9324

Diag. Cht. No. 77-3

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT
(HYDROGRAPHIC)

Type of Survey ..... HYDROGRAPHIC

Field No. HSL-10-2-72

Office No. H-9324

LOCALITY

State ..... VIRGINIA-MARYLAND

General Locality ..... POTOMAC RIVER

Locality ..... COCKPIT POINT TO INDIAN HEAD

1972-73

CHIEF OF PARTY
G.R. SCHAEFER, N.C. AUSTIN

LIBRARY & ARCHIVES

DATE ..... JUNE 22, 1978

☆ U.S. GOV. PRINTING OFFICE: 1976—669-441

9324

FORM C&GS-537
(5-66)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO. H-9324

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. HSL-10-2-72

see other title sheet

State Virginia - Maryland

General locality ~~Quantico, Virginia~~ *Potomac River*

Locality ~~Potomac River, Maryland~~ *Cockpit Point to Indian Head*

Scale 1:10,000 — Date of survey ~~Sept. 1, 1972 - Sept. 6, 1972~~ *May 10 - June 15 1973*

Instructions dated January 31, 1972 — Project No. OPR-409-HSL-72

Vessel NOAA Launch 1257

Chief of party ~~Glen R. Schaefer, LCDR, NOAA~~ *N.C. Austin, CDR*

Surveyed by ~~LCDR G.R. Schaefer, LTJG A.L. SIkes, LTJG D.W. Yeager,~~
LTJG W.L. ADAMS, ST. D.V. Mason, ST. F.L. Saunders

Soundings taken by echo sounder, xxxxxxxxxx DE723D1904

Graphic record scaled by Launch personnel

Graphic record checked by Launch personnel *Verification Branch (AMC)*

Protracted by — Automated plot by ~~PDP 8/I~~ *CALCOMP 618 (AMC)*

Soundings penciled by *CALCOMP 618 (AMC) EDP*

Soundings in xxxxx feet at MLW xxxx Real time tides applied

REMARKS: *changes in red ink made during verification by L.G. Cam*

Applied to sdls 10/3/78
CB.

USCOMM-DC 37009-P66

Descriptive Report

To Accompany

Hydrographic Survey HSL-10-2-72

Registry Number H-9324

OPR-409-HSL-72

Potomac River, Maryland

1972 Field Season

Scale 1:10,000

HFP-746
NOAA Launch 1257

Glen R. Schaefer
LCDR, NOAA
Officer-in-Charge

INDEX

✓ = Misc. items removed and filed with the field records

DESCRIPTIVE REPORT
H-9324

A. PROJECT

This survey was conducted as a part of Project OPR-409 in accordance with Project Instructions OPR-409-HSL-72, Potomac River, Maryland, dated January 31, 1972.

B. AREA COVERED

The area included in this survey lies between Lat. 38°37'00"N and 38°33'12"N. On the east and west hydrography was run as close to shore as conditions permitted. (HFP-742 is currently surveying between the east and west boundaries of this survey and the Maryland and Virginia shoreline.)

The inclusive dates for this survey are September 1, 1972 through September 6, 1972.

Junction was made with ~~prior~~ contemporary survey H-~~2708~~ 9332 to the south.

C. SOUNDING VESSEL

All sounding on this sheet was accomplished by HFP-746 Launch 1257.

D. SOUNDING EQUIPMENT

All sounding on this sheet was accomplished using a Raytheon, DE-723D echo sounder-Unit Number 723-40, Serial Number 1940. Depths sounded ranged between 8 to 43 feet.

Corrections to echo soundings were determined only by bar check data. Bar checks were taken from 5 - 30 feet.

A-F scale checks were performed on the average of 3 per day and bar checks on the average of less than 1 (one) per day. Phase comparisons and speed counts were also performed on the fathometer daily.

Initial corrections to fathometer depths were accounted for while scanning the fathograms.

No handlead soundings were taken.

E. SMOOTH SHEET

The smooth sheet will be produced by the Processing Division at the Atlantic Marine Center. The Processing Division will also plot all soundings corrected for velocity.

F. CONTROL

All horizontal control was determined by traverse, triangulation, intersection, and resection. See Del Norte Calibration Report.

Shore stations used for electronic control systems are as follows:

DAY	CONTROL SYSTEM	STATION LEFT	STATION RIGHT
245	Del Norte, Range-Range	FREESTONE 2 RM 2 1959	SHEP 1928
249	Del Norte, Range-Range	FREESTONE 2 RM 2 1959	SHEP 1928
250	Del Norte, Range-Range	FREESTONE 2 RM 2 1959	SHEP 1928

The geodetic positions of the shore stations were obtained from published geodetic data.

G. SHORELINE

There is no shoreline within the limits of hydrography on this boatsheet. The junction with this sheet and extending to the shoreline is being accomplished by HFP-742. See verifiers report for shoreline on smooth sheet.

H. CROSSLINES

The percentage of crosslines run was 13.6%. Agreement between crossline soundings and regular soundings was very good with differences never exceeding 1 foot except at approximate Lat. 38°34'10"N and Long. 77°13'53"W, where development was found to be necessary. The 1-foot discrepancy can be contributed to individual scanning techniques by personnel. concur

I. JUNCTIONS

This sheet junctions with ~~H-2708 (1904 - 1:10,000)~~ H-9322 (1972) to the south. Junctioning is ~~generally poor with 3 to 4 feet differences in places. Some of this is probably due to the fact that velocity corrections have not been applied to soundings on this boatsheet and perhaps there has been some silting in the area.~~ good.

Junctions with H-9349 (1973) to the Northeast, H-9292 (1973) to the North

* See Verifiers Report for statement concerning junctions.

J. *COMPARISON WITH PRIOR SURVEYS

The only prior survey related to this boatsheet is H-2705 (1:10,000 - year 1904). The Potomac River appears to be much shoaler on the Maryland side as a result of comparison.
* See verifier's Report for additional information on comparison with prior surveys

There is a very noticeable difference in the 18 foot and 24 foot depth curves at the far southend of this boatsheet as compared with the 18 foot and 24 foot depth curves on the prior survey. The explanation is probably the same as in Paragraph I above.

K. *COMPARISON WITH THE CHART

There is generally good comparison of boatsheet soundings with soundings on Chart 560 - 31st Edition, February 27, 1971. However, there is evidence that depth curves on the Maryland side of the river have shifted eastward making that side of the river shoaler than the chart indicated. Velocity corrections have yet to be applied to boatsheet soundings, however. See verifiers Report for additional Information.

L. ADEQUACY OF THE SURVEY

This survey is complete and adequate to supersede all prior surveys of the area actually surveyed. Concur

A total of one development was completed. There were no Pre-Survey Review Items on this sheet.

M. AIDS TO NAVIGATION

All aids to navigation on this boatsheet are to be reported on by HFP-742 and Photo Party 61.

N. STATISTICS

Total number of positions	727
Total nautical miles of sounding line	95.36
Total area in square nautical miles	3.7
Number of tide stations	1 Bubbler 1 ADR
Number of bottom samples	11

O. MISCELLANEOUS

The 7' charted sounding was indicated 8ft on smooth sheet (Lat 38°34'0851" Long 77°13'56.00") again by this survey at the same Lat. 38°34'08"N and Long. 77°13'54". This area was developed with no shoaler sounding found. (See day 250, position ~~525-526~~ 7524-7525 and development on day 250, positions ~~582-601~~. 7574 & 7596) Recommend retaining this charted sounding. concur

P. RECOMMENDATIONS

None.

Q. REFERENCES TO REPORTS

Attention is directed to the following OPR-409-HSL-72 Field Season Reports:

Calibration of Del Norte Report
Corrections to Echo Soundings Report

Respectfully Submitted:

William L. Adams

William L. Adams
LTjg, NOAA

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center

Hourly heights are approved for form 362

Tide Station Used (NOAA form 77-12): Quantico, Va.; Indian Head, Md.

Period: May 4- September 6, 1972

HYDROGRAPHIC SHEET: H-9324

OPR: 409

Locality: Potomac River

Plane of reference (mean ~~lower~~ low water): Quantico, Va: 1.2 ft. Indian Head, Md: 2.1 ft.

Height of Mean High Water above Plane of Reference is Quantico: 1.4 ft. IndianHead: 1.8 ft.

Remarks: Zoning Requirements

1. Recommend use of the following time correction and range north of Cockpit Pt. to (Lat. 38°35.5'N)

	Quantico
Time	Range
0.3 hr	1.6 ft.

2. From lat. 30°35.5'N to the project limits, use Indian Head gage direct.

Robert M Cummings
Chief, Tides Branch

8/7/73

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center

Hourly heights are approved for

Tide Station Used (NOAA form 77-12): Marumsco, Virginia
Tide Staff Reading: Mattawoman Creek, Maryland

Period: May 10 - June 4, 1973
130 - 155

HYDROGRAPHIC SHEET: [redacted] 9324

OPR: 409

Locality: Occoquan Bay, Potomac River
Mattawoman Creek

Plane of reference (mean XXXXX low water): 2.4 feet
Mattawoman 2.9 feet

Height of Mean High Water above Plane of Reference is 1.7 feet
Mattawoman 1.6 feet

Remarks: Zoning: use Marumsco gage direct for those days which cover Hydro in Mattawoman Creek.

Chief, Tides Branch

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center

Hourly heights are approved for Form 362

Tide Station Used (NOAA form 77-12): Quantico, Virginia

Period: May 4-September 6, 1972

HYDROGRAPHIC SHEET: ~~H-9323~~ H-9322 H-9324

Rescinded - changed to H-9322 HLP

OPR: 409

Locality: Potomac River

Plane of reference (mean ~~lower~~ low water): Quantico, Virginia 1.2 ft.

Height of Mean High Water above Plane of Reference is Quantico, Va. 1.4 ft.

Remarks: Zoning requirements:

1. Recommend use of Quantico gage south of Quantico, Va. to Sandy Pt. (38°29'N) and north to Cockpit Pt. (30° 33.7'N)
2. Use the following time correction and range below Sandy Pt., south to the Project limits.

	Quantico
Time	Range
-0.3 hr.	1.2 ft.

3. Use the following time correction and range north of Cockpit Pt. to (lat. 38°35.5'N)

	Quantico
Time	Range
0.3 hr	1.6 ft.

Robert A Cummings

Chief, Tides Branch

ATLANTIC MARINE CENTER

TIDE NOTE

1. Project No: OPR-409 2. Vessel/Field Unit: LAUNCH 1257/HFP#746

3. Year: 1972 4. Meridian Time Zone: 75W (GMT)

5. Tide Station Name: Indian Head, Maryland

6. Position: Lat. 38 ° 36.1 ' Long. 77 ° 10.9 '

7. Plane of Reference: [X] MLW, [ ] MLLW corresponds to 5.9 ft feet on the tide staff for the period Sept. 1, - Sept. 6, 1972.

8. Hourly Heights: [X] Standard Gauge, furnished from Rockville. Standard ADR Gage in place and operatin at same time Tide Telemetry System was installed at same [ ] location. Tides obtained for survey on-line from Tide Telemetry System.

9. Tidal Zoning: [X] Not applicable. All Tides used for this sheet were obtained on-line using the Indian Head location for the Telemetry system.

[ ] By two or more gauges automatically zoned.

[ ] By applying tidal differences and constants

for the area(s): a. _____

TIME (Hour, Minute)		HEIGHT (Feet)		HEIGHT RATIO (If Applicable)	
High Water	Low Water	High Water	Low Water	High Water	Low Water

b. _____

TIME (Hour, Minute)		HEIGHT (Feet)		HEIGHT RATIO (If Applicable)	
High Water	Low Water	High Water	Low Water	High Water	Low Water

c. Include additional areas on separate sheet(s).

10. Remarks: This station used for all data on H-9324

HYDROGRAPHIC SIGNAL NUMBERS AND NAMES

HYDROGRAPHIC SURVEY FIELD NUMBER HSL-10-2-72
REGISTRY NUMBER H-9324

150	QUANTICO MARINE RESERVATION CHECKERED TANK 1929
155	QUANTICO JUNIOR SCHOOL DISTRICT WATER TANK 1959
160	Quantico Power Plant, Center of Three Stacks
146 ~~171~~	Freestone 2 Signal
180	SHEP 1928
235	STUMP NECK NORTH BASE 1929 (not used on this survey)
240	Stump Neck Pier
148 ~~245~~	INDIAN HEAD NEW WATER TANK 1959
248	Indian Head Waterfront
260	GLYMONT LIGHT 1958

HYDROGRAPHIC SIGNAL NUMBERS AND POSITIONS

HYDROGRAPHIC SURVEY FIELD NUMBER HSL-10-2-72

REGISTRY NO. H-9234

SIGNAL NO.	LATITUDE	LONGITUDE
150 (not on sheet)	38° 31' 33.16"	77° 18' 26.02"
155 " " "	38° 32' 00.05"	77° 18' 00.86"
160 (not on sheet)	38° 32' 11.01"	77° 16' 48.61"
~~171~~ 146	38° 35' 25.36"	77° 14' 51.44"
180 ✓ SHEP, 1928	38° 37' 17.76"	77° 10' 58.65"
235 (not on limits not used)	38° 33' 05.86"	77° 14' 14.63"
240 (not used)	38° 33' 13.62"	77° 14' 09.48"
~~245~~ 148	38° 35' 23.43"	77° 11' 16.64"
248 (not used)	38° 36' 23.45"	77° 09' 51.23"
260 not in hydro limits	38° 36' 39.92"	77° 08' 19.58"

S I G N A L N A M E S 6-21-72

103 FAUNCE (USE)
104 FAUNCE RM 1
105 BARN
108 MARLBURO 2
109 MARLBURO 2 RM2
110 BULKHEAD SIGNAL
111 MARLBURO RAYDIST (MARL).
112 MARLBURO SIGNAL
115 BRENT TIDE STATION
120 BDY MON 40
1 FISHERY
126 AIRFIELD RAYDIST
130 BDY MON 43
131 BDY MON 43 SIGNAL
134 MARINE 2
135 MARINE 2 POLE
140 QUANTICO, MICROWAVE MAST
145 QUANTICO, WEST CHECKERED TANK
150 QUANTICO, MARINE RESERVATION, BLACK AND WHITE CHECKERED TANK
155 QUANTICO, JUNIOR SCHOOL DISTRICT, WATER TANK
159 QUANTICO POWER PLANT, SOUTHERLY OF FOUR STACKS
160 QUANTICO POWER PLANT, CENTER OF THREE STACKS
164 BDY MON 46
165 COCKPIT POINT PIER
169 FREESTONE 2
170 FREESTONE 2 RM
1 FREESTONE 2 SIGNAL
180 SIGNAL 180
185 SYCAMORE SIGNAL
200 MARYLAND PT LIGHTHOUSE
201 MARYLAND 2 SIGNAL
205 MARYLAND PT, USNRL TELEMETRY ANTENNA
209 CLIFTON BEACH LIGHT
210 SMITH POINT LIGHT
212 TOWER
214 TWIN
220 MALLOWS BAY LIGHT
224 SANDY3
228 OAK RM 2
229 LOWER
235 STUMP NECK N BASE
236 STUMP NECK SIGNAL
240 STUMP NECK PIER
245 INDIAN HEAD NEW WATER TANK

SIGNAL NAMES-CONTINUED

246	INDIAN HEAD TIDE STATION	
248	INDIAN HEAD WATERFRONT	
260	GLYMONT LIGHT	
610	SIGNAL 610	
612	SIGNAL 612	
614	FAIRVIEW BEACH	
615	FAIRVIEW BEACH SIGNAL	
616	GAS PUMP	
620	FAIRVIEW WEST	
625	PASSAPATANZY	
630	BULL	
635	MARLBURO POINT	
640	BT-03	
5	BRENT	POINT
656	BRENT	POINT DEL NORTE
664	CN-04	
665	CN-04	SIGNAL

ASCII SIGNAL LOCATIONS

103	38	21	1750	077	17	1784
104	38	21	1668	077	17	1808
105	38	21	1666	077	17	1779
108	38	21	3262	077	17	1794
109	38	21	3297	077	17	1878
110	38	21	3268	077	17	1856
111	38	21	3073	077	17	1991
112	38	21	3334	077	17	1812
115	38	25	4498	077	19	1741
120	38	28	2364	077	19	0849
121	38	28	2371	077	19	0842
6	38	30	1309	077	18	0310
130	38	30	5617	077	17	2929
131	38	30	5614	077	17	2925
134	38	31	1185	077	17	1013
135	38	31	1182	077	17	1034
145	38	31	2942	077	18	4175
150	38	31	3316	077	18	2602
155	38	32	0005	077	18	0036
159	38	32	0984	077	16	5195
160	38	32	1101	077	16	4861
164	38	33	3834	077	15	2661
165	38	33	3305	077	15	1811
171	38	35	2536	077	14	5144
180	38	37	1776	077	13	5865
185	38	37	3122	077	10	0883
200	38	20	5842	077	11	5241
201	38	21	3546	077	12	2638
205	38	22	2671	077	13	5746
209	38	24	5637	077	15	5776
210	38	24	5712	077	15	5640
212	38	26	2633	077	15	2890
214	38	27	4860	077	15	1567
223	38	28	5625	077	16	2720
224	38	29	2091	077	16	2057
228	38	30	4146	077	15	4971
229	38	31	2184	077	15	2628
235	38	33	0546	077	14	1463
236	38	33	0587	077	14	1466
240	38	33	1362	077	14	0948
245	38	35	2343	077	11	1664

SIGNAL LOCATIONS-CONTINUED

246 38 36 0487 077 10 5638
248 38 36 2345 077 09 5123
260 38 36 3992 077 08 1958
610 38 20 0378 077 13 3294
612 38 19 5555 077 13 5973
614 38 19 5351 077 14 5008
615 38 19 5351 077 14 5015
616 38 19 5351 077 14 5013
620 38 19 5298 077 15 1086
625 38 20 0156 077 16 0829
630 38 20 1898 077 16 4198
635 38 21 1176 077 17 1555
 4 38 22 2963 077 18 1728
655 38 23 5002 077 18 4179
656 38 23 5054 077 18 4108

SPEED	TRANSDUCER DEPTH	SETTLEMENT&SQUAT	TRA
STOP	2.7	0.0	2.7
DEAD SLOW	"	0.2	2.9
1100 RPM	"	0.5	3.2
1850 RPM	"	0.1	2.8

Determined on August 14, 1972 by Crew of NOAA LAUNCH 1257.

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. ~~742 10-2-73~~ HSL 10-2-72 Office No. H-9324

LOCALITY

State VIRGINIA - MARYLAND

General locality POTOMAC RIVER

Locality ~~OCCOQUAN BAY~~

COCKPIT POINT to INDIAN HEAD

1973

CHIEF OF PARTY

NED C. AUSTIN, CDR, NOAA

LIBRARY & ARCHIVES

DATE

USCOMM-DC 5087

FORM C&GS-537
(8-18-69)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

REGISTER NO.

H-9324

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.

NSL
742 10-2-~~73~~ 72

State Virginia - Maryland

General locality Potomac River

Locality ~~Occoquan Bay~~ Cockpit Point to Indian Head

Scale 1:10,000 Date of survey May 10, June 15 1973

Instructions dated January 9, 1973 Project No. OPR-409

Vessel Hydrographic Field Party 742

Chief of party Ned C. Austin, CDR NOAA

Surveyed by J. Scott Bradford, Elisha J. Miller

Soundings taken by echo sounder, hand lead, pole Echo Sounder, Pole

Graphic record scaled by Party Personnell

Graphic record checked by Party Personnell verification branch (AMC)

Protracted by Party Personnell Automated plot by EDP- AMC CAL COMP 618

Soundings penciled by

Soundings in ~~XXXXXX~~ feet at MLW ~~MLLW~~

REMARKS: Time meridian for hydrography is GMT

Hydrography done on two boat sheets and one skiff sheet.

Changes made in red ink by verifier during verification.

K.G. Cram

USCOMM-DC 8272-P62

HSL
~~742~~ 10-2-~~73~~ 72

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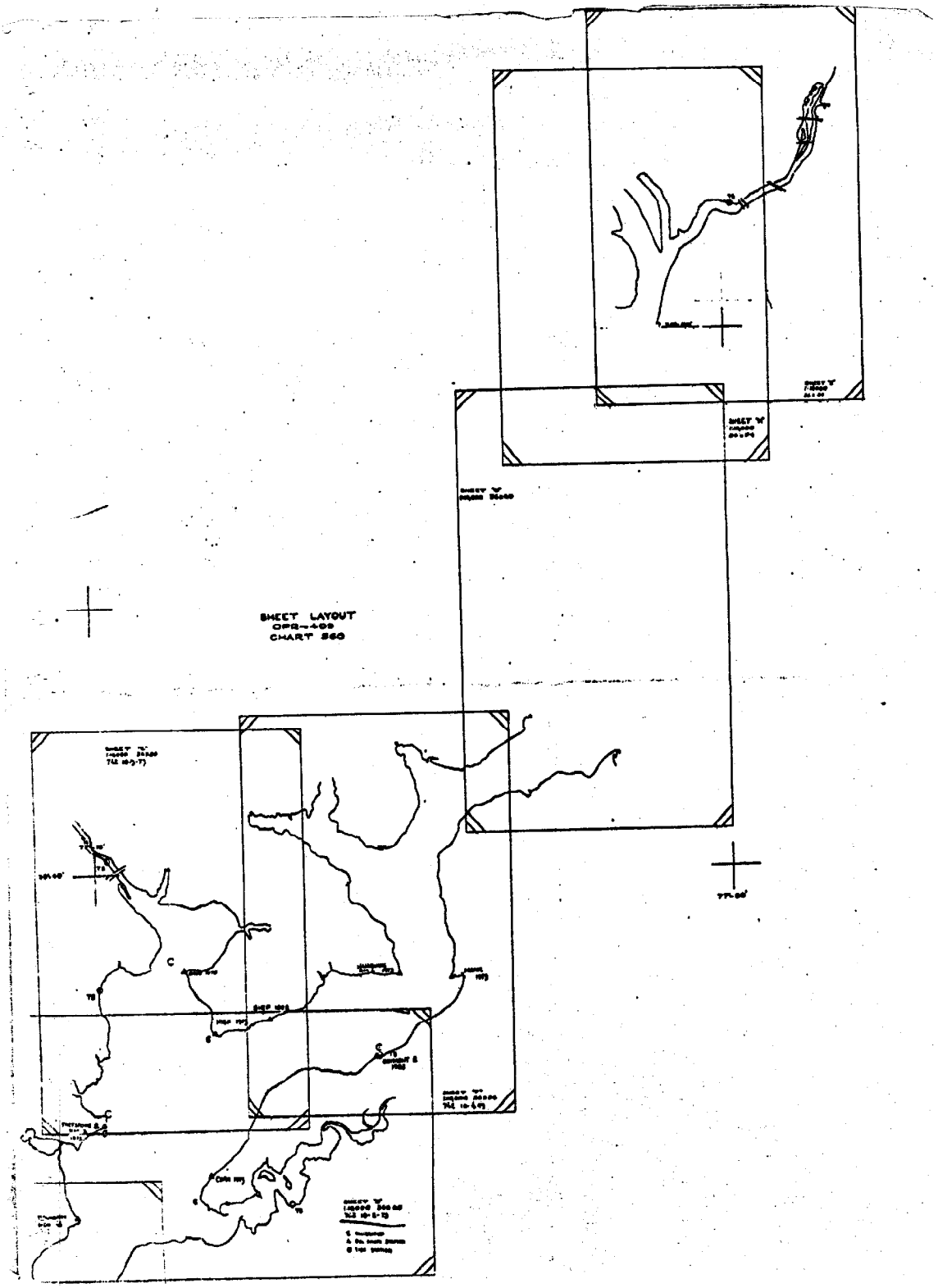
✓ = Misc. items filed with the field records


SHEET LAYOUT
OPR-409
CHART 560

DESCRIPTIVE REPORT

HYDROGRAPHIC SURVEY H-9324

Field No. ~~742~~ HSL 10-2-~~73~~ 72

A. PROJECT

Sheet 742 10-2-73, (H-9324), Project Number OPR-409, was done in accordance with Project Instructions dated January 9, 1973. and Change No. 1, Supplement to Instructions dated January 12, 1973 and Change No. 2, Amendment to Instructions dated February 15, 1973.

B. AREA SURVEYED

This survey covers both sides of the Potomac River. The northern limits is Lat. 38°35'42", and the southern limits is Lat. 38°33'21". This survey also includes all navigable water in Mattawoman Creek, Neabsco Creek and Powell Creek. Hydrographic Field Party 746 (High Speed Launch) surveyed the center of the River with a system of 100 meter spaced lines in 1972. The present survey also includes the development of the channel and two investigations within the high speed launches work.

Hydrography began on May 10, 1973 and ended on June 15, 1973. This survey also makes junctions with Sheet 742 10-4-72.

C. SOUNDING VESSEL

The following sounding vessels were used on this survey.

Launch	Color	Vessel I.D.
Launch 1260	red	742 - 23
Launch 1259	blue	742 - 2
Skiff 570	violet	742 - 24
Skiff 1	brown	742 - 41

D. SOUNDING EQUIPMENT

Raytheon Fathometer No. 1884, DE-723 was used on Launch 1260 for depths greater than 4.0 feet. A pole sounding was taken for depths less than 4.0 feet.

Raytheon Fathometer No. 806, DE-723 was used on Launch 1259 for all depths greater than 4.0 feet. A pole sounding was taken for depths less than 4.0 feet.

Raytheon Fathometer No. 1885, DE-723 was used on Skiff 570 for depths greater than 4.0 feet. A pole sounding was taken for depths less than 4.0 feet.

Raytheon Fathometer No. 1888, DE-723 was used on Skiff 1 for soundings greater than 4.0 feet. A pole sounding was taken for depths less than 4.0 feet.

Echo sounding correction were determined from daily bar checks.

On certain days of hydrography in Mattawoman Creek the Fathometer No. 806 was double keying and on these days the bottom trace was read. This was a double key and not a double echo. Double keying is noted on the fathogram on days 136, 149, 152, and 155.

Fathogram scanning was checked by the hydrographer and was found to be adequate.

E. SMOOTH SHEET

The smooth sheet will be prepared by the Atlantic Marine Center Processing Division from punched tapes made by this party.

The boatsheet is 36 x 60 and must be plotted on a oversized smooth sheet. no

F. CONTROL

Del Norte electronic control and visual control was used on this survey. Electronic control was used on the river and visual control was used in the creeks. In a few areas near shore on the river, fixes were by Del Norte distance and one sextant angle. After these positions were plotted a dummy Del Norte fix was made for logging.

The electronic stations were used in four pairs:

a. FREESTONE 2 RM2 - BOUNDARY MONUMENT 46 OK
b. FREESTONE 2 RM2 - HIGH
c. CORN - HIGH
d. BOUNDARY MONUMENT 46 OK - FREESTONE 2 RM2

Visual control was geodetic, photogrammetric, and hydrographic. * The hydrographic signals (signal code 500, 501, 502, and 503) were located by Del Norte. For a complete signal list see the Control Report by Photo Party 61 included with this report.

* no record found of their use, other than rough lane count.

G. SHORELINE

Shoreline detail for this survey was obtained from Shoreline Manuscripts #TP-00323, #TP-00324, #TP-00326, and #TP-00327. Field edit was done by Photo Party 61 (see Appendix C in this report). TP-00325

The low water line was not defined by zero soundings, however, shoreline hydrography was run within 10 meters of high water line.

H. CROSSLINES

Crosslines were run at 10% of regular system of hydrography. There was good agreement at crossings in the river, however, in Mattawoman Creek crosslines were not in agreement. It is suspected that tides are the problem. The crossline from Pos. 4141-4148 in Mattawoman Creek was not plotted on the boatsheet due to suspected differences in tides. Plotted on smooth sheet agreement adequate

I. *JUNCTIONS

Junction with HFP 746's 1972 work was in good agreement. Junction with Sheet 742 10-4-72 was in general agreement. H-9322 * see verifiers report for additional Information.

J. COMPARISON WITH PRIOR SURVEYS

PSI #19: Pile, Lat. 38°35'50", Long. 77°15'16". This pile was investigated and was not found. The pile was searched for by using two skiffs and dragging a 60' chain between them. Recommend deleting pile from chart Added ED

PSI #18: Rock, Lat. 38°35'41", Long. 77°14'40". This rock was found as charted and is very dangerous. The least depth at MLW is 2.8 feet. (Vol. 4, Page ~~10~~). Pos #825 day 159 Lat 38°35'41.89" Long 77°14'40.45" Recommend ~~retaining as charted~~ using the current survey data.

PSI #17: Three rows of piles, Lat. 38°34'51", Long. 77°10'05". These piling were found to be as charted. Two of the rows of piling are visible on photographs and Photo Party 61 has a position on the third row. Three rows of piling added to smooth sheet from TP-00327, recommend retaining as charted.

PSI #83: Foul area, Lat. 38°33.9', Long. 77°11.75'. This area was investigated during hydrography and found to be still in existence. The shoreline is foul with scrap metal and junk. concur Recommend retaining as charted on chart 12289 (C&GS 560) 37th Ed. May 14/1977

PSI #A: Markers. Four of the markers, PRV 15B, PRV 16A, *PRM 11A, and PRM 11B were electronic control calibration points and were located geodetically by Photo Party 61. *Marker PRV 15A was located by sextant by Photo Party 61. The positions of these markers are listed in their enclosed Control Report. Their positions disagreed with those given in Change No. 2 of the Instructions by about 100 meters. * These markers fall on sheet H-9322 (1972) also.

K. COMPARISON WITH CHART

A comparison was made with Chart C&GS 560, Scale 1:40,000, 32nd Edition, February 1972.

Feature	Position	Remark
7' sounding	38°34.26' 77°13.94'	This sounding was developed and was found to be a 6' shoal. (Vol. IV) *This item developed in 1972 also least depth 8 ft, see section "C" Descriptive Report (1972).
9' sounding	38°34.07' 77°14.95'	A pattern of closely spaced hydrography lines were run and this sounding does not exist. Recommend deletion from chart. (Vol. IV) *shoalest sounding found was 15 ft position ≈ 851 lat 38°34'08.59 long 77°14'58.55. concur
9' sounding	~~38°33.68'~~ 34.25' 77°14.80'	A pattern of closely spaced hydrography lines were run and the sounding does not exist. Recommend deletion from chart. (Vol. IV) concur
16' sounding	38°34.61' 77°14.45'	A pattern of closely spaced hydrography lines were run. A 16,7 sounding was found in an area of 16' and 17' soundings. Pos ≈ 811 lat 38°33'39.74" long 77°14'25.23" Recommend ~~retaining the 16 ft charted depth~~ charting of present depths.
Piles	38°34.61' 77°15.05'	Photo Party 61 found two uncharted 12" piles awash at MLW. These piles are very dangerous to small boating and it is recommended that they be charted. concur
5' sounding	38°33.61' 77°12.00'	In this area the depth curves have changed and this sounding is now in an area of other 6' soundings. Recommend ~~retaining~~ charting of present depths ~~five ft~~ as best ~~representing~~ the bottom configuration in this area
3' sounding	38°33.81' 77°11.31'	In this area the depth curves have changed and this sounding is now in an area of other 3' soundings. Recommend ~~retaining~~ charting of present ~~to~~ 5 ft depths ~~soundings~~ as best representing the bottom configuration in this area.

L. ADEQUACY OF SURVEY

This survey is considered to be adequate to supersede prior surveys for charting. concur

M. AIDS TO NAVIGATION

Within the limits of this survey there are six (6) floating buoys. There is a special purpose buoy offshore of the Naval Propellant Plant, Indian Head, Maryland. This buoy is used to mark a water inlet pipe. concur

There are two day markers at the mouth of Mattawoman Creek. Day marker #2 has been hit and is awash.

Buoys and fixed aids are listed in Light List Vol. I, 1972, Page 388. The buoys adequately serve the intended purpose for the Potomac River. The two fixed day markers at the mouth of Mattawoman Creek are not adequate to navigate the creek, because as stated in the Coast Pilot, the channel meanders back and forth. A few small private markers have been established by property owners.

N. STATISTICS

Launch	Total No. of Positions	Miles of Sounding Line
Launch 1260	886	129.0
Launch 1259	444	35.4
Skiff 570		
Skiff 1	75	5.6

Total square miles 7.0
Number of Bottom Samples 25

O. MISCELLANEOUS

The area in Mattawoman Creek around PSI #17 (three rows of pilings) was foul with lily pads and shallow water and therefore inaccessable to the survey launch.

The area in Neabsco and Powell Creeks was inaccessable to the survey launch due to shallow water. This area was surveyed by visual means using a 13 foot Boston Whaler. DE-723 Fathometer No. 1888 was used by mounting the transducers on a frame made of wood and metal and suspended over the side of the boat. The transducers were placed at the surface and the fathometer set for zero draft.

Soundings less than 4.0 feet were taken with a sounding pole.

P. RECOMMENDATIONS

None.

Q. REFERENCE TO REPORTS

1. HFP 742 Field Season Report for OPR-409, 1973.

2. Report of Corrections to Echo Soundings for OPR-409, 1973.

Q. REFERENCE TO REPORTS (Cont'd)

3. Electronic Control Calibration Report for OPR-409,1973.

Respectfully submitted,

Elisha J. Miller

J. Scott Bradford

APPENDIX A

Tide Note

Tide reducers for all boat sheet sounding's are from predicted tides for High Point, Occoquan Bay, Virginia. A pressure recording gage(Marumsco Gage) was installed in Occoquan Bay for this survey. The unverified Hourly Height Tide Tape Printout for the inclusive days of hydrography (May 14 to June 15, 1973) is included in this report. Staff readings were also recorded in Mattawoman Creek during hydrography there and the data is enclosed.

The time difference between the Marumsco gage and the Mattawoman Tide Staff is only about 10 minutes, so the corrector difference is probably insignificant.

Verfied hourly heights and datum information will be supplied by Rockville. (See Letter to C331 Dated June 8, 1973 enclosed).

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

March 28, 1973

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center

Hourly heights are approved for form 362 ✓

Tide Station Used (NOAA form 77-12): Quantico, Va.; Indian Head, Md.

Period: May 4- September 6, 1972

HYDROGRAPHIC SHEET: H-9324 124-249

OPR: 409

Locality: Potomac River

Plane of reference (mean ~~lower~~ low water): Quantico, Va: 1.2 ft.
Indian Head, Md: 2.1 ft.

Height of Mean High Water above Plane of Reference is Quantico: 1.4 ft.
IndianHead: 1.8 ft.

Remarks: Zoning Requirements

1. Recommend use of the following time correction and range north of Cockpit Pt. to (Lat. 38°35.5'N)

	Quantico
Time	Range
0.3 hr	1.6 ft.

160 18 ✓ 1.14 RATIO

2. From lat. 38°35.5'N to the project limits, use Indian Head gage direct.

Robert A. Cummings
Chief, Tides Branch

8/7/73

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center

Hourly heights are approved for

Tide Station Used (NOAA form 77-12): Marumsco, Virginia
Tide Staff Reading: Mattawoman Creek, Maryland

Period: May 10 - June 4, 1973
130 - 155

HYDROGRAPHIC SHEET: [redacted] H9324

OPR: 409

Locality: Occoquan Bay, Potomac River
Mattawoman Creek

Plane of reference (mean [redacted] low water): 2.4 feet
Mattawoman 2.9 feet

Height of Mean High Water above Plane of Reference is 1.7 feet
Mattawoman 1.6 feet

Remarks: Zoning: use Marumsco gage direct for those days which cover Hydro in Mattawoman Creek.

C. L. Shurlow
Chief, Tides Branch
for

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center

Hourly heights are approved for Form 362

Tide Station Used (NOAA form 77-12): Quantico, Virginia

Period: May 4-September 6, 1972

HYDROGRAPHIC SHEET: ~~H-9323~~ H-9322 H-9324

Rescinded - changed to H-9322 HLP

OPR: 409

Locality: Potomac River

Plane of reference (mean ~~lower~~ low water): Quantico, Virginia 1.2 ft.

Height of Mean High Water above Plane of Reference is Quantico, Va. 1.4 ft.

Remarks: Zoning requirements:

1. Recommend use of Quantico gage south of Quantico, Va. to Sandy Pt. (38°29'N) and north to Cockpit Pt. (30° 33.7'N)
2. Use the following time correction and range below Sandy Pt., south to the Project limits.

	Quantico
Time	Range
-0.3 hr.	1.2 ft.

3. Use the following time correction and range north of Cockpit Pt. to (lat. 38°35.5'N)

	Quantico
Time	Range
0.3 hr	1.6 ft.

Robert A Cummings

Chief, Tides Branch

CAM3-3
3-25-71

ATLANTIC MARINE CENTER

TIDE NOTE

1. Project No: OPR-409 2. Vessel/Field Unit: HFP-742

3. Year: 1973 4. Meridian Time Zone: GMT

5. Tide Station Name: MARUMSCO

6. Position: Lat. 38 ° 38 '.1 Long. 77 ° 14.8 '

7. Plane of Reference: [X] MLW, [ ] MLLW corresponds to _____ feet on the tide staff for the period _____.

8. Hourly Heights: [ ] Standard Gauge, furnished from Rockville.

[X] Scaled and logged from field marigrams.

9. Tidal Zoning: [X] Not applicable.

[ ] By two or more gauges automatically zoned.

[ ] By applying tidal differences and constants for the area(s): a. _____

TIME (Hour, Minute)		HEIGHT (Feet)		HEIGHT RATIO (If Applicable)	
High Water	Low Water	High Water	Low Water	High Water	Low Water

b. _____

TIME (Hour, Minute)		HEIGHT (Feet)		HEIGHT RATIO (If Applicable)	
High Water	Low Water	High Water	Low Water	High Water	Low Water

c. Include additional areas on separate sheet(s).

10. Remarks: _____

Appendix B

Abstract of Corrections to Echo Soundings

Bar checks were taken every day possible during this survey. The results were averaged using the "0.4" foot rule(page 182, Hydrographic Manual). A printout of the velocity table is included as an abstract of bar check corrections. Also included is a settlement and squat correction table printout indicating the results of tests run on May 31, 1973.

TC/TI Printout

A TC/TI printout appling settlement and squat, and velocity corrections to soundings is included in this report.

Signal List

Alist of Del Norte control stations and visual signals used for control in Mattawoman, Nebsco and Powell Creeks is included as a signal list printout.

Abstract of Corrections to Distance Measurements

A corrector tape printout follows as an abstract of Del Norte calibration correctors.

Control Report

A list of visual signals, Del Norte control stations and calibration points appears in Photo Party 61's Control Report which is included in this report.

VELOCITY TAPE
742 10-2-73
ASL 71

DEPTH	IDX	VEL CORR	TAB NO	UNIT	VES ID	SHEET
000040	0	0004	0001	000	742300	010273
000060	0	0006				
000500	0	0008				
999999	0	0008				
000040	0	0002	0002	000	742200	010273
000052	0	0004				
000120	0	0006				
000240	0	0008				
000500	0	0010				
999999	0	0010				
000040	1	0006	0003	000	742400	010273
000047	1	0004				
000055	1	0002				
000500	0	0000				
999999	0	0000				

SQUAT AND SETTLEMENT CORRECTION TABLE TAPE

DEPTH	IDX	CORR	TAB NO	UNIT	VES ID	SHEET
000055	0	0004	0001	000	742200	010273
000500	0	0002				
999999	0	0002				
000055	0	0004	0002	000	742200	010273
000500	0	0002				
999999	0	0002				
000046	0	0006	0003	000	742200	010273
000062	0	0004				
000500	0	0002				
999999	0	0002				
000500	0	0002	0004	000	742200	010273
999999	0	0002				
000040	0	0004	0005	000	742200	010273
000500	0	0002				
999999	0	0002				
000500	0	0002	0006	000	742300	010273
999999	0	0002				
000117	0	0002	0007	000	742300	010273
000500	0	0004				
999999	0	0004				
000051	0	0008	0008	000	742300	010273
000078	0	0006				
000110	0	0004				
000500	0	0006				
999999	0	0006				
000054	0	0000	0009	000	742300	010273
000060	0	0002				
000065	0	0004				
000072	0	0006				
000500	0	0008				
999999	0	0008				
000500	0	0004	0010	000	742400	010273
999999	0	0004				

SIGNAL LIST IN METERS

MSL
742-10-2-73

SIGNAL NO	LAT			LONG		
301	38	34	0255	77	15	1092
303	38	34	1530	77	15	1312
304	38	34	1764	77	15	1244
305	38	34	1835	77	15	0752
306	38	35	0078	77	15	1290
307	38	34	1769	77	16	0034
308	38	34	1725	77	16	0488
309	38	35	0309	77	16	0434
310	38	35	0534	77	16	1200
311	38	35	1137	77	14	1301
312	38	35	1698	77	15	0581
313	38	36	0018	77	15	0716
314	38	36	0033	77	15	0950
315	38	36	0179	77	15	0924
316	38	36	0273	77	15	1151
317	38	36	0464	77	15	0809
318	38	36	0729	77	15	1398
322	38	33	0907	77	12	1149
324	38	33	0932	77	11	1126
325	38	33	1383	77	12	0007
326	38	33	1164	77	11	1057
327	38	33	0990	77	11	0840
328	38	33	1048	77	11	0545
329	38	33	1767	77	11	0971
330	38	34	0208	77	11	0350
331	38	33	1744	77	10	1244
332	38	34	0995	77	11	0422
333	38	34	0972	77	10	1240
334	38	34	0906	77	10	1088
335	38	34	0398	77	10	0761
336	38	34	0088	77	10	0989
337	38	33	1613	77	10	0648
338	38	34	0621	77	10	0220
339	38	34	1316	77	10	0888
340	38	34	1348	77	10	0228
341	38	34	1826	77	10	0033
342	38	34	1380	77	09	1235
343	38	34	1710	77	09	0698
344	38	35	0743	77	09	0951
345	38	35	0450	77	09	0358
346	38	35	0794	77	08	1180
347	38	35	0386	77	08	0879
348	38	36	0297	77	08	0188
349	38	35	0317	77	10	0752
350	38	35	1579	77	10	0323
600	38	32	1704	77	12	0848

SIGNAL TAPE IN SECONDS

~~742~~ 10-2-~~73~~

SIGNAL NO	LAT	LONG
139	38 33 38,346	77 15 26,634
144	38 35 10,486	77 10 17,166
145	38 34 24,733	77 12 24,011
146	38 35 25,256	77 14 51,406
147	38 34 30,778	77 12 00,948
148	38 35 23,427	77 11 16,637
149	38 37 05,775	77 12 16,678

APPROVAL SHEET

SURVEY ~~742~~ H5L 10-2-~~73~~ 72

The field work, hydrographic records, and processing are complete and adequate.

Ned C. Austin

Ned C. Austin

CDR, NOAA, OIC HFP-742

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

SURVEY NUMBER

H-9324

GEOGRAPHIC NAMES

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	
BULLITT NECK										1
CHERRY HILL										2
COCKPIT POINT										3
CORNWALLIS NECK										4
DEEP POINT										5
FREESTONE POINT										6
GRINDERS WHARF										7
HIGH POINT										8
~~HOG ISLAND~~										9
MARSH ISLANDS										10
MATTAWOMAN CREEK										11
NEARSCO CREEK										12
NELSON POINT										13
POTOMAC RIVER										14
POWELLS CREEK										15
PROCTORS WHARF										16
RIVERVIEW VILLAGE										17
RUM POINT										18
SWEDEN POINT										19
THOROUGHFARE ISLAND										20
INDIAN HEAD										21
										22
										23
										24
										25

APPROVED
Chas. E. Harrington
CHIEF GEOGRAPHER ~~C3x8~~
20 July 1978

* U.S. G.P.O. 1972-769-565/516 REG.#6

APPROVAL SHEET
FOR
SURVEY H-9324

A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not~~ been made. A new final sounding printout has/~~has not~~ been made.

B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the Verifier's Report.

Date: 6/5/78

Signed: Harry L. Smith

Title: Chief, Verification Branch

NOAA FORM 77-27 (5-77) | U. S. DEPARTMENT OF COMMERCE NOAA | HYDROGRAPHIC SURVEY NUMBER

HYDROGRAPHIC SURVEY STATISTICS

H-9324

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS	4
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS. ARC, EXCESS	2

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	1		1			2 - misc. data
CAHIERS			2			
VOLUMES	10					
BOXES						

T-SHEET PRINTS (List)

SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	PRE-VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			2132
POSITIONS CHECKED		210	
POSITIONS REVISED		10	
SOUNDINGS REVISED		25	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME – HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	14		
VERIFICATION OF CONTROL		16	
VERIFICATION OF POSITIONS		67	
VERIFICATION OF SOUNDINGS		55	
COMPILATION OF SMOOTH SHEET		60	
APPLICATION OF TOPOGRAPHY		26	
APPLICATION OF PHOTOBATHYMETRY		0	
JUNCTIONS		10	
COMPARISON WITH PRIOR SURVEYS & CHARTS		30	
VERIFIER'S REPORT		30	
OTHER		0	
TOTALS	14	294	308

Pre-Verification by: G. Trefethen, B. Stephenson	Beginning Date: 08/13/73	Ending Date: 09/18/73
Verification by: F. Saunders, J. Bradford, L. Cram	Beginning Date: 10/05/73	Ending Date: 05/05/78
Verification Check by: B. Stephenson	Time (Hours): 6	Date: 05/30/78
Marine Center Inspection by: Hydrographic Inspection Team, AMC	Time (Hours): 16	Date: 06/05/78
Quality Control Inspection by: R. W. Wellman	Time (Hours): 4/	Date: 7-19-78
Requirements Evaluation by: J Baumgardner	Time (Hours): 3	Date: 9-25-78

V EXV

REGISTRY NO. _____

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE_____ TIME REQUIRED_____ INITIALS_____

REMARKS:

REGISTRY NO. H-9324

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE_____ TIME REQUIRED_____ INITIALS_____

REMARKS:

ATLANTIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9324 FIELD NO. HSL-10-2-72

Virginia - Maryland, Potomac River, Cockpit Point to Indian Head

SURVEYED: September 1 through September 6, 1972 and May 10 through June 15, 1973

SCALE: 1:10,000 PROJECT NO.: OPR-409

SOUNDINGS: DE-723D, Sounding Pole CONTROL: Del-Norte (Range-Range and Range-Visual), Visual (Sextant fixes)

Chief of Party ..... N. C. Austin
..... G. R. Schaefer
Surveyed by ..... A. L. Sikes
..... D. W. Yeager
..... W. L. Adams
..... D. V. Mason
..... F. L. Saunders
..... J. S. Bradford
..... E. J. Miller
Automated Plot by ..... CALCOMP-618 Plotter (AMC)
Verified and Inked by ..... L. G. Cram
May 15, 1978

1. Introduction

a. This survey is considered a basic survey with the addition of the 1973 work to the 1972 work.

b. There were two unusual problems on this survey:

(1) The clarity of the topographic manuscripts (TP-00326 and TP-00327) was such that they left a serious doubt as to the position and identity of some objects. Recommend careful reviewing of the original manuscripts to ensure accurate presentation of the topographic data in the area covered by these manuscripts.

(2) The combining of the two different years' work on this survey necessitated the renumbering of the 1972 positional information during the early stages of verification. This renumbering has been documented on the raw data from the field.

c. The projection parameters were revised during verification. Changes in red were made during verification by the verifier.

2. Control and Shoreline

a. The source of the control is adequately described in Section F of the Descriptive Report and in the Control Report in the Descriptive Report for 1973; however, two items were noted during verification of this survey: The field assigned different signal numbers to the same station in 1972 and 1973. This was handled by changing the records to have only one signal number per signal control point (station). The second item noted during verification was that the field located four signals hydrographically but did not use these signals. They were not put on the smooth sheet. (See Q.C. Report-item 2)

b. The shoreline for this survey was transferred from final reviewed photogrammetric manuscripts TP-00323, TP-00324, TP-00325, TP-00326, and TP-00327 of 1971/72 and 1973. A problem was encountered when transferring the topographic information to the smooth sheet. The reproduction quality was so poor on TP-00326 and TP-00327 that questions, as to what certain items were, ~~of~~ or if all the topographic information was visible on these manuscripts, were left in the verifier's mind. Recommend careful review of these manuscripts by the Marine Chart Division to ensure the topographic information is complete and correct. It is further noted that in some areas the shoreline and piers were broken to allow the hydrographic information to be plotted.

3. Hydrography

a. The agreement at crossings on this survey is adequate.

b. The standard curves were drawn in their entirety except for the "0" curve. The charted 24-foot curve and the supplemental 3-foot curves were added to the survey to provide better delineation of the bottom configuration. (See Q.C. Report-item 3)

c. This survey is considered adequate to delineate the bottom configuration and least depths.

4. Condition of Survey

The field plotting, survey records, and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual, with the following exceptions:

a. There were duplicate positions used because of the two year survey by two different field units. This problem was resolved during verification by renumbering the 1972 work.

b. There are an insufficient number of bar checks; the manual requires two a day, Launch 1257 (1972), for a five day survey period on this sheet, got one bar check. The 1973 survey had one bar check on half the survey days and two bar checks on the rest.

c. There should have been detached positions taken on some of the more important features, Presurvey Review items.

5. Junctions

Adequate junctions were effected with the following surveys:

H-9349 ~~(1973)~~ (1973-74) to the northeast
H-9292 (1973) to the north
H-9322 (1972) to the south

It will be necessary for Quality Control to make the following adjustments to complete the junction with H-9349 (1973):

a. Adjust and complete the curves on H-9349 (1973); there is no data other than data tape at the Atlantic Marine Center.

b. Ink the adjusted curves on H-9349 (1973).

6. Comparison With Prior Surveys

H-2606 (1902) 1:10,000
H-2705 (1904) 1:10,000

These prior surveys provide coverage of all the present survey area, with the exception of Neabsco Creek in latitude 38° 36' 00", longitude 77° 15' 30". The shoreline has changed somewhat throughout the survey area. The basic bottom configuration is somewhat the same with depths outside the channel areas being one to two feet shoaler on the present survey. The greatest change, two to six feet shoaler, appears to have taken place in the channel areas, in Mattawoman Creek and in the vicinity of latitude 38° 33' 32", longitude 77° 14' 12" in the Potomac River. These changes can be attributed to both cultural and natural causes in the survey area. Numerous piers, duckblinds, markers, piles, and wrecks have been added to the present survey area since the prior surveys were run.

The present survey is adequate to supersede the prior surveys in the common areas.

7. Comparison With Charts C&GS 559 (9th Edition, February 27, 1971)
C&GS 560 (31st Edition, February 27, 1971)

a. Hydrography

The charted hydrography, for the most part (95%), originates with the previously discussed prior surveys. The 5% of the charted hydrography that does not originate with the prior surveys comes from a source not readily ascertainable at the time of verification and is shown on the chart mark-up by hexagons. There are numerous piers, wrecks, pilings, and other items not charted that should be charted from the topographic information in the survey area.

The present survey is adequate to supersede the charted information when attention is given to the following items:

(1) The pier and pier ruins charted in latitude 38° 33' 36", longitude 77° 11' 47" comes from a source not readily ascertainable at the time of verification. The pier and pier ruins are in such close proximity to one another it was not determined which did not appear on the present survey data. It is recommended that the source data be reviewed and the chart corrected to reflect the change in this area.

(2) The charted pier ruins in latitude 38° 33' 35", longitude 77° 11' 15" comes from a source not readily ascertainable at the time of verification. These ruins do not appear on any hydrographic or topographic data and it is recommended that they be revised to submerged pier ruins on the chart unless subsequent information indicates otherwise.

(3) The pier charted in latitude 38° 33' 52"[4], longitude 77° 10' 52" is from a source not readily ascertainable at the time of verification. This pier does not appear on any topographic or hydrographic information; recommend it be revised to submerged pier ruins unless subsequent information indicates otherwise.

(4) Pier charted in latitude 38° 33' 56", longitude 77° 10' 36" comes from a source not readily ascertainable during verification. This pier does not appear on any hydrographic or topographic information available during verification; recommend revising it to submerged pier ruins unless subsequent information indicates otherwise.

(5) Pier charted in latitude 38° 34' 18", longitude 77° 10' 10" originates with a source not readily ascertainable

at the time of verification. This pier does not appear on any hydrographic or topographic information available during verification. One line of hydrography (position 4228 through 4229) ran across the area of the pier with no indication of any submerged ruins in the area. Recommend deleting this pier from chart unless subsequent information indicates otherwise. Disregard above recommendation. Existence of submerged pier ruins is not disproved. Retain as submerged ruins on the chart.

(6) Two piers charted in the vicinity of latitude 38° 35' 15", longitude 77° 08' 33" originate with a source not readily ascertainable at the time of verification. These piers do not appear on any hydrographic or topographic information available during verification; recommend revising these piers on the chart to submerged pier ruins unless subsequent information indicates otherwise.

(7) A conflict between charted information on the following charts was noted: Chart C&GS 559 (9th Edition, February 27, 1971) has one pier in latitude 38° 35' 25", longitude 77° 09' 39", while Chart C&GS 560 (31st Edition, February 27, 1971) has a pier in latitude 38° 35' 22", longitude 77° 09' 17" and a pier in latitude 38° 35' 25", longitude 77° 09' 39". Recommend that Marine Charts Division research the source of the piers to determine which chart is correct. The smooth sheet has one pier in this area at latitude 38° 35' 24.09", longitude 77° 09' 39.291"; this pier is in the same area of the pier common to both charts. The easterly pier is not verified or disproved by the present survey. Revise charts as considered appropriate.

(8) Pier ruins charted in latitude 38° 34' 32", longitude 77° 10' 54" originates with a source not readily ascertainable at the time of verification. These ruins do not appear on any topographic or hydrographic information available during verification; recommend these pier ruins be revised to submerged ruins unless subsequent information indicates otherwise.

(9) A conflict between charted information on the following charts was noted: Chart C&GS 559 (9th Edition, February 27, 1971) has a pile charted in latitude 38° 35' 09", longitude 77° 11' 33", while C&GS 560 (31st Edition, February 27, 1971) has a pier charted in latitude 38° 35' 09", longitude 77° 11' 33". Recommend Marine Charts Division review the source material in this area for resolution of this conflict. The present survey shows a wreck and a pier charted in the vicinity of latitude 38° 35' 10", longitude 77° 11' 33"; recommend charting the pier from the present survey unless subsequent information indicates otherwise.

(10) The two finger piers charted in latitude 38° 36' 02", longitude 77° 11' 03" originate with a source not readily

ascertainable during verification. The two piers do not appear on any topographic or hydrographic data available during verification. There is one solid larger pier in this area on the topographic manuscript; recommend revising these piers to one pier on future charts unless subsequent information indicates otherwise. (See Q.C. Report - item 5)

(11) The pier with ruins or pilings charted in latitude 38° 35' 25", longitude 77° 14' 48" originates with a source not readily ascertainable during verification. The topographic and hydrographic data has a pier of different configuration and one pile baring one foot at MLW in this area. Recommend revising the charts to reflect the information from the present survey unless subsequent information indicates otherwise.(See Q.C. Report - item 6)

(12) The row of pilings charted in latitude 38° 35' 00", longitude 77° 15' 55" originates with a source not readily ascertainable during verification. These piles do not appear on any topographic or hydrographic information available during verification of the present survey. Recommend these pilings be revised to submerged piles unless subsequent information indicates otherwise.

(13) The pier and pier ruins charted in latitude 38° 34' 56", longitude 77° 15' 56" originate with a source not readily ascertainable during verification. The topographic manuscript (TP-00326) and hydrographic data show only a fence in this area. Recommend revising this pier and pier ruins to submerged unless subsequent information indicates otherwise.

(14) The piling charted in latitude 38° 34' 49", longitude 77° 15' 57" originates with a source not readily ascertainable during verification. The topographic and hydrographic information has no indication of these pilings. Recommend they be revised to submerged piling unless subsequent information indicates otherwise.

(15) The row of piles charted in latitude 38° 34' 04", longitude 77° 15' 42" originates with a source not readily ascertainable during verification. These piles do not appear on any topographic or hydrographic data available during verification. Recommend these piles be revised to submerged unless subsequent information indicates otherwise.

(16) (See Q.C. Report - item 7)
The numbered Presurvey Review items have been adequately addressed in the Descriptive Report for this survey. It is further noted that most of these items came from T-5763 (1938-39) which was not available during verification.

b. Controlling Depths

There was one controlling depth note on the charts, a "21-foot reported January, 1967", in an unnamed channel off ~~Stump Neck~~ Cornwallis Neck in the vicinity of latitude 38° 33' 33", longitude 77° 14' 12". The present survey depths confirm this note for the buoyed marked channel area.

c. Aids to Navigation

The charted positions of the aids in the survey area adequately mark the intended features. There was one item noted, a day-marker in latitude 38° 33' 24.33", longitude 77° 12' 49.42", in ruins during the time of this survey. This is addressed in the Descriptive Report and is listed in Light List as maintained by the U. S. Navy.

8. Compliance With Instructions

This survey adequately complies with the Project Instructions.

9. Additional Field Work

This is a good basic survey; no additional field work is recommended on this survey.

Inspection Report
H-9324

Any verification errors regarding procedures and presentation of survey data detected during inspection by the Hydrographic Inspection Team have been corrected before submission for administrative approval. HIT comments regarding quality of field work, compliance with instructions, and adequacy of the survey have been incorporated within the Verifier's Report.

Examined and Approved:
Hydrographic Inspection Team
Date:

Robert A. Trauschke, CDR, NOAA
Chief, Processing Division

Charles H. Nixon, CAPT, NOAA
Chief, Operations Division

R. D. Sanocki
Technical Assistant
Processing Division

C. Douglas Mason, LT, NOAA
Chief, Electronic Data
Processing Branch

Harry R. Smith
Team Leader
Verification Branch

Approved/Forwarded

Robert C. Munson
RADM, NOAA
Director, Atlantic Marine Center

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

C352/KWW

July 19, 1978

TO: for R H Carstens
A. J. Patrick
Chief, Marine Surveys Division

THRU: Chief, Quality Control Branch

FROM: K. W. Wellman K. W. Wellman
Quality Evaluator

SUBJECT: Quality Control Report for H-9324 (1972-73), Virginia-Maryland, Potomac River, Cockpit Point to Indian Head

A quality control inspection of H-9324 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, junctions, shoreline transfer, verifier's decisions and actions, and cartographic presentation of data.

In general, the present survey was found to conform to National Ocean Survey standards and requirements except as discussed in the Verifier's Report, the HIT Report, and as follows:

1. Geographic names should have been lettered "lightly in pencil" on the smooth sheet during verification. They were added to the smooth sheet during quality control inspection. (See section 7.3.12.3 of the Hydrographic Manual--Fourth Edition.)

2. Photo-hydro signal No. 327, denoted on the smooth sheet as a wreck, falls approximately 25 meters northwest of a wreck shown on TP-00327. The T-sheet does not show any wreck in the position of signal No. 327. A possibility exists of there being another wreck in the area or the signal location is in error. An examination of the survey records reveals that relatively few positions were determined by utilizing signal 327. Further, there appears to be no significant deviations of hydrography attributable to the possible displacement of the station.

Signal No. 327 is a photo-hydro signal established by Photo Party 61 in 1973. In the interests of safety both wrecks are shown on the smooth sheet.

3. Depth curves were not delineated in narrow creeks and were omitted or improperly delineated in a few areas on the smooth sheet. Appropriate additions or revisions were effected during the quality control inspection.

4. The marked charts used during verification were not forwarded with the survey records. (See section 8-3 of the Hydrographic Manual--Fourth Edition.)

5. Section 7a(10) of the Verifier's Report is supplemented by the following:

The charted finger piers extend beyond the seaward limits of the "solid larger pier" in the area on the present survey. They are not verified or disproved by the present survey and are referred to the compiler for evaluation and appropriate action.

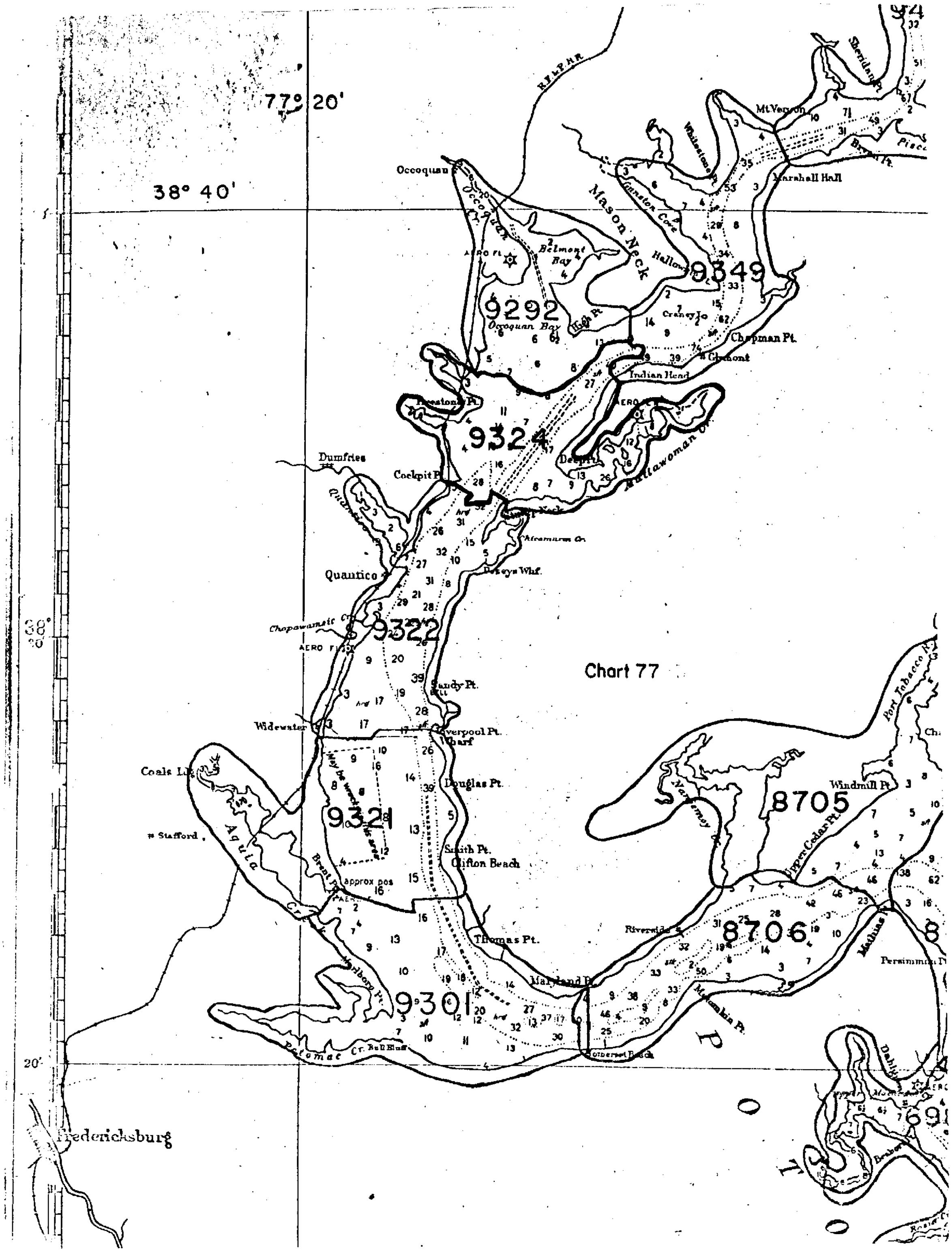
6. Section 7a(11) of the Verifier's Report is supplemented by the following:

The charted ruins or pilings in the referenced area at variance with the present survey are referred to the compiler for evaluation and appropriate action.

7. Section 7a of the Verifier's Report is supplemented by the following:

(16) Additional charted items at variance with the present survey originate with miscellaneous sources. They are referred to the compiler for identification, evaluation, and appropriate action.

cc:
C35
C351


77° 20'
38° 40'
Chart 77
9292
9349
9324
9322
9321
9301
8705
8706
Occoquan
Occoquan Cr.
Belmont Bay
Occoquan Bay
Mason Neck
Mt Vernon
Marshall Hall
Chapman Pt.
Indian Head
Dumfries
Cockpit Pt.
Quantico
Sandy Pt.
Widewater
Douglas Pt.
Smith Pt.
Clifton Beach
Coals Ldg.
Stafford
Aquia Cr.
Brent Pt.
Thomas Pt.
Marlboro Pt.
Potomac Cr.
Maryland Pt.
Riverside
Windmill Pt.
Upper Cedar Pt.
Port Tobacco R.
Fredericksburg
20'

FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9324

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 Revie

CHART	DATE	CARTOGRAPHER	REMARKS
560	10/20/78	Bill Wamble	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. #43
559	3/26/79	Bill Wamble	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 26 Applied in part thru cht. 560 Dwg # 43
1048	4-26-79	MIKE PANAS	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 22 FULLY APPLIED THRU CHT 560 + CHT #559 (10-8 PAGES "C & E")
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
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			Drawing No.

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

USCOMM-DC 8558-P63