

8849

Diag. Cht. No. 903.

<p>Form 504</p> <p>U. S. COAST AND GEODETIC SURVEY</p> <p>DEPARTMENT OF COMMERCE</p> <p>DESCRIPTIVE REPORT</p>	
<p>Type of Survey <u>Hydrographic</u></p>	
<p>Field No. <u>EX-5-2-65</u> Office No. <u>H-8849</u></p>	
<p>LOCALITY</p>	
<p>State <u>Puerto Rico</u></p>	
<p>General locality <u>North Coast of Puerto Rico</u></p>	
<p>Locality <u>San Juan Harbor</u></p>	
<p><u>19 65</u></p>	
<p>CHIEF OF PARTY</p>	
<p><u>Marvin T. Paulson, Capt. USC&GS</u></p>	
<p>LIBRARY & ARCHIVES</p>	
<p>DATE DEC 29 1965</p>	

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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.

REGISTER NO. H-8849

Field No. EX-5-2-65

Reviewer - please take note properly in DR

State PUERTO RICO

General locality North Coast of Puerto Rico

Locality San Juan Harbor

Scale 1:5,000 Date of survey March, April, May 1965

Instructions dated 6 November 1964

Vessel USC&GSS EXPLORER

Chief of party Marvin T. Paulson, Captain USC&GS

Surveyed by Ship's Officers *add names*

Soundings taken by fathometer, graphic recorder, hand lead, wire and pole

Fathograms scaled by Ship's Personnel

Fathograms checked by Ship's Personnel

Protracted by PJD

Soundings penciled by ENS. R. H. Rhudy and LT(jg) James O. Murphy

Soundings in fathoms feet at MLW MLLW

REMARKS: No soundings were placed on the boat sheets. The smooth boat sheet was plotted on a day to day basis as far as practical and the reduced soundings were penciled on the smooth boat sheet on the day following the hydrography in most instances. The smooth boat sheet is the product of several officers. This survey represents 100% of the area encompassed by the hydrographic limits of this sheet.

On preliminary receipt of the smooth sheet numerous changes were made in soundings by WDR. VERIFIED

the sheet was returned to the ship

DESCRIPTIVE REPORT

To Accompany Hydrographic Survey

EX-5-2-65

1965 - Scale 1:5,000

USC&GS Ship EXPLORER

Capt. Marvin T. Paulson, Comdg.

A. PROJECT

Hydrography was accomplished in accordance with instructions for Project OPR-423, dated 6 November 1964.

B. AREA SURVEYED

The area surveyed is San Juan Harbor on the North Coast of Puerto Rico in the vicinity of San Juan. This survey covers approximately the eastern half of the harbor. It is bounded on all sides by land except the westerly limit at longitude $66^{\circ}06.5'$ where it junctions with contemporary survey EX-5-1-65, and the north east limit bounded by the Condado Lagoon. The two navigable rivers located in the extreme south east section of the harbor (the Rio Puerto Nuevo and the Cano de Martin Pena) were surveyed to the limit of the T-sheet. This hydrographic survey was accomplished between the dates of 17 March 1965 - 6 April 1965 and 10 May 1965 - 17 May 1965.

This survey makes junctions with the following prior surveys:

<u>Register No.</u>	<u>Scale</u>	<u>Date</u>
2418	1:5,000	1899
2446	1:10,000	1900

Junction was made with the following contemporary survey:

<u>Field No.</u>	<u>Scale</u>	<u>Date</u>
EX-5-1-65	1:5,000	1965

C. SOUNDING VESSEL

All hydrography was accomplished by launches and skiffs from the Ship EXPLORER.

Skiff #1-A Green day letters
The majority of the inshore hydrography, shoal and foul areas was surveyed with this skiff.

Skiff #2 Blue day letters
Three days of hydrography and the buoy locations were accomplished using this skiff. By mistake "b" day for skiff #2 was plotted on the sheet using purple ink instead of blue ink.

Launch #3 Red day letters
All launch hydrography and bottom sampling was accomplished using this launch.

D. SOUNDING EQUIPMENT

Raytheon DE-723 fathometers, calibrated at 800fm/sec, were used in all sounding vessels as follows: serial No. 261 in ML#3, serial No. 258 in skiff #2, and serial No. 531 in skiff #1-A. Pole soundings were used by skiff hydro parties to supplement fathometer soundings in depths of approximately 3 feet or less. Bar checks were taken in order to determine velocity corrections for the fathometers. Additional information may be found in the fathometer report for this project.

E. SMOOTH SHEET

The smooth boat sheet projection was ruled in the Washington Office by PJD. The positions on the sheet were plotted by ship's personnel as the field work progressed, and the soundings were reduced and penciled on the sheet as soon as practicable. Since the smooth boat sheets were plotted simultaneously with the field work no soundings were placed on the boat sheets. This smooth boat sheet is plotted with the accuracy of a smooth sheet, however, certain minute details may not be up to smooth sheet standards due to the conditions under which the sheet was plotted and prepared. A copy of a letter concerning this sheet from Capt. Paulson to the Director is attached to this report (page 10).
A statement concerning the survey of San Juan Harbor from Cdr Guth is included in this report, pg. 11-14.

Several soundings penciled on the smooth boat sheet were caused by grass and consequently were too shoal.

The Washington Office, in reviewing the sheet changed the soundings to the proper depth.

The changed soundings have been reviewed by EXPLORER personnel.

A list of the changed soundings are as follows:

<u>Sounding in Error</u>	<u>New Sounding</u>	<u>Latitude</u>	<u>Longitude</u>
12	14	18° 27' 07"	66° 05' 57"
9	14	27 06	06 01
8	16	27 05	06 05
7	deleted	27 05	06 06
10	20	27 04	06 08
10	18	27 02	06 09
11	deleted	26 57	06 15
10	19	26 59	06 28
11	15	26 57	06 27
12	15	26 54	06 28
8	deleted	26 48	06 28
11	14	26 50	06 07
11.5	17	26 52	06 01
14	13	26 46	06 12
8	deleted	26 46	06 12
12	13	26 42	06 14
7	deleted	26 43	06 03
9	deleted	26 47	05 57
7	15	26 47	05 54
11	15	26 48	05 49
7	deleted	26 43	05 43
6	9	26 41	05 35
6.5	7	26 41	05 31
6	deleted	26 39	05 31
6	deleted	26 38	05 29
7	8	26 38	05 31
6	7	26 40	05 23
5	7	26 41	05 22
6	8	26 40	05 21
4	7	26 39	05 22
12	8	26 39	05 21
5	7	26 37	05 21
4	7	26 36	05 21
3	6	26 35	05 22
4	7	26 35	05 22

<u>Sounding in Error</u>	<u>New Sounding</u>	<u>Latitude</u>	<u>Longitude</u>
30	deleted	18° 26' 35"	66° 05' 17"
6	11	26 34	05 31
5	11	26 32	05 33
6	8	26 31	05 30
6	8	26 30	05 ⁿ 27
7	8	26 29	05 28
5	deleted	26 28	05 33
6.5	7	26 27	05 35
6	7	26 26	05 32
6	7	26 25	05 35
5	deleted	26 35	05 48
9	11	26 37	05 58
8	11	26 32	05 45
6	deleted	26 31	05 45
5	deleted	26 26	05 45
5	7	26 26	05 47
4	7	26 24	05 49
6	deleted	26 31	06 17
6	11	26 30	06 15
6	11	26 29	06 16
6	9	26 25	06 18
9	10	26 24	06 16
8	9	26 23	06 17
6	9	26 21	06 17
6	7	26 16	06 26
6	8	26 19	06 28
4	9	26 25	06 29
5	deleted	26 26	06 28
4	11	26 27	06 13
5	11	26 28	06 29
5	11	26 28	06 30
7	11	26 28	06 30
9	11	18° 26' 50"	66° 05' 11"

10 Dec., 65 All fathograms have been check scanned for additional strays by EXPLORER personnel. A considerable number of soundings were changed. Refer to the tracing paper overlay accompanying the sheet.

F. CONTROL

The major part of the control was established by photogrammetric methods. All final locations of hydrographic signals are on T-sheets: T-11885, T-11886, T-11888, T-11889. These sheets are classified as "Incomplete Manuscripts" and dated January 1965. Additional information may be found in the Control and Shoreline Report for this project.

G. SHORELINE

Shoreline detail was transferred from the T-sheets listed in section F. Since the Advance Manuscripts have not been completed, the sheets are being forwarded for verification under the assumption that the shoreline will be inked by the verifier. Two changes in the shoreline were noted. The dock in the vicinity of latitude $18^{\circ}26.0'$, longitude $66^{\circ}06.0'$ was being extended, with the area south of the extension being filled in. Position 23p (skiff 1-A) at latitude $18^{\circ}26.1'$, longitude $66^{\circ}06.05'$ locates the end of the construction as of 6 April 1965, however, final construction may have extended further. The area in the vicinity of latitude $18^{\circ}26.6'$, longitude $66^{\circ}05.0'$ was awash as sketched in by the hydrographer. The shoreline could not be walked in this area because the area is composed of very soft material.

H. CROSSLINES

Crosslines compose 8.4% of the hydrography.

I. JUNCTIONS

The depths at the junction between this survey and the EX-5-1-65 survey are in agreement.

J. COMPARISON WITH PRIOR SURVEYS

In regards to the Presurvey Review OPR-423 (1965) the following pertain to this survey sheet.

Note 5: "The following information should be obtained concerning the bridges in the vicinity of latitude $18^{\circ}27.7'$, longitude $66^{\circ}05.2'$. a. Can marine traffic pass under the bridges?"
Yes, marine traffic (small boats) can pass under the bridges.

"b. Clearances of the bridges." The two westerly (of three) bridges have a 7-foot clearance and the easterly bridge has a 6-foot clearance. "c. Status of old crossings shown by dashed lines ---- ruins." No evidence was found of the existence of the crossing or its underwater remains by the hydro party.

Note 8: "The sunken wreck charted in latitude $18^{\circ}27.66'$, longitude $66^{\circ}06.60'$. . ." This sunken wreck (position No. 2d, skiff 2) is located at latitude $18^{\circ}27.64'$, longitude $66^{\circ}06.60'$ with a least depth of 18.5 feet.

Note 16: "The 23-foot sounding 'Rep' charted in latitude $18^{\circ}27.02'$, longitude $66^{\circ}05.44'$. . ." A sounding of 24 feet was obtained at this location with both a leadline and fathometer, and this area shoals up slightly to the north.

Note 17: "The poles charted on the west side of the channel and south of latitude $18^{\circ}26.8'$, longitude $66^{\circ}06.65'$. . ." Two of the poles were located as follows: at latitude $18^{\circ}26.78'$, longitude $66^{\circ}06.65'$ (used as signal IRV); and at latitude $18^{\circ}26.50'$, longitude $66^{\circ}06.61'$ (position 39g skiff 1A). The existence of the third pole was disproved.

The prior surveys of the area are considered obsolete and no useful information would be obtained by a comparison with the new survey. Much dredging and filling has been accomplished since the prior surveys resulting in drastic changes in the water depths and shoreline.

K. COMPARISON WITH THE CHART

The area surveyed is covered on C&GS chart 908, scale 1:10,000, 23rd Ed., 8 March 1965. The "obstr rep" at latitude $18^{\circ}27.80'$, longitude $66^{\circ}06.15'$ is apparently the result of bottom materials shoaling up at the west end of pier 11. The chart does not compare favorably with the survey sheet and a new chart is needed. Depths slightly shoaler than the controlling depths on the various channels appear as listed below.

1. Army Terminal Channel (controlling depth 36.4-37.6 ft.) Several soundings of 36 feet and two soundings of 35 feet appear near latitude $18^{\circ}26.4'$, longitude $66^{\circ}06.5'$.

2. Army Terminal Turning Basin (controlling depth 36 ft.) Several soundings of 35 feet appear in the north west section, soundings of 34 feet and 35 feet appear in the south west section, and the soundings between the Army Terminal Pier and the fuel pier are predominantly 34 feet with one 33-foot sounding at latitude $18^{\circ}25.89'$, longitude $66^{\circ}06.49'$.

3. Puerto Nuevo Channel (controlling depth 31.8-32.1 ft.) Three soundings of 35 feet appear at latitude $18^{\circ}26.0'$, longitude $66^{\circ}06.15'$; latitude $18^{\circ}26.1'$, longitude $66^{\circ}06.1'$; and latitude $18^{\circ}26.2'$, longitude $66^{\circ}05.8'$. Shoal soundings in the apparent channel at latitude $18^{\circ}26.45'$, longitude $66^{\circ}05.5'$ indicate that the channel may not have been dredged in a straight line on the north side.

4. Turning Basin at Navy Tender Piers (controlling depth 30 ft.) Shoal soundings (minimum sounding of 24 feet) appear at approximately latitude $18^{\circ}26.75'$, longitude $66^{\circ}05.25'$ as indicated on the chart.

5. The channel connecting the Navy Piers with the Deep Draft Anchorage and Anegado Channel (controlling depth 30 ft.) appears to taper down at approximately latitude $18^{\circ}26.85'$, longitude $66^{\circ}05.8'$ and then widen back to width.

6. No discrepancies between the survey and chart were apparent in the areas covered by the Deep Draft Anchorage and the San Antonio Channel.

A line of 8 markers, not indicated on the chart, was located by launch No. 3 (position No. 54c & 55c) at latitude $18^{\circ}26.9'$, longitude $66^{\circ}06.2'$.

A small shoal area, not indicated on the chart, with a least depth of 3 feet appears at latitude $18^{\circ}26.62'$, longitude $66^{\circ}05.65'$ in an area of predominantly 11 and 12 feet depths.

L. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys for charting.

M. AIDS TO NAVIGATION

The buoys in the area were located, but are not plotted on the sheet because the Coast Guard was in the process of replacing

all buoys with permanent beacons when the ship departed the area.

N. STATISTICS

<u>Launch No. 3</u>	
No. of Positions	2080
Nautical Miles of Sdg. Line	152.5
Bottom Samples	7
<u>Skiff 1-A</u>	
No. of Positions	1687
Nautical Miles of Sdg. Line	80.3
<u>Skiff No. 2</u>	
No. of Positions	317
Nautical Miles of Sdg. Line	10.5
<u>Total</u>	
No. of Positions	4084
Nautical Miles of Sdg. Line	243.3
No. Bottom Samples	7

O. MISCELLANEOUS

The entire area south and east of the Puerto Nuevo Channel had a very soft bottom which was composed of dredging fluff and discharge from the sewer plant.

A floating drydock occupied the north east corner of the Navy Tender Piers (latitude $18^{\circ}27.05'$, longitude $66^{\circ}05.38'$), therefore, this area could not be surveyed.

P. REFERENCES TO REPORTS

<u>.Report</u>	<u>Date Submitted</u>
Seasons Report	3 September, 1965
Control and Shoreline Report	24 August, 1965
Field Edit Report	21 July, 1965
Coast Pilot Report	28 June, 1965
Tide Report	4 October, 1965
Fathometer and Velocity Correction Report	14 August, 1965

Submitted by:

Gary A. Eskelin, for:

James O. Murphy
LTjg, C&GS

Approved:

Jack E. Luth for
Marvin T. Paulson
Captain, C&GS
Comdg., Ship EXPLORER

Thru : The Director
 Norfolk Regional Officer
 Attn : Chief, Nautical Chart Division

July 22, 1965

Commanding Officer
 Ship EXPLORER

San Juan Harbor Survey

The smooth boat sheets EX 5-1-65 and EX 5-2-65 have been prepared with the utmost care and accuracy comparable to smooth sheet plotting. The soundings have been reduced in accordance with standard procedures and the reduced sounding entered on the sheet.

To date the sheet is yet incomplete with about 3 days development surveys remaining to be plotted, however, the critical soundings have been selected from the developments and entered in the sheet. The sheet in its present form is considered adequate for charting purposes. Two officers, LTjg. Murphy and Ens. Gammon will be detailed ashore for the period 22-30 July while the ship is out to complete the plotting and write the report.

The sheets were plotted as the ^{true} field work progressed and penciled soundings reduced to ~~time~~ ^{and} tides entered on the sheet the day following each days survey as far as practical, consequently certain smooth sheet refinements of position numbering has in development or over lap areas become somewhat congested. It is assumed that during the inking of the of the soundings, these conditions could be corrected if necessary.

The intent of the smooth boat sheet is to provide a plot of soundings satisfactory for immediate charting which I believe we have accomplished. The sheets are a product of several inexperienced officers in smooth plotting working intermittently under adverse conditions aboard ship. Each officer had numerous other assigned duties and responsibilities to accomplish, including watch standing. It is recommended that inspection and review be guided by the intent and be in the form of constructive comments rather than a critical review of minute detail.

Marvin T. Paulson, CAPT.

SAN JUAN HARBOR SURVEY 1965

8 December, 1965

This report contains data that was generally approved by Captain Paulson. He departed the EXPLORER prior to the final review of the smooth boat sheets and the reports. Therefore, I have added my comments.

San Juan Harbor is an estuary with so little flushing by tide and current that it approaches stagnation. The water is thick with floating and suspended debris which is dumped into the harbor from the surrounding populated areas. Excessive sewerage is channeled into the harbor and the suspended matter is dense. The bottom of the harbor is littered with debris and thick with silt.

Shortly after the survey was begun, it was determined that the harbor was so drastically changed that for all practical purposes the old surveys could be discarded. The project was approached with the idea of making a completely new and comprehensive survey.

Large debris such as old drums and timbers are undoubtedly strewn throughout the harbor. On several occasions our hydro units towed "dead heads" and floating timbers, which were a menace to navigation, to the shore and dragged them up onto the beach. Indications were

that some large debris that was submerged would drift or move along the bottom. The silt is so thick that fathometer depths recorded several feet shoaler than pole soundings. Outboard motors constantly clogged up from the densely suspended matter.

To prove or disprove many of the numerous strays that were recorded, several areas were wire dragged with effective depths that would have hung on solid bottom. The purpose of these was to disprove the strays, not to clear shoals with an effective depth; therefore, they are not to be considered support of hydrography. Although the wire drag was recorded in record volumes no attempt was made to reduce the data and accurately plot the strips. Two launches devoted an entire day to this project, and the strays were disproved, which was their only purpose. The drag strips are as follows:

EX 5-1-65

Two strips centered at approximately latitude $18^{\circ} 27' 35''$ longitude $66^{\circ} 07' 30''$ cleared 10 feet in 12 to 13 feet of water.

One strip centered at approximately latitude $18^{\circ} 27' 40''$, longitude $66^{\circ} 06' 55''$ cleared 14 feet in 28 feet of water.

EX 5-2-65

One strip down the channel between Puerta de Tierra and Isla Grande cleared 14 feet in 37 to 44 feet of water.

One strip centered at approximately latitude $18^{\circ} 26' 50''$ longitude $66^{\circ} 06' 25''$ cleared 11 feet in 13 to 14 feet of water.

To adequately develop every fathometer stray or potential shoal sounding would be extremely time consuming and costly, and would only be accurate for the exact time it was surveyed. Therefore, the concentrated development effort was placed on definite shoals, channels, docking areas, and, in general, every area that might be a hazard to shipping and boating. Some of the Presurvey Review Notes (Items marked with an asterisk, *, Section J, of the report for EX 5-1-65) were not thoroughly developed because their proof or disproof was not considered one of these concerns. These depths may not exist in the exact positions given, but it is more than likely that similar least depths do exist in these generally foul shoal areas. Therefore, it is recommended that the least depth, either from the Presurvey Review, or the new survey, be charted, providing the best indication for mariners to avoid the area. The 41 ft. depth charted at latitude $18^{\circ} 28' 40''$, longitude

66° 07' 44"; the 5 ft. depth charted at latitude 18° 27' 57", longitude 66° 07' 19"; and the 4 ft. depth charted at latitude 18° 27' 54", longitude 66° 07' 17" (all on EX 5-1-65) should have been developed and proved or disproved; however, they were overlooked. The other questionable Presurvey Review Items were not developed for the reasons given above.

The number of miles of hydrography in this survey is not staggering, however an enormous amount of time and effort went into accomplishing it. This survey is as accurate as our present means and methods permit. It is adequate for charting purposes and no additional work is recommended, other than the three charted depths noted above, and unless dredging changes have taken place.

Jack E. Guth
CDR Jack E. Guth

Executive Officer and
Operations Officer
USC&GSS EXPLORER

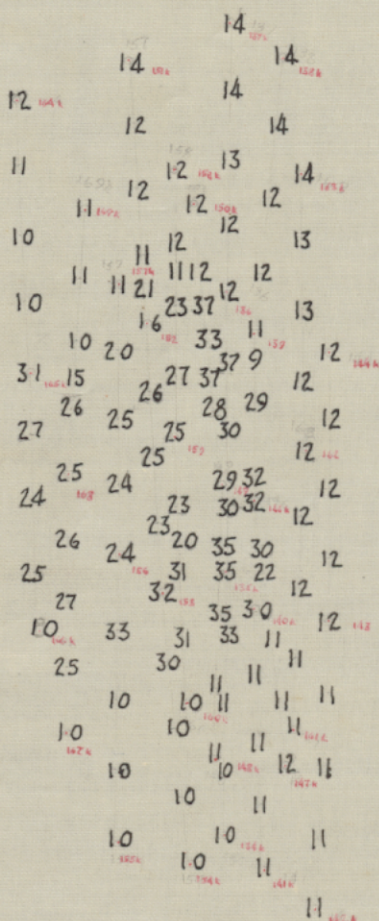
XERO
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COF

18 27' 00"

66 06' 15"



18 26' 30"

OVERLAY

TO ACCOMPANY SHEET

EX-5-2-65

POSITIONS 139k - 169k, LAUNCH NUMBER 3 (RED)

TIDE NOTE

To Accompany EX-5-2-65

Tides for the survey were determined by using a direct reading staff, read every 15 minutes by the QM on watch. The staff was relocated each time the ship changed its berth for convenience of observation. Mean low water was established by comparing the direct reading with the standard tide gage staff at the Navy Tender Piers, San Juan, Puerto Rico. Tide records were referred to local ship time, 60th and 45th meridian.

Location of standard gage
latitude $18^{\circ}26.98'$
longitude $66^{\circ}05.47'$

Location of tide staffs
latitude $18^{\circ}27.02'$
longitude $66^{\circ}05.43'$

latitude $18^{\circ}27.68'$
longitude $66^{\circ}06.67'$

latitude $18^{\circ}27.68'$
longitude $66^{\circ}05.98'$

GEOGRAPHIC NAMES LIST

EX 5-2-65

Cano de Martin Pena

Rio Puerto Nuevo

No new geographic names were encountered in this survey.

ABSTRACT OF CORRECTIONS TO ECHO SOUNDERS

EX-5-2-65

Launch No. 3 17 March 1965-6 April 1965

Raytheon DE-723 No. 261

<u>Depth (ft)</u>	<u>Corr. (ft)</u>
2.3-3.6	-0.6
3.7-5.2	-0.4
5.3-7.0	-0.2
7.1-9.9	0.0
10.0-13.2	+0.2
13.3-17.5	+0.4
17.6-21.3	+0.6
21.4-24.4	+0.8
24.5-27.5	+1.0
27.6-30.6	+1.2
30.7-33.6	+1.4
33.7-36.7	+1.6
36.8-39.6	+1.8
39.7-42.7	+2.0
42.8-45.7	+2.2

10 May 1965

2.5-5.9	+0.4
6.0-12.7	+0.6
12.8-16.1	+0.8
16.2-18.8	+1.0
18.9-20.9	+1.2
21.0-22.9	+1.4
23.0-25.3	+1.6
25.4-28.2	+1.8
28.3-32.3	+2.0
32.4-50.0	+2.2

11 May 1965

2.5-5.5	-0.6
5.6-8.4	-0.4
8.5-10.3	-0.2
10.4-12.0	0.0
12.1-13.8	+0.2
13.9-15.6	+0.4
15.7-17.6	+0.6
17.7-20.0	+0.8
20.1-22.8	+1.0
22.9-26.9	+1.2
27.0-33.7	+1.4
33.8-50.0	+1.6

13 May 1965

4.0-6.4	-0.4
6.5-8.2	-0.2
8.3-9.3	0.0
9.4-10.3	+0.2
10.4-13.2	+0.4
13.3-23.6	+0.6
23.7-26.3	+0.8
26.4-27.9	+1.0
28.0-29.2	+1.2
29.3-30.2	+1.4
30.3-32.6	+1.6
32.7-35.4	+1.8
35.5-39.8	+2.0

17 May 1965

3.7-5.0	-1.0
5.1-5.7	-0.8
5.8-6.0	-0.6
6.1-6.8	-0.4
6.9-7.2	-0.2
7.3-9.3	0.0
9.4-10.4	+0.2
10.5-12.0	+0.4
12.1-15.0	+0.6
15.1-19.8	+0.8
19.9-24.0	+1.0
24.1-26.3	+1.2
26.4-28.0	+1.4
28.1-31.8	+1.6
31.9-34.5	+1.8
34.6-35.9	+2.0
36.0-38.1	+2.2
38.2-41.0	+2.4
41.4-44.8	+2.6

Skiff No. 2

All Days

Raytheon DE-723 No. 258

-7.4	-1.2
7.5-9.2	-1.0
9.3-10.6	-0.8
10.7-11.2	-0.6
11.3-11.6	-0.4
11.7-12.8	-0.2
12.9-15.0	0.0
15.1-16.4	+0.2
16.5-18.0	+0.4
18.1-20.0	+0.6
20.1-24.1	+0.8
24.2-29.7	+1.0
29.8-37.0	+1.2
37.1-46.0	+1.4

Skiff No. 1-A ¹⁷
~~24~~ March-6 April 1965

Raytheon DE-723 No. 531

<u>Depth (ft)</u>	<u>Corr. (ft)</u>
1.4-2.2	-1.2
2.3-3.4	-1.0
3.5-5.0	-0.8
5.1-7.2	-0.6
7.3-10.5	-0.4
10.6-15.6	-0.2
15.7-24.0	0.0
24.1-36.7	+0.2
36.8-50.0	+0.4

	11 May	-12 May	1965
3.0-5.6			-0.6
5.7-8.3			-0.4
8.4-11.0			-0.2
11.1-14.0			0.0
14.1-18.0			+0.2
18.1-27.2			+0.4
27.3-40.6			+0.6

	13 May 1965	and 17 May 1965
0.0-4.0		-0.4
4.1-8.3		-0.2
8.4-12.3		0.0
12.4-17.8		+0.2
17.9-22.8		+0.4
22.9-26.1		+0.6
26.2-28.3		+0.8
28.4-32.6		+1.0
32.7-40.0		+1.2

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LIST OF SIGNALS

EX-5-2-65

<u>Signal</u>	<u>T-Sheet</u>	<u>Photo</u>
BAG	0 0 3	64W3220
BOB	0 6 0	64W3221
CAP	1 0 6	CAPITOL CUPOLA 1927
CAS	1 0 7	CASETA 1939
DAD	1 0 1	64W3221
DAY	1 0 9	64W3220
DIC	1 4 1	64W3221
EAT	2 2 0	64W3220
FIG	2 2 4	64W3220
FIV	2 2 3	64W3221
FOG	2 2 6	64W3221
FOR	2 2 6	64W3221
GUS	3 3 8	ST. AUGUSTINE CATHEDRAL CUPOLA
HAT	3 3 0	64W3221
JOE	4 4 6	1927
KEY	4 4 2	64W3221
LAY	4 4 0	64W3221
NED	5 5 2	64W3221
NOR	5 5 6	NAVY WATER TANK (North)
ONE	6 6 5	64W3221
OFF	6 6 2	64W3221
PAD	6 6 0	64W3239
POL	6 6 6	64W3220
PUS	6 6 8	64W3221
SAP	7 7 0	64W3221
SMU	7 7 5	64W3220
SOW	7 7 6	64W3239
TRA	8 8 7	64W3221
TWO	8 8 9	64W3221
DAV	1 0 8	64W3239
DUM	1 8 5	64W3237
KEN	4 2 5	64W3238
MAL	5 0 4	64W3238
RAG	7 0 3	64W3239
RIC	7 3 1	64W3238
RUD	7 7 8	64W3238
SAM	7 7 0	64W3239
SIB	7 7 3	64W3238
TAP	8 8 0	64W3238
VAN	8 8 0	64W3238
VIN	8 8 3	64W3237
WAR	9 9 0	64W3238
YES	9 9 2	64W3238
ZOO	9 9 6	64W3239

T-11889

Signal	T-Sheet	Photo
ANN	055	64W3239
BED	021	64W3239
BIL	034	64W3213
DON	165	64W3213
EGG	233	64W3213
FOK	264	64W3241
GUM	385	64W3213
HOW	369	64W3212
IRV	478	64W3240
IVY	389	64W3212
JUG	483	64W3212
KID	431	64W3239
LOG	463	64W3241
REC	721	64W3240
STK	784	64W3213
TEE	822	CATANO CHURCH STEEPLE
ICE	312	64W3222
JAP	406	64W3222
MAR	507	64W3222
BIG	930	$\phi 18^{\circ}29'00'' \lambda 66^{\circ}06'45''$ ✓
BAD	931	$\phi 18^{\circ}28'30'' \lambda 66^{\circ}06'15''$ ✓
BOY	932	$\phi 18^{\circ}29'00'' \lambda 66^{\circ}05'45''$ ✓

GEOGRAPHIC NAMES

Survey No. H-8849

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
Bahia de San Juan											1
Canoe de Martin Pena											2
Isla Grande											3
Punta Catano											4
Puerto Rico											5
Punta de Tierra											6
San Juan											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names approved
March 11, 1966
Frank W. Fickett

TIDE NOTE FOR HYDROGRAPHIC SHEET

July 26, 1966

Nautical Chart Division: R. H. Carstens

Plane of reference approved in
20 volumes of sounding records for

HYDROGRAPHIC SHEET 8849

Locality: San Juan Harbor
North Coast of Puerto Rico

Chief of Party: M. T. Paulson (1965)

Plane of reference is mean low water

Tide Station Used (Form C&GS-681):

San Juan, Puerto Rico

Height of Mean High Water above Plane of Reference is as follows:

1.10 feet

Remarks

L. C. Wharton For
J. M. Symms

Chief, Tides and Currents Branch

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. 8849

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS			
DESCRIPTIVE REPORT		1	OVERLAYS (paper tracing)		1	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	I					
VOLUMES	22					
BOXES						

T-SHEET PRINTS (List)

SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				
POSITIONS CHECKED				
POSITIONS REVISED				
DEPTH SOUNDINGS REVISED				
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS				
JUNCTIONS				
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS				
SPECIAL ADJUSTMENTS				
ALL OTHER WORK				
TOTALS				
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY	BEGINNING DATE		ENDING DATE	
REVIEW BY	BEGINNING DATE		ENDING DATE	

VERIFIER'S REPORT
HYDROGRAPHIC SURVEY, H-8849

INSTRUCTIONS - This form serves to identify items of a checklist in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R	Part III - JUNCTIONS (Continued)	CL	R
<p>Note: The verifier should first read the Descriptive Report for general information and problems.</p> <p>1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None</p>			<p>10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of Butt junctions and areas which are SUPERSEDED.</p>		
<p>2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None</p>			<p>Part IV - VOLUMES</p> <p>11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken and exceptions noted in the volumes. Remarks Required: -- None</p>		
<p>3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None</p>			<p>12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following: (a) rocks (b) line turns (c) position values of beginning and ending of lines (d) bar check or velocity correctors (e) time recording (f) notes or markings on fathograms (g) was reduction of soundings accurately done? (h) was scanning accurate? (i) were peaks at uneven intervals missed? (j) were stamps completed? (k) references to adjacent features</p>		
<p>Part II - SHORELINE AND SIGNALS</p> <p>4. Source of shoreline signals Remarks Required: -- List all surveys a. Give earliest and latest dates of photographs b. Field inspection date c. Field Edit date d. Reviewed-Unreviewed</p>					
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>					
<p>6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None</p>					
<p>7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.</p>			<p>Part V - PROTRACTING</p> <p>13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None</p>		
<p>Part III - JUNCTIONS</p> <p>Note: Make a cursory comparison preliminary to inking soundings in area of overlap.</p> <p>8. All junctions of contemporary or overlapping sheets were transferred in colored ink and overlapping curves were made identical. Remarks Required: -- None</p>			<p>14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None</p>		
<p>9. The notation in slanted lettering "JOINS H--- (19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None</p>			<p>15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None</p>		

Part V - PROTRACTING (Continued)	CL	R	Part VIII - AIDS TO NAVIGATION	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.			26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.		
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.			27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None		
Part VI - SOUNDINGS 18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None			Part IX - BOATSHEET 28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None		
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.			29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.		
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None			Part X - GENERAL 30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None		
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None			31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None		
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.			32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None		
Part VII - CURVES 23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected. 24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines b. From soundings in orange c. Approximate position of sketched curve is dashed orange d. Approximate position of shoal area not sounded in black dashed Remarks Required: -- None			33. The bottom characteristics are adequately shown. Remarks Required: -- None		
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.			Part XI - NOTES TO THE REVIEWER 34. Unresolved discrepancies and questionable soundings.		
Verified by _____	Date _____	35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.			
		36. Supplemental information.			

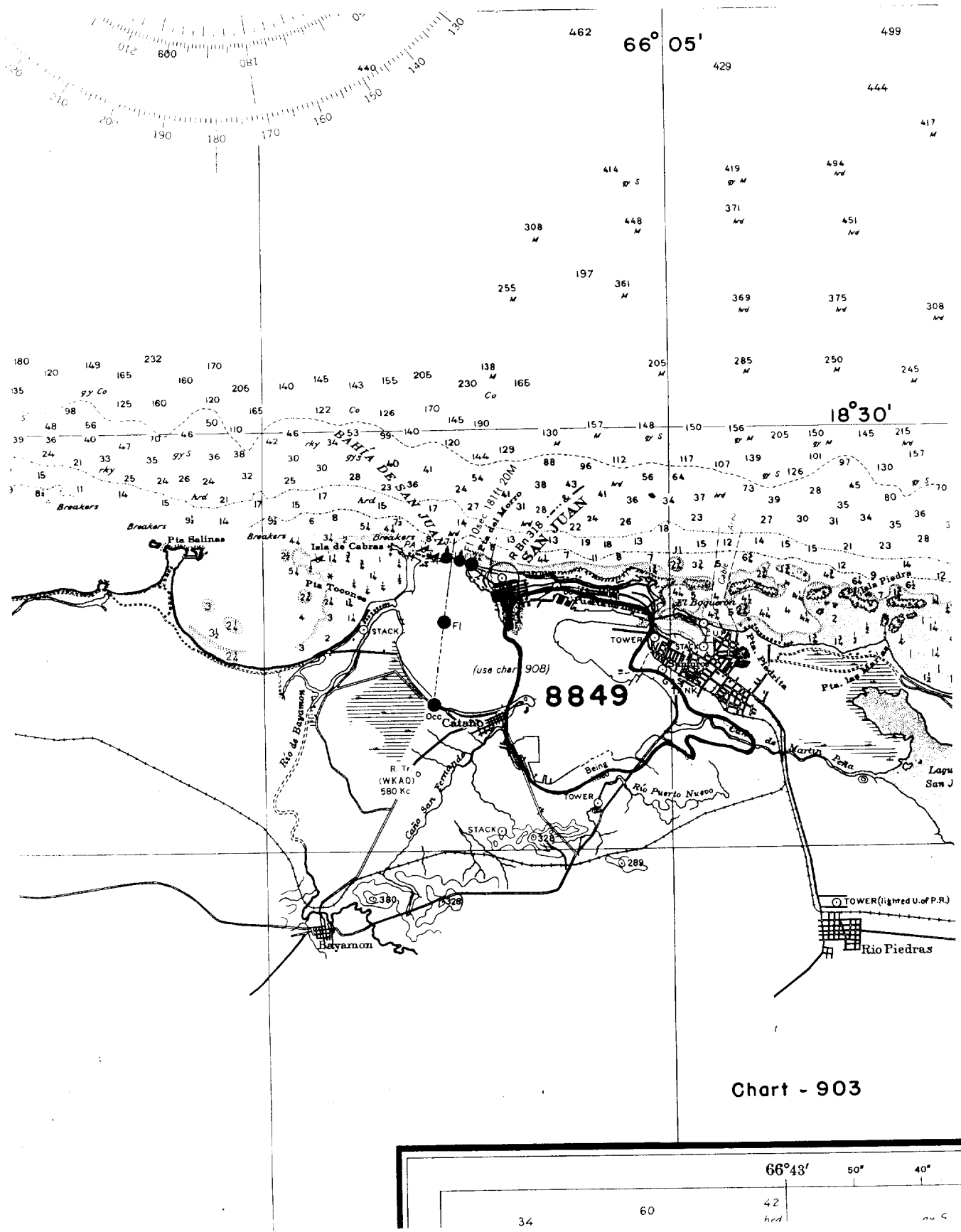


Chart - 903

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8849

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
908	2/2/75	JAY SILVERMAN	Full Part Before Verification Review Inspection Signed Via Drawing No. <i>Revised shoaler sdgs only. Consider Adequately applied</i>
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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908 Partially applied Nov 1965 J. P. Weir.