

12137

Original

12137

12137

Form 504	
U. S. DEPARTMENT OF COMMERCE	
COAST AND GEODETIC SURVEY	
DESCRIPTIVE REPORT	
Type of Survey	SHORELINE (Photogrammetric)
Field No.	Office No. T-12137
LOCALITY	
State	PUERTO RICO
General locality	NORTHEAST COAST
Locality	ENSENADA COMEZON
1959 - 1961	
CHIEF OF PARTY	
M. L. Olivier, Chief of Field Party	
V.R. Sobieralski, Tampa District Officer	
LIBRARY & ARCHIVES	
1 JUL 1968	
DATE	

USCOMM-DC 5087

DESCRIPTIVE REPORT - DATA RECORD

T - 12137

PROJECT NO. (II): PH-6106		
FIELD OFFICE (II): Puerto Rico		CHIEF OF PARTY M. L. Olivier
PHOTOGRAMMETRIC OFFICE (III): Tampa, Florida		OFFICER-IN-CHARGE V. Ralph Sobieralski
INSTRUCTIONS DATED (II) (III): Field and Office August 30, 1961 Amendment: " " " January 15, 1962 * <i>* Interior planimetry restricted to those features useful to photo hydro support. dzo</i>		
METHOD OF COMPILATION (III): Kelsh Plotter		
MANUSCRIPT SCALE (III): 1:10,000	STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III): 1:6,000	
DATE RECEIVED IN WASHINGTON OFFICE (IV): <i>APRIL 13, 1968</i>	DATE REPORTED TO NAUTICAL CHART BRANCH (IV):	
APPLIED TO CHART NO.	DATE:	DATE REGISTERED (IV):
GEOGRAPHIC DATUM (III): Puerto Rico		VERTICAL DATUM (III): MHW MEAN SEA LEVEL EXCEPT AS FOLLOWS: Elevations shown as (25) refer to mean high water Elevations shown as (5) refer to sounding datum i.e., mean low water or mean lower low water
REFERENCE STATION (III): PALMER (USGS) 1939		
LAT.: 18°22'47.390" (1457.0m)	LONG.: 65°46'19.194" (563.4m)	<input checked="" type="checkbox"/> ADJUSTED <input type="checkbox"/> UNADJUSTED
PLANE COORDINATES (IV): = 198,851.94 ✓ x = 729,290.43 ✓		STATE Puerto Rico ZONE Puerto Rico
ROMAN NUMERALS INDICATE WHETHER THE ITEM IS TO BE ENTERED BY (II) FIELD PARTY, (III) PHOTOGRAMMETRIC OFFICE, OR (IV) WASHINGTON OFFICE. WHEN ENTERING NAMES OF PERSONNEL ON THIS RECORD GIVE THE SURNAME AND INITIALS, NOT INITIALS ONLY.		

DESCRIPTIVE REPORT - DATA RECORD

FIELD INSPECTION BY (III): M. L. Olivier		DATE: December 1961*
MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION): Air photo compilation Date of photography: April 18, 1959 and October 20, 1961		
PROJECTION AND GRIDS RULED BY (IV): A. R. (W.O.)		DATE July 1962
PROJECTION AND GRIDS CHECKED BY (IV): L.F.B.(W.O.)		DATE " "
CONTROL PLOTTED BY (III): V. P. Cackowski		DATE August 1962
CONTROL CHECKED BY (III): V. P. Cackowski		DATE " "
PLANIMETRY STEREOSCOPIC CONTROL EXTENSION BY (III): R. E. Fuechsel		DATE March 1962
STEREOSCOPIC INSTRUMENT COMPILATION (III): PLANIMETRY V. P. Cackowski Reviewed by: R. E. Smith		DATE August 1962
CONTOURS		DATE
MANUSCRIPT DELINEATED BY (III): V. P. Cackowski		DATE August 1962
SCRIBING BY (III): Inapplicable A. Santilhan		DATE June 1966
PHOTOGRAMMETRIC OFFICE REVIEW BY (III): W. H. Shearouse		DATE November 1962

REMARKS: * The field inspection report did not supply the date field inspection was done. The date December 1961 was taken from C.S.I. cards.

THERE WAS NO FIELD EDIT.

DESCRIPTIVE REPORT - DATA RECORD

CAMERA (KIND OR SOURCE) (III):

Wild "S"
Wild "W"

PHOTOGRAPHS (III)

NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
59-S-3900	4/18/59 ✓	10:50 ✓	1:30,000 Diapositives	0.0 (Photos taken at approx MLW)
59-S-3901	"	10:51 ✓	" "	"
59-S-3902	"	"	" "	"
61-W-1656	10/20/61	8:35	1:30,000 Contact prints only	0.8 above MLW
61-W-1656	"	"		"
61-W-1657	"	8:36		"
61-W-1658	"	"		"
61-W-1659	"	"		"

Predicted TIDE (III)

		RATIO OF RANGES	MEAN RANGE	SPRING RANGE
REFERENCE STATION:	San Juan		1.1	1.3
SUBORDINATE STATION:	Bahia de Fajardo	1.0	1.1	1.4
SUBORDINATE STATION:				
Atlantic Marine Center WASHINGTON OFFICE REVIEW BY (IV):		DATE:		
M. M. SLAVNEY		APRIL, 1967		
PROOF EDIT BY (IV):		DATE:		
NUMBER OF TRIANGULATION STATIONS SEARCHED FOR (III):	2	RECOVERED:	1	IDENTIFIED: 1
NUMBER OF BM(S) SEARCHED FOR (III):	0	RECOVERED:	0	IDENTIFIED 0
NUMBER OF RECOVERABLE PHOTO STATIONS ESTABLISHED (III): 0				
NUMBER OF TEMPORARY PHOTO HYDRO STATIONS ESTABLISHED (III): 4				

REMARKS:

COMPILATION RECORD

COMPLETION DATE

REMARKS

Alongshore area for hydro	November 1962	<i>SUPERSEDED</i>
<i>Manuscript Complete</i>	<i>June 1966</i>	<i>"</i>
<i>REVISED DURING FINAL REVIEW</i>	<i>APRIL, 1967</i>	

1

5.

6.

SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT T-12137

Shoreline manuscript T-12137 is one of sixteen 1:10,000 maps in Ph-6106 (21042) Puerto Rico, which also contains eight 1:5,000 scale maps. The sketch on page 5 of this report shows the position of this manuscript in the project. It is noted that 1:5,000 maps T-12143 and T-12144; and 1:10,000 maps T-12150, T-12151, and T-12161 of this project are in a "postponed" status until some future date. ~~cancelled.~~

N.T.S.

This is a stereo-instrument project in advance of hydrographic surveys of the area. 1:30,000 scale panchromatic photographs were taken with the "S" camera on April 8, 1959. 1961 panchromatic "W" photography was taken on October 20 at 1:30,000 scale; only contact prints were furnished. Color photographs at 1:10,000 were taken with the "S" camera in 1962, but were not furnished. The stereo-bridge was run and adjusted to field identified control in the Washington Office. Compilation was done with the Kelsh Plotter. Ratio prints ^{of the 1959 photos.} at 1:10,000 scale were processed, and prepared for photo-hydro support.

Field work preceding compilation consisted of control identification and field inspection was provided for compilation. The manuscript has not been field edited. Hydrography is planned for some future date.

The compilation manuscript was a vinylite sheet three minutes, 45 seconds in latitude, and three minutes 45 seconds in longitude. The smooth manuscript was on cronaflex for registry and record after final review.

FIELD INSPECTION REPORT

2. AREAL FIELD INSPECTION T-12136 thru T-12138

These shoreline sheets are located on the northeastern coast of Puerto Rico. The area is rural and undeveloped except for the village of Luquillo.

Field inspection was performed on ratio photographs 59-S-3892 through 59-S-3906. Where there were changes since the 1959 photography some inspection was done on contact photographs 61-W-1651 through 61-W-1657, and 61-W-1742.

3. HORIZONTAL CONTROL

All Coast and Geodetic Survey control stations within the project limits were searched for. Only those stations as specified on the project diagram were photo-identified. Photo-identification was done on the 1959 photographs. The following U. S. Geological Survey control stations were used to supplement the photo control: LUQUILLO CHURCH, 1934; PALMER, 1939; RIO GRANDE CHURCH, 1934; and CENTRAL FAJARDO NORTH STACK, 1941. RIO GRANDE CHURCH, 1934 (USGS) was photo-identified in place of POINT IGLESIAS, 1902 and POINT UVERO, 1902 because these two stations were not recovered.

4. VERTICAL CONTROL

There were no tidal bench marks in the area.

5. CONTOURS AND DRAINAGE

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

Drainage patterns 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. Swamp areas were designated as mangrove.

7. SHORELINE AND ALONGSHORE FEATURES

The mean high water line was inspected by walking along the shoreline. In places the mean high water line is not clearly visible on the photographs. Therefore measurements were made from a distinguishable feature on the photograph.

The low water line was not indicated on the photographs because with the large breakers and heavy seas there was no appreciable difference between mean low water and mean high water.

The foreshore is flat in most areas.

There are no docks, piers, wharves, etc.

There are no submerged cables.

8. OFFSHORE FEATURES

An abundance of coral growth surrounds the coast line. These coral areas are distinguishable on the photographs. Rock areas have been noted on the photographs.

9. LANDMARKS AND AIDS

Landmarks and aids to navigation are adequately covered on Form 567.

10. BOUNDARIES, MONUMENTS, AND LINES

Boundaries were excluded by the project instructions.

11. OTHER CONTROL

Existing objects suitable for photo hydro control were identified and indicated by three digit numbers on the field inspection photographs.

12. OTHER INTERIOR FEATURES

All buildings and roads have been classified in accordance with project instructions dated 30 August 1961.

13. GEOGRAPHIC NAMES

An investigation of geographic names was not required by the project instructions. It was noticed that almost all of the geographic names on the existing charts and quads of this area agree with one another and with the general opinion of the local people. Where discrepancies were found the proper name has been indicated on the photograph.

14. SPECIAL REPORTS AND SUPPLEMENTAL DATA

Contact photographs were forwarded to the Washington office by Letter of Transmittal No. PH-6106-5 dated 13 December 1961.

Submitted
4 January 1962

Michael L. Olivier
Michael L. Olivier
Chief, Photo-party 708

PHOTOGRAMMETRIC PLOT REPORT
PUERTO RICO, EAST COAST
PROJECT PH-6106
March, 1962

21. Area Covered:

T-12136 through T-12139; T-12141 through ^{T-12146;} 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:

Δ 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.

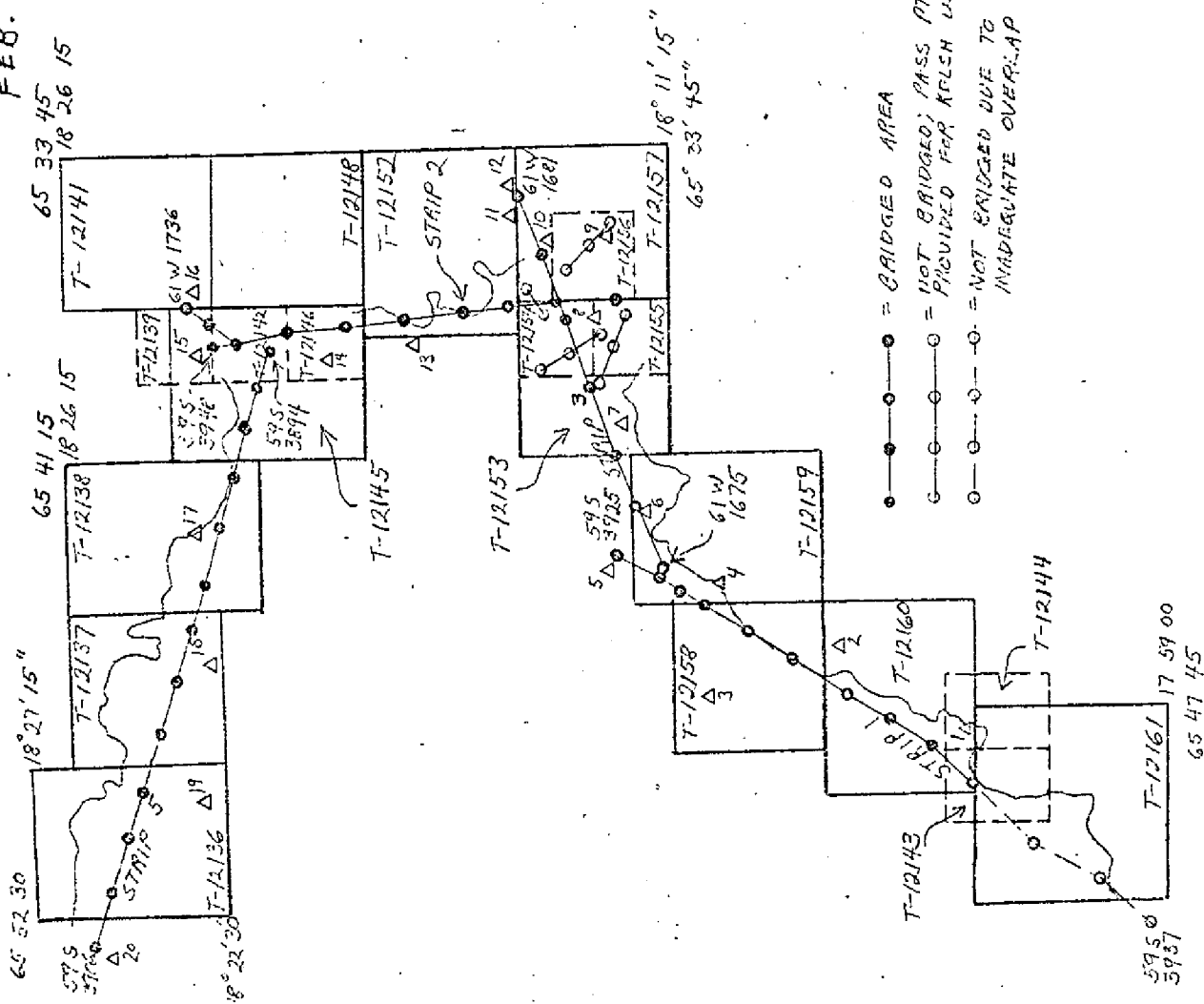
Submitted by:

R. E. Fuechsel
R. E. Fuechsel

Approved:

E. H. Ramey
E. H. Ramey, Chief
Aerotriangulation Section

PUERTO RICO - EAST COAST
PROJECT PH-6106
FEB. 1962



TRIANGULATION LIST-

1. GUAYANES 2, 1923-SUB. 1+2
2. BATATA, 1901-SUB. 1+2
3. PASTO VIEJO EASTERN
SUGAR ASSN. WH. COM.
STACK, 1941
4. HUMACAO PLAYA CH,
(USGS) 1934
5. NAGUAMBO CH.(USGS) 1934
6. COLON (USGS) 1941-SUB. 1+2
7. LOMA 1941 - SUB. 1+2
8. HONDA 1941- SUB. 1+2
9. CABRAS IS. LT., 1941
10. MUNDO, 1926 - SUB. 1+2
11. PIJERITA 2, 1941-SUB. 1+2
12. CABEZA DE FIERO LT., 1923
13. PENEDO, 1941-SUB. 1+2
14. CENTRAL FATARDO
NORTH STACK, 1941
15. CAPE, 1901-SUB. 1+2

DESCRIPTIVE REPORT CONTROL RECORD

MAP T- 12137 PROJECT NO. PH-6106 SCALE OF MAP 1:10,000 SCALE FACTOR

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR Y-COORDINATE LONGITUDE OR X-COORDINATE	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS (1 Ft. = 304.8006 meter) FORWARD (BACK)
PALMER (USGS) 1939		Puerto Rico	198 851.94 729 290.43	
POINT MIQUILLO 1902		Puerto Rico	214 680.30 722 682.25	
COMPUTED BY V. P. Cackowski	DATE 4/23/62	CHECKED BY II Saperstein	DATE 8/1/62	98

COMPILATION REPORT
T-12137

PHOTOGRAMMETRIC PLOT REPORT

See pages 9 & 9A
~~The stereo bridge was run in the Washington Office. The report is submitted with the report for T-12157.~~

31. DELINEATION

The Kelsh Plotter was used. 1959 diapositives were used for compilation, however where changes were indicated on the 1961 contact prints (61-W-1657 and 1658) they were used in a projector. This is particularly noted for the small mangrove islands in Ensenada Comezon. Field inspection was generally adequate.

32. CONTROL

See photogrammetric plot report.

33. SUPPLEMENTAL DATA

None.

34. CONTOURS AND DRAINAGE

Inapplicable.

35. SHORELINE AND ALONGSHORE DETAILS

The mean high water line was delineated according to field inspection which was adequate. No low water line was shown. See field inspection report Item 7.

36. OFFSHORE DETAILS

Numerous coral reefs have been shown. The rock symbols that are shown are coral and have been delineated from office interpretation of the photographs. Other offshore areas are outlined with a dashed line and are believed to be shallow or coral.

37. LANDMARKS AND AIDS

None.

11.

38. CONTROL FOR FUTURE SURVEYS

Four photo-hydro stations were located and are listed under item 49.

Shoreline pass points have been located by the Kelsh Plotter for photo-hydro support.

39. JUNCTIONS

A satisfactory junction has been made with T-12136 on the west and T-12138 on the east. There is no contemporary survey to the south. The Atlantic Ocean is to the north.

40. HORIZONTAL AND VERTICAL ACCURACY

No statement required.

46. COMPARISON WITH EXISTING MAPS

A comparison has been made with USGS quadrangle Rio Grande, issued in 1956, scale 1:20,000. A small island off Punta Percha is now believed to be awash. Investigation has been requested of the hydrographer. No other major changes were noted.

47. COMPARISON WITH NAUTICAL CHARTS

Comparison has been made with Chart No. 904 scale 1:100,000 edition of Feb. 12, 1962 and corrected to Feb. 24, 1962. The same difference discussed under Item 46 applies.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None.

ITEMS TO BE CARRIED FORWARD

None

Vincent P. Cackowski

V. P. Cackowski
Carto Technician (Photo)

APPROVED AND FORWARDED: 4 DEC 1962

V. Ralph Sobieralski
V. Ralph Sobieralski
Tampa District Officer

48. GEOGRAPHIC NAME LIST

Geographic names were taken from Final Names Sheet prepared by Washington Office on USGS quadrangle RIO GRANDE.

- / ATLANTIC OCEAN
- / ENSENADA COMEZON
- / PUNTA MIQUILLO
- / PUNTA PERCHA
- / PUNTA PICUA
- / RIO ESPRITU SANTO
- / RIO MAMEYES

*Names approved
May 28, 1968*

*A. J. Wright
Frank W. Fickett*

49. NOTES FOR THE HYDROGRAPHER

Four photo-hydro stations were located.

118 (Palm tree)

119(Large tree) Note: It was difficult to determine the center or top of this large tree. (Use with caution.)

120(Palm tree) Note: This palm tree is in a group of other trees and the indicated tree was difficult to determine. (Doubtful)

121 (W. Gable white house)

Most of the coral areas were identified but not delimited by the field inspector. The limits shown are from study of the Kelsh models and are only intended as an aid to the hydrographer. The dashed lines shown are approximate limits of breakers and should be investigated by the hydrographer as to being shallow or coral. A small island shown on the charts off Punta Percha at approximate Lat. $18^{\circ}24.5'$, Long. $65^{\circ}45.3'$ is now believed to be awash. An ozalid print is being furnished the hydrographer, questioning this area.

FORM 182 (3-61) 50.		PHOTOGRAMMETRIC OFFICE REVIEW T- 12137		U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY	
1. PROJECTION AND GRIDS WHS		2. TITLE WHS		3. MANUSCRIPT NUMBERS WHS	
		4a Classification label <u>unclassified</u>		4. MANUSCRIPT SIZE WHS	
CONTROL STATIONS	5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY WHS		6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (TOPOGRAPHIC STATIONS) XX		
	7. PHOTO HYDRO STATIONS WHS	8. BENCH MARKS XX	9. PLOTTING OF SEXTANT FIXES XX	10. PHOTOGRAMMETRIC PLOT REPORT W.O. (Bridge)	
	11. DETAIL POINTS Kelsh (V.P.C.)				
ALONGSHORE AREAS (Nautical Chart Data)	12. SHORELINE WHS	13. LOW-WATER LINE XX	14. ROCKS, SHOALS, ETC. WHS	15. BRIDGES XX	
	16. AIDS TO NAVIGATION XX	17. LANDMARKS XX	18. OTHER ALONGSHORE PHYSICAL FEATURES WHS		
	19. OTHER ALONGSHORE CULTURAL FEATURES WHS				
PHYSICAL FEATURES	20. WATER FEATURES XX		21. NATURAL GROUND COVER XX		
	22. PLANETABLE CONTOURS XX		23. STEREOSCOPIC INSTRUMENT CONTOURS XX		
	24. CONTOURS IN GENERAL XX		25. SPOT ELEVATIONS XX		
	26. OTHER PHYSICAL FEATURES WHS				
CULTURAL FEATURES	27. ROADS WHS	28. BUILDINGS XX	29. RAILROADS XX		
	30. OTHER CULTURAL FEATURES XX				
BOUNDARIES	31. BOUNDARY LINES XX		32. PUBLIC LAND LINES XX		
MISCELLANEOUS	33. GEOGRAPHIC NAMES WHS		34. JUNCTIONS WHS		
	35. LEGIBILITY OF THE MANUSCRIPT WHS	36. DISCREPANCY OVERLAY XX		37. DESCRIPTIVE REPORT WHS	
	38. FIELD INSPECTION PHOTOGRAPHS WHS		39. FORMS WHS		
	SIGNATURE OF REVIEWER William H. Shearouse		SIGNATURE OF SUPERVISOR, REVIEW SECTION OR UNIT Milton M. Slavney		
40. FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT - 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. NONE. NO FIELD GWT.					
SIGNATURE OF COMPILER			SIGNATURE OF SUPERVISOR		

FIELD EDIT REPORT
T-12137

No field edit was done for T-12137.

15.

REVIEW REPORT T-12137
SHORELINE
April 1967

61. GENERAL STATEMENT

See summary accompanying Descriptive Report (page 6).

An ozalid Comparison Print showing the differences noted in Items 62, 63 and 65 is enclosed with the "original" of this Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

Registered Survey 4205; 1:20,000; 1921

The shoreline, rocks, reef limits and sounding limits from Survey 4205 are on the Comparison Print in blue.

- (a) There are shoreline differences to 70 meters.
- (b) All the rocks on Survey 4205 that fall with T-12137 are shown on the Comparison Print; and most of them are on T-12137, although with position differences up to 70 meters.

Included in rocks with larger position differences than the above are four on Survey 4205 strung from latitude $18^{\circ} 26.27'$ to latitude $18^{\circ} 26.37'$ at longitude $65^{\circ} 47.95'$; the northernmost of these rocks is about 150 meters northwest of a rock on T-12137. Three rocks strung near latitude $18^{\circ} 25'$ from longitude $65^{\circ} 46.75'$ to $65^{\circ} 46.83'$ are from 75 to 150 meters north and northeast of their counterparts on T-12137.

Survey 4205 shows a sunken rock at latitude $18^{\circ} 25.1'$, longitude $65^{\circ} 45.95'$ that is not on T-12137.

A number of rocks, awash and sunken, are shown on T-12137 that are not on Survey 4205.

Item 36 (Offshore Details) of this report notes that all rocks are from office interpretation with no notes by the field inspector except the "coral" label; and with no field edit. The delineation and location of these rocks have been

carefully checked during this review. The photographs have been examined for rocks in the positions shown from Survey 4205. Some of the rocks on T-12137 shown as awash, may be sunken, or vice versa; which can be resolved only in the field. No field edit has been done.

(c) The reef limits from Survey 4205 are shown on the Comparison Print in a short dashed blue line. The largest discrepancies of 100 to 150 meters, are near longitude $65^{\circ}45.2$ in an area in which two reefs are well defined on photographs 59-S-3899 thru 3901, and 61-W-1656 thru 1658. The reefs are in fair agreement, but generalized on Survey 4205, over the remainder of T-12137.

(d) Some mangrove islands in Ensenada Comezon, latitude $18^{\circ}24.7'$, longitude $65^{\circ}47.9'$, are new since Survey 4205.

This map superseded the previous registered surveys for nautical chart construction.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Rio Grande P. R.; 1:20,000; 1939-40, revised 1956.

(a) The shorelines are in fair agreement. The largest differences, about 50 meters, are at Punta Picua and the mouths of Rio Espiritu Santo and Rio Mameyes. Please see the Comparison Print.

(b) An island about 130 meters long, is shown near latitude $18^{\circ}24.4'$, longitude $65^{\circ}45.37'$, on the quadrangle that is not shown in T-12137. No notice of this was made by the field inspector, see field prints 59-W-3900 and 3901. Re-examination of these prints and 61-W-1656 and 1657 contact prints favor the delineation on T-12137, see paragraph (d) Item 65.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

None; Survey 4205 (Item 62) done in 1921 is the latest.

65. COMPARISON WITH NAUTICAL CHARTS

Chart 904; 1:10,000; 11th Edition of December 28, 1964.

The scale disparity, chart 904 is 1:100,000 and T-12137 is 1:10,000, precludes close comparison of details. The chart shoreline, islands and rocks are shown on the Comparison Print in red.

17.
(a) The shoreline shows differences to 150 meters near the mouth of Rio Mameyes, other differences to 50 meters are not surprising considering the scale difference.

(d) Chart 904 shows an island about 200 meters long at latitude 18 24.4', longitude 65 45.4'. No note in this respect by the field inspector. Photographs 59-S-3899 thru 3900 show no island or do contact prints 61-W-1656 thru 1658. There is a coral reef just south of the island, delineated from 61-W-1656 - 1657 but office interpretation does not warrant its being shown as an island. See paragraph (b) Item 63. The island is not on Survey 4205.

The rocks, reefs and sounding limits appear to be from Survey 4205. Please see Item 62. The rock positions from the chart are very close to those of Survey 4205; the reef and sounding limits coincide with those of 4205 on the Comparison Print.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

No accuracy tests have been made in the field. The map meets the Bureau requirements and the National Standards for Map Accuracy.

Approved by:

Reviewed by:

J. Bull
J. Bull, RADM
Director, Atlantic Marine Center

M. M. Slavney
M. M. Slavney

Approved by:

Charles Thurn
Chief, Cartographic Branch
Photogrammetric

J. Ralph Sobieralski JUN 19 1968
Chief, Photogrammetry Division

John D. Boyer
Chief, Chart Division

Chief, Operations Division

NOTES TO VERIFIER
T-12137 Project 21042 (Ph-6106)
BOAT SHEET No. None

No contemporary hydrographic survey.

