, Field Records Section (Charts)

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

Future work should include a development of the 25 foot spot shown on Hyd. sheet 2935 in lat. 18°29'67" long 66°33'6". An inspection of the original records gives no reason to question this sounding. (C.M.A.)

Section of Field Records

Report on Sheet No 4742
Chief of Party G. C. Mattison
Protracted by J. M. Baker Jr.
Verified and Dated by J. W. Walker

Surveyed in 1928
Surveyed by B. H. Rigg.
Soundings plotted by
E. C. Baum

The sounding records were complete and legible except the time was poorly kept in a number of cases, especially in volume one. In volume two the time was doubtful at position 1 to 3 blue c and 65 to 66 blue c day.

The protracting was very well done as only six mistakes were found in the boat positions.

With a very few exceptions the time intervals were carefully adhered to in the plotting of soundings.

The sheet was clean and legible when received. However, the position numbers were often so close to the position that when the sounding was inked in, the position number was obscured. Also, too hard a pencil was used on the soundings and curves with the result that the paper was indented.

The drafting conformed to General Instructions except as follows: a number of rocks, awash and under water were shown in pencil instead of black ink. These were inked in. The 24 and 36 foot curves were shown, which was not necessary.

A rock was shown on the smooth sheet in ink next to the most westerly rock in the reef known as

Tres Hermanos. It was shown between position 22 and 23 red c day. It was not shown on the boat sheet, T.4324, T2532 (the old top sheet) or the old hydro sheet. It was not mentioned in the descriptive report or in the sounding records. At the advice of Capt. Ellis it was removed from the smooth sheet as no authority for it could be found.

A sketch on page 2 volume 1 was found showing a number of soundings taken off the dock on which signal \odot Dock is located. As no time was given the soundings could not be reduced and were not plotted.

Fifteen hours and thirty minutes was spent verifying the 807 positions and 51 hours 32 minutes was spent spacing and inking the 3446 soundings. Twenty seven per cent of the positions were checked.

Reviewed by

Date

Respectfully submitted
J. Walker.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

C. & G. SURVEY
L. & A.
MAR 8 1928
Acc. No.

REG. NO.
4742

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. 14

REGISTER NO. **4742**

State Porto Rico

General locality North Coast of Porto Rico

Locality Pt. Palmas Altas and Pt. Manati

Scale 1:10,000 Date of survey May ²⁸ June 17, 1927

Vessel RANGER

Chief of Party G.C. MATTISON

Surveyed by B.H. Rigg

Protracted by J.M. Baker Jr.

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.T. Walker

Verified by J.T. W.

Instructions dated July 3, Sept. 22, 26, Feb. 28, 1927

Remarks: