

7884

Diag. Cht. No. 77-3

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. CO-1650 Office No. H-7884

LOCALITY

State MARYLAND

General locality CHESAPEAKE BAY
NANTICOKE RIVER

Locality ROARING POINT TO WELIQUIN CREEK

19/50

CHIEF OF PARTY

John Bowie, Jr.

LIBRARY & ARCHIVES

DATE DEC 13 1951

B-1870-1 (1)

7884

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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.

REGISTER No. H-7884

Field No. CO-1650

State MARYLAND

General locality NANTICOKE RIVER

Locality ROARING POINT TO WETIPQUIN CREEK.

Scale 1:10,000 Date of survey September 1950

Instructions dated 28 February 1949

Vessel Ship COWIE

Chief of party John Bowie, Jr.

Surveyed by J. Bowie, H.D. Reed.

Soundings taken by fathometer, graphic recorder, hand lead, wire & Pole

Fathograms scaled by Personnel of Ship COWIE

Fathograms checked by " " " "

Protracted by Ben. T. Lewis

Soundings penciled by Ben. T. Lewis

Soundings in fathoms feet at MLW MLLW

REMARKS: This survey was smooth plotted in the Hydrographic Section of the Norfolk Processing Office.

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DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY H-7884 FIELD NO. CO-1650

NANTICOKE RIVER, MARYLAND

PROJECT CS-287

SCALE - 1:10,000

SHIP COWIE

JOHN BOWIE, JR., COMDG.

A. PROJECT:

Project CS-287 - Amended instructions date 28 February 1949.

B. SURVEY LIMITS AND DATES:

This survey covers an area in the Nanticoke River. The southern limits are defined by a line between the NE point of Sandy Island and Roaring Point. The survey extends Northward to Lat. $38^{\circ}-20'$, including the inshore area north of Lat. $38^{\circ}-20'$ and west of $75^{\circ}-54'$.

Junction is made with 1950 surveys ^{H-7881} CO-1350 at the southern limits and H-7885 CO-1750 at the northern limits. Field work was accomplished during the period 7 - 26 September 1950 inclusive.

C. VESSELS AND EQUIPMENT:

30' launch # 102 and 25' skiff #737 were used on this survey, both operating from the Ship COWIE. Launch #102 using 808 type fathometer #63 ~~used~~ in the main channel and in the shoaler areas inshore to an average depth of 6 ft. Skiff # 737 using pole and hand lead covered the shoal areas adjacent to the shoreline and in addition was used in sounding the creeks which were large enough to be entered.

D. TIDE AND CURRENT STATIONS:

A portable automatic tide gage was maintained at Roaring Point during the entire period of this survey. (See tide note with this report.

No current stations were occupied in the area.

E. SMOOTH SHEET:

Projection will be constructed and sheet plotted in the Norfolk Processing Office.

F. CONTROL STATIONS:

Triangulation Stations Roar, 1907, Nanticoke Church Spire, 1901, Rag, 1907, Ar, 1907, Gover, 1907 and Earle 1907 were recovered and used.

Topographic Stations used are from air photo surveys T-8120 and T-8134 - The positions of stations Jet, Oyster Bar Light and Nanticoke River Upper Light were found to be in error and were relocated by the field party using hydrographic methods.

Hydrographic stations were located by ~~intersection~~, the following methods: Intersection of sextant cuts, three point sextant fix and check angle, distance and direction from a known position. Control was satisfactory after the topographic stations mentioned above were relocated.

(See Vol. I, Launch sounding records for list of signals and tabulation of cuts and fixes.

G. SHORELINE AND TOPOGRAPHY:

Shoreline on the boat sheet ^{and smooth sheet} was transferred from the air photo compilations covering this area (T-812¹⁹⁴², T-8134¹⁹⁴²) and is generally satisfactory. Except for some minor differences, no adjustment appears necessary when plotting the smooth sheet. On the west side of the river between signals Ar and Let, some adjustment may be required. Soundings should be 10 meters from shoreline. (See boat sheet pos. 3-h - 9-h, skiff). On the east side of the river signal Mug is approximately on the high water line and the shoreline in the vicinity of this signal should be adjustment accordingly.

shoreline was adjusted to fit lines 3h-9h.

⊙ Mug was plotted in error on B.S., no shoreline change is indicated.

It was not practicable to define the low water line by soundings due to the small range of tide and consequent difficulty of keeping the sounding vessel close in to the shoreline without spending long periods dragging bottom and going aground. A line of soundings was run as close in to the low water line as practicable considering the above conditions.

H. SOUNDINGS:

Soundings were taken with the 808 type recording fathometer, hand lead and pole. Bar checks were taken daily from the launch. Fathometer corrections have been determined from the bar checks and entered in the sounding volumes by the field party. In the shoal area North of Rearing Point some ^{small} discrepancies of ^{1 ft.} ~~up to 3 feet~~ are noted where fathometer and pole soundings overlap. It is believed that most of these can be reconciled when plotting the smooth sheet. However in cases where it is not possible to adjust such differences, it is recommended that the pole soundings be accepted as correct.

all discrepancies were resolved

I. CONTROL OF HYDROGRAPHY:

Sounding lines were controlled by three point sextant fixes on shore objects. Three point fix control gave satisfactory results and no adjustment in horizontal position was necessary.

J. ADEQUACY OF SURVEY:

This survey is considered complete and adequate to supersede prior surveys for charting. Junctions with adjoining surveys are satisfactory and no holidays or excessive differences exist. Depth curves can be adequately drawn.

K. CROSSLINES:

About 5% of crosslines were run except in the featureless flat areas close inshore. Satisfactory crossings were obtained.

L-M. COMPARISON WITH PRIOR SURVEYS: CHART:

Preliminary Review Items: Chart 1224 (7/17/50)

(a) Channel into dredged boat basin at town of Nanticoke. Depth of 4 feet shown on Chart 1224. This area has scoured out to a greater depth than appears on the chart thus obliterating the dredged channel. A least depth of $4\frac{1}{2}$ ft. was found from the entrance buoy to inside the breakwater.

(b) Channel extending NE from Oyster Bar Light to limits of survey. Depth of 9 ft. shown on chart. A least depth of 10 ft. was found in the approximate area occupied by this channel on the chart. Least depths of 12 & 13 feet were found for a width of about 50 meters in the middle of the channel. NOTE: This channel is also discussed in Descriptive Report for survey CO-1750.
(H-7885)

Source of controlling depth in channel is H-7885.

L-M. COMPARISON WITH PRIOR SURVEYS: CHART: (CONT.)

(2) Lat. $38^{\circ}-18.4'$ - Long. $75^{\circ}-53.8'$, Small Boat Harbor. This basin is inclosed by wood pile jetties which are now in rather delapidated condition, the limits of the jetties were located by sextant fixes (See boat sheet).

Some filling in of the main river channel was noted, and depths up to 6 feet shoaler than those shown on the chart were found in the vicinity of Gravelly Point Light. However there is still more than sufficient depth for the largest vessels observed using the channel. Evidence of scouring was found in some of the inshore areas. This was especially noticeable on the east side of the river from Ragged Point to the vicinity of Bivalve where the shoal area shown on the chart has washed away to a great extent, and was also apparent in the area to the north of Rearing Point. On the west side of the river some scouring was apparent in the area from Sandy Island north to the vicinity of Newfoundland Point.

Review
par. 5

no apparent
change in
this area.

N. DANGERS AND SHOALS:

Except as noted above, no new dangers or shoals were found in the area covered by this survey.

Q. COAST PILOT NOTES:

This subject is covered in a separate report by the Commanding Officer, Ship COWIE.

P. AIDS TO NAVIGATION:

The following fixed aids to navigation have been relocated by hydrographic methods during the course of this survey and have been reported on Form 567.

(1) Oyster Bar Light (Lat. $38^{\circ}19.43'$ Long $75^{\circ}54.7'$)

(2) Nanticoke River Upper Light (Lat. $38^{\circ}20.33'$ Long. $75^{\circ}53.8'$)

{ new locations
approximately
15 meters from
former positions.

(H-7885)
.02'

NOTE: See also this paragraph in Descriptive Report for CO-1750.

A list of floating aids to navigation is included with this report.

Q. LANDMARKS FOR CHARTS:

Signal TALL (observation tower). Lat. $38^{\circ}17.54'$ Long $75^{\circ}54.37'$ is recommended as a landmark. This has been reported on Form 567.

R. GEOGRAPHIC NAMES:

Geographic names for this area shown on Chart 1224 are adequate and no additional names are recommended.

U-Y. MISCELLANEOUS:

To enable both sounding vessels to be in operation at the same time, a duplicate was made of the boat sheet for this survey. The hydrography for the deeper water areas covered by the launch is plotted on the original boat sheet. The hydrography for the shoal inshore areas covered by the skiff is plotted on the duplicate boat sheet.

Soundings were plotted every 30 seconds instead of every 15 seconds on the boat sheet except where intermediate soundings were necessary to define underwater features.

U-Y. MISCELLANEOUS: (CONT.)

This was done due to the presence of large featureless flat areas and to save time. All intermediate soundings are recorded in the sounding volumes.

In featureless flat areas, spacing of sounding lines was increased to 180 meters. This was done in accordance with Paragraph 9 of the instructions.

Z. TABULATION OF APPLICABLE DATA:

Coast Pilot Report. Forwarded to Washington Office 15 Nov. 1950
Form 567 - Fixed Aids to Navigation - Forwarded to Washington Office.
Form 567 - Landmarks for Charts - Forwarded to Washington Office.

Harry D. Reed, Jr.
Harry D. Reed, Jr.,
LIEUT., USC&GS.

*Approved and forwarded
See Season's Report
John Bowie Jr.
Comdr., CGS
Comdg. Ship COWIE*

STATISTICS

FOR HYDROGRAPHIC SURVEY H-7884 FIELD NO. CO-1650

SHIP COWIE - PROJECT CS-287

DATE	DAY	VOL. NO.	STAT. MI. HYDRO.	POS.	HL&P.	BAR CK.
<u>Launch #102</u>						
9/7	a	I	25.1	109	-	2
9/8	b	I	21.8	105	-	3
9/14	c	II	43.4	202	-	2
9/15	d	II-III	27.8	127	-	2
9/18	e	III	17.8	83	-	2
9/22	f	III	2.4	9	-	1
9/25	g	III	6.8	27	-	2
9/26	h	III	5.9	25	-	1
TOTALS			141.0	687	-	15
<u>Skiff #737</u>						
9/14	a	IV	30.6	188	1334	-
9/15	b	IV-V	27.9	162	999	-
9/18	c	V	12.4	77	491	-
9/20	e	V-VI	17.6	115	741	-
9/21	f	VI	18.4	126	653	-
9/22	g	VI	5.2	48	248	-
9/25	h	VI	3.4	20	144	-
TOTALS			126.0	795	5041	
GRAND TOTALS:			267.0	1482	5041	15

Area 10.4 Sq. Stat. Mi.

TIDE NOTE

HYDROGRAPHIC SURVEY H -7884 FIELD NO. CO-1650

A portable automatic tide gage was maintained at Roaring Point, Nanticoke River (Lat. $38^{\circ}15.72'$ Long $75^{\circ}55.8'$) for the entire period of this survey. Observed tides from this gage were used in obtaining tide reducers for the survey. Height of Mean Low Water was 0.9 ft. above zero on the tide staff.

Hourly heights were scaled from the marigrams by personnel of the Ship COWIE. No time or height corrections were applied to the observed tides.

FATHOMETER CORRECTIONS

Hydrographic Survey H-788 Field No. 1650
Project CS-287

A-day and B-day ----- no corrections

C-day (Fathometer No. 63, Mod. 808)

Depths	Corrections
0.0-7.0	/ 0.2
7.1-over	
Time	
0725-0944	/ 0.4
0945-end	/ 0.2

D-day ----- no corrections

E-day (Fathometer No. 63, Mod. 808)

Depths	Corrections
0.0-7.0	/ 0.4
7.1-over	0.0

F-day (Fathometer No. 63, Mod. 808)

Depths	Corrections
0.0-7.0	/ 0.2
7.1-over	0.0

G-day ----- no corrections

H-day (Fathometer No. ___ Mod. 808)

Depths	Corrections
0.0-7.0	/ 0.4
7.1-25.0	/ 0.0
25.1-30.0	/ 0.2
30.1-over	-0.4

FLOATING AIDS TO NAVIGATION

H-7884

<u>NAME</u>	<u>LAT.</u>	<u>METERS</u>	<u>LONG.</u>	<u>METERS</u>	<u>DEPTH</u>	<u>POS. NO.</u>	<u>DATE</u>
NANTICOKE CUT BOUY 2	38-16	460	75 55	339	5 $\frac{1}{2}$	85b	9/8/50
JUNCTION BUOY	38-17	104	75-55	727	13 $\frac{1}{2}$	84b	9/8/50
MIDDLE GROUND BUOY 6	38-17	1421	75-55	896	12 $\frac{1}{2}$	95b	9/8/50
MIDDLE GROUND BUOY 8	38-19	478	75-54	911	13 $\frac{1}{2}$	119c	9/14/50

LIST OF SIGNALS
H-7884

TRIANGULATION STATIONS

AR, 1907-42
EARLE, 1907-42
GOVER, 1907-42
NANTICOKE CHURCH SPIRE, 1901-42
RAG, 1907-42
ROAR, 1907-42

MARKED TOPOGRAPHIC STATIONS

RED, 1942 T-8134
R.M. NANTI 2, 1932-42 T-8134

TOPOGRAPHIC STATIONS

Gravel T-8120
Light 3 "
Light 4 "
Rear "
Front "
Ring "

HYDROGRAPHIC STATIONS

Tea	H-7881	Peg	Vol. 1, pg. 62
Hop	H-7881	Up	" " " 63
Jet	Vol. 1, pg. 62	Wet	" " " "
Jug	" " " "	Mug	" " " 62
Key	" " " "	New	" " " "
Let	" " " "	Tall	" " " "
Oyster	" " " "	Pad	" " " "
		Ice	H-7881


ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-7884 (Field No. Co-1650)

SOUNDINGS

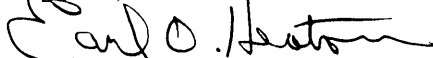
There is a general discrepancy of from 1 to 2 feet at junctions between fathometer and pole soundings. The pole soundings are the deeper.
(See review, par. 2)

Respectfully submitted,


Hugh L. Proffitt
Cartographer.

Norfolk, Va.
10 Dec. 1951

Approved & Forwarded:



Earl O. Heaton
Supervisor, SE Dist.

RAC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DO NOT WRITE IN THESE SPACES~~ 9 January 1952

Division of Charts: R. H. Carstens

Plane of reference approved in 6
volumes of sounding records for

HYDROGRAPHIC SHEET 7884

Locality Nanticoke River, Chesapeake Bay, Maryland

Chief of Party: J. Bowie, Jr. in 1950
Plane of reference is mean low water, reading
0.9 ft. on tide staff at Roaring Point
5.1 ft. below B. M. 1 (1950)

Height of mean high water above plane of reference is 2.3 feet.

Condition of records satisfactory except as noted below:

E. C. McKay
Section

Chief, ~~Division of Tides and Currents.~~

GEOGRAPHIC NAMES

Survey No. H-7884

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
<u>Maryland</u>										BGN	1	
<u>Chesapeake Bay</u>										"	2	
<u>Nanticoke River</u>											3	
<u>Roaring Point</u>				(tide gage location)								4
<u>Nanticoke</u>											5	
<u>Bivalve</u>											6	
<u>Wetipquin Creek</u>										BGN	7	
											8	
<u>Newfoundland Point</u>											9	
<u>Swan Creek Cove</u>											10	
<u>Gravelly Point</u>											11	
<u>Cow Creek</u>										BGN	12	
<u>Little Creek</u>											13	
<u>Sandy Island Cove</u>											14	
<u>Sandy Island</u>										BGN	15	
											16	
											17	
											18	
											19	
											20	
											21	
											22	
											23	
											24	
											25	
											26	
											27	

Names underlined in red are approved
1-2-51
H. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7884...

Records accompanying survey:

Boat sheets ..²...; sounding vols. ...⁶.; wire drag vols.; bomb vols.; graphic recorder rolls ⁴...; special reports, etc. ¹ Smooth Sheet; ¹ Descriptive Report.....

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

Number of positions on sheet		14.85
Number of positions checked		65
Number of positions revised		2
Number of soundings revised (refers to depth only)		6
Number of soundings erroneously spaced		✓
Number of signals erroneously plotted or transferred		✓
Topographic details	Time	3½
Junctions	Time	3
Verification of soundings from graphic record	Time	12

Verification by *J. J. Gallagher*..... Total time 2.86... Date *Mar. 21 52*

Reviewed by *A. J. Hoffman*..... Time 3.2 hrs. Date *5/5/1952*

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7884

FIELD NO. CO-1650

Maryland, Nanticoke River, Roaring Point to Wetipquin Creek

Project No. CS-287

Surveyed in September 1950

Scale 1:10,000

Soundings:

808 Fathometer
Handlead
Sounding Pole

Control:

Sextant fixes on shore signals

Chief of Party - J. Bowie, Jr.
Surveyed by - J. Bowie, Jr. and H. D. Reed
Protracted by - B. T. Lewis
Soundings plotted by - B. T. Lewis
Verified and inked by - J. T. Gallahan
Reviewed by - A. J. Hoffman, 5 May 1952
Inspected by - R. H. Carstens

1. Shoreline and Signals

Air photographic surveys T-8120 and T-8134 of 1942 cover the area of the present survey. Numerous piers delineated on the 1942 topographic surveys were non-existent at the time of the present survey. Minor shoreline revisions and new piers were located during the present survey and are shown on the smooth sheet. The present survey delineation should supersede the topographic delineation of these features.

The source of the signals is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in adequate agreement. Handlead and pole soundings are in many places 1 ft. deeper than fathometer soundings because of sounding in soft mud.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated. Only small portions of the low water line were determined by the regular sounding lines, which were run as close in-

shore as the range of tide and the draft of the boat permitted. The 3, 24, and 36-ft. curves have been added to emphasize bottom relief.

The bottom is relatively smooth. There are inshore flats extending out to depths of 6 ft. A natural channel with depths ranging from 12 to 42 ft. traverses the area and is separated from a secondary channel to the east by a middle ground.

4. Junctions with Contemporary Surveys

The junctions with H-7881 (1950) on the south and H-7885 (1950) on the north will be considered in the reviews of those surveys.

5. Comparison with Prior Surveys

H-673 (1858) 1:20,000

H-1447a (1878) 1:40,000

Prior survey H-673 provides a complete coverage of the area under consideration. A comparison between the prior and the present survey reveals a deepening of 1-2 ft. on some of the flats, as for example in lat. $38^{\circ} 17.60'$, long. $75^{\circ} 55.96'$ where prior depths of 2-ft. (charted) fall in present depths of 4-ft. Extensive shoaling of the middle ground east of the main channel and north of lat. $38^{\circ} 18'$ has resulted in the narrowing of the main channel, as for example in lat. $38^{\circ} 18.24'$, long. $75^{\circ} 55.40'$ where prior depths of 17-ft. (charted) fall in present depths of 7-ft., and in lat. $38^{\circ} 18.67'$, long. $75^{\circ} 54.90'$ where prior depths of 7-ft. (charted) fall in present depths of 4-ft. Closer development on the present survey has revealed in greater detail the delineation of the secondary channel and shoal area, west of Bivalve, from lat. $38^{\circ} 18'$ to $38^{\circ} 18.7'$. Shoaling in the vicinity of Mulberry Point has extended the inshore flats eastward, and as a result in lat. $38^{\circ} 16.36'$, long. $75^{\circ} 55.82'$ present depths of 1-2 ft. now fall in prior depths of 12-ft. In parts of the main channel depths have decreased as much as 5 ft. subsequent to the prior survey.

The present survey is adequate to supersede the prior surveys within the common area.

6. Comparison with Chart 1224 (Print date 7/30/51)

a. Hydrography

Charted hydrography originates entirely with the previously discussed surveys which need no further consideration.

The present survey supersedes the charted information.

b. Aids to Navigation

The spar buoy located in lat. $38^{\circ} 19.26'$, long. $75^{\circ} 54.63'$ on the present survey is charted about 300 meters southwest of the survey position. Either position adequately serves the purpose intended.

All other aids to navigation located on the present survey are in substantial agreement with the charted aids and adequately mark the features intended.

c. Dredged Channels

Depths on the present survey are in adequate agreement with project depths in the marked channel extending northeastward in lat. $38^{\circ} 19.2'$. A controlling depth of 11 ft. is on the verified smooth sheet of adjoining survey H-7885. The charted controlling depth, legend (5 ft. Aug. 1950), from Chart Letter 71, 1951, is superseded by the 11-ft. depth.

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was very well done.

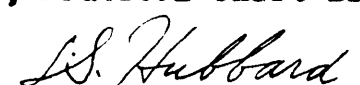
8. Compliance with Project Instructions


The survey adequately complies with the Project Instructions.

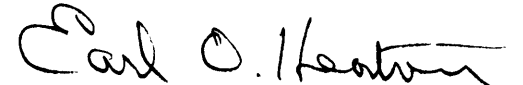
9. Additional Field Work Recommended

This is an excellent basic survey and no additional field work is recommended.


H. R. Edmonston
Chief, Nautical Chart Branch


L. S. Hubbard
Chief, Section of Hydrography

Examined and approved:

H. Arnold Karo
Chief, Division of Charts


Earl O. Heaton
Chief, Division of Coastal Surveys

