Type of Survey: Shoreline (Photogrammetric)

Field No.:
Office No.: T-13118

Locality

State: Puerto Rico
General locality: Southwest Coast
Locality: Bahia Salinas

1966-1968

Chief of Party: Alfred C. Holmes, RNOAA
Director, Atlantic Marine Center

Library & Archives
DESCRIPTIVE REPORT - DATA RECORD
T-13118

PROJECT NO. (III):
PH-6708

FIELD OFFICE (III):
None

CHIEF OF PARTY

PHOTOGRAMMETRIC OFFICE (III):
Atlantic Marine Center

OFFICER-IN-CHARGE
Alfred C. Holme RADM
Director

INSTRUCTIONS DATED (III) (IV):
Field - September 27, 1966
December 14, 1967
Office; November 14, 1967

METHOD OF COMPILATION (III):
Wild B-A Plotter

MANUSCRIPT SCALE (III):
1:10,000

STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):
1:5,000 pantographed to 1:10,000

DATE RECEIVED IN WASHINGTON OFFICE (IV):

DATE REPORTED TO NAUTICAL CHART BRANCH (IV):

APPLIED TO CHART NO.

DATE:

DATE REGISTERED (IV):
JUN 1975

GEOGRAPHIC DATUM (III):
PUE RTO RICO

VERTICAL DATUM (III):
MLW

EXCEPT AS FOLLOWS:
Elevations shown as ( ) refer to mean high water
Elevations shown as ( ) refer to sounding datum
i.e., mean low water

REFERENCE STATION (III):
AGUILA, 1966

LAT.: 17° 57' 14.11943"
LONG.: 67° 12' 46.21536"

ADJUSTED
UNADJUSTED

PLANE COORDINATES (IV):

\[ Y = 44,393.24 \text{ ft.} \quad X = 229,081.33 \text{ ft.} \]

STATE
Puerto Rico

ZONE
1

\[ \text{TOM NUMERALS INDICATE WHETHER THE ITEM IS TO BE ENTERED BY (II) FIELD PARTY, (III) PHOTOGRAFMETRIC OFFICE, OR (IV) WASHINGTON OFFICE.} \]

\[ \text{WHEN ENTERING NAMES OF PERSONNEL ON THIS RECORD GIVE THE SURNAME AND INITIALS, NOT INITIALS ONLY.} \]
**DESCRIPTIVE REPORT - DATA RECORD**

**FIELD INSPECTION BY (III):**

None

**DATE:**

**MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION):**

Air Photo Compilation  Date of Photography: Nov. 15 & 16, 1966

**PROJECTED GRIDS RULED BY (IV):**

A. Bethea  DATE  10/18/67

**PROJECTED GRIDS CHECKED BY (IV):**

L. Van Scoy  DATE  10/18/67

**CONTROL PLOTTED BY (III):**

B. Barge  DATE  11/17/67

**CONTROL CHECKED BY (III):**

L. O. Neterer, Jr.  DATE  11/17/67

**RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III):**

I. Saperstein  DATE  10/31/67

**STEREOSCOPIC INSTRUMENT COMPILED BY (III):**

Wild B-8  DATE

**PLANIMETRY**

R. R. White  REVIEWED BY A. L. Shands  DATE  11/21/67

**CONTOURS**

Inapplicable

**MANUSCRIPT DELINEATED BY (III):**

R. R. White  DATE  1/5/68

**SCRIBE BY (III):**

R. R. White  DATE  6/7/68

**PHOTOGRAMMETRIC OFFICE REVIEW BY (III):**

COMPILATION: C. H. Bishop  DATE  1/11/68

FIELD EDIT: R. E. Smith  DATE  1/10/68

SCRIBE & STICK UP: R. E. Smith  DATE  6/10/68

**REMARKS:**

FIELD EDIT BY: R. E. Kesselring  3/26/68
**DESCRIPTIVE REPORT - DATA RECORD**

**KIND OR SOURCE (iii):**

RC-8 and RC-9

**PHOTOGRAPHS (iii):**

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<th>TIME</th>
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<td>0854 AST</td>
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<tr>
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<tr>
<td>66L(c) 8322 thru 8324</td>
<td>11/15/66</td>
<td>0955 AST</td>
<td>1:30,000</td>
<td>0.4' above MLW</td>
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<td>66L 8518R &amp; 8519R</td>
<td>11/16/66</td>
<td>0927 AST</td>
<td>1:30,000</td>
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**PREDICTED TIDE (iii):**

**REFERENCE STATION:** Galveston, Texas

**SUBORDINATE STATION:** Paraguera (Isla Maguey)

**WASHINGTON OFFICE REVIEW BY (iv):** Leo F. Beugnet, Atlantic Marine Center  April 1970

**REMARKS:**

---

**USCG-AVC 35303C-P65**
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<th>Compilation Record</th>
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<td>Superseded</td>
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<td>Field Edit applied Compilation Complete</td>
<td>April 1968</td>
<td>Superseded</td>
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<tr>
<td>Final Review</td>
<td>April 1970</td>
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</table>
SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT T-13118

Shoreline survey T-13118 is one of twenty-one similar surveys in Job PH-6708. These surveys extend along the south coast of Puerto Rico from Cabo Rojo to Cayo Berberia. There are ten 1:5,000 and eleven 1:10,000 scale surveys in the project.

The only field work preceding compilation consisted of identification of horizontal control. The survey was field edited subsequent to compilation.

Compilation was at 1:10,000 scale by Wild B-8 using the photography of November 1966. A copy of the manuscript (classified incomplete) along with ozalids and specially prepared photographs were furnished for preparation of the boat sheets, location of photo-hydro signals and field edit use.

The manuscript was a vinylite sheet 4 minutes 30 seconds in latitude by 3 minutes 45 seconds in longitude. After application of field edit the manuscript was scribed, stuck-up and reproduced on cronaflex. Final review was done in the Atlantic Marine Center in April 1970. One cronaflex positive and a negative of the final reviewed survey are forwarded for record and registry.
FIELD INSPECTION REPORT
Job PH-6708
T-13118

There was no field inspection prior to compilation.
21. **Area Covered**

This report covers the southwest part of Puerto Rico, consisting of eight (8) 1:10,000 scale T-sheets, T-13110 thru T-13125, and thirteen (13) 1:5,000 scale T-sheets, T-13126 thru T-13140. Photography covering sheets T-13126 and T-13127 was not bridged at this time due to lack of control.

22. **Method**

Analytic aerotriangulation methods were used to bridge Strip 1, 1:60,000 scale color diapositives, using premarked and office identified control. Numerous tie points were located to control the compilation photography. Strips 3, 5, 5A, 6, 7 and 8 were bridged by analytic methods. Strips 2 and 4 were bridged by stereoplanigraph in order to facilitate the work.

The attached sketch of the strips bridged shows the placement of triangulation used in the final strip adjustment. Closures to control are shown for each strip on the IBM readout, along with all bridge points on Puerto Rico plane coordinates.

23. **Adequacy of Control**

Horizontal control is adequate to control Strip 1. All other strips were bridged using tie points and horizontal control and is adequate.

The premarked paneling at station PAGEN was removed prior to photography and the subpoint could not be identified. It was decided, therefore, to end Strip 1 with photo 66-M-625 and Strip 6 with photo 66-L-0433. However, it is believed that sheet T-13125 can be adequately compiled.

Station GUANICA L.H. 1900 does not have a valid position. Geodesy did not tie to this station during the 1966 work, and no adjustment was made to the new Puerto Rico datum. (Station has been reported destroyed.) The positions shown on Form 7256 computed by Geodesy is arbitrary. Therefore, GUANICA L.H. Subpoint 1 and subpoint 2 are unreliable and were not held in the bridge.
It is to be noted that all horizontal control used on this job and the final pass point positions are on the new Puerto Rico Datum. A Xerox copy of triangulation station positions issued by Geodesy is submitted to the Compilation office with this job. Previously published GP's and plane coordinates should not be used for plotting.

24. **Supplemental Data**

Vertical control needed for the adjustment was taken from USGS quadrangles.

25. **Photography**

The definition and quality of the RC-9 "M" and RC-8 "L" color photography was fair and good respectively. Smoke covers parts of some photographs on Strips 3 and 5A, but should not hinder compilation of the shoreline.

Although sheets T-13137 thru T-13140 are covered by 1:15,000 scale photographs, these photographs were not bridged, nor can they be used for compilation on the plotter because of water areas. Strip 3, therefore, should be used to compile the above sheets.

Ratio prints have been ordered for the 1:30,000 and 1:15,000 scale photographs to compilation scale, on black and white base.

Several points were transferred to ratio print 66-L-8394 in order that a reef on T-13140 may be compiled graphically.

Respectfully submitted

[Signature]

I. T. Saperstein

Approved and Forwarded

[Signature]

Henry P. Eichert, Chief
Aerotriangulation Section
1. CALEO ROJO (USAF) 1966
2. CERRO VERDE 2 (USAF) 1934
3. ENSENADA, SOUTH R.R. SUGAR CO.
   CENT. GUANICA WEST& EAST STACKS 1966
   GUANICA MUNIC. W.T. 1966
4. VAQUERO, 1966
5. TURN 2, 1966
6. GUAYANILLA, UNION CARBIDE CO. W.T. 1966
7. REY, 1966
8. PONCE, RADIO STATION WLO MAST 1966
   PONCE BAY FRONT & REAR RANGE LTS. 1966
9. CAYO DANA ISLAND LH 1900
10. PONCE, DON Q. RUM. CO. STACK, 1966
11. BAHIA DE GUANICA RANGE FRONT
    & REAR LTS. 1966

AEROTRIANGULATION
PUERTO RICO
Southwest Coast
PH-6708
Oct. 1967

LEGEND
\[\text{\textbullet} \text{ Control Used in Adjustment}
\[\text{\textcircled{1}} \text{ 1:60,000 Photos (color)}
\[\text{\textcircled{2}} \text{ 1:30,000 Photos ("""")}
\[\text{\textcircled{0}} \text{ 1:15,000 Photos ("""")} \]
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<th>STATION</th>
<th>SOURCE OF INFORMATION (INDEX)</th>
<th>DATUM</th>
<th>LATITUDE OR Y-COORDINATE</th>
<th>DISTANCE FROM GRID IN FEET OR Projection Line in Meters</th>
<th>DATUM CORRECTION</th>
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<td>CABO ROJO, 1966</td>
<td>Geodesy Pad 27060</td>
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<td>274.3</td>
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<td>CABO ROJO LIGHT</td>
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<td>Puerto Rico</td>
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<td>HOUSE, 1900</td>
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<td>COMBATE, 1966</td>
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<td>HOUSE, 1952</td>
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</table>
31. **DELINEATION:**

The shoreline and all other features were compiled using the Wild B-8 stereoplotter and color photographs taken at 0.6 foot above mean low water. The infrared photographs were used as a check on the shoreline compilation. There was no field inspection.

32. **CONTROL:**

See Photogrammetric Plot Report attached.

33. **SUPPLEMENTAL DATA:**

None

34. **CONTOURS AND DRAINAGE:**

Contours are inapplicable.

Drainage was delineated from office interpretation.

35. **SHORELINE AND ALONGSHORE DETAILS:**

See Paragraph 31. No low water line was delineated. The shallow and foul limits were delineated using the Wild B-8 and from office interpretation of the photographs.

36. **OFFSHORE DETAILS:**

Since there was no prior field inspection and due to penetration over water areas, underwater features and hazards to navigation could not be delineated with any accuracy. See Notes for the Hydrographer.

37. **LANDMARKS & AIDS:**

Appropriate copies of Form 567 for Fixed Aids to Navigation were forwarded to the Washington Office under data April 12, 1968. There were no Landmarks.
38. **CONTROL FOR FUTURE SURVEYS**

None.

39. **JUNCTIONS**

Junctions are in agreement with T-13119, scale 1:10,000 to the east. There are no contemporary surveys to the south, west, or north.

40. **HORIZONTAL & VERTICAL ACCURACY**

No statement.

46. **COMPARISON WITH EXISTING MAPS**

A comparison has been made with USGS Quadrangle CABO ROJO, P. R., scale 1:20,000, dated 1957.

47. **COMPARISON WITH NAUTICAL CHARTS**

A comparison has been made with USC&GS Chart 901, scale 1:100,000, 9th edition, dated March 1, 1965.

**ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY**

None.

**ITEMS TO BE CARRIED FORWARD**

None.

Approved for forwarding:

Melvin J. Umbach, CDR, NOAA
Chief, Photogrammetry Division, AMC

Submitted:

R. R. White
Cartographic Aid

Approved:

Alfred C. Holmes, RADM, NOAA
Director, Atlantic Marine Center
September 9, 1970

GEOGRAPHIC NAMES

FINAL NAME SHEET

PH-6708 (Puerto Rico)

T-13118

Bahia Salinas
Bahia Sucia
Bajo Casabe
Cabo Rojo
Canal de Guanajibo
El Combate
Mar Caribe
Pole Ojea
Punta Aguila
Punta Jaguey
Punta Moja Casabe

Approved by:

A. Joseph Wraith
Chief Geographer

Prepared by:

Frank W. Fickett
Cartographic Technician
There are no photo hydro stations or recoverable topographic stations within the limits of this sheet.

All reefs, shoals, shallow areas, foul areas, and submerged rocks are from office interpretation of the color photographs. There was considerable penetration on the color photography; due to this and without the aid of any prior shoreline inspection, these offshore features have been shown only as aid to the hydrographer. They may be only bottom changes, coral, or marine vegetation. The delineation of all these features should be verified, and if any exist that are not shown they should be located. Also, any that are shown that do not exist should be deleted.

If landmarks or non-floating aids to navigation exist in the area, please locate and submit Form 567.

See notes on the FIELD EDIT OZALID.
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<th>Item</th>
<th>Description</th>
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<td>C. H. Bishop 1/11/68</td>
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<td>Supervisor</td>
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<td>Albert C. Rauck, Jr.</td>
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</table>

**Remarks**

Field edit was applied from 1 ozalid, 1 matte ratio photograph 66-L-8318, and 1 color transparent photograph 66-L-8312.
FIELD EDIT REPORT
T-13118
Job PH-6708
Southwest Coast of Puerto Rico

Field edit was performed in accordance with Instructions - PHOTO-HYDRO SUPPORT AND FIELD EDIT - Job PH-6708, dated December 14, 1967, and with Photogrammetry Instructions concerning field edit.

52. Adequacy of Compilation.

Compilation, with a few exceptions, was adequate. Two minor shoreline changes were noted and some of the foul limits were changed, re-classified or deleted. A few rocks were overlooked or mis-classified.

There was no bluff compilation. Recommended bluffs are on Cabo Rojo and are indicated on the field edit calsids with cross-references to the photographs.

Three suspected submerged reefs, on the southwest side of Cabo Rojo are to be investigated by Ship Whiting when hydrography commences near that area. Two areas, further north along the west coast, designated as shallow will also be investigated by the ship.

54. Recommendations.

There are no recommendations.

55. Examination of proof copy.

Dr. Luis R. Almodovar, of La Parguera, Lajas, Puerto Rico, will be happy to examine a proof copy of the map.

56. Landmarks and non-floating aids to navigation.

There are no recommended landmarks within the limits of this map.

One non-floating aid to navigation is contained in this sheet. It was reported on Form 567 and the original and two copies are enclosed with this report. One copy was transmitted to the hydrographer.

57. Reefs, shoals, rocks and foul areas.

There are no reefs or shoals, except those mentioned under side heading 52 above, within the limits of this map.
57(cont.)

Rock delineation was excellent. No rocks of importance were overlooked. One or two rocks were classified as bare when they should have been shown as awash. Two or three rocks awash were not mapped and a few bare rocks were overlooked. These were indicated on the photographs and attention drawn to them on the field edit ozalid. Heights of compiled rocks were placed on the ozalid and referred to the proper datum.

Foul areas are practically non-existent on this map, the only exception being a small section around Punta Aguila. The area to the north and west of Cabo Rojo was classified foul, but is actually shallow. The area around the bluffs of Cabo Rojo, which would seem the most likely to be foul, is surprisingly free of submerged rocks and coral.

58. Drainage and flooded areas.

Special attention is called to the area at latitude 17° 58.5' N, longitude 67° 12.8' W, called, for want of a better name, an intermittent ditch. The pond and marsh involved no longer have any natural drainage. When the basin floods, due to heavy or continual rainfall, a ditch is dug through to the sea and the excess water drained off. The ditch is then back-filled until it is needed again. There is no set interval for this occurrence, as it depends entirely on rainfall. The ditch should probably be shown as intermittent drainage.

There is no periodic flooding of the areas labeled "floods" on this map. These areas do flood occasionally, and this was confirmed by local residents, but it is not a frequent occurrence. It is most likely to occur in July and August, which is the period of heaviest rainfall for this area. As a rule, most of the bare, flat areas along the shore are subject to inundation from time to time.

The areas surrounding the salt evaporators are, for the most part, natural low areas or ponds into which the evaporators were introduced. These are usually connected to the sea by ditches and are used as preliminary evaporators. They would normally be included in the "floods" classification were it not for the evaporators. Except in the case of extremely large areas, these low areas should be classed as part of the salt evaporators.

59. Geographic names.

The names on this map are confirmed and in use by local residents.

60. Photography.

Photography consisted of 1:10,000 ratio black and white matte copies of color photography and the color transparencies. The photography was generally excellent, especially the transparencies.
Definition of smaller details on the black and white copies was poor. The northerly flightline was flown at a relatively early hour, lengthening the shadows among the mangroves and along the bluffs, and making perception of details in these areas difficult. Except for the shadows, this photography was definitely a pleasure to work with.

Richard E. Kesselring
Surveying Technician
March 26, 1968
REVIEW REPORT T-13118
SHORELINE
April 29, 1970

61. GENERAL STATEMENT

See Summary which is page 6 of the Descriptive Report.

62. COMPARISON WITH REGISTERED SURVEYS

Comparison was made with a copy of 1:20,000 scale Registered Survey No. 2475 dated 1899. The comparison was good, the change in the mean high water line is no greater than that normally encountered. The differences have been noted on the comparison print in blue.

All of the rocks and mangrove islets in the area of Cabo Rojo are not shown on the 1899 survey. These have also been noted on the comparison print in blue.

Registered Survey No. 2475 is superseded by T-13118 for nautical chart construction purposes.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Comparison was made with USGS CABO ROJO, P. R. 7 1/2 minute quadrangle, 1:20,000 scale, edition of 1957. The two surveys are in good general agreement.

Two mangrove islands near latitude 17° 57.0', longitude 67° 11.4' are not evident on the photographs and have probably been washed away. These two islands have been indicated on the comparison print in brown.

It was also noted that there are no rocks shown on the USGS quadrangle in the vicinity of Cabo Rojo.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Comparison was made with a copy of boat sheet WH-10-2A-68, H-8985. The shoreline for part of the boat sheet was obtained from a copy of manuscript T-13118 and there are no discrepancies in the area common to the two surveys.
This is an automated boat sheet and it is noted that in some areas there are few soundings close inshore. The rocks in the vicinity of Cabo Rojo are not shown on the boat sheet. The rocks are visible on the photographs that cover the area and were verified by the field editor.

65.  **COMPARISON WITH NAUTICAL CHARTS**

Comparison was made with nautical chart 901, 1:100,000 scale, 10th edition, March 25, 1968. There are no rocks shown on the chart within the limits of T-13118. Two mangrove islands located near latitude 17° 57.0', longitude 67° 11.4' are not evident on the photographs and have no doubt eroded away.

Because of the difference in scales of the two surveys, only a visual comparison was feasible. The two surveys appear to be in agreement, no major discrepancies were noted.

66.  **ADEQUACY OF RESULTS AND FUTURE SURVEYS**

This survey complies with instructions and meets the National Standards of Map Accuracy.

Approved for forwarding:

Melvin J. Umbach, CDR, NOAA
Chief, Photogrammetry Division, AMC

Reviewed by:

Leo F. Beugnet
Leo F. Beugnet
Cartographer

Approved:

Alfred C. Holmes, RADM, NOAA
Director, Atlantic Marine Center

Approved:

Chief, Photogrammetric Branch

Wesley V. Huff
Chief, Coastal Mapping Division
Shoreline in blue from Registered Survey No. 2475

NOTE:

NOTE: The exact location and delineation of features are mean high-water line on this survey complete or final. The contemporary graphic survey of the area where available, is used for the final delineation.
Shoreline in blue from Registered Survey No. 2475

Shoreline in drawn from USGS CABO Rodo, P.R. quadrangle
Shoreline in blue from Registered Survey No. 2175
Shoreline in brown from USGS Cabo Rojo, PR, quadrangle

Note: None of the rocks in this area appear on Chart 901
### Nonfloating Aids or Landmarks for Charts

Atlantic Marine Center  
*April 4, 1968*

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 B. Wilson

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*This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 79. 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*