

4292

WIRE DRAG

4292
WIRE DRAG

Form 504	
U. S. COAST AND GEODETIC SURVEY	
DEPARTMENT OF COMMERCE	
DESCRIPTIVE REPORT	
Type of Survey	Wire Drag
Field No. 2	Office No. H-4292 W.D.
LOCALITY	
State	Porto Rico
General locality	Vieques Sound
Locality	Cabras I. to Chinchorro Shoal
19 22 -23	
CHIEF OF PARTY	
F.B.T. Siems	
LIBRARY & ARCHIVES	
DATE	

DEPARTMENT OF COMMERCE
U. S. Coast and Geodetic Survey

HYDROGRAPHIC TITLE SHEET

U S Coast and Geodetic Survey
Register No 4292 (Field No. 2)

State: Porto Rico.

General Locality: Vieques Sound
~~East Coast of Porto Rico~~
Locality: Cabras I. to Chinchorro Shoal
~~Central part of East Coast of Porto Rico.~~

Chief of Party: F. B. T. Siems

Surveyed by: R. R. Moore.

Date of Survey: 1922-1923.

Scale: 1:20,000.

Soundings in FEET.

Plane of Reference: M. L. W. Pajaro Tide Station.

Protracted by A.P.Katti soundings in pencil .A.P.K.

Inked by..... Verified by.....

Records accompanying sheet (check those forwarded)

Des. report, tide books, Harigrams, ...2...boat sheets,

...1..Sounding books, ...4...Wire Drag books, ...1..Drag Depth Tracing

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
U.S.S. RANGER

St. Thomas, V.I. of U.S.
September 15, 1923.

DESCRIPTIVE REPORT COVERING SHEETS 2, 3, 4, 5, 6, 7.
Wire Drag Operations, East Coast Porto Rico, 1922 to
1923, F.B.T. Siems, Chief of Party.

INSTRUCTIONS:

The instructions covering this work were dated March 25, 1921, June 24, 1921, July 7, 1921, April 5, 1922.

The field work was commenced during July 1921 on Sheet No. 1, and except for examination of channel lanes, that sheet was completed, February, 1922. The field work of the sheets of this report were then undertaken and completed, July, 1923.

LIMITS:

The limits of the work are roughly: Cape San Juan; Culebrita Island; East End, Vieques Island; Pt. Guayanes, and the East coast of Porto Rico; which includes the waters of Vieques Sound, and passages along East and Southeast coasts of Porto Rico.

As originally planned, the territory was divided into six field-sheets of scale of 1:20,000; but, due to the lack of signals in the vicinity of Hodgkins Shoal, a seventh sheet, with scale of 1:40,000, was introduced, on which it was later found advantageous to include the greater part of the dragging of Vieques Sound, on account of squalls cutting off visibility of signals, in a certain locality, but at the same time allowing the use of signals, showing clear in another direction.

DRAG LENGTHS

In the deep-water areas of Vieques Sound, lengths of 6000 and 8000 feet were used; any greater length prevented the clearing of the drag and continuation of a drag line, on account of strains produced by strong trade-wind and sea. In general, for the more open shoal work, 4000 foot drags were used, with 5000 feet as a maximum. For developing channels, drags of 1500 feet to 2400 feet were generally used.

METHOD OF CONTROL

The guide launch or single launch control was continued for drags up to 5000 feet, until September 1, 1922, and then the two-boat control was instituted for all lengths of drag; this required the services of an additional officer to observe and record in the lead launch. The advantages of two-boat control, which have manifested themselves so decidedly during the work, for any length of drag, are first; practically absolute control, and assurance that a drag-path as proposed will be covered,

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September 15, 1923.

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thus avoiding splits, and preventing the drag from going aground by deviating from the drag-path; secondly, relieving the strain of the officer in charge of multitudinous duties required of him in the one-boat-control, and allowing him to devote more time to hookups, which can be set to conform more nearly with the bottom, when the drag can be depended upon to follow a proposed path; thirdly, the tension in general in a wire-drag party is relieved, by the absence of signaling angles and computing distances; fourthly, recording, office work, and plotting are simplified, and uncertainties in the work are rare.

The entire day's work in the two-boat control is, as a rule, laid out on the boat sheets; in places where the drag goes aground, signals for reverse are given, which is understood to mean that the two boats will reverse a sufficient distance, and then resume former path and direction, to pass over obstruction with a less depth of drag.

EQUIPMENT

Standard wire-drag equipment was used, as described in Special Publication # 56; It was kept in good condition, during its continual use under adverse weather conditions. Difficulty was experienced with the wire uprights chafing at the bottom of the buoys, but this was overcome by using small chain. The sash-cord leadline was abandoned in favor of a chain-line. The latter had two distinct advantages; namely, no correction, and no tendency of the line to float as the tender drifted over a shoal; the chain offered little resistance, and acted as a rod.

SHOALS DISCOVERED

Numerous shoal soundings, previously uncharted, were obtained in the drag-work. The localities in which most of the shoals were found comprise the broken areas North and Northwest of Point Mulas, and those in the vicinity of Port Humacao. In nearly all cases, the shoals found consisted of small coral-lumps of lesser depth than surrounding depths, or shoals already charted.

In some cases, noticeably on the shoals Northwest of Point Mulas, there are evidences of growing coral-trees. The drag would entangle itself about these coral-growths, and would be cleared only by picking it up; in a few cases, the trees were broken off and brought to the surface with the drag.

Reports of shoals discovered were forwarded to the Washington Office, from time to time. A complete list is entered in the Sounding records for each sheet.

CURRENTS

Strong currents were encountered in some localities, noticeably at the eastern end of Vieques Island, around East End, Vieques Id., and Grampus Shoals. Here the currents set to the N.N.W., and then S.S.W.

Through Vieques Passage and along the Pt. Arenas Bank, strong currents were encountered, running approximately N.E. and S.W. Due to the strong prevailing easterly trade-winds, tide-rips thru this passage were occasionally very heavy, especially when the current set to the N.E.

Occasionally, strong currents were encountered in the passages through the reefs and cays along the northern limits of the work and around Culebra Island.

On the remainder of the work, the currents were mainly due to the prevailing easterly trades.

CHANNEL LINES

The dragging of the main ship-channel around the East end of Porto Rico was extended from sheet #1. This channel was dragged to an effective depth of 30 feet, and 2000 feet wide; but, in the area off Puerca Pt., southeast of Cabázo de Perro, channel narrows to 1400 feet, and contains numerous 30-foot lumps, on which the drag caught and slipped off. Southwest of this point, the channel deepens to 40 feet or more, and widens considerably.

A continuation of this channel to the southwest of Vieques Passage was dragged to the deep water. The particular place was dragged to an effective depth of 34 feet, and later, a 500 foot channel, to a depth of 36 feet, was dragged.

Along the south side of Isafos Cay of the Cordólleras Reefs, was dragged to an effective depth of 45 feet, which deepened to 54 feet, and passed between Palominos Id. and Blake Shoal to the deep area of Vieques Id.

A channel entering Pt. Humacó^{so} west of Parce Shoal, was dragged to an effective depth of 25 feet, and one to the east to 21 feet.

ORGANIZATION

With the exception of Chas. P. Morrill, Engr. Motor, and L.S. Godfrey, Dragmaster, the personnel of the party was from the complement of the RANGER. The officers were shifted around more or less according to conditions but for the most part were as listed below:

R.R. Moore	Jr. H. & G. Engr.	In charge.
N. November	Aid	Assisting, guide launch
A.P. Ratti	Jr. H. & G. Engr.	In charge, end launch
R.W. Woodworth	Jr. H. & G. Engr.	Assisting
R.J. Auld	H. & G. Engr.	Assisting
M. Leff	Aid	Assisting
H.A. Wexler	D.O.	Assisting
C.P. Morrill	Engr. (Motor)	Engr., guide launch
K.G. Lairtus	A. to Engr. 2cl.	Engr., to end launch
L.S. Godfrey	Dragmaster	

In addition the complements of the launches were as follows:

Guide Launch: Recorder, signalman, coxswain & linetender.

End Launch: Coxswain and linetender.

Tender: Oiler.

All of these latter were from the complement of the RANGER.

F.B.T. Siems
F.B.T. Siems

121
122
WKR (H)

January 5, 1925.

To: ~~Return to H. & T. Inc. 202 Burke Bldg.~~
 Commanding Officer,
 Steamer EXPLORER,
 202 Burke Building,
 under Seattle, Washington. *Inland Water*

Through: Inspector, Seattle Field Station.

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

Subject: Drag work in Porto Rico.

There is enclosed a tracing showing two wire drag strips east of Cabeza de Perro traced from Hydrographic Sheet No. 4292 executed by your party. As will be noticed the effective depths of these strips are 31 ft. and 28 ft., and both pass over a shoal previously found by the party of Lieutenant J. H. Peters when a drag set at 30 ft. grounded at the point and was developed by the lead and a depth of 24 ft. obtained.

2. There is also enclose a photostat copy of the wire drag records of K and U days. It is noted that no mention is made on K day that the drag grounded, although the area covered passed over the 24 ft. shoal, the drag being set at an effective depth of 28 ft. You will notice on the records of U day there is a note "Dragging along on bottom". During the remainder of this line there is no further note to show when the drag cleared the bottom and no note to show what section of the drag was grounded.

3. On the tracing the depths obtained by the original survey are shown in black figures. Having this data on hand, it is not understood why an effective depth of 31 ft. should be used to pass over an area of 28 ft. and 30 ft., even though the officer in charge of the drag party did not have the location of the 24 ft. spot. Photostat of a section of Chart No. 917, increased to a scale of 1:20,000, is also enclosed for your information. The records of this office show that sheet No. 4288 (Field No. 1) executed by the party of J. H. Peters was forwarded by you on August 4, 1923, and that sheet No. 4292 (Field No. 2) was forwarded by you on October 9th. No boat sheets were forwarded so it has been impossible for this office to obtain any original data not furnished on the smooth sheet and descriptive report.

4. It is requested that you take up this matter at your earliest convenience and forward what additional information you may have

covering this subject. It is not the opinion of officers attached to this office that a drag could pass over a 24 ft. spot. However, the shoal sounding obtained by the party of J. H. Peters has been verified and there seems no reason to doubt that the depth was obtained. Even by disregarding this depth the drag strip shows that the drag passed over depths from 28 ft. to 30 ft., and it seems doubtful that launches could tow the drag set at 31 ft. over the bottom in these depths.

5. You can appreciate, I am sure, that results such as these tend to discount the effective use of the drag and by those familiar with drag work it seems as though there must have been an error in the setting of the drag or the recording of the effective depth. The effective depth diagram forwarded by you with your sheet, however, shows that the area in question had been dragged to a depth of 31 ft., even though this area when applied to the chart passed over soundings of shoaler depth.

6. The one important thing that this has emphasized is the necessity of forwarding to this office the original records, together with boat sheets of the work, which you will do for the records completed this year. The soundings should be copied and verified as heretofore but the original tender and end launch records, boat sheets, etc., shall be forwarded for all sheets.

(Signed) E. L. Farin

Acting Director.

POST-OFFICE ADDRESS: 202 Burke Building, Seattle, Washington.

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
U. S. C. & G. S. S. EXPLORER.

DIRECTOR
HYDROG. S. C. & G. SURVEY
SALES
GEODESY

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Seattle, Washington,
January 12th, 1925.

To: Director, Coast & Geodetic Survey,
Washington, D. C.

Thru: Inspector, Coast & Geodetic Survey,
Seattle, Washington.

From: Commanding Officer, U. S. S. EXPLORER,
Seattle, Washington.

Subject: Wire Drag Work in Porto Rico.

Replying to your letter of January 5th, reference 7-mcs, the following statement is respectfully submitted:

All boat sheets of the work done in Porto Rico were forwarded to the office, as indicated on the title sheets and as listed on the transmitting letters, and I cannot understand why it is stated that no boat sheets were forwarded, unless they have not been identified in the Division of Archives by reason that they did not accompany the respective smooth sheets. Each boat sheet was numbered to correspond with the field numbers given to the smooth sheets. There were from two to about five boat sheets for each smooth sheet.

The boat sheets were very carefully prepared, in this instance, however, the 24 foot shoal located on field sheet #1 (4288) was evidently not transferred to its adjoining sheet field #2 (4292). The 28 foot sounding on H2527 probably did not appear on the boat sheet nor does it appear on Chart No. 917. Possibly the chart, with out the recent 4 fathoms correction, was used as a guide in preparing the boat sheet of this particular area as I remember some of the photostats of original hydrographic sheets were not at hand and were subsequently requisitioned. If the chart was used as a guide the area bounded by the drag strip of "V" day (31 feet effective depth)

covers an area in which nothing less than 30 feet is indicated (excepting the 24 feet shoal). See Photograph of Chart 917 returned herewith.

It was intended to determine greatest safe depth, at this narrow and more or less shoal part of the channel extending around the east coast of the island of Perte Rice, and for that reason a subsequent drag set to 31 feet actual depth with a probable effective depth of 30 feet was used for the purpose. It would be very reasonable to assume that the effective depth was actually 30 feet as no correction for variable lift nor light sea was deducted. The tide may have amounted to several tenths of a foot which ordinarily would be considered 0, furthermore the sounding of 28 feet may actually be 28 plus several tenths of a foot. The net result of which would make the drag depth about 1 foot greater than the sounding.

Inasmuch as the "V" day drag did not pass over, but dragged along the bottom between positions 2 and 3 which, is possible, assuming that there was only the 1 foot difference as mentioned in the preceding paragraph, the portion of this drag strip between positions 2 and 3 should be rejected. As the shoal in question is of irregular coral formation it is quite certain that the bottom wire did not drag along the bottom for any extended time.

"K" day drag strip then furnishes the maximum safe depth over the shoal and corresponds with the 28 feet sounding shown on H2527.

Inasmuch as the area reported as having only 24 feet, was passed over by a 28 feet drag and later passed over in dragging along the bottom by a 30 feet drag, and as it is quite improbable that the drag depth was not erroneously set or recorded, both times, the setting of uprights having been accomplished by the party before setting out the drag both times at the beginning of the days work, I am of the opinion that the 24 feet sounding or its position is in error. The headline may have been read one fathom in error, or the fix may be in error by reason of inadequate control on this part of field sheet #1 (4288)

J. Williams

Grounding depths of 27' were obtained in the vicinity of the 24' sounding. Groundings were not cleared



SECTOR

West Lavandera Rk

Cabeza de Perro

Flev 3 sec 50 ft
vis 10 m

From Hyd Sheet 2527

8 1 5 4
65 35

8 34

38 7

(FLW)

7 6 5 4 3 2 1
6 5 4 3 2 1
5 4 3 2 1
4 3 2 1
3 2 1
2 1
1

In reply to your letter of January 12, 1925, I will state that it was not the intent of my letter of January 5th to infer that no boat sheets were received in this office, but that none were received for Hydrographic Sheet No. 4292. Your letter transmitting Field Records dated August 5th stated that two boat sheets for Sheet No. 2 were forwarded. Upon examination these two boat sheets were found to cover small areas covered by sheet No. 1 and no boat sheet for field sheet No. 2 (Hydrographic Sheet No. 4292) was received.

Since the receipt of your letter the location of the 24-foot shoal has been reexamined and there seems no reason to doubt that such a shoal exists and that there is slight probability that its position as recorded is erroneous.

In reviewing the wire drag work in Vieques Sound several such uncertainties have been found and it is now planned that these different areas be re-dragged by the party now engaged in surveys in the Virgin Islands.

The 4th paragraph of your letter would indicate that no allowance was made for swell in recording the effective depth of the drag. This is mentioned in Special Publication No. 56 on Page 31 under "Reduction of Soundings". An examination of your records shows that there is no estimate of the height of the swell and your letter would indicate that the effective depths as recorded disregard this

correction and are in reality not effective depths. There may be as much as 2 to 4 feet less effective depth to the drag than those recorded, owing to the effect of the swell. The method of recording the work such as described in your letter would tend to question the results of the whole area covered by your party. The area and depth sheet constructed from any wire drag survey should indicate that certain areas have been covered at the effective depth shown thereon and therefore prove that no danger or obstruction in such areas were covered by less water than the dragged depth. This apparently is not the case with your work.

You state in the 3rd paragraph of your letter that a subsequent drag set at 31 feet actual depth with probable effective depth of 30 feet was used for this purpose although the effective depth shown ^{in your records and} on ~~your~~ ^{the} diagram submitted with your sheet is 31 feet. In executing wire drag work there should be a margin of safety so that upon the ^{completion} ~~plotting~~ of the work there can be no question that the area covered contains no obstruction with a less depth of water than that shown. The effective depth shown in the records should be absolute and if there was a lift due to swell it should have been noted in the record and added to the correction so that the computed effective depth should have included a liberal allowance for such lift.

From your letter it is inferred that no allowance was made for lift due to swell ^{it} and has therefore resulted in questioning the accuracy of all your work in

Porto Rico. An area shown as dragged to a depth of 30 feet may in reality only have been dragged to an effective depth of 29, 28 or even 27 ft dependent upon the swell. A superficial examination of your records fail to show an estimate of the height of swell on any day when drag work was executed, the only remarks being smooth, moderate swell, heavy swell, etc., from which it will be impossible to estimate the allowance to be made. If you have any information on this subject you will please notify me at your earliest convenience.

on Ad. WK 1926 were
Grounding depths of 27 ft. obtained in vicinity of
24' 5" dg. Groundings were not cleared.

COPY TO FIELD RECORDS

Nov. 20, 1923.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
1 volumes of sounding records ~~for~~ and
4 " " wire drag " for
HYDROGRAPHIC SHEET 4292

Locality: Vieques Sound - Porto Rico

Chief of Party: F. B. Z. Sims in 1923-3
Plane of reference is mean low water, reading
7.8 ft. on tide staff at Punta Arenas
5.0 " " auto. gauge " Fajardo

For reduction of soundings, 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.

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

December 27, 1924.

Report on Verification of Wire Drag Sheet No. 4292

There are a good many changes made in the depth of drag where no time of changing was given in the records. In such places the plotting of the field party was accepted as shown.

The rule of 40 was not adhered to in the plotting of this sheet. *This has been corrected.*

On E day 11 and 12 ft. were plotted on the smooth sheet as the effective depth when the records give 18 and 19 ft.

One of the splits shown in latitude $18^{\circ} 13'$, longitude $65^{\circ} 37'$ is due to the drag being lifted over a buoy and the other is due to the drag being lifted over the 18 ft. spot after grounding.

The drafting conforms to the instructions for field work.

The check angle for sounding 2M appears to be erroneous. This should be taken up with Capt. Siems at the first opportunity.

The records are complete with the exception of paragraph one.

H. W. Edmonster

8.05.

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO. 4-DRM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON January 7, 1925.

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. 4292

Surveyed in 1922-23

Instructions dated July 7, 1921.

Chief of Party, F. B. T. Siems.

Surveyed by R. R. Moore.

Protracted and inked by A. P. Ratti.

Verified and Area and Depth Sheet by H. R. Edmonston.

1. The records conform to the requirements of the General Instructions except that in many cases the time of beginning and ending of depth changes were omitted.
2. The methods and character of operations fulfill the requirements of the General Instructions.
3. The extent of dragging generally satisfies the specific instructions except that the drag should have been carried closer to the 3-fathom curve in the area between Point Puerca and Cabra de Tierra. The depth of dragging does not conform to paragraph 1 of the specific instructions which calls for dragging to within 3 ft. of the bottom except in depths exceeding 10 fathoms. It is to be noted, however, that a large portion of the area covered by this sheet is very much broken, making it extremely difficult to drag close to the bottom in all cases. No attempt will be made here to call attention to all the areas that were not dragged to within 3 ft. of the bottom. For this a special chart 917 (on file in Field Records Section) has been prepared showing the actual depths to which the various areas have been dragged. For a detailed study of this phase of the work reference should be made to that chart. Following are the more important areas where an attempt should have been made to carry the drag closer to the bottom so that the results of the work would be of greater value to navigation.

a. In the main ship channel east of Cabeza de Perro the drag should have been set deeper than 26 ft. and as close to the two 4 3/4 fathom shoals (29 ft.) as possible in order to give a greater effective width to the channel.

*Dragged to 27' on Ad. Wk 1926
4 fm. sdg in middle of ship channel*

b. The 29 ft. area in the vicinity of latitude $18^{\circ} 14'$, longitude $65^{\circ} 32'$ should have been dragged deeper in order to connect with the deeper areas to the north and south. The same is true of the 27 ft. area to the southwest of the 29 ft. area.

c. The area between longitude $65^{\circ} 32'$ and $65^{\circ} 33 \frac{1}{2}'$ in approximately latitude $18^{\circ} 12 \frac{1}{2}'$ which was dragged to depths varying between 26 and 28 ft. should have been dragged to a deeper depth in order to connect with the deeper dragged areas to the north and south.

d. The area surrounding the 4 fathom spot in latitude $18^{\circ} 11 \frac{1}{2}'$, longitude $65^{\circ} 35'$ should be dragged to a greater depth. Also the area surrounding the $3 \frac{1}{2}$ fathom shoal in latitude $18^{\circ} 10'$, longitude $65^{\circ} 35 \frac{1}{2}'$. *Part of area near 24' sdg covered by 29' on Ad. Wk.*

e. The area southeast of Point Cascajo should have been dragged deeper than 20 and 24 ft. *Accomplished*

f. The area north of Descubridor Rock shown dragged to 18 and 27 ft. should have been dragged deeper considering the charted depths. The 18 was covered by 26 ft. on the adjoining sheet (H. 4288) but even this is insufficient. *over*

4. The least water was found over all important shoals discovered except as follows:

a. The 18 ft. sounding in latitude $18^{\circ} 13'$, longitude $65^{\circ} 37' 18'$ was not cleared. A 28 ft. drag grounded here and 18ft. was obtained. The drag was lifted over this spot and the line continued. This sounding lies in the main entrance channel to Ensenada Honda and it is therefore important to know the least depth on this shoal. The shoal is surrounded by depths of 38 and 40 ft. *18' sdg cleared by 16' Eff. Depth on Ad. Wk.*

b. The 18 ft. sounding in latitude $18^{\circ} 12 \frac{1}{2}'$, longitude $65^{\circ} 30 \frac{3}{4}'$, not shown as cleared on this sheet, was cleared by a sloping drag on the adjoining sheet at a depth of approximately $12 \frac{1}{2}$ ft. A deeper drag should be carried over this shoal. *no*

c. The 27 ft. sounding in latitude $18^{\circ} 13 \frac{3}{4}'$, longitude $65^{\circ} 32'$ is shown as cleared by a 25 ft. drag. There is, however, a degree of uncertainty as to whether the 25 ft. drag actually passed over this spot on account of the maneuvering of the drag. There is also a possibility of the 25 ft. drag having grounded here on a previous day (M day). It is therefore recommended that the 27 ft. sounding be charted for the present but that the area be further investigated to determine with certainty the maximum safe depth over this shoal. *27' sdg, cleared by 26' Eff. Depth on Ad. Wk.*

d. The 31 ft. sounding in latitude $18^{\circ} 14'$, longitude $65^{\circ} 32 \frac{1}{4}'$ has not been cleared. The drag set at 40 ft. (M day) grounded here, but a portion of the drag was also set at 25 ft. and since the 31 ft. sounding falls close to the 25 ft. section of the drag it is possible that less water may exist here. Furthermore, on a later day (V day) the drag was set at 29 ft. but just as the drag reached the 31 ft. spot it was reversed, but no mention made of it being aground. The fact, however, that the drag was not carried sufficiently beyond the 31 ft. spot to safely clear the shoal before it was reversed, would be strong presumptive evidence that the drag was aground and was reversed to clear, even though the records do not disclose it. It is recommended, however, that 31 ft. be charted for the present, but that the area be further investigated. 31' sdg cleared by 28' Eff. Depth on Ad. Wk. ✓

e. The 29 ft. sounding in latitude $18^{\circ} 14 \frac{1}{4}'$, longitude $65^{\circ} 32'$ was cleared by a 25 ft. drag. While this appears to be a sufficient depth for present needs of navigation in this locality, yet the future might demand a closer determination of the least water on this shoal. no

f. The 25, 26 and 27 ft. soundings in latitude $18^{\circ} 16 \frac{1}{2}'$, longitude $65^{\circ} 33'$ (approximately) have been covered by a 23 ft. drag on H. 4288. ✓

5. The following are places where the drag passed over known shoals of less depth but without grounding:

a. In the area due east of Cabeza de Perro a 31 ft. drag cleared several soundings ranging from 28 to 30 ft. (Auth. H. 2527). It also cleared a 24 ft. sounding (Authority H. 4288) obtained with the wire drag on the adjoining sheet. This latter sounding was also cleared by a 28 ft. drag. It is extremely important that this area be re-investigated to determine the maximum safe depth for navigation, this being the main ship channel. Groundings of 27' in vicinity of 24' sounding not cleared on Ad. Wk.

b. In Vieques Passage in lat. $18^{\circ} 11 \frac{1}{4}'$, longitude $65^{\circ} 35'$, a (27) ft. drag cleared two 24 ft. soundings (from H. 2528) is an isolated spot and there is no check on its existence. 24' sdg not cleared by Ad. Wk. 25' sdg was obtained on Ad. Wk.

c. South of Cabra I. in latitude $18^{\circ} 12 \frac{1}{2}'$, longitude $65^{\circ} 36'$ a 30 ft. drag cleared a 29 ft. sounding (from H. 2527). This is an isolated spot and there is no check on its existence. 29' sdg cleared by Eff. Depth of 30' on Ad. Wk. 29' sdg not disproved

d. Just off the entrance to Ensenada Honda in latitude $18^{\circ} 12'$ longitude $65^{\circ} 36 \frac{1}{2}'$, a 42 ft. drag cleared a 36 ft. sounding (from H. 2527). This is an isolated spot and there is no check on its existence. It might be mentioned, however, that there is some doubt as to the path of the N buoy around this locality. The smooth plotting shows the position of 15D as considerably to the westward of the normal path of the drag. There is no note in the record to verify this abrupt change in course. 36' sdg disproved by 42' Eff. Depth on Ad. Wk. ✓

And there is no boat sheet to check the smooth sheet by (none having been transmitted with the sheet). If position 15D is rejected and the preceding and subsequent positions joined by a straight line, the 42 ft. drag will be clear of the 36 ft. spot, but a split will be left in the work around here. Therefore the record was accepted as correct. However, it is recommended that the existence of this spot be verified and at the same time the possible split mentioned above should be dragged over.

*OK.
Do not change
depth curve.
See H. 2527
JS*

e. The 3 3/4 fathom spot (22 ft.) in latitude 18° 12 1/2', longitude 65° 31 3/4' was covered by a 26 or 27 ft. drag (it falls close to the edge of the 27 ft. drag, but well within the 26 ft. drag). The authority for this sounding is H. 2527 on which it was plotted from a British Admiralty chart. A detailed hydrographic survey was later made around this spot and no less than 29 ft. was disclosed. It seems likely then that the 22 ft. sounding does not exist and it is recommended that it be expunged from the charts.

f. A 12 ft. sounding (apparently reported) is shown on H. 2527 in latitude 18° 12 3/4', longitude 65° 35'. A 41 ft. drag cleared this spot. Therefore the sounding should be removed from the original sheet. This sounding is not charted.

- 6. The overlaps within the sheet are generally sufficient. Where there is too small an amount of overlap it is so indicated on the A. and D. sheet.

The junction with the adjacent sheets will be considered in the reviews of those sheets. H. 4293 overlaps this sheet at but one point and is sufficient.

There are several important splits on this sheet, all of which are indicated on the A. and D. sheet and should be investigated. The split in the work around Descubridor Rock should be covered. There is a good channel between this rock and the shoal to the south that could be used by smaller vessels and a drag should be carried through here. It is also recommended that a drag be carried over Descubridor Rock (now charted with 1 fathom) to determine the least water on this shoal. The authority for this sounding is a British Admiralty chart (See H. 2527). A detailed hydrographic survey was made by a Coast Survey party and nothing less than 16 1/2 ft. was obtained.

Coverage accomplished on Ad. Wk 1926

- 7. Further dragging will be required as mentioned above, so this sheet cannot be considered as satisfactorily completed. Failure to transmit a boat sheet for this work has left some of the doubtful points unsolved, which might have been cleared up by reference to the boat sheet.

The check angle for sounding 2M appears to be erroneous and should be referred to Capt. Siems.

8. The field plotting was completed to the extent prescribed in the General Instructions.
9. The office cartographer had to make numerous changes owing to the failure to observe the 1/40th rule in the plotting, which was also ignored in the effective depth diagrams. Other changes were made due to carelessness in plotting depth changes.
10. Rating of work (character and scope of operations - good
(field drafting - good
11. Reviewed by A. L. Shalowitz, January, 1925.

NAUTICAL CHARTS BRANCH

SURVEY NO. H-4292 W.D.

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
1/5/48	940	H. E. W.	Before After Verification and Review R.N.D.
1/13/48	917	J.F.R.	Before After Verification and Review <i>Previously applied before review changed</i>
31 Mar 49	904	Nichols	Before After Verification and Review <i>Made by review applied 1/6/49 Add'l work only.</i>
7 Apr 49	922	Nichols	Before After Verification and Review
1-16-57	904	R. K. de Lawder	Before After Verification and Review <i>Exam overlay of ad. wk. See history 4-4-49.</i>
1/27/65	940	Chelmer	Before After Verification and Review <i>App'd main channel only to new green plate</i>
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
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			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

4292 Add'l. Work - W.D.

Diag. Cht. No. 904-2

4292 Add'l. Work W.D.

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
....., Director	
S. & G. SURVEY	
L & A.	
OCT 25 1927	
Acc. No.	
State: Porto Rico	
DESCRIPTIVE REPORT	
Topographic } Hydrographic }	Sheet No. 4292 Add'l. Work
LOCALITY	
Vieques Sound	
Vieques Passage	
Ensenada Honda to Chinchorro	
Shoal.	
1926	
CHIEF OF PARTY	
G.C. Mattison	

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

C. & G. SURVEY
L. & A.
OCT 20 1927
Acc. No.

HYDROGRAPHIC TITLE SHEET

WIRE DRAG

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. 4292 ⁴²⁹²

REGISTER NO. 4292 Add'l. Work

State PORTO RICO

General locality VIEQUES SOUND

Locality VIEQUES PASSAGE

Scale 1:20,000 Date of survey May-June, 1926

Vessel RANGER

Chief of Party G.C. MATTISON

Surveyed by H.E. Finnegan

Protracted by H.E. Finnegan

Soundings penciled by H.E. Finnegan

Soundings in ~~fathoms~~ feet

Plane of reference M.T.L. + 0.5 ft. = MLW

Subdivision of wire dragged areas by H.E. Finnegan

Inked by H.E. Finnegan

Verified by _____

Instructions dated May 28, 19 25

Remarks: _____

G. NO. 4292 Add'l. WK

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

C. G. SURVEY
L. G.
1926

PORTO RICO
VIEQUES SOUND and VICINITY

DESCRIPTIVE REPORT
to accompany

WIRE DRAG SHEET # 4292 Adcl, Wk.

1926

S.S. RANGER

G.C. MATTISON,
Chief of Party.

DESCRIPTIVE REPORT

to accompany

W.D. SMOOTH SHEET #4292.

INSTRUCTIONS:

The Director's instructions dated May 28, 1925 called for additional work on sheet #4292;— covering splits and insufficient overlaps, dragging some areas deeper, finding least depth on shoals and carrying the drag work inshore as near as practicable to the three fathom curve south of Pineros Island.

LIMITS OF ADDITIONAL WORK:

The additional work includes the inshore work from Ensanada Honda to Cabeza de Perro; a small area just north of Arenas Bank and the area in the vicinity of Descubridor Rock.

RESULTS OBTAINED:

The following remarks anent each paragraph of the instructions, are offered as an aid in the verification of the sheet.

Paragraph #1—The drag work was carried inshore as near as practicable to the three fathoms curve as required. The 29 foot sounding referred to in this paragraph does not exist, a drag of 30 feet effective depth having been carried into the charted five fathom curve,

*φ 18°-12.5'
λ 65°-36.14'
29' from H-2527
not disproved*

Paragraph #2—This area was covered to an effective depth of 27 feet. The drag did not hang up in this area, but the weight of one small buoy did touch bottom in the vicinity of the 24 foot sounding. The drag was set at 29 feet. The area was never covered again. The tender obtained a sounding of 29 feet, muddy bottom, in this area. *N buoy also touched*

*Vicinity
φ 18°-14.85'
λ 65°-33.85'
24 ft. from
H-4288 W.D. not
cleared. Retain*

Paragraph #3—Most of this area was covered to an effective depth of 29 feet. However in the area of the 24 foot charted sounding the drag hung and a sounding of 25 feet was found.

*Vicinity
φ 18°-11.3'
λ 65°-34.95'
24' S'd'g not cleared on Ad. Wk.*

Paragraph #4—This area covered as required to an effective depth of 40 feet. The drag hung but pulled off just outside the S.E. limits of this area, and a 39 foot sounding was obtained, which verified the chart.

*Vicinity
φ 18°-11.0'
λ 65°-34.8'*

Paragraph #5—All of this area covered to an effective depth of 42 feet. An effective depth of 40 feet was required.

*Vicinity
φ 18°-10.5'
λ 65°-35.2'*

Paragraph #6—This area covered as required to an effective depth of 32 feet.

*Vicinity
φ 18°-09.8'
λ 65°-35.6'*

Paragraph #7--This area covered as required, to an effective depth of 30 feet. The inshore end of the drag touched in three places and soundings taken by the tender verify the charted 30 foot curve.

Vicinity
φ 18°-11.6'
λ 65°-37.0'

Paragraph #8--The 18 foot sounding was covered with a drag of 16 feet effective depth, and the split around the buoy was covered entirely.

Vicinity
φ 18°-13.05'
λ 65°-37.07'

Paragraph #9--Over the two areas of insufficient overlaps an effective depth of 26 feet instead of 27 feet was obtained.

Vicinity
φ 18°-13.9'
λ 65°-32.0'

Paragraph #10--This split was covered to an effective depth of 28 feet as required.

Vicinity
φ 18°-13.15'
λ 65°-32.2'

Paragraph #11--This area covered to an effective depth of 42 feet, which disproves the existence of the 36 foot sounding.

Vicinity
φ 18°-12.1'
λ 65°-36.4'

Paragraph #12--The split was all covered to an effective depth of 18 feet, except for a small area over Descubridor Shoal on which a sounding of 15.5 feet was obtained. The shoal was covered to an effective depth of 13 feet, which disproves the existence of the 5 foot charted sounding.

Vicinity
φ 18°-14.9'
λ 65°-32.95'

PARAGRAPH #9 OF THE INSTRUCTIONS FOR SHEET #4287:

As noted in the descriptive report for sheet #4287 the area covered by this paragraph was done in connection with the work on sheet 4292. The work is recorded in the record of 4292 and is plotted on sheet 4292.

All of this area is now covered to an effective depth of 11 feet or more. The 12 foot and 13 foot soundings mentioned are covered by 11 feet effective depth.

Vicinity
φ 18°-12.0'
λ 65°-37.3'

SPLITS:

All of the splits indicated on the blue print of sheet 4292 are now covered.

SURVEY METHOD:

Standard drag equipment was used with the launches Marindin and Mitchell as guide and end launches respectively, and the launch Edna M. as a tender. Dual control was used entirely. The complement of the Marindin was two officers, an engineer, a coxswain and two seamen, of the Mitchell; two officers an engineer, a coxswain and one seaman and of the tender; the dragmaster, an engineer and one seaman.

Frequent drag tests were taken.

WEATHER CONDITIONS:

In general the weather was quite favorable while doing this work.

CURRENTS:

The only current of any amount was noted while dragging in the area just north of Arcanas Bank. Here a strong S.W.'ly set was noted. Most of this work was finished in one day, so that no future notes of current were obtained in this vicinity.

COAST PILOT NOTES:

Fish traps are numerous in the areas covered by this sheet, especially in the vicinity of Descubridor Shoal.

Respectfully submitted.

Henry E. Finnegan
Henry E. Finnegan,
Jr. H. & G. Engineer.

Forwarded
G. C. Mathison,
Edy. S. S. Ranger.

STATISTICS

Date	aLetter	Vol.	Drag Length	Pos.	Miles (stat)	Soundings
May 19 1926	A.	1	2800	33	3.02	3
May 20 1926	B	1	3200 2100 1800	42	3.97	3
May 21 1926	C	1	2500 2800 1200	21	2.70	5
June 7 1926	D	1	2100 2800 2400	44	4.80	2
June 9 1926	E	1	2500 2100	52	4.50	4
June 10 1926	F	1&2	2400 2800 2500	45	4.20	6
June 11 1926	G	2	2800 2400 1200 2100	51	4.60	6
June 17 1926	H	2	2100	69	4.70	5
June 18 1926	J	2	1000 1200 1500 2100	49	4.70	7
Total-----				406	37.19	41

TIDAL DATA

Plane tide staff at Point Areanas, 1926.

Plane of reference M.T.L. -0.5 =1.6 ft. on staff.
 Lowest tide observed 1.6 ft. on staff.
 Highest tide observed 2.8 ft. on staff.

New area dragged-----2.3 sq. stat. miles.
 Total area dragged-----11.2 sq. stat. miles.

NEW SIGNALS SHEET #4292

Name	Type	Lat.	Meters.	Long.	Meters	Remarks.
Med	Tri	18 15	1461.9	65 36	628.0	White washed rock (Pt. Medio Mundo)
Mun	"	18 15	1035.5	65 36	772.0	" " " " "
Tac (Tan)	"	18 15	996.1	65 35	324.0	" " " (Pineros Id)
r	"	18 15	180.5	65 34	1064.9	Light Beacon Skeleton structure (E.end Cabeza de Perro)
Nip	"	18 14	1703.9	65 34	1727.9	W.W.Rock (S.E. end Pineros Id.)
Rot	"	18 14	1742.0	65 35	539.6	" " " (S.side " ")
Pin	"	18 14	1498.8	65 35	1235.2	Tripod sig. (Pinexita Island)
Lone	"	18 14	976.4	65 36	1725.5	Lone bushy tree on top of cultivated knoll.
Mayo	"	18 14	385.5	65 36	237.4	House on ridge of Puerca Point.
Mundo	"	18 14	314.8	65 36	47.6	Pole signal(" " " ")
Cap	"	18 13	1542.8	65 35	718.9	W.W. E. end of Puerca Point.
Pun	"	18 13	1034.6	65 35	1131.1	" " S. " " " "
Man	"	18 13	1491.4	65 36	745.9	Signal cloth Banner (Head of Puerca Bay)
Sat	"	18 13	682.5	65 36	494.2	W.W. Rock.(NE Pt. of Cabra de Tierra)
Br&t	"	18 13	660.4	65 36	182.5	" " " (Cabritas Island)
Ho	"	18 13	102.7	65 36	846.9	House (E.side Cabra de Tierra)
Shack	"	18 13	867.2	65 36	1543.8	House (NE shore Ensanada Honda)
Kor	Hydro	18 12	599	65 37	1033	Largest of group of rocks SE of Point Cascajo)
Rek	"	18 13	1430.0	65 35	1718.0	WW. (S. side of Point Puerca)
Pan	"	18 13	1788.5	65 35	1084.0	WW. (N. side of Point Puerca)

LIST OF SOUNDINGS

The following depths were obtained while dragging.

A depth of 19.5 feet was found ¹¹⁰⁰ 1300 meters 294° true from the southern point of Cabra de Tierra in Lat. 18 13' - 22 meters, Long. 65 37' 419 meters. This sounding was taken at the position of Black Can Buoy #3, and not on highest part of the shoal in this vicinity.

A depth of 16.5 feet was found 657 meters 310°³ true from the southern point of Cabra de Tierra in Lat. 18 13' - 13 meters, Long. 65 36' 1684 meters. (Just inside charted 18 foot curve).

A depth of 20.5 feet was found 1534 meters 193° true from the southern point of Cabra de Tierra in Lat. 18 11' - 1772 meters, Long. 65 36' 1552 meters. This sounding was taken at the position of Black Can Buoy #1 and not taken as the least depth on the shoal marked by this buoy.

A depth of 27.5 feet was found 1564 meters 187°⁰ true from the southern point of Cabra de Tierra in Lat. 18 11' - 1726 meters, Long. 65 36' 1410 meters. (Just inside charted 30 foot curve).

A depth of 30 feet was found 1104 meters 177° true from the southern point of Cabra de Tierra in Lat. 18 12' - 324 meters, Long. 65 36' 1137 meters. (Just inside charted 30 foot curve).

A depth of 31 feet was found 972⁴ meters 174° true from the southern point of Cabra de Tierra in Lat. 18 12' - 447 meters, Long. 65 36' 1066 meters. (On the charted 30 foot curve).

A depth of 30 feet was found 614 meters 142° true from the southern point of Cabra de Tierra in Lat. 18 12' - 946 meters, Long. 65 36' 821 meters. (Outside the charted 30 foot curve).

A depth of 30 feet was found 911 meters 110° true from the southern point of Cabra de Tierra in Lat. 18 12' - 1095 meters, Long. 65 36' 343 meters. (On charted 30 foot curve).

A depth of 14.5 feet was found 1181 meters 216° true from the easternmost point of Point Puerca in Lat. 18 13' - 507 meters, Long. 65 35' 1325 meters. The sounding was obtained at the eastern end of the shoal on the south side of the entrance to Puerca Bay. Another depth of 14.5 feet was found on this shoal 163 meters 238° true from the above sounding. A drag of 25 feet effective depth was grounded around the eastern end of the above shoal and soundings were obtained. The positions of these soundings, with reference to the position of the first 14.5 foot sounding mentioned above are as follows:

- A 21.5 foot sounding 77 meters 354° true.
- A depth of 21.5 feet 58 meters 90° true. *Not plotted*
- A 23.5 foot sounding 58 meters 172° true.
- A 23.5 foot sounding 168 meters 186° true.
- An 18.0 foot sounding 209 meters 180° true.

260°

grounding of 10 ft. plotted

A depth of (11) feet was found 1386 meters 241° true from the easternmost point of Point Puerca in Lat. $18^{\circ} 13'$ - 8³/₅ meters, Long. $65^{\circ} 36'$ 178 meters, (In charted shoal area).

A depth of 14.5 feet was found 175 meters 96° true from the easternmost point of Point Puerca in Lat. $18^{\circ} 13'$ - 1486 meters, Long. $65^{\circ} 35'$ 564 meters.

A depth of 19.5 feet was found 1837 meters 30° true from the easternmost point of Point Puerca in Lat. $18^{\circ} 14'$ - 1270 meters, Long. $65^{\circ} 34'$ 1578 meters. (In charted shoal area).

The charted depth of one fathom on Descubridor Rock does not exist. The area in which this shoal is charted was covered with a drag of 13 feet effective depth. And on this shoal a depth of 15.5 feet was found 2.57 miles 67° true from the easternmost point of Point Puerca in Lat. $18^{\circ} 14'$ 1579 meters, Long. $65^{\circ} 32'$ - 16²/₅ meters. At the northern limits of this shoal a depth of (19.5) feet *grounding plotted* was found 300 meters 353° true from the above 15.5 foot sounding, and a depth of 21.5 feet was found 289 meters, 324° true from the above 15.5 foot sounding. Near the southern limits of this shoal a depth of 16 feet was found 217 meters 198° true from the above 15.5 foot sounding.

A depth of 24.5 feet was found 2 miles 71° true from the easternmost point of Point Puerca in Lat. $18^{\circ} 14'$ - 869 meters, Long. $65^{\circ} 33'$ 745 meters. Another depth of (28) *plotted grounding of 277* feet was found 148 meters 264° true from the above sounding. Both of these soundings lie within the charted five fathom curve.

plotted grounding of 18 ft.
A depth of (19.5) feet was found 2.4 miles 77° true from the easternmost point of Point Puerca in Lat. $18^{\circ} 14'$ - 688 meters, Long. $65^{\circ} 32'$ 1706 meters. This depth verifies the chart.

A depth of 26.5 feet was found 3.4 miles 87° true from the easternmost point of Point Puerca in Lat. $18^{\circ} 14'$ - 02.0 meters, Long. $65^{\circ} 31'$ 1561 meters.

A depth of 7.5 feet was found 1.84² miles 97° true from the easternmost point of Point Puerca in Lat. $18^{\circ} 13'$ - 1098 meters, Long. $65^{\circ} 33'$ 926 meters.

A depth of 29.5 feet was found 3.05 miles 117° true from the easternmost point of Point Puerca in Lat. $18^{\circ} 12'$ - 794 meters, Long. $65^{\circ} 32'$ 1018 meters. The following depths of 31.5 feet, 30.5 feet and 32.5 feet were found 150 meters 40° true, 100 meters 305° true and 344 meters 303° true respectively from the above 29.5 foot sounding.

A depth of 25 feet was obtained 2.15 miles 132° true from the southern point of Cabra de Tierra in Lat. $18^{\circ} 11'$ - 592 meters, Long. $65^{\circ} 34'$ - 1740 meters. This verifies a charted depth of 24 feet. In this shoal area another depth of 29 feet was found 205 meters 242° true from the above 25 foot sounding.

A depth of 39 feet was found 2.57 miles 136° true from the southern point of Cabra de Tierra in Lat. $18^{\circ} 11'$ - ~~116~~ meters, Long. $65^{\circ} 34'$ 1687 meters. This verifies the charted depth. ✓

A depth of 29 feet was found 2.63 miles 137° true from the southern point of Cabra de Tierra in Lat. $18^{\circ} 10'$ - 1511 meters, Long. $65^{\circ} 34'$ - 1438 meters. This sounding verifies the charted depth. ✓

A depth of 32 feet was found 2.82 miles 153° true from the southern point of Cabra de Tierra in Lat. $18^{\circ} 10'$ - 400 meters, Long. $65^{\circ} 35'$ 623 meters. The following depths of 34 feet, 36 feet and 40 feet were found 107 meters 81° true, 205 meters 100° true and 320 meters 116° true respectively from the above 32 foot sounding. The soundings mark the N.E. limits of a charted shoal. ✓

A depth of 29 feet was found ^{2.9}~~3.08~~ miles ⁸~~156~~ $^{\circ}$ true from the southern point of Cabra de Tierra in Lat. $18^{\circ} 09'$ - ~~1705~~ meters, Long. $65^{\circ} 35'$ ~~618~~ meters. ✓

Plotting of this sounding was revised

970

October 26, 1937.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide reducers are approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 4397 Add'l.

Locality: **VINQUES SOUND, PORTO RICO.**

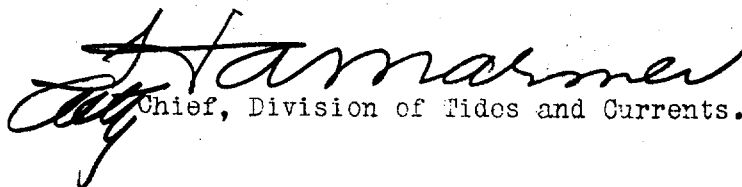
Chief of Party: **G. C. Mattison, 1926.**

Plane of reference is **MLW**

1.6 ft. on tide staff at **Pt. Arenas.**

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.

add. Wk.

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-4292 W.D.

Add. Wk. 1926

FIELD NO. -----

Puerto Rico, Vieques Sound, Vieques Passage
Surveyed in May - June, 1926 Scale 1:20,000
Instructions dated May 28, 1925

Soundings:

Control:

Handlead

Sextant fixes on shore signals

Chief of Party - G. C. Mattison
Surveyed by - M. E. Finnegan, W. R. Porter and C. F. Ehlers
Protracted by - H. E. Finnegan
Soundings plotted by - H. E. Finnegan
Verified by - R. H. Carstens and R. L. Johnson
Reviewed by - R. H. Carstens, April 5, 1948
Inspected by - R. H. Carstens

1. In recompiling charts of this area it was noted that the verification and review of the Additional Work accomplished in 1926 had not been done. This informal review, therefore, is now being made.
2. This additional work covered numerous splits and areas of insufficient overlap on the original survey. South of Pineros Island additional work was carried inshore to the 3-fm. curve.
3. The control consists of the signals of the original survey, supplemented by additional triangulation stations together with hydrographic signals located by sextant fixes. The geographic positions of the hydrographic signals are recorded in the Descriptive Report.

4. The following charted soundings (chart 917) are disproved by the present effective drag depths: ✓
- ✓ a. The 1-fm. charted in lat. $18^{\circ} 14.87'$, long. $65^{\circ} 32.95'$ from British Admiralty charts was cleared by an effective drag depth of 13 ft.
 - 927 ✓ b. The 6-fms. charted in lat. $18^{\circ} 12.1'$, long. $65^{\circ} 36.37'$ from H-2527 (1901) was cleared by an effective drag depth of 42 ft. *deletion ch. 922 10/49*
 - ✓ c. The 6-fms. charted in lat. $18^{\circ} 10.26'$, long. $65^{\circ} 35.25'$ from H-2586 (1902) is charted in error. The correct position is about 100 meters south of the charted position. In its correct position the sounding is in harmony with the present effective depths. ✓
 - ✓ d. The 4-3/4-fms. charted in lat. $18^{\circ} 09.90'$, long. $65^{\circ} 35.32'$ from the present survey before verification and review was revised during verification and falls on the shoal 400 meters to the northwest. ✓
5. Several charted soundings were cleared by effective drag depths 1 to 2 ft. greater than the sounding but are not considered disproved because of uncertainty regarding the value for the lift of the drag. ✓
6. The following charted shoals were not cleared by the drag on the additional work:
- a. The 4-fms. charted in lat. $18^{\circ} 11.33'$, long. $65^{\circ} 34.95'$ from H-2528 (1901) was cleared by an effective depth of 25 ft. (27 ft. effective depth on original plotting revised to 25 ft.) on the 1922-23 wire drag survey but was not covered on the present additional work. This 24 ft. sounding from H-2528 was substantiated by a 25 ft. sounding on the present survey.
 - b. The 4-fms. charted in lat. $18^{\circ} 14.83'$, long. $65^{\circ} 33.83'$ from H-4288 W.D. (1921-23) was covered on the present additional work by an effective drag depth of 27 ft. The drag buoys touched bottom in the vicinity of the 4-fm. sounding, however, and no cleared depth over the shoal was obtained. (Correspondence pertaining to prior drag coverage of this shoal is attached to the Descriptive Report of the original wire drag survey).