9029

Diag. Cht. Nos. 901-2 & 902.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. WH-100-1-69 *Office No.* H-9029

LOCALITY

State Commonwealth of Puerto Rico

General locality South Coast of Puerto Rico

Locality Cabo Rojo to Ponce

19 69

CHIEF OF PARTY

CDR Wayne L. Mobley, USESSA

LIBRARY & ARCHIVES

DATE Aug. 17, 1970

USCOMM-DC 37022-P66

9029

FORM C&GS-537 (5-66)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

REGISTER NO. H-9029

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO. WH 100-1-69

State COMMONWEALTH OF PUERTO RICO

General locality SOUTH COAST

Locality CABO ROJO TO PONCE

Scale 1:100,000 Date of survey 4-5-69 to 4-13-69

Instructions dated January 23, 1969 Project No. OPR-423

Vessel USC&GS SHIP WHITING

Chief of party CDR. WAYNE L. MOBLEY

Surveyed by G.C. CHAPPELL, J.L. WALLACE, C.W. TIGNOR, L.T. GILLMAN
G.J. CINPINSKI

Soundings taken by echo sounder, hand lead, pole ECHO SOUNDER

Graphic record scaled by SHIP PERSONNEL

Graphic record checked by SHIP PERSONNEL & VERIFICATION BR., AMC

Protracted by GERBER DIGITAL PLOTTER Automated plot by PACIFIC MARINE CENTER

Soundings penciled by GERBER DIGITAL PLOTTER

Soundings in fathoms ~~feet~~ at MLW ~~MLLW~~

REMARKS:

USCOMM-DC 37009-P66

DESCRIPTIVE REPORT

To Accompany

HYDROGRAPHIC SURVEY H-9029

WH-100-1-69

Scale 1:100,000

April 5 to April 13, 1969

South Coast of Puerto Rico

OPR-423

USC&GSS WHITING
CDR Wayne L. Mobley, USESSA, Commanding

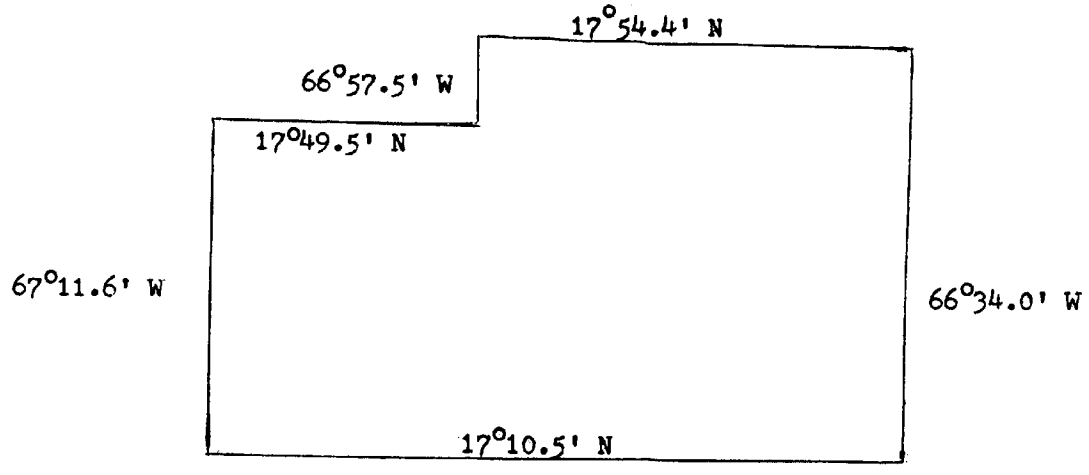
- - - - - - - - -

A. PROJECT

Authority for this project is granted by the Revised Instructions, OPR-423, Puerto Rico, dated January 23, 1969.

B. AREA SURVEYED

The survey was conducted between April 5 and April 13, 1969, between Cabo Rojo and Ponce on the south coast of Puerto Rico. The limits of the survey are as follows:



The main system of lines was run with 3000 meter spacing; splits were run at 750 meter spacing in areas with steeply sloping bottom.

Junctions were made with the following contemporary surveys:

WH 20-1-68	H-8989
WH-20-1-69	(H-9033)
WH-20-2-69	(H-9034)

C. SOUNDING VESSEL

The USC&GSS WHITING was the sounding vessel for this survey.

D. SOUNDING EQUIPMENT

Because of the extreme depths involved in this survey, Precision Depth Recorder (PDR) #159 was used as the sounding instrument.

The ship's position plot was created on-line by the computer plotter system; soundings, in fathoms, were inked in by hand later.

Velocity corrections were scaled off a temperature-salinity curve obtained from a Nansen cast of March 31, 1969. A copy of the velocity table is attached. Reference should be made to the Fathometer Report for further explanation of the depth corrections applied.

Because of the tidal range in the area surveyed, less than one foot, and because the soundings were in fathoms, no tides were applied.

E. SMOOTH SHEET

The smooth sheet will be plotted on the computer-plotter system at Pacific Marine Center.

F. CONTROL

The hydrography was controlled electronically by Hi-Fix in the range-range mode. The Hi-Fix was calibrated at least daily and at any time that any discrepancies were suspected by comparing visual and electronic positions. The Hi-Fix corrections are listed in the appendix to this report.

The Hi-Fix stations were located as follows:

Station	Name	Latitude	Longitude
Slave #1	Cabo Rojo	17°56'07.50"	67°11'32.85"
Slave #2	Don Q	17°58'04.67"	66°34'21.22"

These locations were calculated from unadjusted positions furnished by the Geodesy Division. For additional information on control, see the OPR-423 Hi-Fix Report.

G. SHORELINE

There was no shoreline on this survey.

H. CROSSLINES

10.6% of the total length of sounding line consisted of crosslines. The agreement between crosslines and the main system of lines was very good in all cases.

I. JUNCTIONS

The northern limit of this survey junctioned with WH-20-1-69 (H-9033), and WH-20-2-69 (H-9034). The soundings in this area common to more than one survey showed excellent agreement in all cases. Junctions with H-8989 (1968) on the north west.

J. COMPARISON WITH PRIOR SURVEYS

The area surveyed contained no pre-survey review items. No comparison with prior surveys was deemed necessary since the pre-survey review states:

"Prior surveys of the area are of 1899-1927, made by leadline in shallow water and by wire soundings in deep water. While considered good in those days, these surveys are inadequate by present standards."

K. COMPARISON WITH EXISTING CHARTS

Comparisons were made with the following existing charts:

C&GS #901, 10th Edition, March 25, 1968
C&GS #902, 8th Edition, March 15, 1965
C&GS #920, 14th Edition, November 28, 1966

Two things were noted in making these comparisons: (1) existing charts show very few adequate soundings in the area and at the depths covered by this survey. However, those that are shown are in fairly good agreement; (2) In general, the charted depths are greater than those gathered in this survey. This discrepancy will be corrected when the positive velocity correctors are included. Any other discrepancies are minor, and in all cases the new soundings should be considered more accurate because of the improved methods used.

L. ADEQUACY OF SURVEY

The survey is complete and adequate and should be considered as part of an original survey due to the time elapsed since the previous survey and the improved methods used.

M. AIDS TO NAVIGATION

There are no aids to navigation in the area surveyed.

N. STATISTICS

Number of positions - 1947 (#1-1947)
Miles of sounding line - 1795.0 N.M.
Area surveyed - 1457.0 sq. mi.

O. MISCELLANEOUS

None

P. RECOMMENDATIONS

None

Q. REFERENCES TO REPORTS AND RECORDS

1. OPR-423, Computer Plotter Report
2. OPR-423, Fathometer Report
3. OPR-423, Hi-Fix Report
4. Fathograms and listings for Julian days 095-103
5. Velocity Tables
6. Hi-Fix correctors

Submitted by,

Lynn T. Gillman

Lynn T. Gillman
LTJG - USESSA

PARAMETERS FOR DIGITAL COMPUTING
POLYCONIC PROJECTION

(1) Project No. OPR 423 (4) Requested by

(2) H No. 9029 (5) Ship or Office WHITING

(3) Field No. WH 100-1-69 (6) Data Required

(7) Visual ☐ Pt.(0) or Fathoms (1) [1] (8) Electronic [XXX] (fill out form #3)

(10) XKN (SP 5) Distance from CMER to East Edge (NYX = 1) or West Edge (NYX = 0). (Origin) 51,422.8 Meters

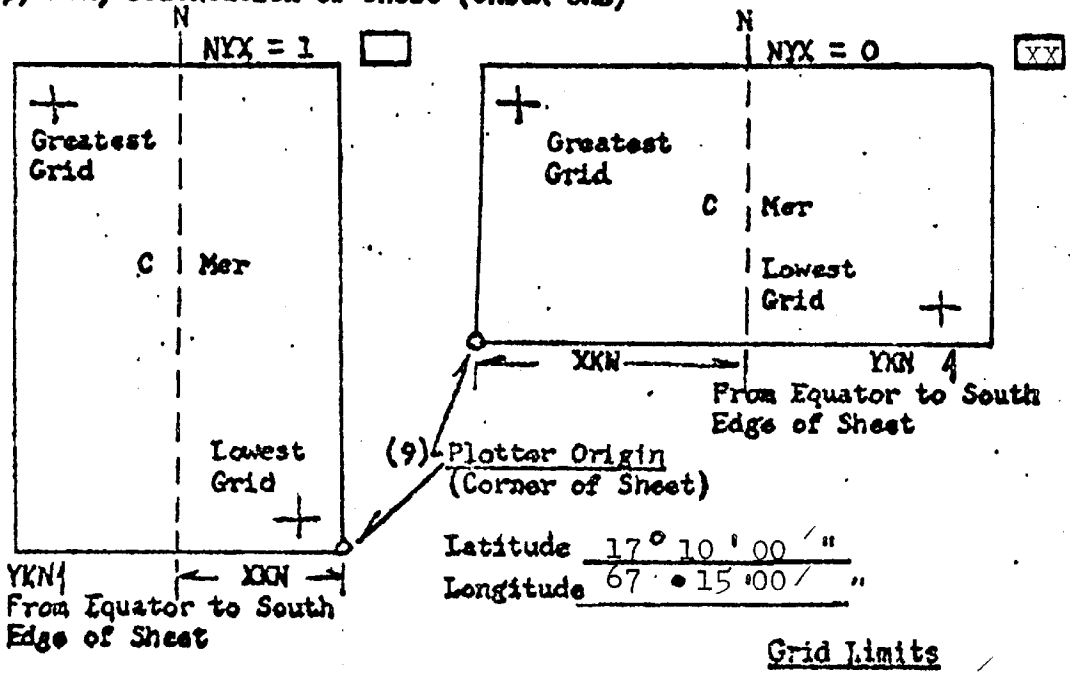
(11) YKN (SP 241) Distance from Equator to South Edge of Sheet. (Origin) 1,898,637.1 Meters

(12) Central Meridian 66 ° 46 ' 00"

(13) Survey Scale 1: 100,000

(14) Size of Sheet (Check one) 36x60 [XX] 42x60 ☐

(15) NYX, Orientation of sheet (Check one)



Grid Limits

(16) Greatest Latitude 17 ° 50' 00"
(17) Lowest Latitude 17 ° 15' 00"
(18) Difference 35' 00"

(Projection Line Interval Page 4 Hydro Manual)
(19) 5' "
(20) 7 YSN

(21) Greatest Longitude 67 ° 10 ' 00"
(22) Lowest Longitude 66 ° 30 00"
(23) Difference 40' "

(24) 5' "
(25) 8 XSN

FORM #3

COMPUTER PARAMETERS FOR ELECTRONICALLY CONTROLLED SURVEYS

(RANGE - RANGE)

(1) Project No. OPR 423 (2) N. No. 9029 (3) Field No. WH 100-1-69

(4) Type of Control: ___ SHORAN, ___ RAYDIST, XXX HI-FIX, ___ RADAR
Frequency (for conversion of RAYDIST or HI-FIX lanes to meters) 1799.6

(5) RANGE ONE (R1)
Station Name CABO ROJO
Latitude 17° 56' 07.50"
Longitude 67° 11' 32.85"

(6) RANGE TWO (R2)
Station Name DON Q
Latitude 17° 58' 04.67"
Longitude 66° 34' 21.22"

(7) Azimuth from R1 to R2 266° 45' 50.87"

(8) Baseline Length in Meters 65,753.00 M.

(9) Location of survey with respect to Electronic Baseline: CHECK ONE
(To determine: imagine an observer standing at R1 and looking directly at R2 --- if the survey area is to the observer's LEFT then A is negative; if the survey area is to the observer's RIGHT then A is positive.)

___ -A (minus) XXXX +A (plus)

(10) if SHORAN corrections are applied by the equation, K(X) + C = D, where X is SHORAN distance and D is true distance, enter the Constant Coefficients of the equations here:

K(R1) _____, C(R1) _____, K(R2) _____, C(R2) _____.

(11) Number of Velocity Tables to be used:

___None, 1 One, ___ More than one.

(12) _____ This form is submitted only as an aid in preparing a boat sheet projection.

XXXX This form applies to all data on this survey.

_____ This form applies to part of the data on this survey -

Time and Date limitations: From _____ To _____

Position Number Limitations: From _____ To _____

This is Form #3 Sheet #_____ of _____ Sheets for this survey.

(13) Other Remarks:

CORRECTIONS TO ECHO SOUNDINGS

USC&GSS WHITING

WH-1003-69

(fathoms)

fms		fms
000012	0	0000
000028	0	0001
000045	0	0002
000063	0	0003
000082	0	0004
000098	0	0005
000116	0	0006
000134	0	0007
000152	0	0008
000168	0	0009
000204	0	0010
000240	0	0012
000274	0	0014
000310	0	0016
000345	0	0018
000380	0	0020
000414	0	0022
000449	0	0024
000484	0	0026
000520	0	0028
000556	0	0030
000592	0	0032
000626	0	0034
000660	0	0036
000695	0	0038
000729	0	0040
000763	0	0042
000798	0	0044
000832	0	0046
000866	0	0048
000900	0	0050
000933	0	0052

0002 000 000000 000000

000968 0 0054
001000 0 0056
001170 0 0060
001340 0 0070
001530 0 0080
001750 0 0090
002010 0 0100
002300 0 0110
002920 0 0120
003720 0 0140
004720 0 0160
005750 0 0180
006820 0 0200
007760 0 0220
008630 0 0240
009420 0 0260
010140 0 0280
010920 0 0300
011650 0 0320
012320 0 0340
012960 0 0360
013580 0 0380
014180 0 0400
014740 0 0420
015270 0 0440
015780 0 0460
016280 0 0480
016820 0 0500
017280 0 0520
017750 0 0540
018200 0 0560
018630 0 0580
019120 0 0600
019670 0 0620
020220 0 0640
020740 0 0660
021280 0 0680
021840 0 0700
022370 0 0720
022900 0 0740
023440 0 0760
023980 0 0780
024500 0 0800
025040 0 0820
025570 0 0840
026120 0 0860
026640 0 0880
027180 0 0900
027740 0 0920
028260 0 0940
028810 0 0960
029350 0 0980

HI-FIX CORRECTORS

Day	Time	Pattern 1	Pattern 2
095	133000	+.09	-2.05
097	161001	+.09	-.05

TC/TI TAPE

WH 100-1-69

```
000000 0 0020 0002 000 000000 000000
000000 0 0020 0002 999 000000 000000
```

(fathoms)

APPROVAL SHEET
WH-100-1-69
H-9020

This survey was supervised daily. Fathogram interpretation and check scanning was under my supervision.

Several unconventional methods were used on this survey. They include:

1. Computer conning of helm along straight lines.
2. Automatic marking of P.D.R. trace by computer.
3. Boat sheet produced by computer plotter with arcs and grid. This was then used for hand plotting positions since soundings were not automated from P.D.R. Soundings were later logged and merged with automated position data.

The Descriptive Report is adequate except for the following:

I. JUNCTIONS (H8989). Junction was also made with the 1968 survey, WH-20-1-68 A preliminary examination was made during survey operations indicating good agreement. But after smooth plotting, I recommended a careful examination be made since the 1968 survey was controlled by Hyperbolic mode and the accuracy at the extreme corners are not as good as the control on the 100,000 sheet which was controlled in the Range-Range mode. Depths in good agreement at junction - H.L.W.

The two lane jump shown in the hifix corrections was introduced at the beginning of first day survey operations due to excessive radio communications from AMC.

Bottom samples were not obtained on this survey due to extreme depths of water, hardness of bottom, and lack of coring equipment.

This survey is adequate for charting.

Wayne L. Mobley
COR USC&GS.

VERIFIER: Harry R. Smith

Norfolk, Va.
March 30, 1970

AMC PLOTTER NOTE TO EDAT
SURVEY H-[redacted] 9029

This office has completed the verification of the preliminary sounding overlay for this survey. Both the position and sounding card printouts are being returned with applicable changes marked in red pencil.

After these changes have been made, please furnish this office a smooth plot of thi s survey. It will be necessary to make the plot on 42" paper for later trimming as the projection parameter was made incorrectly in the field and hydrography falls too close to the South side of the sheet.

See EDAT note at the beginning of each printout concerning the incorrect registry number.

Hugh L. Proffitt
Chief, Hydro Bramch, AMC

80. H-9029 (WH-100-1-69)

Fig. 18.

DESCRIPTIVE REPORT DATA RECORD			
PART I SMOOTH SHEET PREPARATION		PREPARED BY/OPERATOR	DATE
A. PLOTTER OPERATOR		EDAT	
B. DISTORTION MARKS PLOTTED		EDAT	
C. PROJECTION INTERSECTIONS PLOTTED		EDAT	
D. POINTS OF ELECTRONIC CONTROL ARCS PLOTTED		SPS - AMC	6/24/70
E. OVERLAYS PREPARED BY		EDAT	
1. POSITION NUMBER		EDAT	
2. EXCESS SOUNDINGS		EDAT	
3. PRELIMINARY SMOOTH PLOT		EDAT	
4. LIST OTHERS			
A.			
B.			
F. SOUNDING SELECTION BY		EDAT	
G. PLOTTER INPUT	PREPARED	EDAT	
H.	CHECKED	EDAT	
I. DESCRIPTIVE REPORT ADDENDUMS			
PART II SMOOTH SHEET COMPLETION			
		CARTOGRAPHER	DATE
A. DISTORTION SCALE TICKS IDENTIFIED BY NOTE		HRS	6/5/70
B. PROJECTION INTERSECTIONS VERIFIED BY		HRS	6/5/70
C. PROJECTION LINES RULED BY		HRS	6/10/70
D. ELECTRONIC CONTROL ARCS RULED AND LOCATION VERIFIED		HRS	7/1/70
E. OVERLAYS COMPLETED BY			
1. POSITION NUMBER LEADERS ADDED		HRS	7/8/70
2. EXCESS SOUNDING OVERLAY COMPARED		HRS	6/18/70
3. PRELIMINARY SMOOTH PLOTS COMPARED		HRS	6/18/70
4. OTHERS UTILIZED			
A.			
B.			
F. DESCRIPTIVE REPORT ADDENDUM		HRS	7/9/70
G. CONTROL STATIONS VERIFIED		DRM	2/13/70
H. POSITIONS MANUALLY PLOTTED		HRS	2/16/70
I. MANUAL PLOT VERIFIED		HRS	6/5/70
J. SHORELINE APPLIED		NONE	
K. BOTTOM CHARACTERISTICS ADDED		NONE	
L. NOTES AND DEPTH CURVES ADDED		HRS	7/8/70

FORM 197
(3-16-55)

GEOGRAPHIC NAMES

Survey No. H-9029

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Caribbean Sea										1
										2
										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
					PREPARED BY					22
					Frank W. Pickett					23
					CARTOGRAPHIC TECHNICIAN					24
					APPROVED BY					25
					C. Joseph Cwright					26
					CHIEF GEOGRAPHER					27

FORM C&GS-946
(REV. 11-69)
(PRESC. BY HYDROGRAPHIC MANUAL 20-2, 6-94, 7-13)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
NAUTICAL CHART DIVISION

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-9029 (WH-100-1-69)

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET & P.O.	1	BOAT SHEETS	1
DESCRIPTIVE REPORT	1	OVERLAYS	4

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS / SOURCE DOCUMENTS
ENVELOPES	3					
CAHIERS						
VOLUMES						
BOXES			2			

T-SHEET PRINTS (Lin.)

SPECIAL REPORTS (Lin.)

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				1947
POSITIONS CHECKED	0	100		
POSITIONS REVISED		4		
DEPTH SOUNDINGS REVISED		61		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		48		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS				
JUNCTIONS		4		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		30		
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		217		
TOTALS		251		

	BEGINNING DATE	ENDING DATE
PRE-VERIFICATION BY		
VERIFICATION BY H. R. Smith	Feb. 16, 1970	July 8, 1970
REVIEW BY		

FIG. 20 79

FORM C&GS-946A
(REV. 11-65)
(PRES. BY HYDROGRAPHIC MANUAL, 8-94)

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

VERIFIER'S REPORT

HYDROGRAPHIC SURVEY, H-9029 (WH-100-1-69)

INSTRUCTIONS - This form serves to identify items of a check list 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
Note: The verifier should first read the Descriptive Report for general information and problems.		
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	✓	
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	✓	
3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None	✓	
Part II - SHORELINE AND SIGNALS		
4. Source of shoreline signals Remarks Required: -- List all surveys		
a. Give earliest and latest dates of photographs (None)	✓	
b. Field inspection date		
c. Field Edit date		
d. Reviewed-Unreviewed		
5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. (None) Remarks Required: -- Discuss remaining differences.	✓	
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. (None) Remarks Required: -- None	✓	
7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. (None) Remarks Required: -- List those signals still unidentified.	✓	
Part III - JUNCTIONS		
Note: Make a cursory comparison preliminary to inking soundings in area of overlap.		
8. All junctions of contemporary or overlapping sheets were transferred in colored ink and verified, curves were made identical. Remarks Required: -- None	✓	
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	✓	

Part III - JUNCTIONS (Continued)	CL	R
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.	✓	
Part IV - VOLUMES		
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. (None) Remarks Required: -- None	✓	
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		
Part V - PROTRACTING		
13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None	✓	
14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None	✓	
15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None	✓	

Fig. 20 (cont'd.)
Form 946 A (back of form)

H-9029 WH-100-1-69

Part V - PROTRACTING (Continued)	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.	✓	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.	✓	
Part VI - SOUNDINGS		
18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	✓	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	✓	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	✓	
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. 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.	✓	
Part VII - CURVES		
23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the pencilled curves inspected. WWF	✓	
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: None 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	✓	
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 VIII - AIDS TO NAVIGATION	CL	R
26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. None Remarks Required: -- Conflicts of any nature listed.	✓	
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. None 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	✓	
29. Heights of rocks awash were correctly reduced and compared with topographic information. None Remarks Required: -- Note excessive conflicts with topographic information.	✓	
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	✓	
31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	✓	
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	✓	
33. The bottom characteristics are adequately shown. None Remarks Required: -- None	✓	
Part XI - NOTES TO THE REVIEWER		
34. Unresolved discrepancies and questionable soundings.	✓	
35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.	✓	
36. Supplemental information.		

Verified by: Harry L. Smith

Date: 7/8/70

FORM C&GS-U40A (11-68)

USCOMM-DC 36272-P65

H- 9029

A. Additions and corrections have been furnished the plotter center by the verification unit. Except those marked for correction by Review

Signed Lloyd D. Pruitt

Date Aug. 11, 1970 Title Chief, Verification Br., AMC

B. Additions and corrections have been added to the survey records and the final smooth sheet forwarded to the Review ~~xxxxxxx~~ ~~xxx~~n unit.

Signed Lloyd D. Pruitt

Date Aug. 11, 1970 Title Chief, Verification Br., AMC

C. The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the verifier's report).

Signed Lloyd D. Pruitt

Date Aug. 11, 1970 Title Chief, Verification Br., AMC

D. Smooth sheet and records forwarded to Rockville, Maryland Office.

Date Aug. 12, 1970

VERIFICATION NOTES
SURVEY H-9029

GENERAL

This appears to be an excellent basic survey. No unusual problems were experienced during verification and soundings are in agreement at crossings and at junctions with contemporary adjoining surveys.

Hugh L. Proffitt
Chief, Verification Br., AMC

Norfolk, Va.
August 11, 1970

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9029

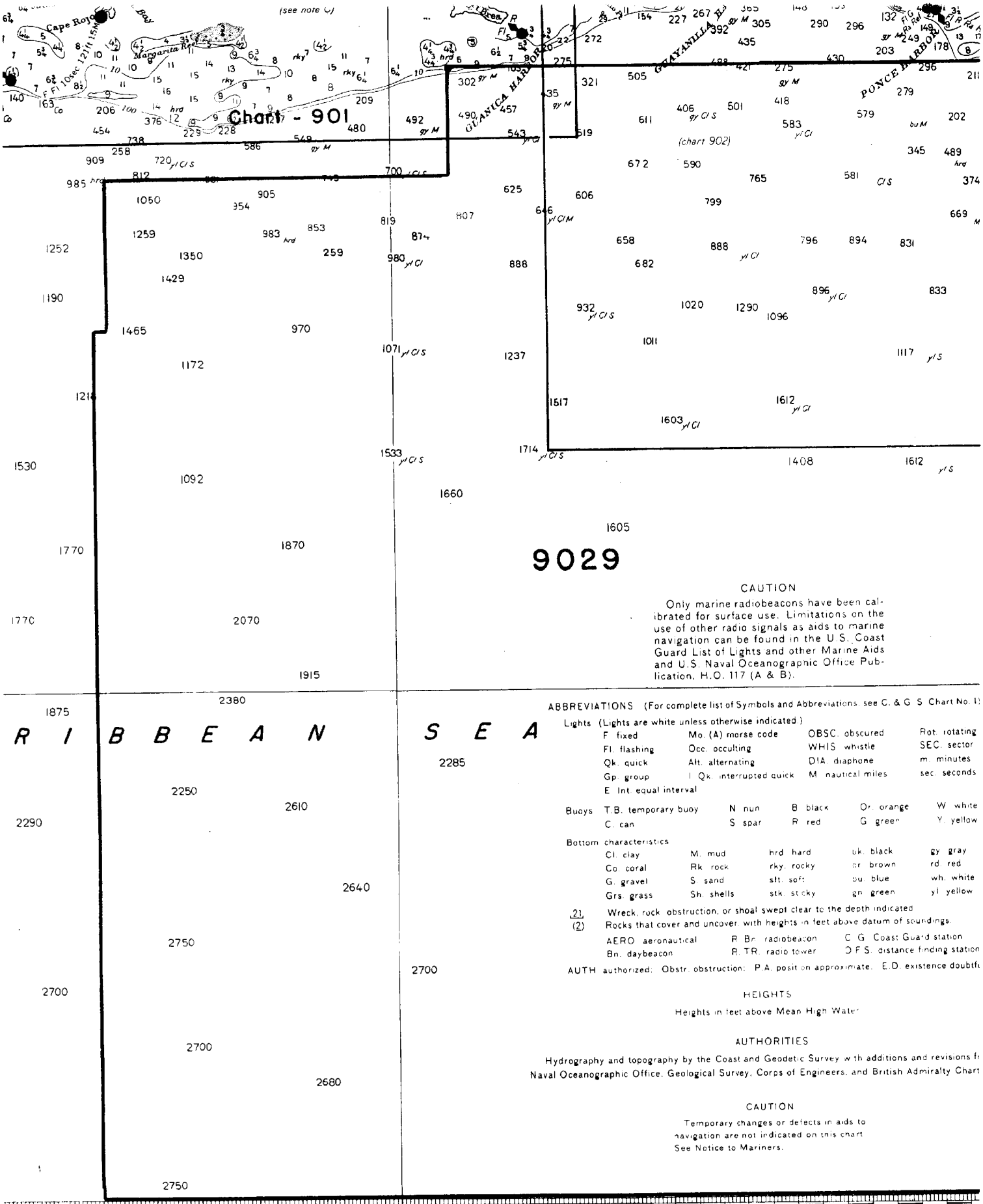
INSTRUCTIONS

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
920	1/27/71	C. B. Samuel	~~Full~~ Part ~~Before~~ After Verification ~~Review Inspection Signed Via~~
			Drawing No. Examined only for depths of 100fms or less - No corr - all depths greater than 100 fms
902	5/11/71	R.A. Lillis	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via (before)
			Drawing No. 15
927	5-14-71	C E Harrington	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via (before)
			Drawing No. 10
~~901~~	1-10-72	Wm Galanty	~~Full Part Before~~ After Verification ~~Review Inspection Signed Via~~
~~25677~~			Drawing No. 13
920	9-13-74	DL Pattilow	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via (BEFORE)
25640			Drawing No. 25
			ADDED SOUNDINGS IN AREA PREVIOUSLY OCCUPIED BY NOTES
25683	3-17-78	J. Briggs	Full ~~Part~~ ~~Before~~ After Verification Review Inspection Signed Via (Before)
(927)			Drawing No. 12
			Adequately applied
25671	9/28/79	Powers	~~Full Part Before~~ After Verification Review Inspection Signed Via (before)
901			Drawing No.
			Adequate
902 25677	1-12-81	B Fowler	~~Full Part Before~~ After Verification Review Inspection Signed Via (before)
			Drawing No.
			Adequately
25640	8/12/83	B Fowler	~~Full Part Before~~ After Verification Review Inspection Signed Via (before)
			Drawing No. 34
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

USCOMM-DC 8558-P63



ABBREVIATIONS (For complete list of Symbols and Abbreviations, see C. & G. S. Chart No. 1)

Lights (Lights are white unless otherwise indicated.)

F. fixed	Mo. (A) morse code	OBSC. obscured	Rot. rotating
Fl. flashing	Occ. occulting	WHIS. whistle	SEC. sector
Qk. quick	Alt. alternating	DIA. diaphone	m. minutes
Gp. group	I. Qk. interrupted quick	M. nautical miles	sec. seconds
E. Int. equal interval			

Buoys T.B. temporary buoy; N. nun; B. black; Or. orange; W. white; C. can; S. spar; R. red; G. green; Y. yellow

Bottom characteristics

Cl. clay	M. mud	hrd. hard	bk. black	gy. gray
Co. coral	Rk. rock	rky. rocky	br. brown	rd. red
G. gravel	S. sand	sft. soft	bu. blue	wh. white
Grs. grass	Sh. shells	stk. sticky	gn. green	yl. yellow

(21) Wreck, rock, obstruction, or shoal swept clear to the depth indicated.
(2) Rocks that cover and uncover, with heights in feet above datum of soundings.

AERO. aeronautical; R. Bn. radiobeacon; C. G. Coast Guard station
Bn. daybeacon; R. TR. radio tower; D.F.S. distance finding station

AUTH. authorized; Obstr. obstruction; P.A. position approximate; E.D. existence doubtful

HEIGHTS

Heights in feet above Mean High Water

AUTHORITIES

Hydrography and topography by the Coast and Geodetic Survey, with additions and revisions from Naval Oceanographic Office, Geological Survey, Corps of Engineers, and British Admiralty Charts

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Notice to Mariners.

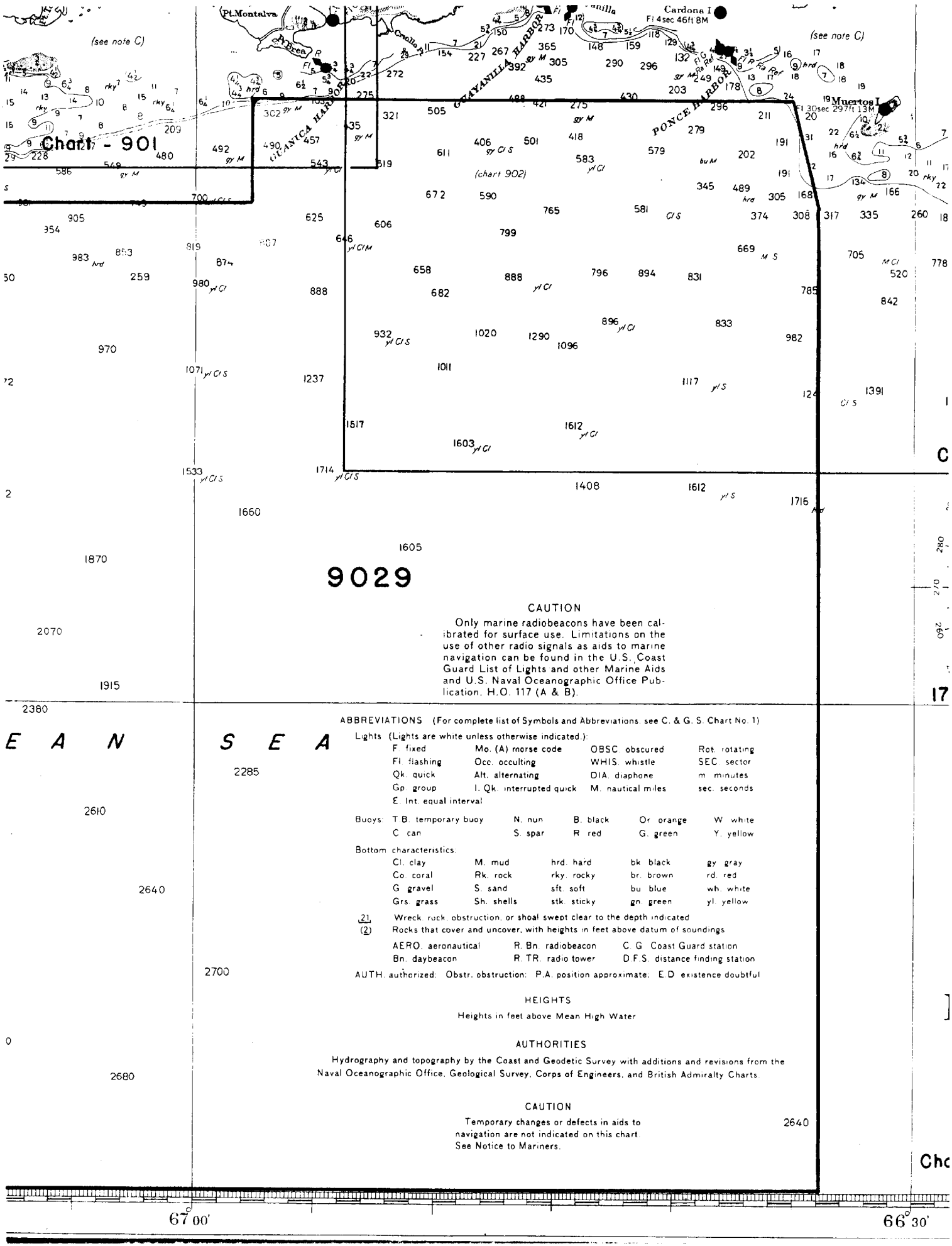


Chart - 901
(see note C)
Pt. Montalva
Cardona I
Fl 4sec 46ft 8M
(see note C)
GUAYANILLA HARBOR
PONCE HARBOR
Muertos I
Fl 30sec 297ft 13M
(chart 902)
9029
CAUTION
Only marine radiobeacons have been calibrated for surface use. Limitations on the use of other radio signals as aids to marine navigation can be found in the U.S. Coast Guard List of Lights and other Marine Aids and U.S. Naval Oceanographic Office Publication, H.O. 117 (A & B).
ABBREVIATIONS (For complete list of Symbols and Abbreviations, see C. & G. S. Chart No. 1)
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Fl. flashing
Qk. quick
Gp. group
E. Int. equal interval
Mo. (A) morse code
Occ. occulting
Alt. alternating
I. Qk. interrupted quick
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WHIS. whistle
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Sh. shells
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E A N
S E A
67° 00'
66° 30'