9321

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. 42-10-3-72

Office No. H-9321

LOCALITY

State VIRGINIA AND MARYLAND

General Locality POTOMAC RIVER

Locality AQUIA CREEK TO LIVERPOOL POINT

1972

CHIEF OF PARTY
Ned C. Austin

LIBRARY & ARCHIVES

DATE Jan. 9, 1978

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

9321

AREA-2

559 (12FF)
101 (1228S)
77 (12260)

FORM C&GS-537 (8-15-69)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-9321

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.

742-10-3-72

State Virginia and Maryland

General locality Potomac River

Locality ~~Liverpool Pt.~~ Aquia Creek to Liverpool Point

Scale 1:10,000 Date of survey Aug.-Sept. 1972 Surveys 21 - Lights 8

Instructions dated 3/1/72&3/3/72 Project No. OPR-409

Vessel Hydrographic Field Party 742 Ldrs 1259 and 1260; Skiff 570.

Chief of party CDR Ned E. Austin

Surveyed by Walter H. Piner and Elisha J. Miller

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

Graphic record scaled by Party personnel

Graphic record checked by Party personnel Verification Branch

Protracted by _____ Automated plot by ~~CEDP~~ CALCOMP #618 (CEDP ADC)

Soundings penciled by CALCOMP #618

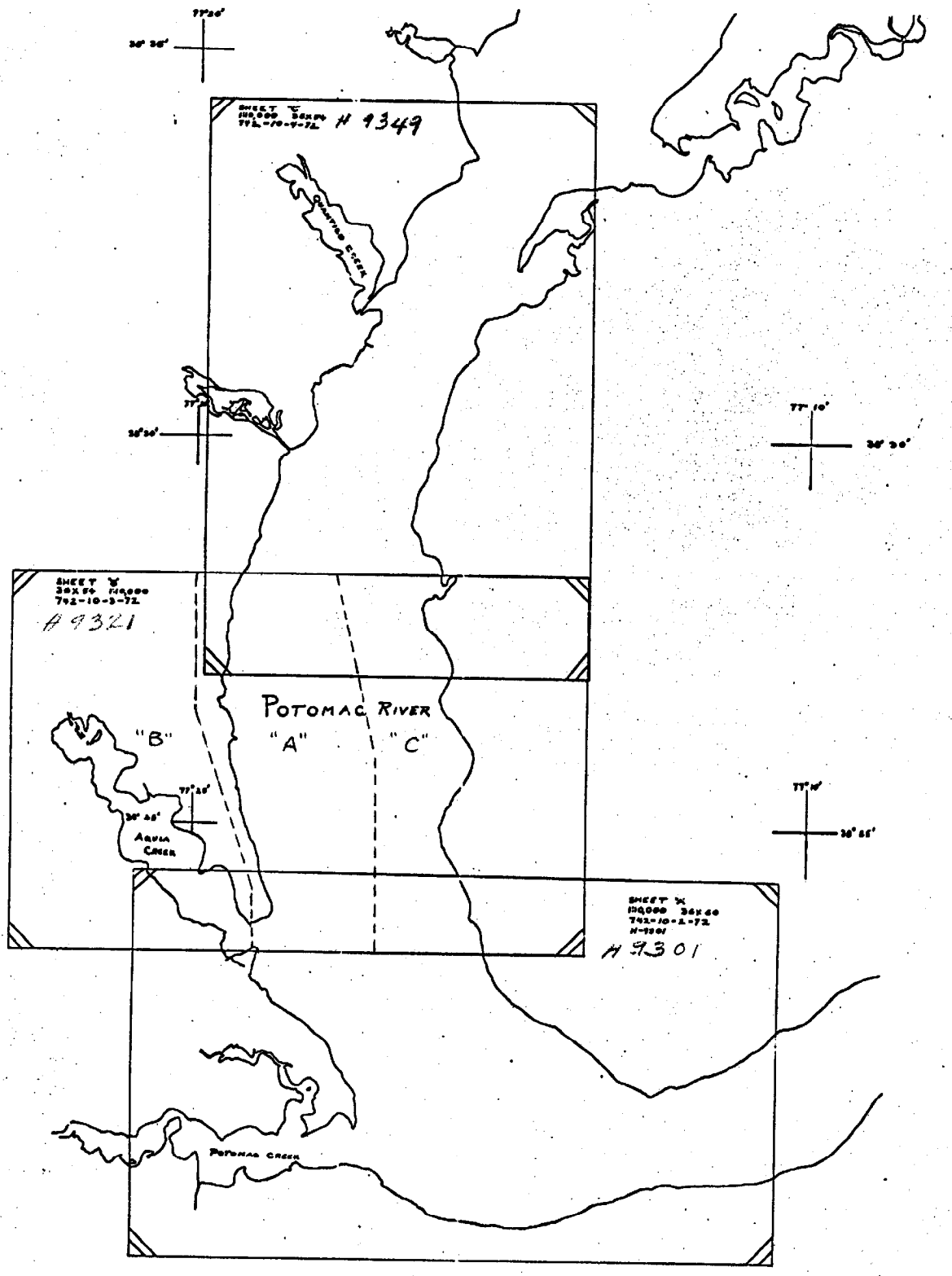
Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~

Changes in red made during verification

REMARKS: ~~Survey 742-10-3-72 was done using three boatsheets: 10-3-72A (Virginia side of the Potomac River), 10-3-72B (Aquia Creek), and 10-3-72C (Maryland side of the Potomac River). This descriptive report is divided into three sections, one for each sheet, except for those sections of the appendix which are common to all. The survey data is also separated so that one sheet can be processed at a time if desired. The main reason for doing the survey this way was to speed up the field processing.~~ Appd. to Stds. 8-16-28 LJS

~~The time meridian for hydrography is Greenwich Mean Time.~~

USCOMM-DC 19086-P65


77°20'
38° 30'
H 9349
QUANTICO CREEK
77°
38°30'
77° 10'
38° 30'
H 9321
POTOMAC RIVER
"B"
"A"
"C"
77°15'
38° 25'
AQUIA CREEK
77°10'
38° 25'
H 9301
POTOMAC CREEK

SHEET: 742-10-3-72 "A"

Surveyed by: W. H. Piner

A. PROJECT

This survey was done in accordance with Project Instructions OPR-409-HFP-742-72 dated March 1, 1972 and Supplemental Instructions, Change 1, dated March 3, 1972.

B. AREA SURVEYED

This survey covers the west side of the Potomac River (Virginia side) from Lat. 38°23.60, Long. 77°18.75 to Lat. 38°27.74', Long. 77°17.80. Hydrography began on ~~August 11~~ July 21, 1972 and ended on September 8, 1972.

C. SOUNDING VESSELS

Launches CS 1259 and CS 1260 and Skiff 570 were used on this survey. Position color for 1259 was blue, 1260 was red, and Skiff 570 was brown.

D. SOUNDING EQUIPMENT

Raytheon Fathometer No. 1885 DE-723 was used on Launch 1260 for depths greater than 4 feet. A sounding pole was used for soundings less than 4 feet.

Raytheon Fathometer No. 535 DE-723 was used on Launch 1259 for soundings deeper than 4 feet. A sounding pole used for soundings less than 4 feet.

Raytheon Fathometer No. 806 was used on Skiff 570. A sounding pole was used in depths less than 4 feet.

Echo sounding corrections were determined from bar checks. No trouble was encountered with the sounding equipment.

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

E. SMOOTH SHEET

The smooth sheet will be plotted by AMC from punched tapes made by this party. Actual tide correctors will be supplied by Rockville from Fisher Porter ADR gages.

F. CONTROL ✓

Horizontal control was by sextant fixes. All signals for this survey were located by Photo Party 61.

G. SHORELINE ✓

Shoreline detail for this survey was obtained from Shoreline Manuscripts TP-00331 and TP-00328, Scale 1:10,000. A sounding line was run around the shore of Aquia Creek; however, due to shallow water and a small tide range, the zero curve could not be obtained. TP-00330

H. CROSSLINE ✓

Approximately 10% of the sounding lines were crosslines. They are in good general agreement.

I. JUNCTIONS ✓

A junction was made with 742-10-2-72(C). H-2301 on the south Soundings were not in good agreement; however, it is suspected that tides are the problem as predicted tides were used for tide correctors.

J. COMPARISON WITH PRIOR SURVEYS ✓

There is no prior survey available. Pre-Survey Review Item No. 4 (submerged piles) at Thorney Point, Lat. 38°23'44", Long. 77°19'36", was dragged for and a D.P. taken on the offshore piles. In the process of dragging, several submerged pilings protruding 0.2 ft. from the bottom were found from Pos. 826 to shore. (See ~~boat~~ sheet) Vol. 6, Page 11 & 26. Recommend retaining this item on chart See O.C. Report, para 7.A.4.

K. COMPARISON WITH CHART ✓

The overall comparison with Chart C&GS 559 is in good general agreement, although detailed comparison is impossible due to great difference in scales. Items not shown on the chart that are considered significant are as follows:

1. Small Islands at Lat. 38°26.01' (15), Long. 77°21.07' (8) are no longer there. This area is covered by 2.0 to 3.0 ft. of water. See O.C. Report, para 7a.2.

2. A privately maintained channel with a controlling depth of approximately 3.0 ft. marked with red and green clorox jugs extending from the mouth of the creek at Lat. 38°26.30', Long. 77°22.00' to 100 meters east of Signal 608. No action.

Items 6X & 6Y are letters given to possible wrecks added to the chart. These areas were investigated by running closely spaced lines over the charted positions. No sign of these charted wrecks was found. Recommend deleting symbols from chart unless subsequent chart information indicates otherwise See QC Report Item 5.

Items lettered "A" Markers maintained by Potomac Fisheries Commission, were verified by this survey and found to be correctly charted as Markers #PRV 12A and PRV 12B. See QC Report para. 7c. Also a 5 ft. charted sounding at Lat. 38°26.09' and Long. 77°19.00' was investigated by running lines over the charted position. A 6-foot sounding was the least depth obtained. Recommend ~~revising the 5 ft. sounding~~ charting present depths 5ft sdg. origin H-2707, circled PSR Item.

Two 12-foot soundings at Lat. 38°26.79' and Long. 77°18.00' and 38°25.05' and Long. 77°17.55' were investigated by running closely spaced lines over the charted positions. No sign of these soundings was detected on the fathogram. Recommend deleting from chart Shoalest depth in both cases is four ft., chart present fourteen depths. 12 ft. sdg originate with H-2707.

K. COMPARISON WITH CHART

A comparison with Chart C&GS 559 was made and found to be in good agreement with this survey.

L. ADEQUACY OF SURVEY

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

M. AID TO NAVIGATION

There are two fixed aids maintained by the Potomac Fisheries Commission, #PRV 12A and PRV 12B, and their charted positions are correct. See Q.C. Report, para 7c.

N. STATISTICS

LAUNCH	TOTAL NO. POS.	MILES OF SOUNDING LINE
1259	230	49.4
1260	730	123.5
570	114	6.2
Total	1074	179.1

Total area surveyed is 5.8 square nautical miles and 19 bottom samples.

O. MISCELLANEOUS

None.

P. RECOMMENDATION

None.

Q. REFERENCES TO REPORTS

1. Field Edit Report by Photo Party 61
2. Fathometer Report for the project
3. Season's Report for the project
4. Electronic Control Calibration Report for the project.

Respectfully submitted,

Walter H Piner

W. H. Piner

SHEET: 742-10-3-72 "B"

Surveyed by: E. J. Miller

A. PROJECT

This survey was done in accordance with Project Instructions OPR-409-HFP-742-72 dated March 1, 1972 and Supplemental Instructions, Change 1, dated March 3, 1972.

B. AREA SURVEYED

The area surveyed includes the entire Aquia Creek and it's navigable tributaries. At the mouth of Aquia Creek, the southern limit is Lat. 38°23.30', the northern limit is Lat. 38°28.00', the eastern limit is Long. 77°19.00' and the western limit is Long. 77°23.30'.

Hydrography began on 21 July 1972 and ended on 9 August 1972. A junction was made with Survey #742-10-2-72, (H-9301) Potomac River.

C. SOUNDING VESSELS

All soundings on this survey were taken by Launch 1259 and Skiff 570. The identifying color used for Launch 1259 is blue and for Skiff 570 is brown.

D. SOUNDING EQUIPMENT

Raytheon Fathometer DE-723, No. 535 was used on Launch 1259 for depths greater than 5 feet, and a sounding pole was used for depths less than 5 feet.

Raytheon Fathometer DE-723, No. 806 was used on Skiff 570 for depths greater than 5 feet, and a sounding pole was used for depths less than 5 feet.

Echo sounder corrections were determined from daily bar checks. No trouble was encountered with the fathometers. Fathogram scanning was checked by the hydrographer and found to be adequate.

E. SMOOTH SHEET

Smooth sheet will be prepared by AMC from punched tapes made by this party.

F. CONTROL ✓

Horizontal control was by sextant fixes. All signals for this survey were located by Photo Party 61.

G. SHORELINE ✓

Shoreline detail for this survey was obtained from Shoreline Manuscripts TP-00331 and TP-00328, Scale 1:10,000. A sounding line was run around the shore of Aquia Creek; however, due to shallow water and a small tide range, the zero curve could not be obtained. TP-00330

H. CROSSLINE ✓

Approximately 10% of the sounding lines were crosslines. They are in good general agreement.

I. JUNCTIONS ✓

A junction was made with 742-10-2-72(C). H-9301 on the south Soundings were not in good agreement; however, it is suspected that tides are the problem as predicted tides were used for tide correctors.

J. COMPARISON WITH PRIOR SURVEYS ✓

There is no prior survey available. Pre-Survey Review Item No. 4 (submerged piles) at Thorney Point, Lat. 38°23'44", Long. 77°19'36", was dragged for and a D.P. taken on the offshore piles. In the process of dragging, several submerged pilings protruding 0.2 ft. from the bottom were found from Pos. 826 to shore. (See ~~boat~~ sheet) Vol. 6, Page 11 & 26. Recommend retaining this item on chart See Q.C. Report, para 7.A.4.

K. COMPARISON WITH CHART ✓

The overall comparison with Chart C&GS 559 is in good general agreement, although detailed comparison is impossible due to great difference in scales. Items not shown on the chart that are considered significant are as follows:

1. Small Islands at Lat. 38°26.~~01~~15', Long. 77°21.~~07~~8' are no longer there. This area is covered by 2.0 to 3.0 ft. of water. See Q.C. Report, para 7.a.2.

2. A privately maintained channel with a controlling depth of approximately 3.0 ft. marked with red and green clorox jugs extending from the mouth of the creek at Lat. 38°26.30', Long. 77°22.00' to 100 meters east of Signal 608. No action.

3. Rocky shoal awash at MLW is approximately 50 ft. long running northwest and southeast along the edge of a small channel, Lat. 38°25.98', Long. 77°21.76', is a hazard to navigation and should be charted. (See ~~boat~~ smooth sheet--Sounding Volume 6, Page 41, Pos. 937.)

4. Positions 910, 934, and 935 are uncharted rocks that should be charted approximately 50 meters southeast of Signal 618. (See ~~boat~~ smooth sheet--Sounding Volume 6, Page 41 and 31.)

5. Wreck 40 ft. long, bare 3.0 ft. at MHW, Position 940, Lat. 38°25.14½, Long. 77°21.16', (Vol. 6, Page 42).

L. ADEQUACY OF SURVEY

This survey is considered complete and adequate to supersede prior surveys ~~of~~ for charting.

M. AIDS TO NAVIGATION

There is one fixed aid to navigation within the limits of the sheet. Day Bn. #10 was found to be as shown on Chart C&GS 559; however, it is leaning over as if it has been hit by a boat.

N. STATISTICS

There were 671 positions taken on this survey for a total of 61.9 nautical miles of sounding line. The total area of this survey is approximately 3 sq. miles. Eight bottom samples were taken.

O. MISCELLANEOUS

This boat sheet includes an insert which contains the small creek that extends north from the main body of Aquia Creek. A centerline was run in this creek; however, some of the soundings taken were not actually center channel soundings due to the channel being narrow, and it has been impossible to stay in the center of the channel at all times.

There is a depth of ~~12.0~~ 10.0 feet at the center channel of the RR bridge that is not charted.

P. RECOMMENDATIONS

None to be made.

Q. REFERENCES TO REPORTS

1. Field Edit Report by Chief, Photo Party 61
2. Fathometer Report for Project
3. Season's Report for Project.

Respectfully submitted:

Elisha J. Miller

Elisha J. Miller

SHEET: 742-10-3-72 "C"

Surveyed by: E. J. Miller

A. PROJECT

This survey was done in accordance with Project Instructions OPR-409-HFP-742-72 dated March 1, 1972 and Supplemental Instructions, Change 1, dated March 3, 1972.

B. AREA SURVEYED

The area surveyed includes the eastern (Maryland) side of Potomac River from southern limit, Lat. 38°24.00' to Lat. 38°28.00', northern limit (Liverpool Pt.), to Long. 77°18.00' western limit and to the Maryland shore on the eastern side of the Potomac River.

Hydrography began on August 28, 1972 and ended on September 8, 1972. A junction was made with 742-10-2-72 to the south.

AH-9301 (1972)

C. SOUNDING VESSELS

All soundings on this survey were taken by Launch 1260 and Skiff 570. The identifying color used for Launch 1260 is red, and the color used for Skiff 570 is brown.

D. SOUNDING EQUIPMENT

Raytheon Fathometer DE-723, No. 1885 was used on Launch 1260 for depths greater than 5 feet, and sounding pole was used for depths less than 5 feet.

Raytheon Fathometer DE-723, No. 806 was used on Skiff 570 for depths greater than 5 feet and a sounding pole was used for depths less than 5 feet.

Echo sounding corrections were determined from daily bar checks. No trouble was encountered with the fathometers. Fathogram scanning was checked by the hydrographer and found to be adequate.

E. SMOOTH SHEET

The smooth sheet will be prepared by AMC from punched tapes made by this party. Actual tide reducers will be provided by Rockville.

F. CONTROL

Electronic control (Del Norte) was used for all positions on this survey. Daily calibrations were made before and after hydrography. The hydrographic vessel was positioned within 2 meters of a designated calibration point, and the Del Norte was set to the correct distance. All end of day calibrations were less than 5 meters off; therefore, no corrections were applied to the boatsheet. For a more detailed discussion of calibrations, see the Electronic Control Report for the project. For this survey, shore stations were located at Brent Point RM4 and Fishery RM3. The calibration point was at Clifton Beach Light.

G. SHORELINE

Shoreline detail for this survey was obtained from Shoreline Manuscript TP-00331 and TP-00329; Scale 1:10,000. A sounding line was run around the shore with Skiff 570; however, due to shallow water and a small tide range, the low waterline was not defined. TP-00328

H. CROSSLINES

Approximately 10% of the sounding lines were crosslines. They are in good general agreement.

I. JUNCTIONS

A junction was made with Sheet 742-10-2-72 H-9301 (1972) to the south. Soundings were in good general agreement. The survey continues to the north with Sheet 742-10-4-72. H-9321 (1972)

J. COMPARISON WITH PRIOR SURVEYS

Comparison with prior survey, Register No. 2707, dated September 30, 1904, Scale 1:10,000 was in good general agreement. There are two numbered Pre-Survey Items within the limits of this survey (Numbers PSI-5 submerged piles, PSI #A ~~Day Marker~~ Day Marker PRM 9B).

PSI #5 (submerged piles) was dragged for and a D.P. was taken on a submerged pile protruding 0.6 feet from the bottom (Vol. 15, Page 60). Lat 38°24'50.95" long 77°15'56.92" Pile covered 3Ft of MLW. Chart present survey position. Origin H-2707 (1904), possible remains of Clifton Beach Wharf.

D.P.'s were taken on 3 small stakes in the area. The area seemed to be clear of all other submerged objects.

PSI #A (Day Marker PRM 9B) was located on this survey and found to be different from the charted position by approximately ~~200~~ 80 meters. The position determined by Del Norte was 38°27.82', 77°16.27' (Vol. 15; Page 30). See O.C. Report, para 7c.

K. COMPARISON WITH THE CHART

a PSR circled item from H-2708

The overall comparison with the Chart C&GS 559 is in good general agreement. The ~~12~~ 11 ft. shoal charted at Lat. 38°27.36' Long. 77°17.74' is shown to have ~~moved~~ migrated about ~~200~~ 150 meters northwest and now has a least depth of ~~12~~ 11 feet. There are three boatsheets on this Survey 742-10-3-72 (A, B, & C). The ~~12~~ 11 ft. shoal was covered by Sheet A and Sheet C; however, the soundings did not exactly coincide. It is suspected that predicted tides are the problem. Recommend charting present survey depths

L. ADEQUACY OF THE SURVEY

This survey is considered complete and adequate to supersede prior surveys for charting.

M. AIDS TO NAVIGATION

There are ~~two~~ fixed aids and ~~nine~~ floating aids within the limits of this survey. All aids to navigation on this survey are checked with the Light List (CG-158, Vol. #1) and with Chart C&GS 559 and found to be as charted except for day marker PRM 9B at Lat. 38°27.82', Long. 77°16.27' and privately maintained buoy PRM 9A Lat. 38°27.78', Long. 77°16.26'. All aids were judged adequate for their intended purposes.

See Q.C. Report, para 7c.

N. STATISTICS

VESSEL	No. POSITIONS	NAUTICAL MILES
Launch 1260	731	126.9
Skiff 570	80	5.1
Total	811	132.0

Total Square Nautical Miles Surveyed..... 5.2

Number of Bottom Samples..... 6

O. MISCELLANEOUS

Dragging was done, searching for PSI #5, using Launch 1260. A chain approximately 150 feet long was anchored on one end and then pulled around in a circle. The anchor was moved and the same process was done over again.

P. RECOMMENDATIONS

None.

Q. REFERENCES TO REPORTS

1. Field Edit Report by Photo Party 61.
2. Fathometer Report for the project.
3. Season's Report for the project.
4. Electronic Control Calibration Report for the project.

Respectfully submitted,

Elisha J. Miller

Elisha J. Miller

(PHOTO) VISUAL SIGNALS

Signal No.	Lat.	Long.	T-Sheet No.	Description
563	38 23 849.0	77 18 1037.1	00331	Aquia Creek Lt. #3
565	38 23 966.4	77 18 1165.3		Day Beacon 5
566	38 23 1212.8	77 18 1289.1		Day Beacon 6
568	38 23 1212.0	77 19 68.9		Day Beacon 8
572	38 23 578.3	77 19 685.7		
574	38 23 1190.6	77 19 779.7		
576	38 24 406.0	77 18 400.0		
578	38 24 844.8	77 19 941.7		
580	38 24 46.6	77 19 1172.9		Day Beacon 10
582	38 24 980.6	77 19 1258.9		
584	38 24 1539.5	77 20 10.1		
586	38 23 116.0	77 20 336.0	00330	
588	38 24 516.0	77 19 883.0		
590	38 24 1650.8	77 21 271.8		
592	38 24 1769.2	77 20 476.2		
594	38 25 547.5	77 20 301.4	00328	
596	38 25 584.5	77 20 968.7		
598	38 25 520.2	77 20 1266.3		
600	38 25 259.4	77 21 164.7		
602	38 25 707.3	77 21 435.3		
604	38 25 621.8	77 21 536.2		
603	38 25 1626.8	77 21 08.0		
608	38 25 1548.6	77 21 977.3		
610	38 25 1574.4	77 22 33.5		

(PHOTO) VISUAL SIGNALS CONT.

Signal No.	Lat.	Long.	T-Sheet No.	Description
612	38 26 289.4	77 21 512.7	00328	
614	38 26 134.2	77 21 898.4		
616	38 26 32.5	77 22 314.3		
617	38 26 601.7	77 22 693.8		
618	38 26 567.3	77 21 1433.0		

TRIANGULATION AND FIELD POSITIONS

Del- Del Norte Shore Station T- Triangulation Position
Cal- Del Norte Calibration Station F- Field Position

115(220)	38 23 50.544	77 18 41.085	BRENT PT RM 4 (Del) F	
116(200)	38 22 57.950	77 15 02.288	104 (USE) (Del) T 1928, R 1961	
119	38 23 44.574	77 18 38.722	PRV11B (Cal) F	
120	38 24 56.369	77 15 57.756	Clifton Beach Lt. (Cal) F	
121(230)	38 28 23.354	77 19 07.790	FISHERY RM 3 (Del) F	
123(210)	38 27 48.595	77 16 15.669	TWIN 1928, 1959 (Del) T	

CVP

CONTROL REPORT
Boat Sheet HFP-742-10-3-72

Prepared by
NATIONAL OCEAN SURVEY
PHOTO PARTY 61

September, 1972
POTOMAC RIVER, MARYLAND

1. Authority

Hydro support was performed in accordance with project instructions OPR-409-742-72 Potomac River, Maryland, dated 1 March 1972.

2. Purpose

To provide shore stations and calibration stations for Del Norte control, and to provide photo-hydro signals for visual control on boatsheets HFP-742-10-3-72. Boat sheet preparation, except for transferring of photo-hydro signals, was not performed by this party.

3. Locality of Control

Potomac River from Brent Point to Liverpool Point and the entire Aquia Creek.

4. Control

Hydrographic control consisted of triangulation stations, intersection stations, and photo-hydro stations.

a) Del Norte control requirements

The Del Norte electronic control system required that there be complete visibilty between the mobile and the shore stations. It also required calibration stations that could be reached with the launch so the mobile stations could be calibrated directly. Shore stations were placed directly on triangulation stations where possible. Where it was necessary due to visibilty limitations, the shore stations were placed on existing or new reference marks of existing triangulation stations. Calibration stations were located by intersections from existing triangulation stations.

b) Photo-hydro Control

Photo-hydro control stations were located in accordance with Photogrammetry Instructions No. 45, using October, 1971, photography.

5. Recommendations

None.

6. Disposition of Data

Original Cronaflex signal sheets TP00330 and TP00331, containing photo-hydro signals covered by this report were transmitted to HFP 742 on 24 August 1972. Original Cronaflex signal sheet TP00332, containing all remaining photo-hydro signals covered by this report will be transmitted with this report to HFP 742 for inclusion in survey records for this boatsheet. All data related to intersection and position computations will be transmitted to Photogrammetry Division, AMC, Attn. CAM21 upon completion of field work in the area.

7. Attached

A signal list is attached including positions of all Del Norte stations, calibration stations, and photo-hydro signals.

Respectfully submitted,

Richard D. Olson

RICHARD D. OLSON
LT, NOAA
Chief, Photo Party 61

VELOCITY TABLE TAPE

DEPTH	IND	VEL CORR	TABLE NO	UNIT	VESSEL	SHEET
000338	0	0000	0001	000	742300	010372
001000	1	0002				
999999	1	0002				
001000	1	0004	0002	000	742200	010372
999999	1	0004				
000120	1	0006	0003	000	742400	010372
001000	1	0004				
999999	1	0004				

VESSEL 7423 - LAUNCH 1260 (MONARK)

TABLE #1 FATH #1885

VESSEL 7422 - LAUNCH 1259 (DENN YAN)

TABLE #2 FATH #535

VESSEL 7424 - SKIFF 520

TABLE #3 - FATH #806

SQUAT AND SETTLEMENT CORRECTION TAPE

DEPTH	IND	CODE	TAB NO	UNIT	PERSONNEL ID	DATE
000055	0	0002	0001	000	742300	010272
001000	0	0000				
999999	0	0000				
000045	0	0006	0002	000	742300	010272
000060	0	0004				
000085	0	0002				
001000	0	0000				
999999	0	0000				
000045	0	0006	0003	000	742300	010272
000100	0	0004				
001000	0	0002				
999999	0	0002				
000045	1	0002	0004	000	742300	010272
000070	0	0000				
000075	0	0002				
000080	0	0004				
000120	0	0006				
001000	0	0004				
999999	0	0004				
001000	0	0002	0005	000	742200	010272
999999	0	0002				
001000	0	0003	0006	000	742400	010272
999999	0	0003				

9/26/75

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): Brent Marsh, Aquia Creek

Period: August 11 - September 11, 1972

HYDROGRAPHIC SHEET: H-9321

OPR: 409

Locality: Potomac River

Plane of reference (mean ~~lower~~ low water): 1.01 ft. - Brent Marsh
2.04 ft. - Aquia Creek

Height of Mean High Water above Plane of Reference: 1.3 ft.

Remarks: Recommended zoning:

(1) North of 38°27', apply a time correction +15 minutes to Brent Marsh.

(2) South of 38°27', zone direct on Brent Marsh.

(3) In Aquia Creek, zone direct on Aquia Creek.

James R Hubbard
for Chief, Tides Branch

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-9321

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	
AQUIA CREEK ✓										1
BENNETTS POINT ✓										2
BLUE BANKS ✓										3
BOARS CREEK ✓										4
BRENT MARSH ✓										5
BRENT POINT ✓										6
CLIFTON BEACH ✓										7
DOUGLAS POINT ✓										8
GOURDS POINT ✓										9
LIVERPOOL POINT ✓										10
POTOMAC RIVER										11
SEEGARS POINT ✓										12
SHACKLEY POINT ✓										13
SIMMS POINT ✓										14
SMITH POINT ✓										15
THORNEY POINT ✓										16
WADES BAY ✓										17
WATSONS POINT ✓										18
WIDEWATER ✓										19
WIDEWATER BEACH (locality) ✓										20
WILLOW LANDING ✓						APPROVED				21
COAL LANDING ✓						Chas. E. Harrington				22
GOVERNMENT ISLAND ✓						STAFF GEOGRAPHER - C51x2				23
						21 Feb. 1978				24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

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

APPROVAL SHEET
FOR
SURVEY H-9321

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 Provisional Hydrographic Manual. Exceptions are listed in the Verifier's Report.

Date: Dec. 5, 1977

Signed: William L. Jones

Title: Chief, Verification Branch

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

HYDROGRAPHIC SURVEY STATISTICS

H-9321

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS	3 &3
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS. ARC, EXCESS	2

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	N		1-smoot			
CAHIERS	1		1-filed			
VOLUMES	16					
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			2556
POSITIONS CHECKED		125	125
POSITIONS REVISED		25	25
SOUNDINGS REVISED		50	50
SOUNDINGS ERRONEOUSLY SPACED		--	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		--	
	TIME – HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)			
VERIFICATION OF CONTROL	5		5
VERIFICATION OF POSITIONS	63		63
VERIFICATION OF SOUNDINGS	59		59
COMPILATION OF SMOOTH SHEET		62	62
APPLICATION OF TOPOGRAPHY		8	8
APPLICATION OF PHOTOBATHYMETRY			
JUNCTIONS		6	6
COMPARISON WITH PRIOR SURVEYS & CHARTS		20	20
VERIFIER'S REPORT		11	11
OTHER			
TOTALS	127	107	234

Pre-Verification by Charles Meekins, Maurice B. Hickson III, & J. Scott Bradford	*Beginning Date* 8/23/74	*Ending Date* 8/15/77
Verification by Leroy G. Cram Leroy G. Cram	*Beginning Date* 10/19/77	*Ending Date* 11/30/77
Verification Check by B. J. Stephenson and W. L. Jonns	*Time (Hours)* 6	*Date* 12/14/77
Marine Center Inspection by HIT	*Time (Hours)* 10	*Date* 12/16/77
Quality Control Inspection by R.W. DeKazarian	*Time (Hours)* 81	*Date* 2/2/78
Requirements Evaluation by J. Dennerdine	*Time (Hours)* 5	*Date* 8/8/78

✓ DOD Eng Ltr 19 7-3-78

Reg. No. 9321

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 REQ'D_____ INITIALS_____

REMARKS:

Reg. No. _____

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 REQ'D._____ INITIALS_____

REMARKS:

APPENDIX D

Electronic Control Parameters

Stations: R1 104(USE) (1928) Lat. 38-22-57.950
Long. 77-15-02.288
R2 Twin 1928 Lat. 38-27-48.595
Long. 77-16-15.669

Survey area is to observers left

Vessel#	From Time	From Day	To Time	To Day	Position Numbers (inclusive)
7422	143000	224	140800	228	0600-0800
7422	141000	228	184000	235	4001-4030
7424	153000	236	183700	236	0951-1047
7424	164000	255	173045	255	1128-1144
7423	130000	229	180700	238	2001-2730

Stations: R1 Brent Point RM 4 Lat. 38-23-50.544
Long. 77-18-41.085
R2 Fishery RM3 Lat. 38-28-23.354
Long. 77-19-07.791

Survey area is to observers right

Vessel#	From Time	From Day	To Time	To Day	Position Numbers (inclusive)
7424	133500	250	171400	250	1048-1127
7423	143000	241	175430	252	2901-3631

APPENDIX E

Approval Sheet to Accompany
Hydrographic Survey 742-10-3-72 (H-9321)

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

Approved and forwarded,

Ned C. Austin
CDR, NOAA
OIC, HFP 742

H-9321

Items for Future Presurvey Reviews

Future surveys should include an investigation by wire drag of the area charted as "May be wrecks in this area"; and resolve the questionable existence of the Presurvey Review pier ruin and other pier ruins discussed in the Quality Control Report and not disposed of by the present survey. Random shoaling has occurred throughout a large portion of the present survey, including portions of the maintained channel.

Position Index		Bottom Change Index	Use Index	Resurvey Cycle
Lat.	Long.			
382	772	3	4	25 years
382	773	1	2	50 years

ATLANTIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9321 FIELD NO. 742-10-3-72

Virginia and Maryland, Potomac River, Aquia Creek, Virginia, and Smith Point, Maryland

SURVEYED: July 21 through September 8, 1972

SCALE:	1:10,000	PROJECT NO.:	OPR-409
SOUNDINGS:	Raytheon DE-723 and Sounding Pole	CONTROL:	Del-Norte and Sextant Fixes on Shore Signals

Chief of Party	N. C. Austin
Surveyed by	W. H. Piner
.....	E. J. Miller
Automated Plot by	CALCOMP 618 Plotter (AMC)
Verified and Inked by	L. G. Cram November 10, 1977

1. Introduction

a. There were no unusual problems encountered during verification.

b. The Descriptive Report was written in three parts as the survey was separated into three parts. This is not a standard procedure; however, it was done by the field to expedite the field processing. The use of grid intersections for pseudosignals is not a standard procedure; however, it was done by the field to expedite processing of the data at the Marine Center.

c. There were two revisions made during verification. The projection parameter was revised and the three Descriptive Reports were combined into one.

2. Control and Shoreline

a. The control is adequately described in Section F of the Descriptive Report and the Control Report except for two areas:

(1) Signal Numbers 619 through 626 are grid intersections and were used only to convert "See Boat Sheet Soundings" into the automated hydrographic data processing system.

2. Control and Shoreline (continued)

(2) The two Electronic Control Stations that appear on the smooth sheet have two numbers. One of these numbers was assigned to the Electronic Control Station and another was assigned to the same station when it was used for Visual Control. The numbers are Electronic Control Station Number 115 with Visual Control Signal Number 220 and Electronic Control Station Number 123 with Visual Control Signal Number 210.

b. The shoreline for this survey was transferred from final reviewed Photogrammetric Manuscripts TP-00328, TP-00329, and TP-00331 of 1971-1976. In verifying this, survey differences between photogrammetric and hydrographic locations of piles, piers, stakes, et cetera were resolved by using the photogrammetric location and the hydrographic elevations. The differences, when they occurred, were noted in the sounding volumes.

See Q.C. Report, para 1.

3. Hydrography

See Q.C Report, para 2

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

b. The depth curves are adequate to delineate the basic bottom configuration, with one exception: there is not enough hydrographic or topographic information to draw the low-water line with any continuity.

c. The field unit adequately developed the bottom configuration and least depths, with the exception noted above in Item b.

4. Condition of Survey

See Q.C. Report, para 3.

The smooth sheet and accompanying overlays, hydrographic records, and reports are adequate to conform to the requirements of the Provisional Hydrographic Manual, with the following exceptions:

a. No Log Sheets M, "Bottom Sediment Data," were included with the survey. Not included in D.R.

b. The Descriptive Report did not reflect the edition and date of the chart used for field comparison.

5. Junctions

Adequate junctions were effected with the following surveys:

H-9322 (1972) to the north
H-9301 (1972) to the south

These junctions are completed to the extent that no further consideration is necessary.

6. Comparison with Prior Surveys

See O.C. Report, para 5.

H-2707 (1904) - 1:10,000
H-2708 (1904) - 1:10,000

These surveys, taken together, cover the area of the present survey. A comparison between the present and prior surveys reveals a ~~general~~ shoaling of from one to three feet. These changes can be attributed to natural causes.

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

7. Comparison with Chart C&GS 559 (9th Edition, February 27, 1971)

See O.C. Report, para. 7.

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys, with the exception of a few soundings whose source was not readily determined at this time. The line spacing and hydrography in this area is adequate to supersede these soundings.

The Presurvey Review items for this survey are adequately discussed in the Descriptive Report, with the exception of Presurvey Review Item 6, which is discussed as follows:

(1) The charted note, "Foul Area" in Latitude 38°27.3', Longitude 77°18.5'; and

The charted note, "Foul Area" in Latitude 38°25.2', Longitude 77°18.0'.

The fathograms in these areas were closely examined and no indication of any foul areas exist. Recommend these foul notes be removed from the chart.

7. Comparison with Chart C&GS 559 (continued)

(2) The charted note, "May be wrecks in this area," in Latitude 38°26', Longitude 77°18.5'.

The fathograms in this area were closely examined and no indication of any wrecks exist. The presently charted note should be retained until the existence of wrecks in the area are verified or disproved by a conclusive wire drag investigation as recommended in the Presurvey Review.

(3) Wreck "X" in Latitude 38°26'15", Longitude 77°18'00"; and Wreck "Y" in Latitude 38°26'55", Longitude 77°18'20".

These items were* investigated by running closely spaced lines over the charted positions. See QC Report para 5 The fathograms were closely examined and no indication of these wrecks were found. Recommend that the wreck symbols be* removed from the chart unless subsequent chart information indicates otherwise.

b. Controlling Depths

There was only one controlling depth note on the chart: a 24-feet controlling depth in an unnamed channel off of Smith Point in the vicinity of Latitude 38°24'00", Longitude 77°16'00". Present survey depths are one to two feet shoaler than the isolated charted controlling depth. It is recommended that present survey depths be charted unless subsequent chart information indicates otherwise. Origin of controlling depth, C+E, Bp 65677-80. (1963)

c. Aids to Navigation

The aids to navigation on this sheet are discussed under Section M of the Descriptive Report. The position of the aids adequately mark the intended features. See QC Report para 7

This survey is adequate to supersede the charted information within the common area.

8. Compliance with Instructions

This survey adequately complies with the Project Instructions dated March 1, 1972.

9. Additional Field Work

This is an excellent basic survey. No additional field work is recommended.

Inspection Report
H-9321

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: Dec. 16, 1977

for R. D. Sanocki
Robert A. Trauschke, CDR, NOAA
Chief, Processing Division

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

R. D. Sanocki
R. D. Sanocki
Technical Assistant
Processing Division

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

Harry R. Smith
Harry R. Smith
Team Leader
Verification Branch

Approved/Forwarded

Robert C. Munson
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/RWD

February 21, 1978

TO: A. J. Patrick
Chief, Marine Surveys Division

THRU: Chief, Quality Control Branch

FROM: R. W. DerKazarian
Quality Evaluator

SUBJECT: Quality Control Report for H-9321 (1972), Aquia Creek to Liverpool Point, Potomac River, Virginia and Maryland

A quality control inspection of H-9321 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data.

The junctions with H-9322 (1972) and H-9301 (1972) have not been evaluated. The adequacy of their junctions will be considered at the time of their respective evaluations. These surveys have not been received at Headquarters at the time of this report.

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

1. The numbers of the photogrammetric manuscripts identified in the Verifier's Report are incomplete and the dates are in error.

Photogrammetric manuscript TP-00330 is excluded, and the dates given should include the photo date and field edit date, which for the pertinent manuscripts are 1971-72. The 1976 date given is the date of review and should not be included.

2. The following statement should be included under Hydrography, paragraph 3, of the Verifier's Report:

The supplemental 24-foot charted curve has been added to the smooth sheet to delineate the channel configuration better. The curve was added during the quality evaluation.

3. The graphic records for the most part apparently were not rescanned, or if they were little attention was given to the task, both in the field and during verification. In many cases the volumes show no indication of being checked, and the final sounding printout indicates little change. Soundings are in many instances 0.2 to 0.8, and as much as 2 to 4 feet in error. Several peaks and depths falling between events had been rescanned and entered in the wrong position; e.g., if the feature fell between the second and third event it was entered between the third and fourth event. Some soundings were even transposed while on a normal line. These items when found were corrected, if necessary, during the quality evaluation. Furthermore, the 3-foot dredged channel between signals 618 and 608 in Aquia Creek, specifically mentioned by the hydrographer in the Descriptive Report, had not been delineated on the smooth sheet as required by the manual. Channel deeps which had been improperly scanned or excessed were restored during quality evaluation.

4. Four bottom characteristics were added to the smooth sheet from the records; and the control station names were added to the position-arc overlay during the quality evaluation.

5. The following additional information should be noted under the Comparison with Prior Surveys in the Verifier's Report:

The high water line on the west shore of the Potomac River has receded in part as much as 100 meters north of latitude 38°26.00'. Varying differences of 10 to 20 meters between prior and present positions of the high water line are noted throughout the remainder of the survey area.

Four circled Presurvey Review soundings are discussed and disposed of accordingly in the Descriptive Report, sheet A, paragraph J, and sheet C, paragraph K.

6. The hydrographer's statements for sheets A and C of the Descriptive Report regarding the adequacy of the floating aids to mark their intended features is for the most part erroneous, inasmuch as some aids were not in their charted positions. See paragraph 7.c. below.

7. The Verifier's Report under "Comparison with Chart" did not include statements regarding the disposition of the charted information originating with other than NOS sources, as outlined in the Provisional Hydrographic Manual, section 6.6.12.a; nor was an accurate evaluation of the floating aids to mark their intended features given as outlined in paragraph c of the same section in the manual.

The following information should be noted under the "Comparison with Chart 559":

a. Hydrography

The charted hydrography originates largely with the prior surveys previously discussed in the Verifier's Report which require no further consideration, supplemented with various chart letters and blueprints from the USCG (Coast Pilot Reports), USCE, and from USC&GS reconnaissance surveys.

Attention is directed to the following:

(1) The soundings in Aquia Creek from the vicinity of its mouth to the railroad bridge were transferred from the canceled USC&GS Chart 390 which is the primary source of the charted information. Soundings of this area have an origin possibly from 1862 to 1907. It is recommended that the charted soundings be deleted in favor of the present survey.

(2) The soundings north of the railroad bridge in Aquia Creek and several small islets in latitude 38°26.15', longitude 77°21.8' originate with a Coast Pilot Report (CL 1152/58). The present survey adequately developed this area and shows no indication of the islets. It is believed that the islets were spoil and have eroded away. Present depths are 1 to 3 feet. It is recommended that the charted soundings and islets be deleted in favor of the present survey data.

(3) A pier ruin charted in latitude 38°24.0', longitude 77°20.22' at Watsons Point, for which an origin is not readily ascertainable, was not disproved by the present survey and should be retained on the chart.

(4) A pier ruin (Presurvey Review Item 4) charted in latitude 38°23.7', longitude 77°19.6' at Thorney Point originates with Bp-14113 of 1911. The present survey investigation confirmed the existence of the ruin but did not locate its inshore end. Nor did the field sheet sketch conform to the charted position of the ruin. The ruin was therefore delineated on the smooth sheet to conform in location of the pier shown on the original source document noted above and should be charted accordingly.

(5) Two sunken wrecks, Presurvey Review Items 6X and 6Y, are not presently charted. Item 6X was adequately discussed in the Descriptive Report and the Verifier's Report. Item 6Y falls in latitude 38°26.95', longitude 77°18.4'. No special investigation was made at this position and the existence of this wreck is not disproved. Nor is there any evidence to justify charting a wreck at this position.

(6) A sunken wreck (Presurvey Review Item 7) charted in latitude 38°26.1', longitude 77°19.2' originates with a Coast Pilot Report (1936), Bp-29672, which described a group of nine burned hulks. The charted

position of the wreck was not investigated on the present survey; however, an area foul with wrecks was located approximately 200 meters to the north and is believed to refer to the same wrecks as those described above. It is recommended that the wrecks be charted from the present survey.

(7) A pier ruin charted in latitude 38°26.02', longitude 77°19.35' originates with a Coast Pilot Report (1936), Bp-29672. The pier ruin was not disproved by the present survey and should be retained on the chart.

(8) Two pier ruins, one charted in latitude 38°27.52', longitude 77°16.15' originating with CL 372/52, an air photo revision, and one charted in latitude 38°27.45', longitude 77°16.02' originating from an unascertainable source, have not been verified or disproved by the present survey and should be retained on the chart.

With the exception of the items discussed above, and the items discussed in the various sections of the Descriptive Report and Verifier's Report that were not disproved by the present survey, the present survey is adequate to supersede the charted information in the common area. See paragraph c below for disposition of Presurvey Review Items A and AA.

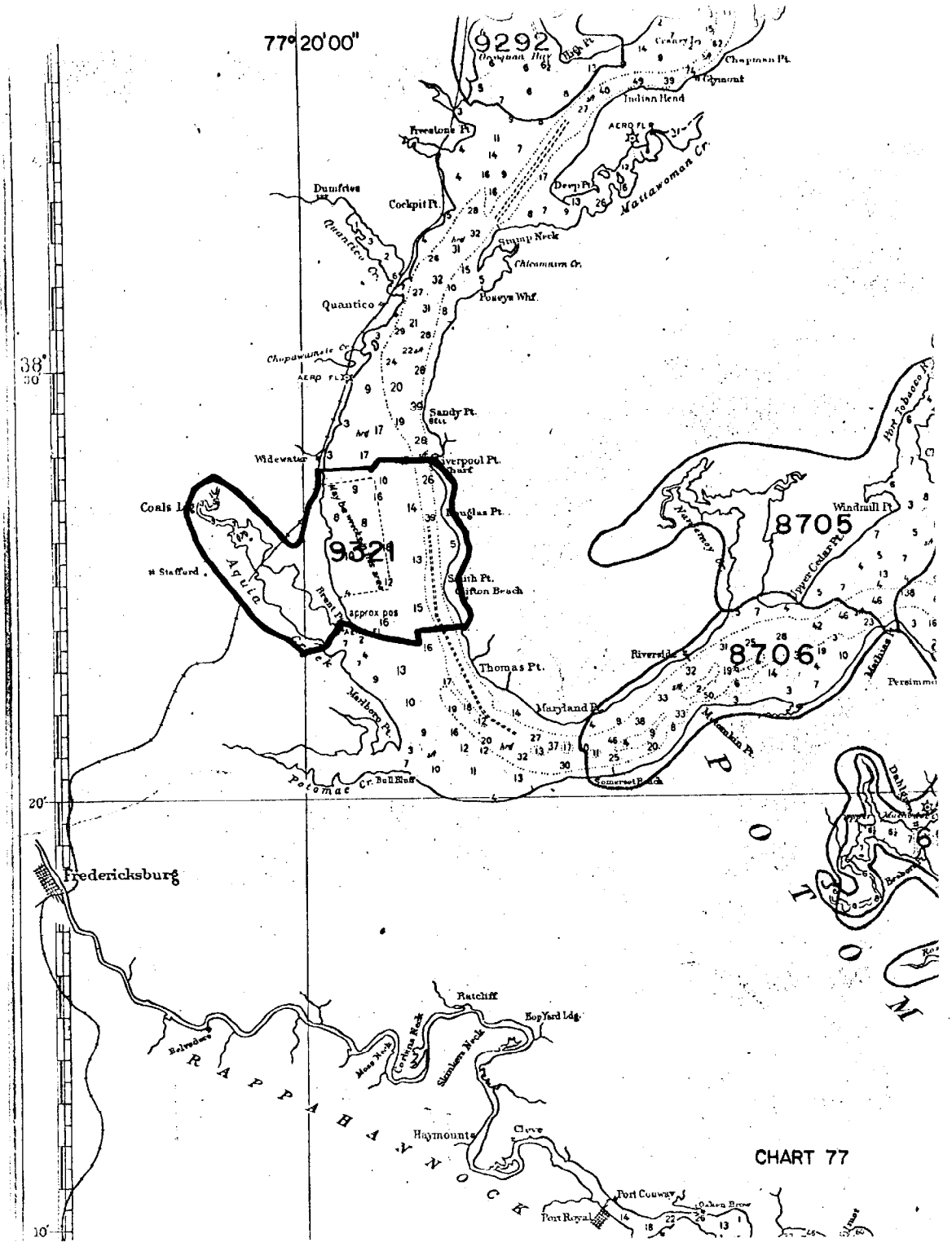
c. Aids to Navigation

The fixed aids to navigation located on the present survey are in substantial agreement with their charted positions. Several of the floating aids in the vicinity of the maintained channel off Smith Point are not in their charted positions and do not mark the best water in the channel.

Several markers (Presurvey Review Item A) within the survey area, established by the Potomac River Fisheries Commission, have been located by the present survey and should be charted accordingly.

Presurvey Review update Item AA, dated January 4, 1973, indicates that new geographic positions have been established for several charted markers through CL 1486 of 1971. Markers "PRV 11B" and "PRV 12A" have been located by the present survey and are in disagreement with the charted positions. They should be charted in accordance with the present survey.

cc:
C35
C351


77°20'00"
38°30'
20'
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9292
9321
8705
8706
Fredericksburg
Quantico
Dumfries
Cockpit Pt.
Freestone Pt.
Indian Head
Chapman Pt.
Mattawoman Cr.
Swamp Neck
Chicamuxen Cr.
Poseys Whf.
Quantico Cr.
Chopawamsic Cr.
Sandy Pt.
Widewater
Liverpool Pt.
Coals Lg.
Douglas Pt.
Stafford
South Pt.
Clifton Beach
approx pos
Aquia Creek
Thomas Pt.
Marlboro Pt.
Potomac Cr.
Bull Run
Maryland Pt.
Somerset Beach
Riverside
Windmill Pt.
Upper Cedar Pt.
Port Tobacco R.
Mattawoman Cr.
Persimmon
Ratcliff
Hop Yard Ldg.
Belvedere
Moss Neck
Cordrys Neck
Slaughters Neck
Haymount
Cleve
Port Conway
Port Royal
Oakes Brow
RAPPAHANNOCK
POTOMAC
CHART 77

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

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9321

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
12288	9/8/78	Richard L. Hogan	Full ~~Part Before~~ After Verification Review Inspection Signed Via
(559)			Drawing No. 26
12285			
(101)	9/11/78	Richard L. Hogan	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 21 THRU CHART 12288 DWG # 26
77	4-17-79	M. PANAS	Full ~~Part Before~~ After Verification Review Inspection Signed Via
12260			Drawing No. 39
			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
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
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			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

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

USCOMM-DC 8558-P63