

H10757

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey SIDE SCAN SONAR
Field No. AHP-10-5-97
Registry No. H10757

LOCALITY

State MARYLAND
General Locality CHESAPEAKE BAY
Sublocality SWAN POINT TO
..... NORTH POINT
.....
..... 19 98
.....
CHIEF OF PARTY
..... B. A. LINK, NOAA

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DATE DEC 1 1999

HYDROGRAPHIC TITLE SHEET

H-10757

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.

AHP-10-5-97

State Maryland

General locality Chesapeake Bay

Locality Swan Point to North Point

Scale 1:10,000

Date of survey June 23, 1997 - November 11, 1998

Instructions dated 4-25-96

Project No. OPR-E346

Vessel NOAA Launch 1017

Chief of party Brian A. Link

Surveyed by BAL, GDH, MJM, JBG, MMC**

Soundings taken by echo sounder, hand lead, pole echosounder

Graphic record scaled by BAL, GDH, MJM, JBG, MMC**

Graphic record checked by BAL, GDH, MJM, JBG, MMC**

Protracted by HPS

Automated plot by ~~HP DesignJet 750 Plus~~ HP 2500C P (AHP)

Verification by Atlantic Hydrographic Branch Personnel

Soundings in ~~feet~~ ^{Fath} at ~~MLLW~~ MLLW

REMARKS: **BAL - Brian A. Link

GDH - Glenn D. Hendrix

MJM - Mark J. McMann

JBG - John B. Gaskin

MMC - Monica M. Cisternelli

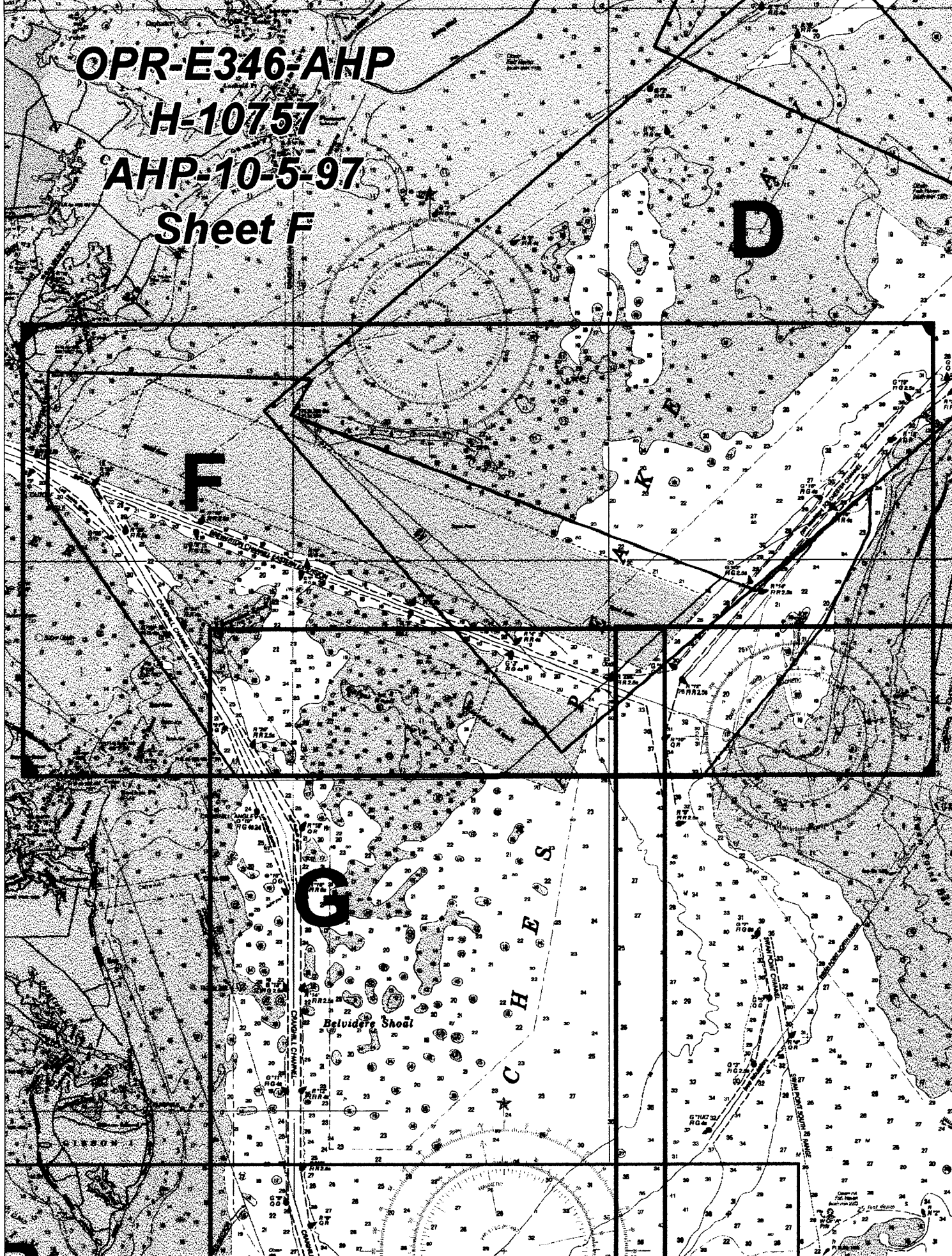
Handwritten notes in the Descriptive Report were made during office processing.

OPR-E346-AHP

H-10757

AHP-10-5-97

Sheet F



DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10757
FIELD NO. AHP-10-5-97
SCALE: 1:10,000
1997-98
ATLANTIC HYDROGRAPHIC PARTY
CHIEF OF PARTY: Brian A. Link

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions OPR-E346-AHP, Northern Chesapeake Bay - Baltimore Harbor, Maryland, dated April 17, 1995, change No. 1 dated April 25, 1996, change No. 2 dated March 31, 1997, change No. 3 dated January 15, 1998 and change No. 4 dated March 25, 1998. This survey is designated as "F" on the sheet layout dated August 21, 1995.

The purpose of this project is to provide contemporary hydrography for updating charts and responds to requests from the Maryland Port Administration, Association of Maryland Pilots, U.S. Army Corps of Engineers, and the U.S. Coast Guard.

B. AREA SURVEYED

The area surveyed for H-10757 includes a portion of the Brewerton Ship Channel and has the following limits:

North - $39^{\circ}12'06''$ ⁴⁴N
South - $39^{\circ}08'00''$ ^{07'43''}N
East - $076^{\circ}16'18''$ ^{58''}W
West - $076^{\circ}26'48''$ ^{42''}W

This survey was conducted from June 23, 1997 (DN 174) to November 11, 1998 (DN 315).

C. SURVEY VESSELS

Vessel 1017, a 30-foot Jensen was used to collect all hydrography, side scan data and detached positions. There were no unusual vessel configurations nor problems encountered.

D. AUTOMATED DATA ACQUISITION AND PROCESSING - See also Evaluation Report

Coastal Oceanographic's HYPACK was used to collect all survey data.

The Hydrographic Processing System (HPS) was used for processing hydrographic data for the entire survey.

The following non-HPS computer programs were used:

MapInfo	Ver. 4.5
VELOCITY	Ver. 2.0 (12/18/92)
Velocity	Ver. 3.1 (2/25/98)
NADCON	Ver. 1.01
MS-WORD	Ver. 7.0

E. SIDE SCAN SONAR EQUIPMENT

Side scan sonar (SSS) operations were conducted using an EG&G model 260 slant-range corrected SSS recorder and an EG&G 272-T dual-channel, single frequency towfish. The towfish was operated on the 100-kHz frequency and was configured with a 20° beam depression. Serial numbers (S/N) for the side scan sonar equipment used throughout the survey are listed below:

<u>Vessel</u>	<u>SSS Towfish S/N</u>	<u>Recorder S/N</u>	<u>Dates</u>
1017	0011901	0012102	entire survey

On launch 1017 the SSS towfish was deployed using a Superwinch Model W115 in conjunction with an adjustable davit arm on the stern of the launch. The SSS towfish was towed with vinyl-coated Kevlar cable and was connected to the recorder via a slip ring assembly.

Side scan data were collected utilizing the 50-meter range scale. In order to acquire the required 200% SSS coverage, main-scheme lines were run at a spacing of 40 meters. Adequate coverage was determined by producing two separate swath plots and ensuring 100% coverage on each plot.

The SSS towfish was maintained at a height off the bottom of 8 to 20 percent of the range scale used. Confidence checks were performed on a routine basis, primarily by noting changes in bottom texture on the outer edges of the sonargram and on buoys in the survey area.

The sonargrams were scanned on line and checked scanned in the office.

All significant contacts were measured off the sonargrams and entered into the HPS Contact Table. The contact heights were computed using the Compute Contact Height function located in HPS. Only the computed contact heights of 1.0 meter or more were investigated. Developments at 10-meter line spacing were run on each of the contacts listed below. A complete contact listing is included in the survey data accordion folder.

Results of the contact developments are shown in the following table.

Year	DN	Contact	DevRef	Contact Height	Latitude	Longitude	Depth*	ChartRec
1997	308	3200.7	31339	1.1	39°09'43.82"	76°22'24.53"	18'	survey soundings
1997	308	3268.3	31273	1.6	39°09'52.82"	76°17'17.02"	20.7	survey soundings
1997	308	3590.4	31245	1.3	39°08'57.87"	76°18'34.05"	22.0	survey soundings
1997	308	3751.1	31218	1.6	39°08'38.07"	76°19'01.70"	30.5	survey soundings
1997	308	3848.3	31294	1.9	39°09'21.92"	76°18'17.28"	21.0	survey soundings
1997	308	3849.3	31375	1.2	39°09'23.33"	76°18'15.63"	20.6	survey soundings
1997	313	6080.3	32232	1.1	39°10'50.15"	76°22'29.76"	16.7	survey soundings
1997	310	6082.7	32152	1.1	39°10'31.79"	76°21'25.46"	17.4	survey soundings
1997	313	6276.7	32259	1.0	39°10'46.21"	76°22'22.65"	15.7	survey soundings
1997	313	6301.3	32208	1.3	39°10'56.74"	76°22'58.23"	16.7	survey soundings
1997	313	6458.8	32178	1.1	39°10'59.55"	76°23'22.40"	17.0	survey soundings
1998	310	6530.1	32127	1.3	39°10'19.18"	76°20'59.23"	18.0	survey soundings
1997	308	6534.5	31386	1.2	39°10'19.18"	76°20'59.23"	18.0	survey soundings
1997	310	6652.4	31924	1.3	39°11'41.45"	76°25'59.19"	10.5 ft	sounding
1997	313	6947.1	32286	1.3	39°10'23.00"	76°21'28.62"	12.5	survey soundings
		6948.1		1.2			17.0	
1997	313	6961.2	32352	1.0	39°10'31.99"	76°21'56.93"	17.0	survey soundings
1997	313	6967.3	32407	1.3	39°10'34.46"	76°22'09.18"	17.0	survey soundings
1997	313	6983.3	32456	1.0	39°10'43.60"	76°22'41.12"	16.7	survey soundings
1997	310	7102.1	31962	1.1	39°11'28.84"	76°25'33.91"	14.1	survey soundings
1997	313	7172.2	32498	1.0	39°10'48.83"	76°23'13.65	17.4	survey soundings
1997	313	7201.2	32432	1.3	39°10'32.42"	76°22'15.33"	17.4	survey soundings
1997	313	7211.2	32380	1.4	39°10'26.66"	76°21'55.49"	17.7	survey soundings
1997	313	8163.8	32477	1.3	39°10'31.86"	76°23'02.21"	17.7	survey soundings
1997	309	10072.4	31868	2.0	39°10'08.11"	76°23'03.60"	17.1 ft	sounding
1997	309	10113.7	31815	1.4	39°09'44.02"	76°21'41.23"	23.9	survey soundings
1997	310	10825.9	32004	1.0	39°10'54.09"	76°26'29.31"	37.1	survey soundings
1997	309	11993.86	31754	2.5	39°09'18.66"	76°21'29.50"	37.0	survey soundings
1997	310	12164.7	32091	1.4	39°10'01.74"	76°24'06.41"	19.0	survey soundings
1997	309	17562.8	31709	1.3	39°08'56.76"	76°23'02.57	16.0	survey soundings
1997	309	17587.85	31727	1.3	39°08'41.55"	76°22'11.04"	16.1 ft	sounding
1997	310	19935.8	32112	1.1	39°10'01.24"	76°24'00.56"	21.0	survey soundings
1997	310	20644.3	32039	1.5	39°10'44.68"	76°25'56.57"	18.4 ft	sounding
1997	309	20750.0	31840	1.7	39°09'43.82"	76°22'24.53"	17.7	survey soundings
1997	309	21115.3	31787	1.1	39°09'34.78"	76°21'33.70"	17.7	survey soundings
1997	309	22135.1	31896	1.2	39°10'15.86"	76°23'07.84"	16.1 ft	sounding

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Year	DN	Contact	DevRef	Contact Height	Latitude	Longitude	Depth*	ChartRec
1997	309	22510.0	31532	1.3	39°09'13.46"	76°25'12.48"	12.5	survey soundings
1997	309	22510.0	31532	1.3	39°09'13.46"	76°25'12.48"	12.5	survey soundings
1997	309	22672.7	31410	1.1	39°10'30.15"	76°26'18.04"	46.4 ft	sounding
1997	309	22827.1	31618	2.0	39°08'37.57"	76°24'27.72"	53.5	survey soundings
1997	310	22891.1	32063	1.4	39°10'02.70"	76°25'43.39"	14.8 ft	subm obstr
		24972.0		1.6			15.4	
1997	309	22905.0	31440	1.5	39°10'21.20"	76°26'00.07"	20.7	survey soundings
1997	309	23636.6	31497	1.6	39°10'01.66"	76°25'17.48"	18.4 ft	sounding
1997	309	24316.5	31470	1.2	39°10'02.61"	76°25'23.96"	20.7 ft	sounding
1997	309	24379.3	31646	2.3	39°08'37.04"	76°24'06.95"	21.3	survey soundings
1997	309	24650.5	31675	1.7	39°08'06.61"	76°23'50.04"	19.4 ft	sounding
1997	309	24826.7	31558	4.1	39°09'15.11"	76°24'57.02"	51.5 ft	subm. Obstr
1997	309	25075.8	31587	1.6	39°09'06.27"	76°24'57.42"	23.7 ft	sounding
		32575.9		1.8				
1997	308	28429.2	31362	1.6	39°09'55.58"	76°19'50.81	20.0	survey soundings
1997	313	31057.9	32524	1.6	39°10'48.25"	76°26'02.75"	15.7 ft	subm obstr

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* Depths are shown only for developments which showed a distinguishable bottom feature relative to the surrounding bottom area.

F. SOUNDING EQUIPMENT

An Innerspace model 448 depth sounder, serial number 187 was used on launch 1017 to collect data from June 23, 1997 (DN 174) to September 2, 1997 (DN 245). An Innerspace model 448 depth sounder, serial number 243 was used to collect data from November 4, 1997 (DN 308) to November 11, 1998 (DN 315).

A standard lead line calibrated in meters, was used during this survey for comparison readings with the echo sounders.

G. CORRECTIONS TO SOUNDINGS

Soundings were recorded using the Innerspace model 448 depth sounders. They were adjusted for an assumed speed of sound through water of 1500 meters/second. Changes to the gain and/or chart speed were noted on the echograms. Digitized soundings agreed with the analog trace within 0.1 meter. Necessary corrections were made while scanning the echogram.

Corrections for the speed of sound through water were computed from data obtained with Sea-Bird Electronics, Inc., SEACAT electronic profiler, serial number 192276-287. Data quality assurance tests were performed in accordance with Field Procedures Manual (FPM) 2.1.3.2. Program VELOCITY, version 2.0, was used to compute speed of sound through water corrections. *Copies of the velocity tables and cast data are in the "Survey Separates."

* Original data filed with original field records.

Correctors for the velocity of sound through water were determined from the casts listed below:

Vessel	Year	Table Number	Cast Number	Deepest Depth (m)	Applicable DN	Position	Day
1017	1997	1	24	12.0/16.5*	174-177 ✓	39°10.0'/76°18.1'	175
1017	1997	2	25	17.2/22.4*	183 181-190 ✓	39°08.5'/76°24.0'	183
1017	1997	3	26	12.2/15.9*	197 197-202 ✓	39°10.0'/76°25.0'	198
1017	1997	4	27	14.0/18.2*	209 209-213 ✓	39°10.5'/76°26.0'	212
1017	1997	5	28	16.1/21.0*	216 216-219 ✓	39°10.5'/76°26.0'	220
1017	1997	6	29	16.3/21.2*	239 239-245 ✓	39°20.0'/76°20.0'	241
1017	1997	7	32	14.1/18.4*	309 308-323 ✓	39°09.3'/76°22.0'	309
1017	1997	8	33	16.7/21.7*	338 324-352 ✓	39°10.8'/76°26.5'	338
1017	1998	9	36	15.7/20.4*	097-103 ✓	39°09.3'/76°22.0'	097
1017	1998	10	39	16.7/21.7*	226 226-241 ✓	39°11.0'/76°26.3'	237
1017	1998	11	40	15.7/20.4*	243 243-246 ✓	39°10.0'/76°26.3'	246
1017	1998	12	41	16.5/21.5*	264 264-296 ✓	39°10.3'/76°25.7'	280
1017	1998	13	42	14.9/19.3*	308 308-315 ✓	39°10.4'/76°26.0'	313

* software extrapolated depth

Correctors were applied to the sounding data using the HPS program REAPPLY prior to plotting.

Weather permitting, lead line comparisons were conducted each day in accordance with FPM 2.1.3.1. No instrument error was detected from these comparisons. The lead line comparison form is in the "Survey Separates."

A static draft of 0.4 meters was applied to data on the entire survey. The transducer draft was measured by subtracting the difference from a punch mark on the side of launch 1017 to the water surface. The punch mark was measured from the transducer surface, while the launch was hauled out for bottom cleaning and transducer installation.

Settlement and squat measurements for launch 1017 were performed on January 31, 1997 (DN 031) at Fort Smallwood Park, Maryland, using Lietz level S/N 08745. Settlement and squat correctors and the static draft corrector were applied on-line through the offset table. Copies of the field data, the graphs of the settlement and squat correctors vs. speed in m/sec., and the offset table are included in the "Survey Separates."

The Baltimore, Maryland, tide station number 857-4680, served as control for datum determination. This station is also the reference station for the predicted tides which were applied to the final sounding plot. Zone CB30, shown in the Project Instructions, was the only zone used for this survey. The time corrector used was +48 minutes with a range corrector of 1.08.

* Data filed with original field records

Approved tides were requested from the Sea and Lake Levels Branch, N/OES231, in a letter dated November 24, 1998. A copy of the letter is appended to this report.

H. CONTROL STATIONS - See also Evaluation Report

The horizontal control datum for this project is the North American Datum of 1983. Two stations, the USCG Differential GPS (DGPS) Beacons at Cape Henlopen ($38^{\circ}46'36.406''\text{N}$, $075^{\circ}05'15.661''\text{W}$) and Cape Henry, Virginia ($36^{\circ}55'37.580''\text{N}$, $076^{\circ}00'23.884''\text{W}$), were used to control this survey.

I. HYDROGRAPHIC POSITION CONTROL

DGPS was used as the method of positioning for all hydrographic data on this survey. The USCG Differential GPS beacons at Cape Henlopen, Delaware and Cape Henry, Virginia were used as reference stations in conjunction with beacon receiver serial number 036, beacon receiver serial number X-1251 and Ashtech sensor serial number 700417B1270 on launch 1017 from June 23, 1997 (DN 174) thru December 18, 1997 (DN 352). A Starlink DNAV-212G, 12 channel DGPS receiver and 2 channel Beacon receiver, S/N 855 was used from April 7, 1998 (DN 021) thru November 11, 1998 (DN 315). This equipment met the accuracy standards for this 1:10,000 scale survey.

Performance checks were conducted daily by resting the launch alongside station CAL 2 1997 ($39^{\circ}08'46.070''\text{N}$, $076^{\circ}27'29.443''\text{W}$). The abstracts of these checks are included in the "Survey Separates." The calibration point was established by measuring a single GPS baseline, between a third-order, class I station and the calibration point. ~~✓~~The computation for the CAL 2 1997 point is included in the "Survey Separates."

Occasionally, a good position misplotted on the raw track plot. This problem was attributed to good DGPS data following a period of questionable DGPS data. These positions were reviewed, then edited or rejected as necessary.

J. SHORELINE - See also Evaluation Report

No shoreline verification was required.

K. CROSSLINES

A total of 29.6 nautical miles of crosslines were run, representing 7.0% of the main scheme hydrography. The percentage of crosslines was based on 80-meter line spacing. Crossline soundings show an over all agreement of 0.6 meter when compared with the main scheme soundings.

L. JUNCTIONS - See also Evaluation Report

This survey junctions with H-10688, sheet "D" from project OPR-E346-AHP, to the north. Survey H-10688 was submitted to AHB before H-10757 sheet "F" was started. A copy of the junction area was not retained, therefore, a field comparison of the two surveys was not made.

M. COMPARISON WITH PRIOR SURVEYS - See also Evaluation Report

The prior survey comparison will be performed by AHB. The prior surveys covering this area are H-2345, 1:20,000, 1896,97; H-2347, 1:10,000, 1897; H-6597, 1:10,000, 1940; H-9562, 1:10,000, 1975,76 and miscellaneous USACE survey, 1:2,400.

The hydrographer recommends that data from the present survey be used to supersede all of the prior surveys within their common areas.

N. ITEM INVESTIGATION REPORTS

Five AWOIS items were assigned to this survey. All of the items originated from the chart.

N.1 - **AWOIS ITEM 9726**

Item Description: Obstruction

Source: LNM21/92

AWOIS ITEM Position: 39°09'00"N, 076°19'54"W

Required Investigation: SD, S2, DI

Search Radius: 200m

Charts Affected: 12273, 12278

Date/DN: August 27, 1997/239

April 13, 1998/103

Position Numbers: 11030-11824
20214-20964

Launch Number: 1017

Investigation Used: Side Scan Sonar

Position Determined By: DGPS

Investigation Summary: The required search area was covered with 200% side scan sonar during normal survey operations on the days listed above. No significant contacts were found.

CHARTING RECOMMENDATION: The hydrographer recommends that the obstruction be removed from the chart. *Concur. Remove [] Obstr*

N.2 - AWOIS ITEM 9743

Item Description: Wreck

Source: LNM37/72

AWOIS Position: 39°09'44.39"N, 076°23'35.85"W

Required Investigation: SD, S2, DI **Search Radius:** 200m

Charts Affected: 12273, 12278

Date/DN: September 2, 1997/245
April 7, 1998/097

Position Number: 12561-13176
19611-20213

Launch Number: 1017

Investigation Used: Side Scan Sonar

Position Determined By: DGPS

Investigation Summary: The required search area was covered with 200% side scan sonar during normal survey operations on the days listed above. No significant contacts were found.

CHARTING RECOMMENDATION: The hydrographer recommends that the item be removed from chart. *Concur - Remove* (X) PA

N.3 - AWOIS ITEM 9748

Item Description: Unknown

Source: Unknown

AWOIS Position: 39°09'00"N, 076°22'04"W

Required Investigation: SD, S2, DI **Search radius:** 200m

Charts Affected: 12273, 12278

Date/DN: November 4, 1997/308
December 8, 1997/342

Position Number: 13177-13958
17997-18646

Launch Number: 1017

Investigation Used: Side Scan Sonar

Position Determined By: DGPS

Investigation Summary: The required search area was covered with 200% side scan sonar during normal survey operations on the days listed above. No significant contacts were found.

CHARTING RECOMMENDATION: The hydrographer recommends that the item be removed from the chart. *Concur - Remove* (X) PA

N.4 - AWOIS ITEM 9749

Item Description: wreck

Source: NM45/48

AWOIS position: 39°09'20.39"N, 076°21'18.84"W

Required Investigation: SD, S2, DI **Search Radius:** 200m

Charts Affected: 12273, 12278

Date/DN: August 27, 1997/239
April 13, 1998/103

Position Number: 11030-11824
20214-20964

Launch Number: 1017

Investigation Used: Side Scan Sonar

Position Determined by: DGPS

Investigation Summary: The required search area was covered with 200% side scan sonar during normal survey operations on the days listed above. No significant contacts were found in the search area, however, a contact was located 250 meters southwest of the item's position. See charting recommendations for contact 11993.86 listed in the contact table in section "E" of this report.

CHARTING RECOMMENDATION: The hydrographer recommends that the item be removed from the chart. -Cancel - Remove (++)

N.5 - AWOIS ITEM 9750

Item Description: Unknown

Source: Unknown

AWOIS Position: 39°09'00"N, 076°24'32"W

Required Investigation: SD, S2, DI **Search radius:** 200m

Charts Affected: 12273, 12278

Date/DN: August 29, 1998/241
August 31, 1998/243

Position Number: 22918-23615
23616-24522

Launch Number: 1017

Investigation Used: Side Scan Sonar

Position determined By: DGPS

Investigation Summary: The required search area was covered with 200% side scan sonar during normal survey operations on the days listed above. No significant contacts were found.

CHARTING RECOMMENDATION: The hydrographer recommends that the item be removed from the chart. *Concur - Remove (H) PD*

0. COMPARISON WITH THE CHART - *See also Evaluation Report*

Comparisons were made with chart 12278, 69th Edition, October 31, 1998. Survey soundings compare to within 3 feet of the charted soundings, with the survey soundings generally deeper, except in the vicinity of 39°09'24"N, 076°23'41"W. This is the charted deep water area (19 - 27 feet) between Six Foot and Seven Foot Knolls. This area appears to be closing in. Some charted soundings in this area disagree with survey soundings by as much as 5 ft with survey soundings being shoaler. Survey soundings were 18 - 22 feet. This is not considered a danger to navigation since the area is not used by deeper draft vessels. *- Revise to reflect present survey soundings.*

The spoil area at 39°10'28"N, 076°23'16"W, located north of and parallel to the Brewerton Channel Eastern extension is still active. *- No changes in charting recommended.*

The spoil area at 39°08'28"N, 076°20'57"W, located southwest of the junction of the Brewerton Channel Eastern Extension and Tolchester Channel is still active. *- No changes in charting recommended.*

The 12-foot contour around Sixfoot Knoll at 39°08'43"N, 076°24'29"W is disappearing, with the survey soundings being deeper in this area. The hydrographer recommends that the survey soundings be charted. *Concur*

Sounding discrepancies with the chart are as follows:

Charted Depth FT	Charted Position	Survey soundings Depth		Charting Recommendation
		FT.	M	
12	39°08'59", 076°22'39"	16.5	4.9	survey soundings
6	39°08'39", 076°22'40"	10.5	3.1	survey soundings
12	39°08'13", 076°22'33"	16.5	4.9	survey soundings
10	39°08'30", 076°21'51"	13.4	4.0	survey soundings
12	39°08'44", 076°21'53"	16.5	4.9	survey soundings
8	39°08'42", 076°21'37"	13.1	4.0	survey soundings

Charted Depth FT	Charted Position	Survey soundings Depth		Charting Recommendation
		FT.	M	
11	39°08'37", 076°21'40"	13.4	4.0	survey soundings
49	39°08'01", 076°19'37"	39.38	10.3	survey soundings
17	39°08'25", 076°18'38"	19	5.8	survey soundings
18	39°09'10", 076°17'58"	19	5.8	survey soundings
8	39°09'11", 076°24'13"	18	5.5	survey soundings

The hydrographer recommends sounding data from this survey be used to update the chart. *CONCUR*

P. ADEQUACY OF SURVEY - *See also Evaluation Report*

This survey is complete and adequate to supersede all prior surveys within the common area.

Q. AIDS TO NAVIGATION - *See also Evaluation Report*

There are twenty six floating aids and two non-floating aids to navigation located in the survey area. All were located by detached position. The positions of the non-floating aids were compared with the U.S. Coast Guard Light List Volume II, 1997.

Non - Floating Aids

Sevenfoot Knoll light - (Light List No. 8120)

Light List Published Position - 39°09.3', 076°24.5'
 Surveyed Position (No. 32176) - 39°09'19.240"N, 076°24'32.024"W
 Surveyed position agrees with the charted position.

Graighill Channel front range Light (Light List No. 8040)

Light List published Position - 39°11.3', 076°23.7'
 Surveyed Position (32177) - 39°11'18.797"N, 076°23'39.861"W
 Surveyed position agrees with the charted position.

Positions for the floating aids can be found on the features list, included in the "Survey Separates". All of the aids serve their intended purpose, though should be re-charted using current surveyed positions.

R. STATISTICS

Launch 1017

Total Number of Positions	32681
Total LNM Hydrography	839.8
Square NM of Hydrography	16.0
Days of Production	57
Detached Positions	26
Bottom Samples	47
Tide Stations	1
Velocity Casts	13

S. MISCELLANEOUS - *See also Evaluation Report*

No anomalous currents or tides were observed during this survey.

Forty-seven bottom samples were taken during this survey. The samples were submitted to the Smithsonian Institution along with the original Oceanographic Log Sheet-M, NOAA Form 75-44. A copy of the Oceanographic Log Sheet-M, NOAA Form 75-44, is included in the "Survey Separates".

The "assign fix" function of the program QUICK EDIT, was used to assign position numbers to the beginning or ending of a line as needed.

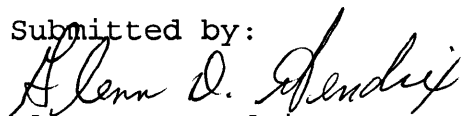
T. RECOMMENDATIONS

No additional field work was identified after field office processing was completed. Specific recommendations are made sections E, N, O and Q of this report.

U. REFERRAL TO REPORTS

No reports or data are referred to in this Descriptive Report that are not included with this survey.

Submitted by:



Glenn D. Hendrix
Launch Hydrographer in Charge

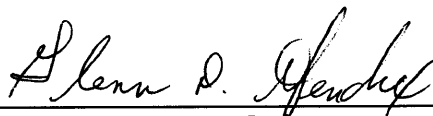
APPROVAL SHEET
Basic Hydrographic Survey
OPR-E346-AHP
AHP-10-5-97
H-10757
1997-98

This basic hydrographic survey was conducted in accordance with the Project Instructions for OPR-E346-AHP, the Hydrographic Manual, the Hydrographic Survey Guidelines, and the Field Procedures Manual. All reports, records, and survey sheets were reviewed by Mr. Glenn D. Hendrix, the hydrographer-in-charge of daily operations. The descriptive report was reviewed and approved by the Chief of Party. The Chief of Party did not directly supervise any part of this survey.

This survey is a complete basic hydrographic survey for the area described in Section B of this report.



Brian A. Link
Chief, Atlantic Hydrographic Party



Glenn D. Hendrix
Hydrographer-in-charge of daily operations



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: February 24, 1999

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-E346-AHP

HYDROGRAPHIC SHEET: H-10757

LOCALITY: Chesapeake Bay, MD, Swan Point to North Point

TIME PERIOD: June 23, 1996 - November 11, 1998

TIDE STATION USED: 857-4680 Baltimore, MD

Lat. $39^{\circ} 16.0'N$ Lon. $76^{\circ} 34.7'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.411 meters

TIDE STATION USED: 857-3364 Tolchester, MD

Lat. $39^{\circ} 12.8'N$ Lon. $76^{\circ} 14.7'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.433 meters

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: CB37, CB38, CB38A, CB39, CB39A, CB40 & CB41.

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time.

Note 2: Use tide data from the appropriate station for each zone according to the order in which they are listed in the Tidezone corrector files. For example, tide station one (TS1) would be the first choice for an applicable zone followed by TS2, etc. when data are not available. All zones within a survey sheet may not have the same order of applicable tide stations.

Thomas N. Mero 2/24/99
CHIEF, REQUIREMENTS AND ENGINEERING BRANCH



Final tide zone node point locations for OPR-E346-AHP-97,
Sheet H-10757

Format: Longitude in decimal degrees (negative value denotes
Longitude West),
Latitude in decimal degrees
Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction

	Tide Station Order	AVG Time Correction	Range Correction
Zone CB37			
-76.718418 39.250542	857-4680	0	1.00
-76.592558 39.319574			
-76.473291 39.273454			
-76.466841 39.262422			
-76.447911 39.233027			
-76.433625 39.2307			
-76.43095 39.220036			
-76.443159 39.21037			
-76.442661 39.195916			
-76.483935 39.159399			
-76.491633 39.138219			
-76.501896 39.125643			
-76.588281 39.122333			
-76.718418 39.250542			
Zone CB38			
-76.491633 39.13888	857-3364	-30	0.88
-76.445447 39.137557			
-76.430536 39.131959			
-76.344216 39.142658			
-76.342455 39.185436			
-76.442661 39.195916			
-76.483935 39.159399			
-76.491633 39.13888			
Zone CB38A			
-76.388789 39.236148	857-3364	-18	0.92
-76.394445 39.23112			
-76.403334 39.228606			
-76.427038 39.212891			
-76.442661 39.195916			
-76.342455 39.185436			

-76.340596 39.232604
-76.388789 39.236148

Zone CB39

-76.344216 39.142658	857-3364	-24	1.01
-76.276388 39.150432			
-76.267546 39.175284			
-76.314171 39.184808			
-76.342455 39.185436			
-76.344216 39.142658			

Zone CB39A

-76.342455 39.185436	857-3364	-12	1.01
-76.314171 39.184808			
-76.267546 39.175284			
-76.240177 39.191831			
-76.340596 39.232604			
-76.342455 39.185436			

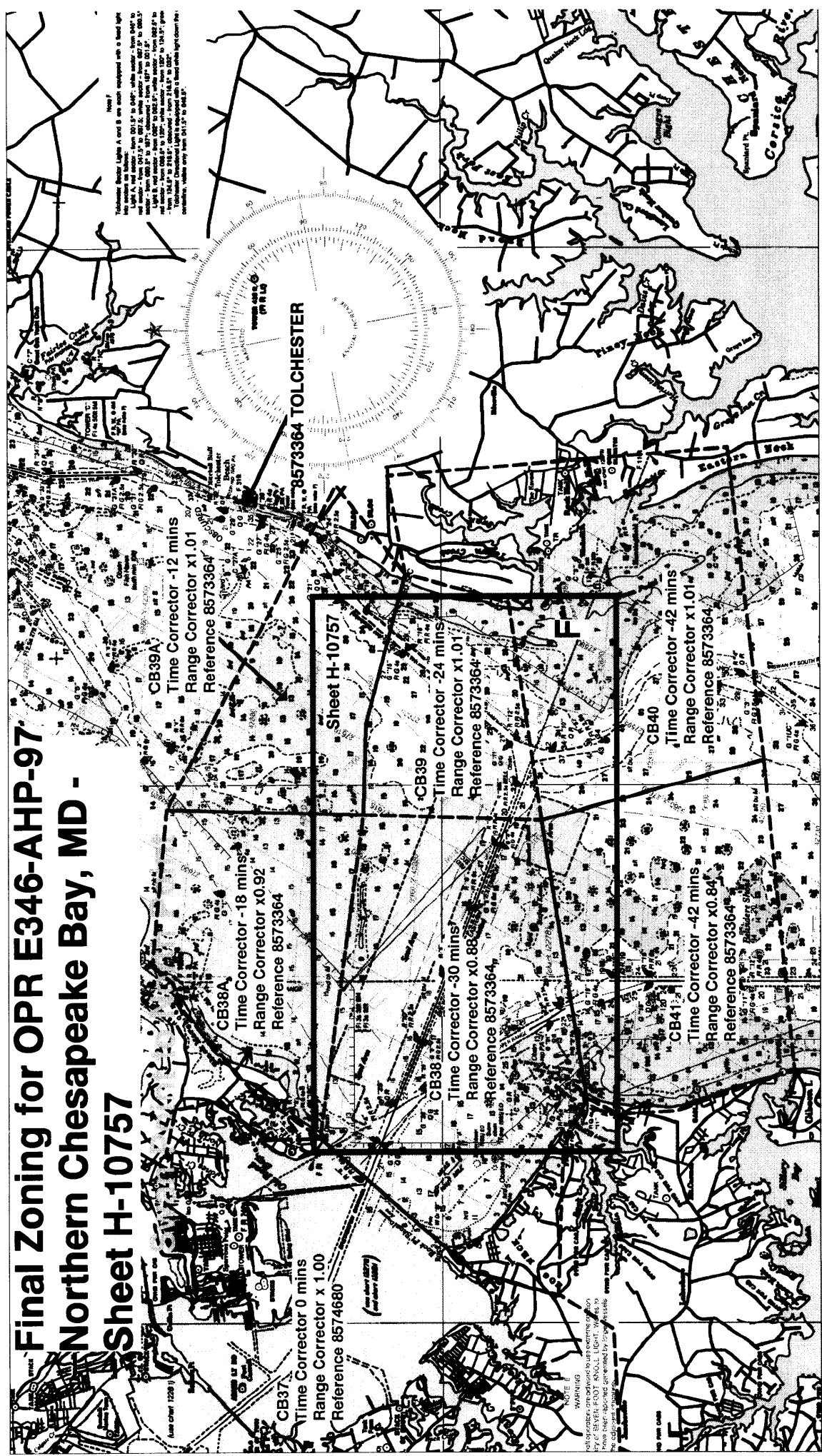
Zone CB40

-76.325504 39.08921	857-3364	-42	1.01
-76.22844 39.0978			
-76.237211 39.17947			
-76.267546 39.175284			
-76.276388 39.150432			
-76.344216 39.142658			
-76.325504 39.08921			

Zone CB41

-76.430536 39.131959	857-3364	-42	0.84
-76.435384 39.123987			
-76.43432 39.110448			
-76.421394 39.082027			
-76.325504 39.08921			
-76.344216 39.142658			
-76.430536 39.131959			

Final Zoning for OPR E346-AHP-97 Northern Chesapeake Bay, MD - Sheet H-10757



NOTE
 This chart is based on the latest available information. It is not intended to be used as a substitute for a current chart. It is not intended to be used as a substitute for a current chart. It is not intended to be used as a substitute for a current chart.

NOTE
 WARNING
 This chart is based on the latest available information. It is not intended to be used as a substitute for a current chart. It is not intended to be used as a substitute for a current chart. It is not intended to be used as a substitute for a current chart.

GEOGRAPHIC NAMES

H-10757

Name on Survey	Source of Information										
	A ON CHART NO. 12218	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		
BACK CREEK POINT	X		X								1
BAYSIDE BEACH	X		X								2
BODKIN CREEK	X		X								3
BODKIN NECK	X		X								4
BODKIN POINT	X		X								5
BODKIN POINT SHOAL	X		X								6
BREWERTON CHANNEL EASTERN EXTENSION	X		X								7
CHESAPEAKE BAY	X		X								8
CRAIGHILL CHANNEL UPPER RANGE	X		X								9
FRANKIE POINT	X		X								10
MARYLAND (title)	X		X								11
NINEFOOT KNOLL	X		X								12
NORTH POINT	X		X								13
NORTH POINT SHOAL	X		X								14
OLD LANDEN POINT	X		X								15
SEVENFOOT KNOLL	X		X								16
SIXFOOT KNOLL	X		X								17
SPIT POINT	X		X								18
SWAN POINT	X		X								19
TOLCHESTER CHANNEL	X		X								20
											21
											22
											23
											24
											25

Dennis J. Rossburg
11 4 1999

APR 20 1999

N/CS33-82-99

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY
(Check):

ORDINARY MAIL AIR MAIL

REGISTERED MAIL EXPRESS

GBL (Give number) _____

TO:

CHIEF, DATA CONTROL GROUP, N/CS3x1
NOAA/NATIONAL OCEAN SERVICE
STATION 6815, SSMC3
1315 EAST-WEST HIGHWAY
SILVER SPRING, MARYLAND 20910-3282

DATE FORWARDED

OCT 29, 1999

NUMBER OF PACKAGES

ONE TUBE

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

H10757

MARYLAND, CHESAPEAKE BAY, SWAN POINT TO NORTH POINT

(ONE) TUBE CONTAINING THE FOLLOWING:

- 1 SMOOTH SHEET FOR SURVEY H10757
- 1 ORIGINAL DESCRIPTIVE REPORT
- 1 DRAWING HISTORY FORM (NOAA FORM #76-71) FOR NOS CHART 12278
- 1 RECORD OF APPLICATION TO CHART FORM (NOAA FORM #75-96) FOR SURVEY H10757
- 1 H-DRAWING FOR NOS CHART 12278
- 1 COMPOSITE DRAWING FOR NOS CHART 12278

FROM: (Signature)

DEBORAH A. BLAND



RECEIVED THE ABOVE

(Name, Division, Date)

Return receipted copy to:

ATLANTIC HYDROGRAPHIC BRANCH
N/CS33
439 WEST YORK STREET
NORFOLK, VA 23510-1114

10/29/99

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H10757

NUMBER OF CONTROL STATIONS 2

NUMBER OF POSITIONS 32681

NUMBER OF SOUNDINGS 32981

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	66.0	04/09/99
VERIFICATION OF FIELD DATA	198.0	09/13/99
QUALITY CONTROL CHECKS	17.0	
EVALUATION AND ANALYSIS	26.5	
FINAL INSPECTION	22.0	10/08/99
COMPILATION	47.0	10/27/99
TOTAL TIME	376.5	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		10/20/99

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10757 (1998)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System (HPS)
NADCON, version 2.10
SITEWORKS 02.01
MicroStation 95, version 5.05
I/RAS B, version 5.01

The smooth sheet was plotted using an HEWLETT-PACKARD 2500CP plotter.

H. CONTROL STATIONS

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27 datum move the projection lines 0.394 seconds (12.156 meters or 1.22 mm at the scale of the survey) north in latitude, and 1.152 seconds (27.656 meters or 2.77 mm at the scale of the survey) east in longitude.

J. SHORELINE

Brown shoreline originates with National Ocean service (NOS) chart 12278 (69th Edition, October 31, 1998) and is for orientation purposes only.

L. JUNCTIONS

H10688 (1997) 1:10,000 to the north

A standard junction could not be made with the junctional survey. The smooth sheet for the junctional survey is archived at NOS headquarters, Silver Spring, Maryland. In this case the note "ADJOINS" has been shown on the present survey smooth sheet. Any adjustments to the depth curves in

the junctional areas will have to be made on the chart during chart compilation.

M. COMPARISON WITH PRIOR SURVEYS

A comparison with prior surveys was not performed. This is in accordance with section 4. Of the memorandum titled, "Changes to Hydrographic Survey Processing," dated May 24, 1995.

**O. COMPARISON WITH CHART 12273 (49th Edition, Sep 20/97)
12278 (69th Edition, Oct 31/98)**

The charted hydrography originates with prior surveys and miscellaneous sources. The hydrographer makes an adequate chart comparison in Section O. of the Descriptive Report. The following should be noted:

1. An uncharted obstruction in Latitude 39°10'02.702"N, Longitude 76°25'43.386"W with a least depth of 15 feet (4.7m) was found by the present survey. This obstruction is approximately 46 feet wide by 105 feet long and is being shown with dashed black limit lines on the smooth sheet. It is recommended that a dangerous submerged obstruction with a least depth of 15 feet be charted in the present survey location.

2. An uncharted obstruction in Latitude 39°10'47.932"N, Longitude 76°26'02.751"W with a least depth of 15 feet (4.6m) was found by the present survey. It is recommended that a dangerous submerged obstruction with a least depth of 15 feet be charted in the present survey location.

Except as noted above, the present survey is adequate to supersede the charted hydrography within the common area.

Controlling Depths

There are no conflicts between the controlling depths in "Brewerton Channel Eastern Extension", "Craighill Channel Upper Range", "Tolchester Channel Eastern Extension and the present survey soundings.

P. ADEQUACY OF SURVEY

This is an adequate hydrographic/side scan sonar survey. No additional work is recommended.

Q. AIDS TO NAVIGATION

The hydrographer located twenty six floating aids to navigation and two fixed aids to navigation within the limits of the present survey. These aids appear adequate to serve their intended purpose. The following should be noted:

Sevenfoot Knoll Light charted in Latitude 39°09'18.0"N Longitude 76°24'30"W was positioned by the present survey. The light is presently charted with the PA. The field position verified the location of the light, therefore the PA notation is no longer needed. It is recommended that the PA notation be removed from the chart.

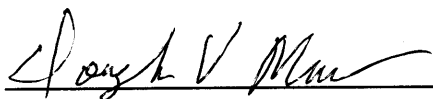
S. MISCELLANEOUS

Chart compilation of the present survey was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data has been forwarded to Marine Chart Division, Silver Spring, Maryland.

The following NOS chart was used for compilation of the present survey:

12278 (69th Ed., October 31/98) 1:40,000

H10757

A handwritten signature in cursive script, reading "Douglas V. Mason", written over a horizontal line.

Douglas V. Mason

Cartographic Technician
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H10757

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproof of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.



Deborah A. Bland
Cartographer,
Atlantic Hydrographic Branch

Date: 10-20-99

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.



Andrew L. Beaver
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

Date: 10/20/99

Final Approval:

Approved: 

Date: November 29, 1999

Samuel P. De Bow, Jr.
Captain, NOAA
Chief, Hydrographic Surveys Division

NOAA

DRAWING HISTORY

U.S. DEPARTMENT OF COMMERCE
NOAA NATIONAL OCEAN SERVICE
OFFICE OF COAST SURVEY

CHART 12278
DRAWING H10757
EDITION 69th

REMARKS:

APPLIED Part	Full	ITEM NO.	SOURCE OF INFORMATION		DATE		TYPE OF INFORMATION	LOCALITY <i>Lat./Long. and Name</i>	INFORMATION APPLIED
			FILE NO.	DATE	COMPILED	AUTH			
X		1	H10757	6/23/97 11/11/98	NOS		Hydrography	39-09-00N, 76-22-00W MARYLAND, CHEASPEAKE BAY SWAN PT. TO NORTH PT.	FULL APPLICATION OF SOUNDINGS AND CURVES.
X		2					AWOIS 9726		DELETE UNKNOWN DANG OBSTN
X		3					AWOIS 9743		DELETE DANG SUNKEN WK PA
X		4					AWOIS 9748		DELETE DANG SUNKEN WK PA
X		5					AWOIS 9749		DELETE DANG SUNKEN WK
X		6					AWOIS 9750		DELETE DANG SUNKEN WK PD
X		7					OBSTN		ADD 15 OBSTN W/ DANGER CURVE
X		8					OBSTN		ADD 15 OBSTN W/ DANGER CURVE

NC To Reproduction
RC Date
NE Print Date
NP
RP

Notice to Mariners
(FWD)
Source Data
(FWD)

ITEMS
1-8
DATE
COMPILED
10/21/99

COMPILER
(Signature)
DEBORAH A. BLAND

DATE
REVIEWED
10/22/99

REVIEWER
(Signature)
RICHARD H. WHITEFIELD

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H10757

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
12278	10/22/99	D. A. Bland	Full After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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