PORTO RICO
U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey: SHORELINE
Field No.: Office No.: T-12160

LOCALITY
State: PUERTO RICO
General locality: EAST COAST
Locality: RIO HUMACAO TO PLAYA DE GUAYANAS

1959 - 1962

CHIEF OF PARTY
M. L. Olivier, Photo Party 708
V. Ralph Sobieralski, Tampa District Office

LIBRARY & ARCHIVES

DATE: 1 JUL 1968
DESCRIPTIVE REPORT - DATA RECORD

T-12160

Project No. (II): PH-6106
Quadrangle Name (IV):

Field Office (II): Puerto Rico
Chief of Party: M. L. Olivier
Photogrammetric Office (III): Tampa, Fla.
Officer-in-Charge: V. R. Sobieralski

Amendment: Field & Office - Dec 15, 1962

※ Interior planimetry restricted to those features useful to photo hydro support

Method of Compilation (III): Kelsh Plotter

Manuscript Scale (III): 1:10,000
Stereoscopic Plotting Instrument Scale (III): 1:6,000

Scale Factor (III): Pantographed to 1:10,000

Date received in Washington Office (IV): April 13, 1948
Date reported to Nautical Chart Branch (IV):

Date applied to Chart No.:
Date registered (IV):

Publication Scale (IV):

Publication Date (IV):

Geographic Datum (III): Puerto Rico

Vertical Datum (III): MHW

Reference Station (III): CUYANES 2, 1923
Lat.: 18°03'48.111 (1179.1 m) Long.: 65°48'22.554 (663.3 m)

Adjusted

Plane Coordinates (IV):
State: Puerto Rico Zone: 1

Y = 83,898.29

X = 717,803.44
Areas contoured by various personnel
(Show name within area)

(i) (ii) (iii)

Inapplicable
Field Inspection by (II): M. L. Olivier
Date: Oct. 1961

Planetable contouring by (II): Inapplicable
Date:

Completion Surveys by (II): G.F. Wirth
Date: Sept. 1962

Mean High Water Location (III) (State date and method of location): Field Inspection Oct. 1961

Projection and Grids ruled by (IV): A. R. (W.O.)
Date: Nov. 1961

Projection and Grids checked by (IV): A.R. (W.O.)
Date: Dec. 1961

Control plotted by (III): V. P. Cackowski
Date: Dec. 1961

Control checked by (III): I. I. Saperstein
Date: Dec. 1961

Stereoscopic
Control extension by (III): Washington Office

Planimetry R. J. Pate
Date: Dec. 1961

Stereoscopic Instrument compilation (III):

Manuscript delineated by (III): R. J. Pate
Date: Dec. 1961

Photogrammetric Office Review by (III): H. H. Slavney
Date: Dec. 1961

Elevations on Manuscript
checked by (II) (III): Inapplicable
Date:
Camera (kind or source) (III): Wild "S"

<table>
<thead>
<tr>
<th>Number</th>
<th>Date</th>
<th>Time</th>
<th>Scale</th>
<th>Stage of Tide</th>
</tr>
</thead>
<tbody>
<tr>
<td>59-6-3931</td>
<td>Apr. 18, 1959</td>
<td>11:25</td>
<td>1:30,000</td>
<td>Tidal BM nearby gives 0.4 ft. for M.H.W. so tide seems negligible</td>
</tr>
<tr>
<td>3932</td>
<td></td>
<td>11:25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3933</td>
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<td>11:25</td>
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<td></td>
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<tr>
<td>3934</td>
<td></td>
<td>11:25</td>
<td></td>
<td></td>
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<tr>
<td>234-229</td>
<td>Feb 15, 1962</td>
<td>16:45</td>
<td>1:10,000</td>
<td></td>
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<tr>
<td>287-291</td>
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<td>09:52</td>
<td>09:53</td>
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<tr>
<td>9756-9751</td>
<td></td>
<td>15:15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9766-9767</td>
<td></td>
<td>22:22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tide (III)
Nearest sub-ordinate station is at Bahia Mulas, Isla de Vieques, about 21 miles away. See "Stage of Tide" above.

Reference Station: Atlantic Marine Center
Subordinate Station: Washington Office Review by (IV):

Final Drafting by (IV): J. Honick (Tampa District Office)
Final Drafting Reviewed by: W. H. Shearouse (Tampa)
Drafting verified for reproduction by (IV):

Proof Edit by (IV):

Land Area (Sq. Statute Miles) (III): 7.6 Linear St. Miles
Shoreline (More than 200 meters to opposite shore) (III): 24
Control Leveling - Miles (II): 0
Number of Triangulation Stations searched for (II): 2
Number of BMs searched for (II): 0
Number of Recoverable Photo Stations established (III): 1
Number of Temporary Photo Hydro Stations established (III): 0

Remarks: A third station that falls in T-12161 which joins this map on the south, was searched for and recovered.

Field edited by G.F. Wirth - Sept. 1962
SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT T-12160

Shoreline manuscript T-12160 is one of sixteen 1:10,000 scale maps in Ph-6106, Puerto Rico, which also contains eight 1:5,000 scale maps. The sketch on page 5 of this report shows the position of this map in the project. It is noted that five maps of this project were cancelled: 1:5,000 scale maps T-121143 and T-121144, and 1:10,000 scale maps T-12150, T-12151, and T-12161.

The delineation of T-12160 was carried about 15" (seconds) south of its prescribed southern border with T-12143, T-12144, and T-12161 to provide shoreline control in the area offshore Playa de Guayanes. This seemed desirable during compilation and is retained on this map for registry in view of the cancellation of the three maps south of T-12160. 1962 color photographs, 1:10,000 scale, were used for some revisions and additions south of latitude 18° 05' during final review. Photographs were 62-3(c)-224 thru 229, 239 thru 241, 9750, 9751, 9766 and 9767.

This is a stereo instrument project in advance of hydrographic surveys of the area. Field work preceding compilation consisted of control identification on contact prints and field inspection on 1:10,000 ratio prints of the 1:30,000 scale April 18, 1959 "S" panchromatic photographs. The stereo bridge was run in the Washington Office. Compilation was by Kelsh Plotter using diapositives of the April 18, 1959 photographs. Ratio prints at 1:10,000 scale were processed and furnished for hydrographic support.

The manuscript was field edited in September 1962 in conjunction with hydro-support. The field edit was done on a cronaflex "T" sheet, which was to be returned to the ship. An ozalid print was made from the field edit "T" sheet and the field editor's notes were underscored in red; this print was used in final review.

The compilation manuscript was a vinylite sheet 4 minutes in latitude, and 4 minutes and 45 seconds in longitude. The smooth manuscript was extended to 4 minutes of latitude, and is on cronaflex for registry and record after final review.
2. AREAL FIELD INSPECTION

These shoreline sheets are located on the southeasterly side of Puerto Rico. The area is rural except for two beach resorts. The shoreline area is very undeveloped.

Field inspection was performed on photographs 59-S-3925 through 59-S-3937. The photographs contained some clouds but were otherwise of good quality. No difficulty was encountered in the interpretation in the field. Some shoreline areas around the mouths of streams had changed since photography. These changes are shown on the photographs in violet ink.

A large amount of rainfall fell during field inspection making it very difficult to reach some of the interior features. Some of the marsh and swamp areas may have to be clarified by the field editor.

3. HORIZONTAL CONTROL

All Coast and Geodetic Survey control stations except one were searched for. No attempt was made to recover SAN, 1901 because this station is located on an island used as a breeding ground for monkeys. Nobody is allowed on the island. One might possibly obtain permission to visit the island if contact is made with the Laboratory of Perinatal Physiology, Post Office Box 5095, San Juan, Puerto Rico.

Only those stations as specified on the project diagram were photo-identified. To meet this requirement some United States Geological Survey control was used. The following U. S. G. S. control stations were recovered and photo-identified: HUMACAO PLAYA CHURCH, 1934; COLON, 1941; and NAGUABO CHURCH, 1934.

The following Coast and Geodetic Survey control stations were searched for but not recovered: TEGUAS, 1901; BARBACOA, 1901; LIMA 3, 1941; and RON BOIG LARGE RED STK., 1901.

4. VERTICAL CONTROL

All tidal bench marks in the area were searched for but only one was recovered.

5. CONTROL AND DRAINAGE

Contours were not a part of the work requirements for this project.

Drainage is mostly perennial and can be distinguished on the photographs.

6. WOODLAND COVER

Woodland cover has been classified in accordance with the requirements for topographic maps. Wooded areas are adequately covered by the field inspection photographs. Most of the swamp areas were designated as mangrove.
7. **SHORELINE AND ALONGSHORE FEATURES**

The mean high water line was inspected by walking along the beach and by examination from strategic points.

The shoreline, in places, was visited at low water. The distance from the mean low water line to the mean high water line was given at these points.

The foreshore is steep in some areas and flat in other areas.

Docks, wharves, piers, etc. are covered on the photographs.

There are no submarine cables.

8. **OFFSHORE FEATURES**

Some offshore rocks were visited and their heights above water and the time and date have been noted on the photographs. Other heights of rocks were determined from shore. There are a few areas where it appears on the photographs that the water is breaking over an underwater growth or submerged rocks. These places will require investigation by the hydrographic party.

9. **LANDMARKS AND AIDS**

Landmarks and aids to navigation located by photogrammetric methods are shown on the contact prints. All others were located previously by triangulation and have not been disturbed.

Quite a few landmarks were selected, and since all were not inspected from seaward, the hydrographic party may need to delete those not thought to be of landmark value. All heights of new landmarks to be charted were determined. Heights of existing landmarks were determined and verified where possible.

All landmarks and aids to be charted and deleted are adequately covered by Form 567.

10. **BOUNDARIES, MONUMENTS, AND LINES**

Boundaries were excluded by the project instructions.

11. **OTHER CONTROL**

Existing objects that are suitable for photo hydro control were identified on the field inspection photographs. These are shown on the photographs by three digit numbers beginning with 100. Not many objects were selected because of the scarcity of such. Many of the landmarks and aids will be suitable for photo hydro control.
12. OTHER INTERIOR FEATURES

All buildings and roads have been classified in accordance with project instructions dated 30 August 1961. It will be noted by looking at the photographs covering sugar cane areas that many open spaces appear to be roads. Only those open spaces that seemed permanent and well traveled were classified as roads.

Clearances were determined for the following bridges and are listed: (See photo 59-S-3927 for names of rivers)

<table>
<thead>
<tr>
<th>Bridge</th>
<th>Hor. Clearance</th>
<th>Vert. Clearance</th>
<th>Time</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Río Santiago</td>
<td>17.3 ft.</td>
<td>4.7 ft.</td>
<td>10:25 AST</td>
<td>10-6-61</td>
</tr>
<tr>
<td>Río Blanco</td>
<td>26.9 ft.</td>
<td>5.1 ft.</td>
<td>10:30 AST</td>
<td>10-6-61</td>
</tr>
<tr>
<td>Río Anton Ruiz</td>
<td>26.9 ft.</td>
<td>5.2 ft.</td>
<td>10:43 AST</td>
<td>10-6-61</td>
</tr>
<tr>
<td>Boca Prieta</td>
<td>18.9 ft.</td>
<td>5.5 ft.</td>
<td>10:50 AST</td>
<td>10-6-61</td>
</tr>
</tbody>
</table>

13. GEOGRAPHIC NAMES

An investigation of geographic names was not required by the project instructions. Some discrepancies in the names of rivers were found. The names of rivers are shown correctly on the photographs.

14. SPECIAL REPORTS AND SUPPLEMENTAL DATA

Contact photographs and horizontal control data was forwarded to the Washington Office 3 October 1961.

Submitted
24 October 1961

Michael L. Olivier
Chief, Photo Party 708
21. Area Covered:
T-12136 through T-12139; T-12141 through T-12148; T-12152 through T-12161.

22. Method:

Five stereoplanigraph bridges were run in order to provide pass points for Kelsh compilation of the project.

Strip #4 was adjusted on a linear basis. All other strips were adjusted on a least-squares basis on the IBM 650 computer. Satisfactory adjustments were obtained for all strips in the project.

23. Adequacy of Control:

The horizontal control provided complied with project instructions, and was adequate. The following control failed to hold in bridging:

\( \Delta \) PINERITA 2, 1941-SUB.PT. 2. This station had been designated as a poor image pt. at the time of bridging, and may safely be disregarded due to the proximity of other control that held in bridging.

24. Supplemental Data:

None

25. Photography:

The photography was adequate for the needs of aerotriangulation.

Submitted by:

Signed by:

N. E. Fuechsel

Approved:

E. H. Ramey, Chief
Aerotriangulation Section
TRIANGULATION LIST

1. GUAYANES 2, 1923 - SUB. 1+2
2. CATIATA, 1901 - SUB. 1+2
3. RASTO VIEJO EASTERN
   SUGAR ASS'N, W.H. CON.
   STACK, 1941
4. HUMACHO PLAYA CH.
   (USGS) 1934
5. NAUCHEO CH. (USGS) 1934
6. COLON (USGS) 1941 - SUB. 1+2
7. LOMA 1941 - SUB. 1+2
8. HENDA 1941 - SUB. 1+2
9. CACRAS LT. 1941
10. MURDO, 1926 - SUB. 1+2
11. FINERITA 2, 1941 - SUB. 1+2
12. CAZA DE HET, 1923
13. FENEGO, 1941 - SUB. 1+2
14. CENTRAL Fajardo
   NORTH STACK, 1941
15. CAPE, 1921 - SUB. 1+2
16. CAPE SAN JUAN LIGHT
    HOUSE, 1900
17. LOQUILO CH. (USGS) 1934
19. PALMER (USGS) 1929 - SUB. 1+2
19. RIO GRANDE CHURCH
   (USGS) 1934 - SUB. 1+2
20. SANTA INEZ, 1922 - SUB. 1+2
<table>
<thead>
<tr>
<th>STATION</th>
<th>SOURCE OF INFORMATION (INDEX)</th>
<th>DATUM</th>
<th>LATITUDE OR Y COORDINATE</th>
<th>LONGITUDE OR X COORDINATE</th>
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</thead>
<tbody>
<tr>
<td>BATATA, 1901</td>
<td></td>
<td>Puerto Rico</td>
<td>103</td>
<td>669.45</td>
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<tr>
<td></td>
<td></td>
<td>Puerto Rico</td>
<td>729</td>
<td>829.69</td>
</tr>
<tr>
<td>GUAYANES 2, 1923</td>
<td></td>
<td>Puerto Rico</td>
<td>83</td>
<td>898.29</td>
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<tr>
<td>PYRAMIDAL DAY BEACON ON HILL WEST OF PUERTO YABUGA (USGS) 1941</td>
<td></td>
<td>Puerto Rico</td>
<td>717</td>
<td>803.44</td>
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<tr>
<td></td>
<td></td>
<td>Puerto Rico</td>
<td>83</td>
<td>475 (IN T-12161, TO THE SOUTH)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>710</td>
<td>992</td>
</tr>
</tbody>
</table>
PHOTOGRAMMETRIC PLOT REPORT

Stereo bridge was run in the Washington Office, pages 8-9.

31. Delineation

The Kelsh Plotter was used. The field inspection was generally adequate, and no difficulty was encountered in the interpretation of the photographs with the exception of the areas mentioned in Item 36.

Numerous shoreline pass points have been dropped as an aid to the photogrammetry hydro party.

32. Control

See Photogrammetric Plot Report.

33. Supplemental Data

None.

34. Contours and Drainage

Contours are inapplicable.

Perennial and some intermittent streams and main ditches were shown.

35. Shoreline and Alongshore Details

The shoreline, low-water line and alongshore details were delineated in accordance with characteristic areas shown by the field inspection, which was generally adequate.

36. Offshore Details

Rocks and rocky areas lie offshore from Morro de Humacao south to Playa de Guayanas. Some were noted by the field inspector, others that were positively seen on the plotter are shown. Some areas are noted for investigation by the hydrographer.

37. Landmarks and Aids

No non-floating aids were located and a form 567 is submitted. One landmark, TOWER (on Cayo Batata) is submitted for "deletion" on Form 567.

Ink changes by drafter 1-3-62.
38. CONTROL FOR FUTURE SURVEYS

One (1) photo-hydro station was identified by the field inspector and located by the compiler. It is listed under Item 49.

39. JUNCTIONS

Junctions have been made with T-12158 to the north and T-12161 to the south. T-12161 has not been compiled but our diapositive coverage enabled us to delineate the north 20 seconds of latitude for T-12161, which is shown on the border of T-12160. There are no contemporary surveys to the east or west.

40. HORIZONTAL AND VERTICAL ACCURACY

No statement.

46. COMPARISON WITH EXISTING MAPS

None available at this time.

47. COMPARISON WITH NAUTICAL CHARTS

Comparison was made with Chart 918 scale 1:10,000 edition of Apr. 14, 1938 revised Feb. 6 1961; and with chart 923 scale 1:20,000, edition of Aug. 3 1929 revised Aug. 18, 1958.

Comparison with chart 918 reveals shoreline changes from Punta Icacos south to Rio Guayanes. Some near the mouth of Rio Guayanes seem to be changes that can be ascribed to time, but differences in the position of rocky bluff shoreline seem to be differences in the surveys. Some small rocks, just offshore on chart 918 were not noted by the field inspector and under the plotter they appeared contiguous to the shore.

Comparison with chart 923 is generally favorable, there have been some changes at the mouth of Rio Humacoc.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None.
ITEMS TO BE CARRIED FORWARD

None.

[Signature]
R. J. Pate
Carto-photo Aid

APPROVED AND FORWARDED:

William A. Rasure
for V. Ralph Sobieralski
Tampa District Officer
<table>
<thead>
<tr>
<th>Compilation Record</th>
<th>Completion Date</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>Alongshore area for hydro</td>
<td>December 1961</td>
<td>superseded</td>
</tr>
<tr>
<td>Alongshore area revised from field edit</td>
<td>November 1962</td>
<td>superseded</td>
</tr>
<tr>
<td>Manuscript complete</td>
<td>November 1962</td>
<td>superseded</td>
</tr>
<tr>
<td>Some revision &amp; additions from 1962 &quot;S&quot; color photographs during Final Review</td>
<td>March 1968</td>
<td></td>
</tr>
</tbody>
</table>
June 3, 1968

GEOGRAPHIC NAMES
FINAL NAME SHEET
PH-6106 (Puerto Rico)
T-12160

- Caballo Blanco
- Cayo Batata
- Mar Caribe * See below
- Morro de Humacao
- Punta Candalero
- Punta Fraile
- Punta Icacos
- Rio Humacao

Part of T-12160 shown on this sheet:
- Cano Santiago
- Playa de Guayanes
- Punta Guayanes
- Rio del Ingenio
- Rio Guayanes

Approved by:
A. Joseph Wraith
Chief Geographer

Prepared by:
Frank W. Pickett
Cartographic Technician

* Note: The first GNB decision—1944—was "Carribean Sea". Mar Caribe is used on nautical charts.
49. NOTES FOR THE HYDROGRAPHER

One photo-hydro station (number 10h) was established.

Several offshore areas have been shown as questionable. The existence of rocks in these areas could not be positively ascertained from the photographs and will have to be investigated by the hydrographer.

The range from the Puerto Yabucoa daybeacons was not ascertained because no "point on range" was identified by the field inspector. The azimuth of this range will have to be determined by the hydro party.
I recommend that the following objects which have been inspected from seaward to determine their value as landmarks be charted on the charts indicated.

The positions given have been checked after listing by

H. H. Slavney

<table>
<thead>
<tr>
<th>STATE</th>
<th>FUERTE RICO</th>
<th>CHARTING NAME</th>
<th>DESCRIPTION</th>
<th>D.M.</th>
<th>M.</th>
<th>M.</th>
<th>LATITUDE</th>
<th>LONGITUDE</th>
<th>LATITUDE</th>
<th>LONGITUDE</th>
<th>DATUM</th>
<th>METHOD OF LOCATION AND SURVEY NO.</th>
<th>DATE OF LOCATION</th>
<th>CHARTS Affected</th>
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<tbody>
<tr>
<td></td>
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<td>EAST COAST</td>
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<td></td>
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<td></td>
<td></td>
<td>FUKO TOBUCO</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Daybeacon</td>
<td>RANGE FRONT</td>
<td>18 03</td>
<td>1289</td>
<td>65 h9</td>
<td>801</td>
<td>T-12161</td>
<td>1960</td>
<td>1960</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and nonfloating aids to navigation, if reetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.
PHOTOGRAMMETRIC REVIEW BRANCH

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

Tampa District Office Dec. 29 1961

I recommend that the following objects which have (mark) been inspected from seaward to determine their value as landmarks be marked off (deleted from) the charts indicated.

The positions given have been checked after listing by

M. E. Slavney

V.R. Schmalzleki Chief of Party

<table>
<thead>
<tr>
<th>STATE</th>
<th>PUERTO RICO</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHARTING NAME</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>TOWER</td>
<td>Tower on Cayo Batata (Gons)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

* TABULATE SECONDS AND METERS
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<tr>
<th>Category</th>
<th>Description</th>
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<tr>
<td>Projection and Grids</td>
<td>MMS</td>
<td>MMS</td>
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<td>Control Stations</td>
<td>MMS</td>
<td>MMS</td>
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<tr>
<td>Stations</td>
<td>Horizontal Control Stations of Third-Order or Higher Accuracy</td>
<td>MMS</td>
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<tr>
<td>Hydro Stations</td>
<td>Photo Hydro Stations</td>
<td>MMS</td>
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<tr>
<td>Bench Marks</td>
<td>8. Bench Marks</td>
<td>XX</td>
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<tr>
<td>Plotting of Sextant Fixes</td>
<td>9. Plotting of Sextant Fixes</td>
<td>XX</td>
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<tr>
<td>Plot Report</td>
<td>10. Photogrammetric Plot Report</td>
<td>XX</td>
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<tr>
<td>Detail Points</td>
<td>11. Detail Points</td>
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<td>Shoeline</td>
<td>12. Shoreline</td>
<td>MMS</td>
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<td>Low-Water Line</td>
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<td>Bridges</td>
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<td>Physical Features</td>
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<td>Water Features</td>
<td>19. Other Alongshore Physical Features</td>
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<td>Planetary Contours</td>
<td>20. Water Features</td>
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<tr>
<td>Stereoscopic Instrument Contours</td>
<td>21. Natural Ground Cover</td>
<td>MMS</td>
</tr>
<tr>
<td>Contours in General</td>
<td>22. Planetary Contours</td>
<td>XX</td>
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<td>Spot Elevations</td>
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<td>Signature of Supervisor</td>
<td>Signature of Supervisor, Review Section or Unit</td>
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**Field Completion Additions and Corrections:**

Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted in remarks on reverse side.

**Signature of Compiler:**

**Signature of Supervisor:**

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*USCGC-DC 28383-P61*
All field edit notes have been delineated on the mylar T-Sheets. In general, the only discrepancies found were differences in the delineation of the mean high water line along sand beaches. These discrepancies were resolved with distance measurements from the hydrographic signals to the mean high water line. The azimuth used was a perpendicular line from the mean high water line to the respective signal. Each T-Sheet is discussed separately below with a listing of the necessary photos.

T-12160 - Mean high water line revision in area of "BED" appears necessary. Rock height revisions necessary in the following areas: HER, LOG, FOX, AND DIX.
Photos - 59S3933, and 3932.

T-12158 - Mean high water line revision along entire beach line appears necessary.
Photos - 59S3931, 3930, 3929, and 3928.

T-12159 (2 copies) - Mean high water line revision in area of DUN to ABE. Rock height revisions in the following areas: HUG, GEO, and WUG.
Photos - 59S3927, 3926, and 61W1676.

T-12153 - Rock height revision in area of JIM.
Photos - 61W1678 and 1679.

T-12155 - Rock height revision in area of CUT.
Photos - 61W1559 and 61W1560.

T-12156 - Rock height revisions in the following areas: EVA (2), KEN, and CRY.
Photos - 61W1584 and 1585.

T-12154 - Pier revision at OIL.
Photos - None

T-12157 - None

All T-Sheets, since they contain final locations of hydrographic signals, must be returned to this command as soon as possible as they are needed to plot hydrographic smooth sheets.

Respectfully submitted:
10 September 1962

George F. Mirth
LT, CGS

Forwarded Approved:

Edmund L. Jones
CAPT, CGS
Comdg., Ship EXPLORER
REVIEWS REPORT T-12160
SHORELINE
March 1968

61. GENERAL STATEMENT:

See Summary accompanying the Descriptive Report (page 6).

An ozalid Comparison Print (pages 23 thru 26) showing the differences noted in Items 62 through 65, is included with the original copy of this report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS:

Registered Survey 4323; 1:20,000; 1927
Registered Survey 2540; 1:20,000; 1901

Differences with T-12160 are on the Comparison Print in blue.

1. The islands at latitude 15° 04'.8', off Punta Fraile, see page 24, and at latitude 15° 04'.22', off Punta Icacos, see page 25.

2. Shoreline changes of up to 70 meters at Punta Fraile and Punta Icacos, pages 24 and 25.

This survey supersedes the previous registered surveys for nautical chart construction.

63. COMPARISON WITH MAPS OF OTHER AGENCIES:

PUNTA GUAYANES, P.R.; U.S.G.S. quad; 1:20,000; 1943, revised 1960.

The quadrangle differences are on the Comparison Print in brown.

1. The differences in position, to about 80 meters, appear due to a datum shift. The quadrangle details fall south of the positions on T-12160, see pages 23 thru 26.

2. The quadrangle gives the highest point on Cayo Batata as 12 meters. The elevation, 12 feet, on the original compilation of T-12160 was not changed or noted by the field editor.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

BOAT SHEET EX-10-1-62 (H-8637); 1:10,000; 1962

The boat sheet did not show any shoreline changes; but did show rocks and other details that are on the Comparison Print in green, see pages 23 thru 25.
A careful examination was made of the 1959 photographs, 59-S-3931 through 3934 and transparencies of the 1962 1:10,000 photographs 62-S(c)-224 through 229, 239 through 241, 9750, 9751, 9766 and 9767, to identify the rocks and other details shown on the Comparison Print. In some places the rock has been classified differently on T-12160, see pages 23 through 26. Several rocks on the boat sheet could not be identified on the photographs. No reference was made to these details by the field editor.

There is no contemporary hydrographic survey southeast of EX-10-1-62.

65. COMPARISON WITH NAUTICAL CHARTS:

Chart 918; 1:10,000; 4th Edition; Jan. 31, 1966
Chart 923; 1:20,000; 3rd Edition; May 9, 1966
Chart 904; 1:100,000; 12th Edition; June 19, 1967

No comparison was made between latitudes 18° 02.5' and 18° 06.6'. This area is covered only by Chart 904, and the scale precludes detailed comparison.

The other chart differences with T-12160 are shown on the Comparison Print, pages 23 through 26, in red. Also on this Comparison Print are notes pertaining to these differences:

1. The elevation, (12), on Cayo Batata on T-12160 given as 40 feet on Chart 923. No note was made by the field editor, and the original T-12160 elevation was from the inspection. It is noted that the USGS quadrangle gives the islands topoc elevation of 12 meters, see Item 63.

2. Three rocks awash on the chart near Cayo Batata, see page 23, are not visible on the photographs and are not noted on the boat sheet.

3. The Comparison Print, pages 23 through 26, show rocks on the chart not visible on the photographs, some rocks on T-12160 not on the chart, and in some cases what appear to be differing positions of shoreline, rocks, and islets.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS:

This survey complies with the project instructions, Bureau requirements, and the National Standards of Map Accuracy. No accuracy tests were run in the field.
Punta Candelero

Chart 904, 1:100,000

Not visible on 595-3932 or 3933

45°47'30"

18°05'

something here on photos, but "?"

Awash on H-8637

(Center pointed rock)
"B" Breakers in area on photos 62-59750, 9751 - but elev of coral? - Boat sheet shows "Breakers" only.

Images here on 62-59751 but no positive ident could be made.

Wreck nn chart not on chart 918.

A - See photos 62S(c) 224 48'30" 32 30' for what appear to be ledges not on chart.

No contemporary hydro survey south and west of here.
See name quad "Punta Guayanes" for placement of river names on T-12160

Playa de Guayanes

Numbered Control Stations
1. Pyramidal daybn on hill west of Puerto Yabucoa (USGS 1943)

Photos, 62-5(c) 240, 241
Show something here, but?

Nothing visible here on 62-5(c) 240, 241, 7766 or 7767

Chart 918

River entrance subject to frequent change

breakers

breakers

breakers
NOTES TO VERIFIER
T-12160, Project Ph-6106
BOAT SHEET EX10-1-62

Please note Items 63, 64, and 65 of the final review report and the Comparison Print (pages 23 thru 26) for rock, shoreline, and other notes.
**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.

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