

8078

Diag. Cht. Nos. 78-3 & 1222-3

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. CO-1153 Office No. H-8078

LOCALITY

State Virginia

General locality Chesapeake Bay

Locality Vicinity of Horn Harbor to Wolf Trap

19A 53

CHIEF OF PARTY

Comdr. J. H. Brittain

LIBRARY & ARCHIVES

DATE November 15, 1955

8078

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-8078

Field No. CO-1153

State VIRGINIA

General locality CHESAPEAKE BAY

Locality VICINITY OF HORN HARBOR TO THE OFF TRAP

Scale 1:10,000 Date of survey 22 Apr - 20 July 1953

Instructions dated 5 February 1953

Vessel SHIP COWIE

Chief of party COMDR. J. H. BRITTAIN

Surveyed by SHIP'S OFFICERS

Soundings taken by fathometer, ~~graphic recorder~~, hand lead, ~~XXX~~, and pole.

Fathograms scaled by Personnel of Ship COWIE

Fathograms checked by " " " " & Norfolk Processing Office

Protracted by A.K. Schugeld

Soundings penciled by A.K. Schugeld

Soundings in ~~XXXXXX~~ feet at MLW ~~XXXX~~ and are true depths

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-8078, FIELD NO. CO-1153

CHESAPEAKE BAY
SHIP COWIE
J. H. BRITTAIN

VICINITY HORN HARBOR
SCALE: 1:10,000
CHIEF OF PARTY

Delim 7958 - Rev
unrev 7960 - Sec 1
unrev 8079 Sec 1
V.C.

A - PROJECT:

Project CS-287; Supplemental Instructions dated 5 February 1953. ✓

B - SURVEY LIMITS AND DATES:

The area covered by this survey is from latitude 37°20' north to latitude 37°24.4' and longitude 76°12.5' west to the western shore of Chesapeake Bay. Horn Harbor and Winter Harbor, opening into Chesapeake Bay, are included in this survey.

Surveying operations began on 22 April 1953 and closed 20 July 1953.
Junction is made with CO-1752 (1952) ^{H-7958} to the south, CO-1253 (1953) to the north and CO-2153 (1953) to the east. ^{H-8083} ✓

C - VESSELS AND EQUIPMENT:

Hydrographic launch 102, equipped with 808 type fathometer, was used from approximately 6 foot depths offshore to a junction with ship work on CO-2153. ^{H-8083} An unnumbered 25 foot hydrographic skiff equipped with hydro-jet engine, and an auxiliary outboard motor, and twenty-five foot hydrographic skiff no. 737, powered with outboard motors and used inshore. These boats, not being equipped with fathometer fish mounts, were equipped with poles and leadlines for sounding. In Winter Harbor where the depths were too shoal for the 25 foot skiffs, two 16 ft. aluminum skiffs, each carrying a party of four men, equipped with poles and leadlines for sounding and outboard motors for power were used. ✓

D - TIDE AND CURRENT STATIONS:

Portable automatic tide gages were maintained at Wolf Trap Light Station, New Point Wharf and at Winter Harbor entrance during the entire period of this survey. Tide gage records and all soundings are on Eastern Standard Time. No current stations were occupied in this area.

E - SMOOTH SHEET:

Projections will be constructed and sheets plotted by the Norfolk Processing Office.

Special note should be taken that adequate control of hydrography in the northern part of Winter Harbor necessitated use of topographic signal IRK. It is recommended that the limits of the smooth sheet be shifted northward to include this signal. *IRK shown on smooth sheet.*

F - CONTROL STATIONS:

TRIANGULATION: Wolf Trap Light Station - 1898-1932.

HYDROGRAPHIC: FIG - End of Pier.
RIT - Temporary signal on fish trap.
SUR - " " " " "
TRA - " " " " "

TOPOGRAPHIC SIGNALS - MANUSCRIPT T-11158 (1952)

HYDRO. NAME	MAN. NO.	DESCRIPTION	HYDRO. NAME	MAN. NO.	DESCRIPTION
ADD	206	Lone Cedar Tree	FIG	185a	Temporary signal
ALP	164	Temporary signal	GAM	225	Lone Cedar Tree
AMP	201	Temporary signal	GEM	185	E.gable of house
BARE (d)	-	Pile of Rocks	GIG	229	Temporary signal
BED	207	Lone Cedar Tree	HER	226	Lone Cedar Tree
BON	165	Temporary signal	HID	194	Temporary signal
CAT	208	Temporary signal	HOE	220	Temporary signal
CLAUD (d)	1944-53	Chim. on E.gable ho.	IRK *	230	Temporary signal
DIF	222	Temporary signal	IVY	190	E. gable of shed
DIP	-	N. gable of shed	JIM	187	End of pier
EEL	223	Temporary signal	LEO	189	End of pier
EGO	168a	Temporary signal	LIZ	-	Temporary signal
FEW	224	Temporary signal	MAX	188	S. gable of house
FIG	185a	Temporary signal	MID	171	Tree

(*) See paragraph B:

F - CONTROL STATIONS: (CONT.)

TOPOGRAPHIC SIGNALS - MANUSCRIPT T-11158 (1952)

HYDROL NAME	MAN. NO.	DESCRIPTION	HYDRO NAME	MAN. NO.	DESCRIPTION
MOO	210	Temporary signal	RIP	179a	SW Corner of pier
NIG	191	E. gable of barn	ROT	211	End of pier
NIP	175	Fallen tree	SET	198	Temporary signal
NIT	216	Temporary signal	SIP	181	Lone Cedar Tree
OIL	192	E. gable of shed	TOO	215a	Temporary signal
ONA	177	End of pier	TUB	173	Temporary signal
ORB	216a	Temporary signal	VOE	179	NE gable of 2 story ho.
PEP	196	NE end of T Pier	WEE	172	Temporary signal
PIE	171	End of pier	WEN	219	Temporary signal
PIN	213	End of pier	ZOO	-	Lone Cedar Tree

TOPOGRAPHIC SIGNALS - MANUSCRIPT T-11161 (1952)

ABE	101	Temporary signal	LAD	135	End of pier
ACE	147	SE corner of pier	LAM	153	End of pier
BAG	102	Shore end of pier	MAG	142	Temporary signal
BAH	144	S gable of boatho.	MAL	154	End of pier
BAKE	-	Horn Harbor Lt. 5	MAN	-	Temporary signal
BOR	-	" " Bn. 10	MILL	-	Horn Harbor Dbn. 11
CAB	103	Temporary signal	NAT	141	Lone Cedar Tree
CAM	145	W gable of boatho.	NAY	155	End of pier
CAR	-	Mooring pile	NED	117	Temporary signal
CAST	-	Horn Harbor Lt. 7	OAK	144a	End of pier
DAW	105	NE gable, Refrig. ho.	OBI	143	SE corner of pier
DAY	140	Temporary signal	ODD	116	Temporary signal
DEB	-	Temporary signal	PAD	138	Temporary signal
EAR	104	NE gable, fish ho.	PAL	137	Temporary signal
EAT	134	Lone Cedar Tree	PAR	112	Temporary signal
EBB	113	Temporary signal	PARK	159	N gable of b'ldg.
FAR	126	End of pier	RAM	130	SW corner of house
FAT	145a	Shore end of pier	RAY	106	End of pier
GAD	127	End of pier	SAD	107	End of pier
GAG	150	S. End of pier	SAL	111	Temporary signal
GAL	132	SW corner of pier	TAN	-	Temporary signal
HAG	128	N. Chimney of ho.	TAP	132a	End of pier
HAR	-	Horn Harbor Lt. 3	TAX	114	Temporary signal
HAT	149	End of pier	USE	-	Temporary signal
HEM	131a	End of pier	VAN	-	S end of fuel pltm.
HORN	-	Horn Harbor Lt. 1	VET	115	Temporary signal
ICE	133	NW Corner, Fuel pltm.	VOL	109	Temporary signal
IDA	151	End of Pier	WAG	131	E gable of fish house
ION	-	W end of wreck. boat	WAN	160	E gable of shack
JAR	-	W gable, garage	YAK	123	Lone Cedar Tree
JAP	-	Temporary signal	YAM	122	Lone Cedar Tree
KED	136	Temporary signal	YEA	-	Winter Harbor Ent. Lt.
KEN	152	NE Corner of pier	ZAG	125	End of pier
KEY	-	Temporary signal	ZIG	-	End of pier...

G - SHORELINE AND TOPOGRAPHY:

The shoreline on the boat sheet was transferred from air photo manuscripts T-11058 and T-11161 which cover this area. The air photos were taken recently and the shoreline on the manuscripts is correct. All of the topographic signals were radial plotted from air photos on the manuscript and then transferred directly to the boat sheet by a photogrammetrist from the Division of Photogrammetry.

It was not practicable to define the entire low water line by soundings due to the small range of tide and the attendant difficulty of getting the sounding vessel close to the beach without long periods spent dragging bottom. However, the sounding lines were run close to and parallel to the beach whenever possible.

H - SOUNDINGS:

Depths were measured with the 808 type fathometer, handlead and pole. Bar checks were taken daily from the launch to depths where satisfactory results could be obtained. Fathometer corrections have been determined from the bar checks and entered in the sounding volumes by the field party. The leadline was checked daily with no corrections found.

I - CONTROL OF HYDROGRAPHY:

Sounding lines were controlled by three point fixes using natural objects or signals erected along the shorelines. Satisfactory results were obtained using these signals.

J - ADEQUACY OF SURVEY:

This survey is considered complete, adequate for charting purposes and should supersede all prior surveys. Junctions with adjoining surveys are satisfactory, no holidays exist and depth curves can be adequately drawn at the junctions..

4
Review

K - CROSSLINES:

Crosslines are in good agreement. The percentage is estimated at 8 to 10 percent.

L-N - COMPARISON WITH CHARTS AND PRIOR SURVEYS:

Comparison with prior surveys H-2870 (1906-07) and H-2813 (1906) and charts 1222 (1/26/53), 1223 (12/22/52), 494 (5/26/52), and 78 (2/25/52) shows the following:

1. The wreck in latitude $37^{\circ}23.40'$, longitude $76^{\circ}13.90'$ (No. 29, Preliminary Review) is not there. The spot was buoyed, and an extensive search was made for it at low water with negative results. It should be removed from the chart.

2. The 4 foot sounding (No. 35, Preliminary Review) in latitude $37^{\circ}21.08'$, longitude $76^{\circ}16.05'$ was verified. It is a visible pile of oyster shells and a least depth of 4 feet was obtained on it.

3. The 12 foot sounding in latitude $37^{\circ}21.86'$, longitude $76^{\circ}12.87'$ was verified.

4. The 14 foot sounding in latitude $37^{\circ}22.35'$, longitude $76^{\circ}12.89'$ could not be found, however a 14 foot sounding was found in latitude $37^{\circ}21.29'$, longitude $76^{\circ}12.88'$. Several 14 ft sdgs in vicinity

5. The 17 foot sounding in latitude $37^{\circ}22.00'$, longitude $76^{\circ}13.43'$ was not found, but several 17 foot soundings were obtained in the vicinity of latitude $37^{\circ}21.98'$, longitude $76^{\circ}13.43'$.

6. The 5 foot sounding (No. 28, Preliminary Review) in latitude $37^{\circ}24.45'$, longitude $76^{\circ}13.80'$ could not be found. This area was thoroughly developed and since the 5 foot sounding was in an area of general 10 to 11 foot depths, it is believed that the leadline was misread by 1 fathom. It is recommended that this sounding be deleted.

Shifting bottom - 6 ft ridge 200 m S.W.

L-N - COMPARISON WITH PRIOR SURVEYS: (CONT.)

7. The 8 foot sounding (No. 28, Preliminary Review) in latitude $37^{\circ}24.38'$, longitude $76^{\circ}13.08'$ could not be found. This area was tho-roughly developed and since the 8 foot sounding was in an area of general 13 to 14 foot depths, it is believed that the leadline was misread by one fathom. Removal from chart is recommended.

sdg removed from Ch 494

8. ^{Screal} 7 foot soundings ^{were} obtained in latitude $37^{\circ}24.12'$, longitude $76^{\circ}14.32'$ in charted depths of 8 feet. *6' chart from boat sheet.*

9. The charted 3 foot sounding in latitude $37^{\circ}23.58'$, longitude $76^{\circ}14.23'$ could not be found. ³ feet was the least depth found in the immediate area. *3 ft sdy at $37^{\circ}23.50'$ $76^{\circ}14.18'$*

10. 3 foot soundings were obtained in the vicinity of latitude $37^{\circ}23.50'$, longitude $76^{\circ}14.17'$, some 180 meters southeast of a charted 3 foot sounding. *3 ridges of 3 ft sdy have charted from*

11. The 4 foot sounding in latitude $37^{\circ}23.14'$, longitude $76^{\circ}14.18'$ could not be found. Soundings of 6 feet were obtained in the immediate area. *3 ft ridge shifted 280 meters westward*

12. Previously uncharted depths of 10 feet were found in latitude $37^{\circ}24.46'$, longitude $76^{\circ}13.48'$. *5' 8' charted at $37^{\circ}24.42'$ $76^{\circ}13.53'$ from H-285*

13. Previously uncharted 8 foot soundings were found in latitude $37^{\circ}25.10'$, longitude $76^{\circ}12.97'$. *charted from B.S.*

14. Previously uncharted 2 foot soundings were found in the vicinity of latitude $37^{\circ}24.90'$, longitude $76^{\circ}12.63'$.

15. A group of submerged dredge pipes was located in latitude $37^{\circ}20.50'$, longitude $76^{\circ}15.72'$. Some of these pipes are awash at MLW. *Spur line*

16. At latitude $37^{\circ}20.84'$, longitude $76^{\circ}16.36'$ where a group of piles was previously charted, a fuel platform was located. *vol. 12 P 58*

also shown on T-11161

L-N - COMPARISON WITH PRIOR SURVEYS: (CONT.)

17. A previously uncharted wreck which is awash at MLW was located in latitude 37°21.37', longitude 76°15.46'. ⁴⁷ *charted from B.S. Vol. 13 p 27*
18. A previously uncharted wreck which is awash at MLW was located in latitude 37°22.30', longitude 76°18.87'. ^{bare 1 ft} *charted from B.S. was sunken wreck*
19. The charted 2 foot depth in latitude 37°20.89', longitude 76°16.10' could not be found. 5 feet was the least depth obtained in the immediate area; however, a 3 foot shoal was found in latitude 37°20.88', longitude 76°16.07', ⁴⁵ *75 meters southeast of the charted 2 foot depth.* ^{2 ft no longer charted}
20. A 1/2 foot deep shoal, previously uncharted was found in latitude 37°22.45', longitude 76°14.83'. *Vol. 15 p. 11 charted from B.S.*
21. The charted 4 foot sounding in latitude 37°22.48', longitude 76°14.41', was verified. ^{4 ft not charted} *2 charted at 37° 22.53' and 37° 22.42' 76° 14.20 and 76° 14.40*
22. The charted 3 foot sounding in latitude 37°22.67', longitude 76°14.44' could not be found. ^{6 1/2} *7 feet was the least depth obtained in the immediate area. Not charted - in 6-7 ft deep*
23. ^(Not charted) The charted 2 foot shoal in latitude 37°22.35', longitude 76°14.52' could not be found. 4 foot soundings were obtained in the immediate area. A 2 foot sounding was obtained in latitude 37°22.39', longitude 76°14.63' in surrounding depths of 4 feet. ³² *also 3 40 meters to west*
24. The charted, submerged piles in latitude 37°20.98', longitude 76°16.00' were verified. The least depth obtained was on top of the piles ^{1'} *feet in surrounding depths of 4 feet. These piles are the remains of a fish house. pos. 1-6t Vol. 17*
25. The charted pile in latitude 37°21.10', longitude 76°16.40' could not be found. This is a shoal area and the bottom could be clearly seen. Removal from chart is recommended. *Never charted*

L-N - COMPARISON WITH PRIOR SURVEYS: (CONT.)

26. The charted pile in latitude $37^{\circ}21.72'$, longitude $76^{\circ}16.93'$ was located and used for a topographic signal. (CAR)
27. ^{two} The charted piles in latitude $37^{\circ}21.88'$, longitude $76^{\circ}16.50'$ ^{are two} ~~is a~~ fuel platform and ^{were} ~~was~~ located.
28. The charted pile in latitude $37^{\circ}21.08'$, longitude $76^{\circ}16.50'$ ^{tank} is a fuel platform and was located. ^{at 13 P 5} ~~at 13 P 5~~ ^{37 21.08} ^{76 16.50}
29. The charted piles in latitude $37^{\circ}21.68'$, longitude $76^{\circ}17.41'$ is a fuel platform and was located. ^{No piles charted here} ~~at 17 P 27~~
30. The charted pile in latitude $37^{\circ}21.70'$, longitude $76^{\circ}17.50'$ is a fuel platform and was located from an aerial photo for a topographic signal. ^{Topo signal (ICE)}
31. The charted wreck in latitude $37^{\circ}22.14'$, longitude $76^{\circ}18.12'$ is awash at high water and is not considered dangerous to navigation. There is a small marine railway in the immediate vicinity. ^{Vol. 14 p. 23}
32. The charted pile in latitude $37^{\circ}22.12'$, longitude $76^{\circ}18.52'$, which is a mooring pile was verified. ^{Vol. 17 p. 24}
33. The pile of rocks charted in latitude $37^{\circ}23.20'$, longitude $76^{\circ}14.70'$, which bares ^{5 (3' MHW)} ~~4~~ feet at MLW, was verified. ^{Topo signal (BARE)}
34. The charted structure in latitude $37^{\circ}21.74'$, longitude $76^{\circ}16.92'$, which is a fuel platform was verified. ^{charted as 3 piles} ^{2 piles on smooth sheet}
35. The charted pile in latitude $37^{\circ}21.30'$, longitude $76^{\circ}16.60'$ could not be found. This is a shoal area and the bottom could be seen clearly. Removal from the chart is recommended. ^{Vol. 12 p. 52 see revision P 6}

P - AIDS TO NAVIGATION:

Form 567, Nonfloating Aids to Navigation was forwarded to the Washington Office 10 November 1953.

Clt Ltr 1126 (1953)

P - AIDS TO NAVIGATION: (CONT.)

1. Horn Harbor ~~Entrance~~ Bell Buoy, latitude $37^{\circ}20.13'$, longitude $76^{\circ}14.82'$ in 17 feet of water. *Position 569 - 20 May 1953*

Q - LANDMARKS FOR CHARTS:

Form 567, Landmarks for Charts was forwarded to the Washington Office
30 November 1953. *Clt Ltr 1126 (1953)*

Topographic station PARK - latitude $37^{\circ}22'$, (74.92 meters), longitude $76^{\circ}15'$, (184.8 meters). Station PARK, 1953 is the north gable of a low prominent building.

R - GEOGRAPHIC NAMES:

Geographic names as shown on charts 1222, 1223, 494 and 78 are adequate and no additional names are recommended.

U-Y - MISCELLANEOUS:

In featureless shoal areas, soundings were spaced every 30 seconds on the boat sheet. Intermediate soundings were plotted only where needed to define underwater features.

In latitude $37^{\circ}24.6'$, longitude $76^{\circ}15.3'$ (Winter Harbor). Position 56a marks the center of a wooden bridge over the stream north of the upper end of Winter Harbor. The vertical clearance is $2\frac{1}{2}'$ at MHW, the horizontal clearance is 12 feet. Hydrography could not be carried north of this point because the vertical clearance could not allow passage for the sounding vessel


Z - TABULATION OF APPLICABLE DATA:

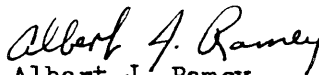
The Coast Pilot Report has been forwarded to the Washington Office. A list of signals used in this survey is attached to the inside cover of volume 1 of the sounding record.

Z - TABULATION OF APPLICABLE DATA: (CONT.)

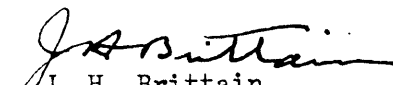
A tabulation of other data is attached.

Respectfully submitted,


Arthur E. Greaves, Jr.,
Lieut. (j.g.) Ship COWIE.


Albert J. Ramey,
Ensign, Ship COWIE.

Approved and forwarded:


J. H. Brittain,
Comdr., USC&GS,
Comdg. Ship COWIE.

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STATISTICS
-TO ACCOMPANY -

HYDROGRAPHIC SURVEY H _____, CO-1153

CHESAPEAKE BAY - VICINITY OF HORN HARBOR

LAUNCH 102:

<u>VOL NO.</u>	<u>DATE</u>	<u>DAY</u>	<u>NO. OF POSITIONS</u>	<u>STATUTE MILES</u>
I	5/4	a	108	22.3
I	5/6	b	171	37.6
II	5/6	b	86	1.2
II	5/12	c	92	19.6
II	5/13	d	150	28.0
III	5/13	d	47	7.4
III	5/18	e	133	22.2
III	5/19	f	106	21.4
IV	5/19	f	93	23.5
IV	5/20	g	112	21.7
IV	6/1	h	57	11.5
V	6/1	h	32	6.1
V	6/2	j	87	20.3
V	6/3	k	47	8.7
V	6/4	l	59	9.5
V	6/8	m	36	4.7
VI	6/8	m	100	19.9
VI	6/9	n	131	24.0
VI	6/16	p	66	10.7
VII	6/19	q	61	13.3
VII	6/29	r	88 ⁷	10.7
VII	6/30	s	91	15.0
VII	7/1	t	58	12.2
VIII	7/1	t	166	30.2
VIII	7/2	u	165	23.5
IX	7/2	u	67	12.4
IX	7/7	v	25	5.4
IX	7/8	w	195	32.9
X	7/9	x	88	20.0
TOTALS:			2636 ⁸	495.9

SKIFF, 25' HYDROGRAPHIC:

XI	4/22	a	41	4.0
XI	4/24	b	95	9.9
XI	4/29	c	50	6.0
XI	5/4	d	87	11.0
XII	5/4	d	8	1.2
XII	5/6	e	174	21.4
XII	5/13	f	55	7.1
XIII	5/18	g	58	6.2
XIII	5/19	h	180	29.3
XIII	5/20	j	62	7.0
XIV	5/20	j	86	8.9

STATISTICS

HYDROGRAPHIC SKIFF: (CONT.)

<u>VOL. NO.</u>	<u>DATE</u>	<u>DAY</u>	<u>NO. OF POSITIONS</u>	<u>STATUTE MILES</u>
XIV	6/1	k	33	2.6
XIV	6/2	l	151	17.2
XV	6/3	m	171	16.3
XV	6/4	n	108	9.1
XVI	6/12	p	81	6.7
XVI	6/16	q	140	9.2
XVI	6/18	r	89	7.0
XVII	6/29	s	52	6.4
XVII	7/20	t	71	4.9
TOTALS:			1792	191.4
<u>ALUMINUM SKIFF:</u>				
XVIII	6/4	a	88	11.4
GRAND TOTALS:			45168	698.7

AREA - 15.7 Square Statute Miles.

FATHOMETER CORRECTIONS

LAUNCH NO. 102:

<u>DAY</u>	<u>DATE</u>	<u>CORRECTIONS:</u>
a	5/4	0.0 to 7.5 ft. - / 0.4 ft. Over 7.5 ft. - / 0.2 ft.
b	5/6	None
c	5/12	None
d	5/13	None
e	5/18	None
f	5/19	None
g	5/20	None
h	6/1	None
j	6/2	0.0 to 6.5 ft. - / 0.2 ft. Over 6.5 ft. - / -0.0 ft.
k	6/3	0.0 to 6.0 ft. - / 0.4 ft. 6.5 to 8.5 ft. - / 0.2 ft. Over 8.5 ft. - / - 0.0 ft.
l	6/4	None
m	6/8	None
n	6/9	None
p	6/16	None
q	6/19	None
r	6/29	None
s	6/30	None
t	7/1	None
u	7/2	None
v	7/7	None
w	7/8	None
x	7/9	None

HYDROGRAPHIC SKIFF:

All soundings taken by the hydrographic skiff were either leadline
or pole sounding. There was no leadline correction.

✓

TIDE NOTE

TO ACCOMPANY

HYDROGRAPHIC SURVEY H _____, CO - 1153

CHESAPEAKE BAY - VICINITY OF HORN HARBOR

SHIP COWIE

SCALE 1:10,000

J. H. BRITTAIN

COMMANDING

A portable automatic tide gage at New Point Wharf, New Point, Va., Lat. 37 20.82 ; Long. 76 16.32, was used for obtaining the tide reducers for Horn Harbor and Horn Harbor Entrance. The tide reducers for Winter Harbor and Winter Harbor Entrance were obtained from a portable automatic tide gage located at the entrance to Winter Harbor in Lat. 37 22.24 ; Long. 76 15.43. Tide reducers for the remainder of the survey were obtained from a portable automatic tide gage at Wolf Trap Light Station in Lat. 37 23.41 ; Long 76 11.39. No time or height corrections were applied to the observed tides. Hourly heights were scaled from the marigrams by personnel of the Ship COWIE. A tabulation of the work covered by each tide gage is included in this report.

✓

LAUNCH NO. 102:

WOLF TRAP TIDES:

<u>VOL. NO.</u>	<u>DATE(1953)</u>	<u>DAY</u>
I - X	5/4 - 7/9	1-a - 88-x

HYDROGRAPHIC SKIFF:

WOLF TRAP TIDES:

XII	5/13	53-f - 55-f
XIII	5/19	1-h - 180-h
XIV - XV	6/2 - 6/3	1-l - 135-m

NEW POINT TIDES:

XI - XII	4/22 - 5/13	1-a - 52-f
XII - XIII	5/18	1-g - 58-g
XIII - XIV	5/20 - 6/1	1-j - 33-k
XV	6/3	136-m - 171-m
XVII	6/29 - 7/20	1-s - 71-p

WINTER HARBOR TIDES:

XV - XVI	6/4 - 6/18	1-n - 89-r
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TIN SKIFF:

WINTER HARBOR TIDES:

XVIII	6/4	1-a - 88-a
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v

NORFOLK PROCESSING OFFICE

LIST OF SIGNALS

To Accompany

H-8078

TRIANGULATION STATIONS

WOLF WOLF TRAP LIGHTHOUSE, 1898-1932

on Cowie
10/20/55

TOPOGRAPHIC STATIONS

SOURCE - MANUSCRIPT T-11158

Add	Alp	Amp	Bare(d)	Bed	Bon	Cat	Claud(d)	Dif	Dip
Eel	Ego	Few	Fig	Gam	Gem	Gig	Her	Hid	Hoe
Irk	Ivy	Jim	Leo	Liz	Max	Mid	Moo	Nig	Nip
Nit	Oil	Orb	Pep	Pie	Pin	Rim	Rip	Rot	Set
Sip	Too	Tub	Voe	Wee	Wen	Zoo			

SOURCE - MANUSCRIPT T-11161

Abe	Ace	Bag	Bah	Bake	Bor	Cab	Cast	Daw	Day	Deb
Ear	Eat	Ebb	Far	Fat	Gad	Gag	Gal	Hag	Har	Hat
Hem	Horn	Ice	Ida	Ion	Jar	Jap	Ked	Ken	Key	Lad
Lam	Mag	Mal	Man	Mill	Nat	Nay	Ned	Oak	Obi	Odd
Pad	Pal	Par	Park	Quo	Ram	Ray	Sad	Sag	Sal	Tan
Tap	Tax	Use	Van	Vet	Vol	Wag	Wan	Yak	Yam	Yea
Zag	Zig									

HYDROGRAPHIC STATIONS

Pig	Vol. 14, pg. 10
Rit	Vol. 2, pg. 23
Tra	Vol. 2, pg. 7
Sur	Vol. 2, pg. 7

ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8078 (Field No. Co-1153)

CONTROL

Much difficulty was experienced during the smooth plot of this survey because the hydrographer used numerous weak fixes and swingers. These occurred in areas where the number of control stations appeared to be adequate. There were also a great many un-accountable, in-correct angles. Notes will be found in the sounding volumes where these conditions existed. It is believed this survey should be carefully verified and the positions checked in critical areas before the soundings are charted.

The following is a list of "swingers" that could not be plotted in this Office:

Launch # 102, Vol. 4, 20 May 1953
← *not plotted - other coverage* → ← *OK* →
Positions 8 thru 11g; 32 thru 37g; 78 thru 83g; 89 thru 90g

Launch # 102, Vol. 9, 7 July 1953
Positions 7 thru 14v *- not plotted - other coverage*

Hydro Skiff, Vol. 11, 24 April 1953
Positions 16 thru 21b; 52 thru 65b; 76 thru 79b *adjusted or eliminated*

Hydro Skiff, Vol. 11, 29 April 1953
Positions 17 thru 20c *rejected*

Respectfully submitted,

Hugh L. Proffitt
Hugh L. Proffitt
Cartographer.

GEOGRAPHIC NAMES

Survey No. H-8078

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K
<u>Virginia</u>									B. 64 1
<u>Chesapeake Bay</u>									" 2
									3
<u>New Point</u>				(settlement)					4
<u>Smith Creek</u>									5
<u>Horn Harbor</u>									6
<u>Winter Harbor</u>				applies to both bodies					7
<u>Wolf Trap light</u>				of water					8
									9
									10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20
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									22
									23
									24
									25
									26
									27

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8078

Records accompanying survey:

Boat sheets 1 in 2 parts sounding vols. 18; wire drag vols.; bomb vols.; graphic recorder rolls; special reports, etc. 1 descriptive report, 1 smooth sheet, 22 Fathograms - a through x days,

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

Number of positions on sheet	..4518
Number of positions checked60
Number of positions revised5
Number of soundings revised (refers to depth only)	..1440 *
Number of soundings erroneously spaced	...0...
Number of signals erroneously plotted or transferred	...0...
Topographic details	Time ...5...
Junctions	Time ...15...
Verification of soundings from graphic record	Time ..15..

Verification by *J.T. Gallehan* Total time *4 1/2 hr.* Date *Oct. 1, 1955*

Reviewed by *A.R. Stirni* Time *52 hrs.* Date *Oct. 28, 1955*

* this is the tide reduction corrections applied to various days.

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DIVISION OF HYDROGRAPHY AND TOPOGRAPHY~~

21 January 1955

Division of Charts: R. H. Carstens

Plane of reference approved in
18 volumes of sounding records for

HYDROGRAPHIC SHEET

8078

Locality Vicinity of Horn Harbor
Chesapeake Bay, Va.

Chief of Party: J. H. Brittain
Plane of reference is mean low water, reading
2.5 ft. on tide staff at Wolf Trap Lighthouse
6.8 ft. below B. M. 1 (1901)
3.2 ft. on tide staff at Winter Harbor
3.5 ft. below B.M. 1 (1953)
0.8 ft. on tide staff at New Point
5.0 ft. below B.M. 2 (1953)

Height of mean high water above plane of reference is as follows:

Wolf Trap Lighthouse	= 1.5 feet
Winter Harbor	= 1.5 feet
New Point	= 1.8 feet

Condition of records satisfactory except as noted below:
Note: Tide reducers for the positions listed below have been
revised in red and verified:

<u>Volume</u>	<u>Position</u>
4	(29g - 112g ✓ (1h - 57h ✓
5	58h - 89h ✓
9	213u - 232u ✓
17	1t - 70t ✓

E. C. McKay
Tides Branch

Chief, Division of Tides and Currents.

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8078

FIELD NO. CO-1153

Virginia, Chesapeake Bay, Vicinity of Horn Harbor to the
Wolf Trap

Project CS-287

Surveyed - April, July, 1953

Scale 1:10,000

Soundings:

Control:

808 Fathometer
Lead line
Sounding Pole

Sextant fixes on
shore signals

Chief of Party - J. H. Brittain
Surveyed by - A. E. Greaves, Jr., A. J. Ramey
Protracted by - A. K. Schugeld
Soundings plotted by - A. K. Schugeld
Verified and inked by - J. T. Gallahan
Reviewed by - A. R. Stirni 10-28-55
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with prints of the unreviewed manuscripts of air-photographic surveys T-11158 (1952) and T-11161 (1952).

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

2. Sounding Line Crossings

The sounding line crossings are in adequate agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated. The 3-ft. curve was added to accentuate the many shoal sand ridges and knolls which characterize portions of the bottom, and the 24-ft. curve was added to reveal the extent of the area of deepest depths.

4. Junctions with Contemporary Surveys

Depths on the present survey are in harmony with depths on the preliminary verification of survey H-7958 (1952) on the southwest, with unverified survey H-7960 (1952) on the southeast, and with verified survey H-8083 (1953) on the east. Minor differences in the junction-with H-8079 (1953), on the north, will be adjusted during the verification of that survey. Final disposition of all junctions will be made in the reviews of the adjoining surveys.

5. Comparison with Prior Surveys

H-285 (1851), 1:40,000
H-364 (1852), 1:40,000

H-2813 (1906), 1:20,000
H-2870 (1906-07), 1:20,000

A comparison between the present survey and the prior surveys reveals lateral shifting of the sand bottom, particularly in depths less than 12 ft. The shifting is indicated by the random differences in the soundings and the displacements in the depth curve delineations. The area of greatest change, known as the Wolf Trap, is in the vicinity of lat. $37^{\circ}23.5'$ - $37^{\circ}24.5'$, long. $76^{\circ}13.0'$ - $76^{\circ}14.0'$, where differences in depths are as much as 5 ft. The present survey, with a density of soundings at least four times greater than the prior surveys combined, completely delineates the bottom and supersedes the prior surveys within the common area.

6. Comparison with Chart 494 (print date 8-22-55)A. Hydrography

The charted hydrography originates with the previously discussed prior surveys supplemented by partial application of the boat sheet of the present survey (Bp's 51829, 51830). A comparison of the chart with the present survey reveals differences in soundings as much as 3 ft. and numerous depth-curve differences.

✓ The small-boat wreck charted at lat. $27^{\circ}23.40'$, long. $76^{\circ}13.95'$ should be removed from the chart. An extensive buoyed investigation by the field party revealed no evidence of its presence. ✓

✓ An uncharted fuel-tank platform on piles was located by this survey at lat. $37^{\circ}21.65'$, long. $76^{\circ}17.41'$ and should be charted. ✓

✓ The three piles charted at lat. $37^{\circ}21.73'$, long. $76^{\circ}16.92'$ are shown on the smooth sheet as two pile symbols representing a fuel-tank platform and a mooring pile. ✓

✓ The charted pile at lat. $37^{\circ}21.30'$, long. $76^{\circ}16.63'$ was investigated and not found. A thorough search was made in shoal, clear water. Deletion of the pile from the chart is recommended.

✓ The fuel tank located at lat. $37^{\circ}21.08'$, long. $76^{\circ}16.50'$ is called to the compilers attention. A piling is charted 50 meters to the westward originating with T-8328.

Numerous charted piles in the branches and creeks leading into Horn Harbor and a charted bare wreck at lat. $37^{\circ}22.10'$, long. $76^{\circ}18.66'$ were neither confirmed nor disproved by the present survey. All these features originate with air-photographic survey T-8328 (1942-46) but are not shown on the contemporary shoreline manuscript T-11161. These features may still be in existence. *Unconfirmed items omitted from chart 562 REE 1-8-60*

Except for the features mentioned in the preceding paragraph the present survey is adequate to supersede the charted information.

B. Aids to Navigation

✓ The aids to navigation located on the present survey are in substantial agreement with the charted aids and adequately mark the features intended, with the exception of Horn Harbor Black Day Beacon "11", at lat. $37^{\circ}21.47'$, long. $76^{\circ}16.20'$ which is charted as Horn Harbor Light "11" in accord with H.O.N.M. 42, 1955 (subsequent to the present survey).

7. Condition of Survey

(a) The sounding records and Descriptive Report are complete and comprehensive.

(b) The smooth plotting was accurately done, however, considerable difficulty was experienced during verification in identifying the closely plotted sounding lines in the area known as the Wolf Trap at lat. $37^{\circ}23.5' - 37^{\circ}24.5'$, long. $76^{\circ}13.0' - 76^{\circ}14.0'$. An estimated three days of verification time could have been saved if the smooth plotter had used overlay tracings instead of plotting all the lines on the smooth sheet.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work

This is a good basic survey and no additional field work is recommended.

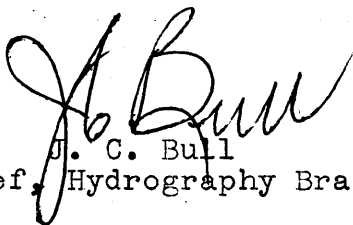
Examined and Approved:



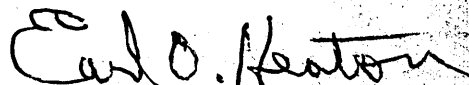
H. R. Edmonston
Chief, Nautical Chart Branch



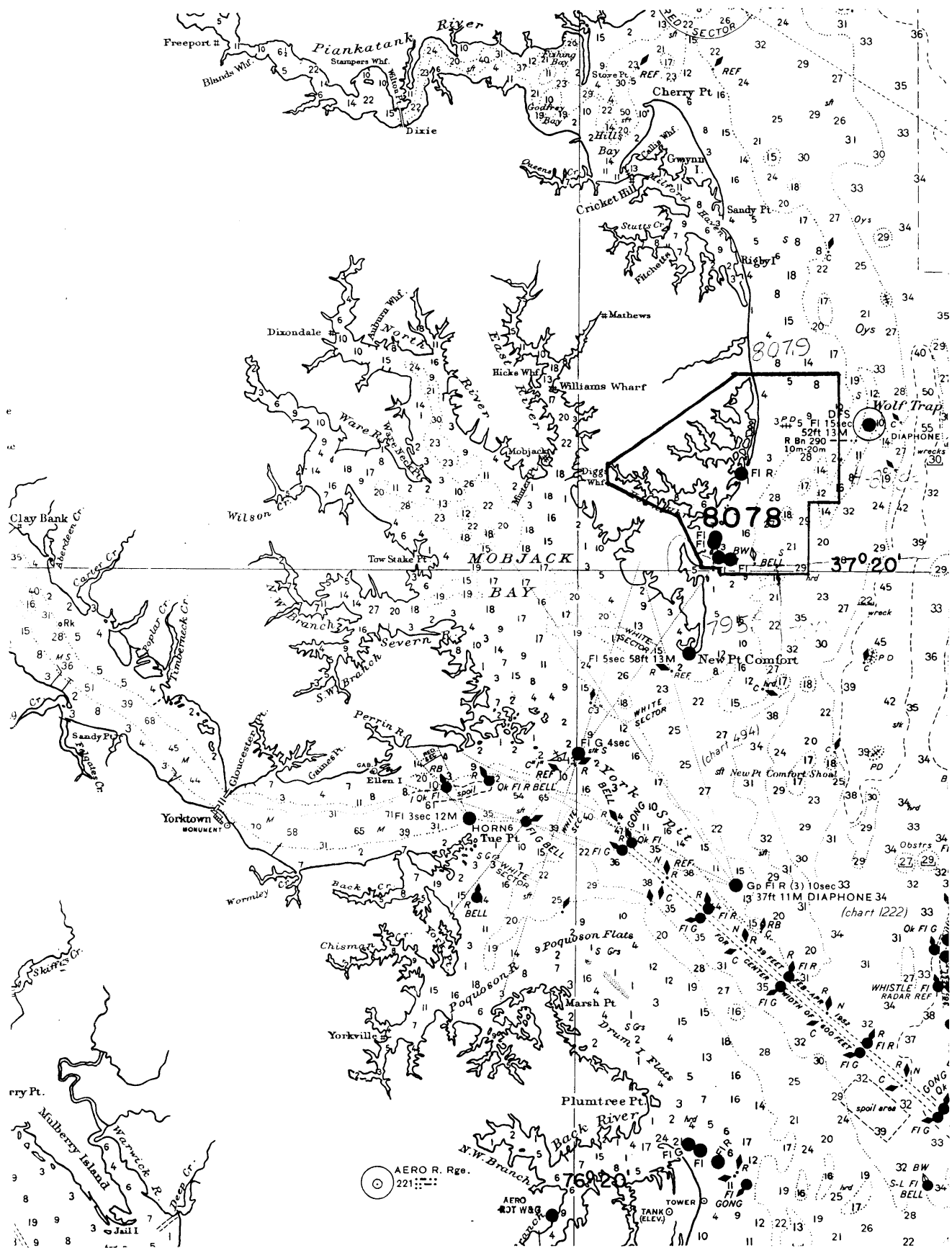
E. R. McCarthy
Chief, Chart Division



J. C. Bull
Chief, Hydrography Branch



Earl O. Heaton
Chief, Division of Coastal Surveys



NAUTICAL CHARTS BRANCH

SURVEY NO. H-8078

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
29 June 55	1222	Ed Brown	Examined - no information applied. Before After Verification and Review
29 Feb 56	78	J. R. Brown	Examined for critical corrections - no corrections applied Before After Verification and Review
10 Sept 59	494	H. E. MacEwen	Before After Verification and Review
1-9-60	562	R. E. Elkins	Before After Verification and Review Fully applied - app thru ckt 494 dig 17 and input thru H-8078.
1-19-60	1222	R. E. Elkins	Before After Verification and Review Fully applied. app thru ckt 494 dig 17 with revisions from Chart 562.
2-17-64	1223	F. B. Powers	Before After Verification and Review Fully applied. App. thru ckt. 1222; 12/16/63; and ckt 494.
10-2-67	78	W. H. Hall	Before After Verification and Review Part. app thru 1222 & 1223
8/24/70	78	J. H. McMillan	Before After Verification and Review Fully applied thru ckt 1223 dig 44; 1222 dig 57.
10-7-82	12021 Protogram	V. Graham	Before After Verification and Review Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.