

5351

Diag. Cht. Nos. 1000-2 and 1220-1.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. 4 Office No. H-5351

LOCALITY

State Maryland and Virginia

General locality Offshore Maryland Coast

Locality East of Great Gull Bank

194 33

CHIEF OF PARTY

H. A. Seran

LIBRARY & ARCHIVES

DATE February 19, 1934

5351

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5351

HYDROGRAPHIC TITLE SHEET

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

Field No. 4

REGISTER NO. 5351

State Maryland

Large  
Small

General locality Offshore Maryland Coast

Locality East of Great Gull Bank

Scale 1:40,000 Date of survey 6-10 to 7-15, 1933

Vessel OCEANOGRAPHER

Chief of Party H. A. Seran

Surveyed by Field Officers

Protracted by W. F. D.

Soundings penciled by W. F. D.

Soundings in ~~fathoms~~ feet

Plane of reference

Subdivision of wire dragged areas by

Inked by W. H. Bamford & R. E. DeKend

Verified by

Instructions dated April 27, 1933

Remarks:

GPO

Applied to Chart 1220 - Oct. 1934 - H. A. Seran

DESCRIPTIVE REPORT

to accompany

Hydrographic Sheet No. 4

INSTRUCTIONS:

This survey was made in compliance with the Director's instructions, dated April 27, 1933, to the Commanding Officers of the ships OCEANOGRAPHER, LYDONIA and GILBERT. These instructions covered projects: H. T. 142, H. T. 143 and H. T. 144.

LIMITS AND SCALE:

This sheet was surveyed on a scale of 1:40000 and covers that part of the Atlantic Ocean off the coast of Maryland from Latitude 38°-06' to Latitude 38°-24' and from Longitude 74°-32' to Longitude 74°-48', approximately.

It joins sheet 3<sup>5350</sup> on the east, sheet 5<sup>5355</sup> (part two) on the south, sheet 2 on the west and sheet 4939 on the north. Sheet 4A covers that area in the vicinity of Latitude 38°-19.5 and Longitude 74°-33.5.

SURVEY METHODS:

The area on this sheet was surveyed by the ship OCEANOGRAPHER using standard R.A.R. methods. The ship LYDONIA and ship GILBERT were used as station ships.

For sounding the OCEANOGRAPHER used a combination striker and oscillator type fathometer. The soundings on this sheet were taken with the striker unit. Satisfactory junctions were made with the adjacent sheets. The depth curves from sheet 5 (part two) and sheet two were transferred to this sheet. The ones transferred are shown in dotted red lines. The depth curves join very satisfactorily except in the following cases.

Sheet Two # 5348

1. 90 foot curve on the S.E. of sheet two does not join with the one on sheet four. This is probably due to poor control on sheet four due to the displacement of buoy Jig.
2. 90 foot shoals in vicinity of Latitude 38°-14', Longitude 74°-44.5 and Latitude 38°-15', Longitude 74°-43.5 are larger on sheet two than shown on sheet four. This is probably due to the difference in fathometer corrections.
3. 90 foot curve west of Latitude 38°-16', Longitude 74°-43' is probably due to erroneous fathometer soundings.

Sheet Five (part two) 5355

1. 120 foot curve N.E. of Latitude 38°-06', Longitude 74°-36' is probably due to the control on sheet four.

2. 90 foot curve south of Latitude  $38^{\circ}-06'$ , Longitude  $74^{\circ}-42'$  is probably due to the control on sheet four.

Positions 29 G to 32 G and 35 G to 40 G were transferred to sheet 2. These lines were designated on sheet 2 as G! ✓

REDUCTION OF SOUNDINGS:

In obtaining reducers the tide was taken as occurring fifteen minutes earlier than indicated at Assateague Anchorage where a standard tide gauge was maintained.

The fathometer corrections ( the index correction and the temperature and salinity corrections ) were taken as one unit. Comparison between the fathometer soundings and vertical casts were taken several times a day, usually one on each line of soundings. Temperature and salinities were taken at the same time as the comparisons.

ADJUSTMENTS:

In all cases where there were strong bomb arc intersections these positions were accepted as correct unless they were found to be too far off in time, distance or course. These intersections were given preference over log distances and courses except in cases where adjustments between accepted positions proved the dead reckoning to be more suitable. In such cases the arc intersections that were supplanted by dead reckoning were rejected entirely or one arc retained if it fitted in with the adjustment. ✓

DISCREPANCIES:

From 58 A to 59 A and from 76 A to 78 A the variable soundings were probably due to rough bottom. ✓

From 69 D to 70 D the soundings were obviously affected by the assumed turning path of the ship. *Ink as spelled by field party*

From 21 G to 22 G and from 44 G to 47 G the irregular soundings were possibly due to irregular bottom. ✓

From 47 G to 48 G a 107 is found on a 85. It seems as if 48 G is too far north in position. ✓

From 49 G to 50 G the soundings are again irregular in such a way that the positions seem too far north. ✓

From 53 G to 59 G the soundings are displaced but regularly in such a manner as to suggest that the positions should be shifted. The soundings from 56 G to 57 G show 126 near 139, 140 near 144 and 119 near 116. On 59 G a sounding of 114 falls on 123. ✓

From 16 C to 17 C a sounding of 105 is found between two of 92. This is possibly a displacement. ✓

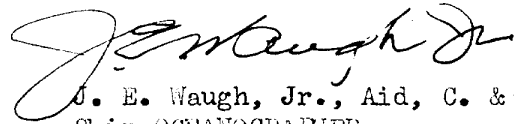
From 7 G to 8 G irregularities due to rough bottom occur. ✓

From 6 G to 7 G a sounding of 89 is near 98. ✓

From 1 G to 5 G the soundings are irregular but are caused by ✓  
rough bottom.

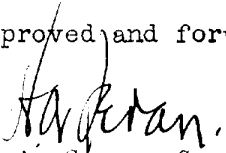
From 20D to 22 D and along to remainder of the line the sound-  
ings are too shoal. A displacement of the line is indicated. It was  
discovered later that buoy Jig had shifted. Before it could be re-  
located it disappeared. "Jig" not used on this day, sdps omitted.  
RJE

Respectfully submitted:



J. E. Waugh, Jr., Aid. C. & G. S.,  
Ship OCEANOGRAPHER.

Approved and forwarded:



H. A. Seran, Commdr., C. & G. S.,  
Commanding Ship OCEANOGRAPHER.

STATISTICS

Day	Date	Statute miles sounding line	Number positions	Number soundings
A	6-10-33	86.0	123	720
B	6-11-33	57.2	43	316
C	6-13-33	23.0	19	166
D	6-21-33	81.6	72	515
E	7-12-33	36.5	40	245
F	7-13-33	38.6	43	345
G	7-15-33	61.7	62	575
Total				
Sheet 4		384.6	402	2882

Area covered by sheet 4,116 square miles.

POST-OFFICE ADDRESS: c/o Postmaster, Norfolk, Virginia.

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

*570 Club*

*STP*

*HM 22*

*80*

*Suggest that the descriptive reports and cross references to orders be prepared*

*HM*

*20*

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

SHIP OCEANOGRAPHER

February 10th, 1934.

1934 FEB - 13 - AM 9:41

To: The Director,  
U. S. Coast & Geodetic Survey,  
Washington, D. C.

From: Commanding Officer,  
SHIP OCEANOGRAPHER.

Subject: Smooth Sheets, crossings on.

After plotting the smooth sheets of the RAR work of the past season, a careful study has been made of the crossings of the sounding lines in those cases where the differences are greater than the differences that would be regarded ordinarily as within the allowable limits. In practically all of the cases a slight displacement of one of the lines would bring the soundings in agreement. The descriptive reports of the individual sheets mention all such cases.

We have made no attempt to shift the lines to bring the soundings in agreement as it is felt that inasmuch as the control was virtually the same the position of one line was as correct as the other and that either position could be taken without appreciable error. ✓

The differences appeared principally on sheets 4 and 5 where the area is broken with numerous sand shoals and where we feel sure our velocities were only approximately correct.

*H. A. Seran*

H. A. Seran,  
Comdr., U.S.C. & G.S.,  
Commanding Ship OCEANOGRAPHER.

*5351 - Field sheet # 4*

*5353 part 1 } Field sheet # 5  
5355 " 2 }*

Lae

February 28, 1934.

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in  
2 volumes of sounding records for

HYDROGRAPHIC SHEET 5351

Locality East of Great Gull Bank, Coast of Maryland

Chief of Party: H. A. Seran in 1933

Plane of reference is mean low water, reading  
3.5 ft. on tide staff at Assateague Anchorage, Va. ( Allowance of 15 minutes  
9.3 ft. below B. M. 17 earlier made for time of tide at place of  
of sounding.)

Height of mean high water above plane of reference is about 4 feet.

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents



Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *5351*

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

Number of positions on sheet	<i>.402.</i>
Number of positions checked	<i>...3...</i>
Number of positions revised	<i>...0..</i>
Number of soundings recorded	<i>2882</i>
Number of soundings revised	<i>...14..</i>
Number of signals erroneously plotted or transferred	<i>...0...</i>

Date: *Mar* ..... *1934* .....

Cartographer: *W. H. Bamford & R. E. DeMund* .....

PARTIAL REPORT ON H 5351

MARCH 6, 1934.

1./ The field plotting of the positions on this sheet were accepted as correct and not checked except in a few instances where bad crossings occurred. - The soundings between positions 19 D and 23 D seem to be consistently more shoal than soundings on lines normal to this one.  
Admitted  
R.H.

2./ Distance arcs on this sheet are at intervals of 5000 meters.

Respectfully Submitted.

Warren H. Bamford.

Section of Field Records  
Report on Hydrographic Sheet 5351  
Offshore Maryland Coast  
East of Great Sull Bank  
Maryland.

Surveyed in June & July 1933  
Instructions dated April 27, 1933

Chief of Party - H. L. Swan  
Surveyed by - Field Officers  
Protracted by - W. F. D.  
Soundings plotted by - W. F. D.  
Verified by - W. W. Bamford.  
Indexed .. R. E. DeMent.

1. The records conform to the requirements ✓  
of the Hydrographic Manual
2. Sounding line crossings are adequate, but  
in several instances disagree.
3. The field plotting was completed to the ✓  
extent prescribed in the Hydrographic  
Manual, except as follows;

Datum note, degree and minute symbols  
and distance arc scales were omitted by the ✓

## field Party.

- 4 The spacing of soundings by the field draftsman were frequently erroneous, and were changed to conform <sup>with</sup> the records ✓
- 5 Junctions with adjacent sheets were made as follows.

With H 5352 - in M.E. Corner. - Overlap of <sup>H 5351</sup> was enlarged 3 times and tracing made to ✓ accompany H-~~552~~ 5352. No soundings were transferred to 5352 because of general irregularities.

With H 5350 On East side, the junction was found to be in fair agreement. Those soundings that are questionable, are left in pencil. ✓

- 6 The 120' curve is shown complete. ✓

## 7 Remarks:

(a) The field plotting of the positions were accepted as correct, and except in a few instances where bad crossings occurred, were not checked. ✓

(c) Irregular ~~and~~ soundings, and lines of

soundings, mentioned in the D.P. were ✓  
not inked.

Resp. submitted

Mar. 29, 1934

A. E. DeMent

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5351 (1933)

Offshore Maryland Coast, East of Great Gull Bank, Maryland  
Instructions dated April 27, 1933 (OCEANOGRAPHER)  
Surveyed June-July, 1933

Fathometer Soundings.

-

R. A. R. Control.

Chief of Party - H. A. Seran  
Surveyed by - Officers on U.S.S. Oceanographer.  
Protracted and soundings penciled by - W. F. Deane.  
Verified and inked by - W. H. Bamford and R. E. DeMent.

1. Condition of Records.

The records conform to the requirements of the Hydrographic Manual. Degree and minute marks were not placed on the smooth sheet by the field draftsman.

2. Compliance with Instructions for the Project.

Fathometer soundings on crosslines do not agree within the limits (4%) specified in the explanatory letter attached to the instructions. Fathometer readings on the first three days were recorded to  $\frac{1}{2}$  fathoms; on later work they were recorded to 1/10 fathoms. (See Letter of June 1, 1933 attached to instructions).

3. Sounding Line Crossings.

Soundings are plotted in feet. The agreement in depth at crossings are not as close as desirable. An examination of the sounding records shows that if a mean fathometer correction had been used in correcting the readings instead of the correction derived from the adjacent vertical cast a closer agreement would have resulted. The soundings however were inked on the chart as corrected by the field party. The majority of the discrepancies noted in the Descriptive Report can be explained on the basis of differing fathometer corrections and/or irregular bottom. Line 19 to 22D and several single soundings have been rejected because of their disagreement with adjacent soundings.

4. Depth Curves.

Only the 120 foot curve appears on this sheet but the bottom is irregular and the development is not sufficient to draw the curve in detail. A part of this area is shown on H-5352(1933) scale 1-10,000 and the curve drawn on that sheet is in greater detail and should be used in charting.

5. Junction with Contemporary Surveys.

a. H-5355(1933)

An adequate junction on the south has been made with this survey. The

greater part of the soundings are in general agreement but there are several cases where discrepancies occur. Some of these differences may be due to the fact that the position of buoy Jig on H-5351(1933) was known to have shifted but could not be relocated (See descriptive report H-5351(1933)). The soundings from H-5355(1933) were used and the soundings of H-5351(1933) were omitted at these points. The line from pos. 19 to 22D (lat. 38-06 between long. 74-34 and long. 74-38( on H-5351(1933) was omitted because of poor agreement with soundings of H-5355(1933) as well as other lines on H-5351(1933). Other soundings of H-5351(1933) which have been omitted are part of the line from pos. 10 to 11G (lat. 38-05, long. 74-45) and the soundings at pos. 15E pos. 16E and pos. 39E in the general vicinity of lat. 38-05, long. 74-42.

b. H-5354(1933)

This sheet joins H-5351(1933) to the southwest. Except for the omitted soundings on line 10-11G day (see par. 5a) the agreement in depth is good.

c. H-5348(1933)

The junction with the survey will be considered in the review of that sheet.

d. H-5352(1933)

This sheet on a scale of 1-10,000 is a detailed investigation of a reported shoal falling within the area of H-5351(1933). The soundings on the two sheets are in fair general agreement. No attempt was made to harmonize the difference between the two sheets. Some are doubtless due to irregularities in the bottom, but there are others which could not be accounted for. In several cases portions of sounding lines from the present survey were omitted when in consistent disagreement with the more closely spaced soundings of H-5352(1933). Because of the larger scale and greater detail detail H-5352(1933) should be used for charting the area common to the two sheets.

e. H-4939(1929)

This survey covers the area north of lat. 38-19 on the present survey. It is in fair general agreement but there are some differences which could not be harmonized. It was not considered advisable to make adjustments which would involve a complete replotting of the dead reckoning lines on H-4939(1929)

Part of a line of soundings from H-4939(1929) in the vicinity of lat.  $38^{\circ}22.3'$ , long.  $74^{\circ}33.5'$  was omitted on the overlaps shown on H-5351(1933) and H-5352(1933) because of poor agreement with those sheets. One or two other soundings from H-4939(1929) were also omitted on these overlaps because of poor agreement but none of these soundings were removed from the original sheet, H-4939(1929). The area common to these surveys should be charted from H-5352(1933) within its limits and from H-5351 in the area not covered by the former sheet.

f. H-5350(1933)

There are several differences at the crossings between this sheet and H-5351(1933). It was not possible to effect an adjustment of these differences on the basis of control or doubtful soundings. A rule was therefore applied that where a single line of soundings or portion thereof on one sheet differed consistently with a number of cross lines on the other sheet, the first line or portion thereof was omitted. Such a case was the line from pos. 17 to 23K on H-5350 (1933) which disagreed with 4 lines on H-5351(1933) by from 9 to 21 feet in depths of 20 fathoms. Similar cases are the lines from pos. 7 to 8G and pos. 5 to 7H on H-5350(1933).

6. Comparison with Prior Surveys.

a. H-1720(1886)

The scale of (1-200000) is too small and the soundings are spaced too far apart to make a close comparison. There are no special features that can be identified but the general depths are in fair agreement.

7. Comparison with Chart No. 1109.

No special features are shown. The authority for the 17 fm. in lat.  $38^{\circ}11'$ , long.  $74^{\circ}36'$  was not determined. The 1933 survey shows a bank of this depth about 2 miles to the eastward. The charted 17 should be superseded by the present survey.

8. Field Plotting.

Plotting of positions was accepted with very little checking but spacing of penciled soundings had to be revised in a number of places.

9. Additional Field Work Recommended.

There are no dangerous depths within the limits of this survey but there are ridges which were not closely developed although the lines are generally spaced within the specified limits. Attention is called to the ridge about a mile southeast of buoy Cast, (lat.  $38^{\circ}12.4'$ ; long.  $74^{\circ}41.5'$ ) which shows a least depth of 73 feet, with considerably deeper water shown on the adjacent lines on either side.



10. Note to Compiler

Before charting the area represented by the present survey, reference should be made to paragraphs 5d and 5e of this review.

11. Superseding Old Surveys.

Within the area covered the present survey with indicated additions from H-5350(1933) ~~supersedes~~ the following survey.

H-1720(1886) in part

12. Reviewed by - R. J. Christman, August 1934.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green, *C K Green*  
Chief, Section of Field Records.

*B. Borden*  
Chief, Section of Field Work.

*L. O. Lobnitz*  
Chief, Division of Charts.

*G. Glue*  
Chief, Division of H. & T.

This survey has been applied to chart 1109. H.B.