

# 9955

Diagrams 1227-2 & 1222-4

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT

Type of Survey .. Hydrographic  
Field No. .... MI-20-1-81  
Office No..... H-9955

### LOCALITY

State ..... Virginia  
General Locality Atlantic Ocean  
Locality ..... Offshore Chesapeake  
..... Bay Entrance

1981

CHIEF OF PARTY  
CAPT. R.A. Trauschke

### LIBRARY & ARCHIVES

DATE ..... September 28, 1982

# 9955

**HYDROGRAPHIC TITLE SHEET**

H-9955

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.

MI-20-1-81

State Virginia

General locality Atlantic Ocean

Locality Offshore Chesapeake Bay Entrance

Scale 1:20,000

Date of survey 8-14 July 1981

Instructions dated 31 March 1981

Project No. OPR-D103-MI-81

Vessel NOAA Ship Mt. Mitchell, S-222 (VESNO 2220)

Chief of party Captain Robert A. Trauschke, NOAA

Surveyed by Ship's officers (see Remarks)

Soundings taken by echo sounder, hand lead, pole Echo sounder (Raw 5000)

Graphic record scaled by EW, ES, EM, KP, FR, JZ, DH

Graphic record checked by EW, ES, EM, KP, FR

VERIFICATION BRANCH, AMC

Protracted by \_\_\_\_\_

<sup>SMOOTH SHEET</sup>  
Automated plot by Xynetics 1201 Plotter (AMC)

Verification by J. Wilson & L.G. Cram

Soundings in ~~fathoms~~ ~~feet~~ ~~MFT~~ MXXV Feet at MLW

REMARKS: LT Kenneth Perrin, FOO Changes in red in the Descriptive

ENS Frederick Rossmann, OIC Report made during Verification

LT(JG) John Humphrey, Jr.

ENS John Zabitchuck

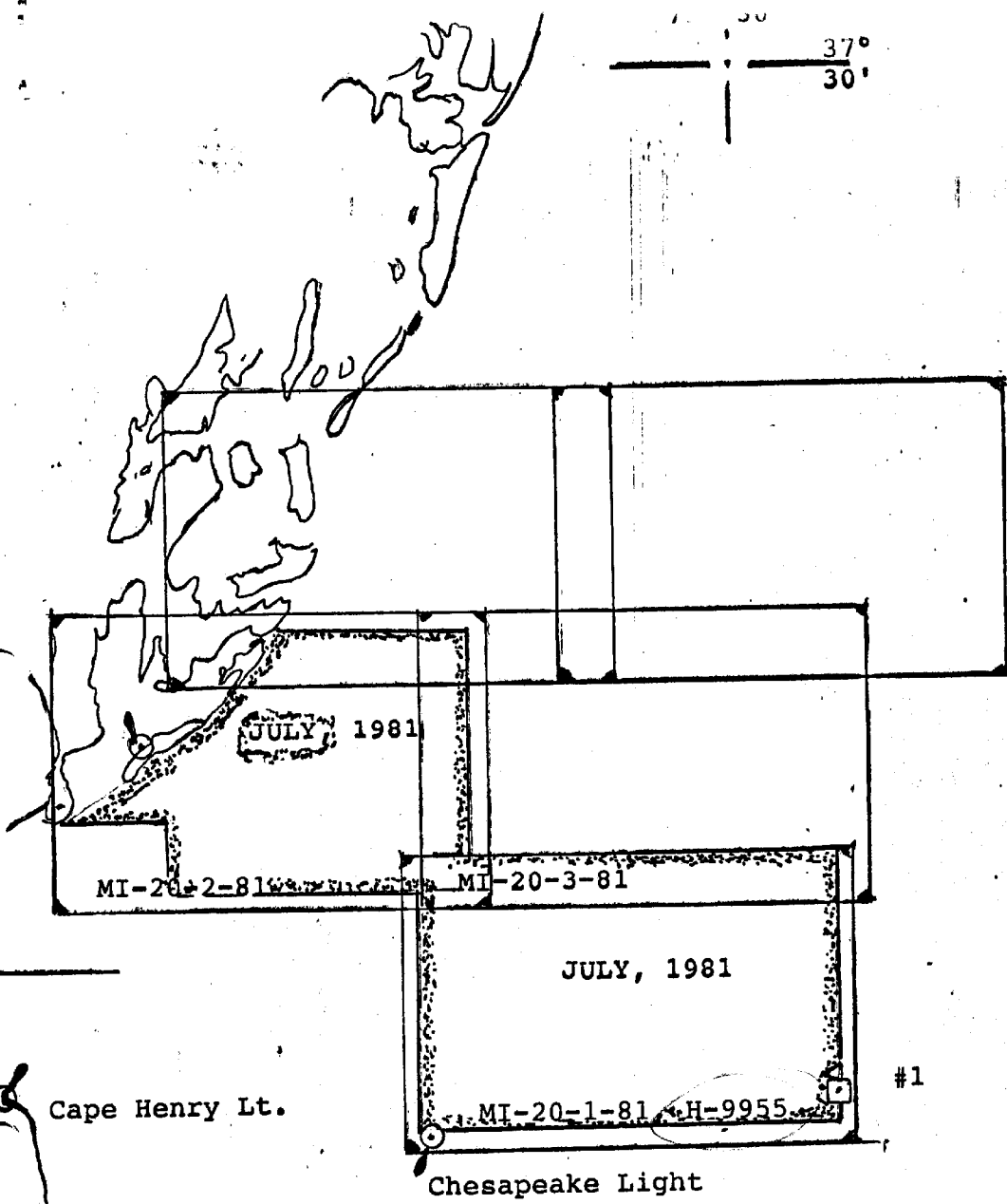
ENS Robert Henegar

ENS Bobby Coakley

ENS Amy Orris

*Quality Control remarks in black unless noted*

*All times for survey based on GMT. otherwise*



Cape Henry Lt.

Chesapeake Light

75° 30'

SCALE OF CHART 12200

LEGEND

PROGRESS SKETCH  
 HYDROGRAPHIC OPERATIONS  
 NOAA SHIP MT. MITCHELL S-222  
 ROBERT A. TRAUSCHKE, CAPT., NOAA  
 COMMANDING OFFICER

JUL.	AUG.	SEP.	OCT.	NOV.
1530				
138				
509				
55				
72				
1				
392				
206				

LNM HYDRO (SHIP)  
 SNM HYDRO (SHIP)  
 LNM HYDRO (LAUNCH)  
 SNM HYDRO (LAUNCH)  
 BOTTOM SAMPLES  
 NANSEN CAST  
 MISC. NM SHIP  
 MISC. NM LAUNCH

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A. PROJECT ✓

This survey was carried out in accordance with project instructions OPR-D103-MI/PE-81 issued 31 March 1981 and amended by changes 1 through <sup>2</sup> dated 27 April 1981 and <sup>6</sup> ~~14~~ May 1981 respectively.

B. AREA SURVEYED ✓

This survey was conducted in the Atlantic Ocean, east of the entrance to Chesapeake Bay, Virginia. The western limit of the survey is approximately 13.5 nautical miles offshore due east of Cape Henry, Virginia. The limits of the survey area are roughly described by connecting the following points in a clockwise manner:

$36^{\circ}51^{\prime}.8^{\text{N}}$	$75^{\circ}43^{\prime}.7^{\text{W}}$
$37^{\circ}02^{\prime}.7^{\text{N}}$	$75^{\circ}43^{\prime}.7^{\text{W}}$
$37^{\circ}02^{\prime}.8^{\text{N}}$	$75^{\circ}26^{\prime}.8^{\text{W}}$
$36^{\circ}51^{\prime}.8^{\text{N}}$	$75^{\circ}26^{\prime}.8^{\text{W}}$

The survey was conducted between 8 July 1981 (JD 189) and 14 July 1981 (JD 195).

C. SOUNDING VESSEL ✓

All soundings for this survey were obtained by the NOAA Ship MT MITCHELL, S-222. (VESNO 2220).

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS ✓

The following equipment was used to obtain soundings for this survey:

<u>Equipment</u>	<u>Serial Number</u>
Ross Model 5000 Finline Depth Recorder	1050
Ross Model 5000 Finline Depth Recorder	1089
Ross Model 4000 Transceiver	1050
Ross Model 6000 Digitizer	1050

Soundings obtained by the MT MITCHELL were taken with a skeg mounted transducer ✓ (antenna distance +32.0 M). All survey records were scanned by senior survey department personnel and checked by the officer in charge. Peaks and deeps considered significant that occurred between soundings were inserted by means of the electronic corrector tape. The electronic corrector was used to correct digitizing errors, also.

Phase calibration checks were made at frequent intervals. Necessary adjustments ✓ were made and noted in the sounding volume and on the fathogram. Any departure of the trace from the calibration due to phase difference were corrected during the scanning process.

Velocity corrections were obtained from the Nansen cast conducted on 8 July 1981 (JD 189) at 36°55'37" N, 75°25'54" W. Water depth at the site of the Nansen cast was 92 feet. A sound velocity table and printout of the velocity tape are included ✓ in Appendix D. The sound velocity correctors were applied to all soundings when

*outside survey area (.2 mile east)*  
*See Verification Report section 4. a.*  
*Survey was to depths of 113 feet*

smooth plotted. A vertical cast was conducted on 8 July 1981 (JD 189) at latitude  $36^{\circ}55'.3$  N, longitude  $75^{\circ}42'.3$  W to determine fathom<sub>er</sub> instrument error for the ship.

This survey was conducted using predicted tides based on daily predictions at Hampton Roads, Virginia from the tide tables, 1981. Prezone tide corrector charts were supplied in the 1980 DELMARVANC project instructions. Using RK-111, the predicted tide correctors were applied to the master data tape during the actual sounding operation. A copy of the request for the actual tides in the survey area is included in Appendix B.

#### E. HYDROGRAPHIC SHEETS

This survey was plotted on four Mylar Complot Roll Plotter sheets by the MT MITCHELL's Hydroplot System.

<u>Number of Sheets</u>	<u>Type</u>	<u>Skew</u>
2	Basic Survey	0, 21, 54
2	Crosslines and Developments	0, 21, 54

Two additional sheets of the basic survey using wet ink were provided for reproduction by the Atlantic Marine Center for use by the U.S. Army Corps of Engineers.

The soundings were plotted offline using an electronic corrector tape and a velocity corrector tape. These two corrector tapes corrected all plotted soundngs on the field sheets for draft (14.1 feet), predicted tides, initial and digitizing errors

and sound velocity. They are not corrected for smooth tides, settlement and squat or instrument error. The later<sup>†</sup> three corrections will be applied by AMC, Processing Division, CAM3, <sup>during</sup> after data verification.

On 26 July, 1981 a settlement and squat test was run for the ship to verify the 1978 tests. The correction for standard hydrography speed (full pitch, 160 rpm) was verified. See the settlement and squat report, 1981, NOAA Ship MT MITCHELL. (APPENDIX D)

All field records and the following tapes will be forwarded to the Atlantic Marine Center for verification and smooth plotting:

- Master Range-Range Data Tapes (both raw and edited)
- Electronic Corrector Tapes
- Velocity Corrector Tape
- Parameter Tapes
- Signal Tapes
- TC/TI Tape

F. CONTROL STATIONS

HYDROTRAC electronic control stations used for this survey were:

<u>Signal Name and Number</u>	<u>Latitude</u>	<u>Longitude</u>
100 Gravity <del>1965</del>	36°40'31."453 N	75°54'56."471 W
200 Fen, 1960	37°05'36."243 N	75°58'17."556 W



Gravity 19<sup>65</sup>~~80~~  
FEN 1960

Reoccupied 1981

Station Gravity and Fen, ~~1960~~ were established in ~~1965~~ (Re-established 1980) and ~~1960~~ respectively using Third-Order Class I survey methods. Both stations were recovered by MT MITCHELL officers. HYDROTRAC control stations were erected and maintained by ship's personnel.

G. HYDROGRAPHIC POSITION CONTROL

An Odum Offshore HYDROTRAC System, operating in the range-range mode at 1718.590 KHz, provided the positioning control for the survey period, 8 July 1981 (JD 189) to 14 July 1981 (JD 195). The equipment serial numbers are:

<u>Vessel or Shore Station</u>	<u>Equipment</u>	<u>Serial Number</u>
GRAVITY, 1965 <sup>OK</sup> <del>1980</del>	Slave Drive Unit	214
	Amplifier	537
FEN, 1960	Slave Drive Unit	226
	Amplifier	538
NOAA Ship MT MITCHELL	Master Drive Unit	122
	Linear Transmitter	539
	Receiver	327
	S <sub>1</sub> Antenna Coupler	131
	S <sub>2</sub> Antenna Coupler	130

The lane count and partial lane correctors were determined by circle calibration around Chesapeake Light Tower (Latitude 36° 54' 16."158N Longitude 75° 42' 47."123W). The circle calibration method is described on page 4 - 28 of the Hydrographic Manual. A three point sextant fix was taken on 14 July 1981 (JD 195). The corrector agreement

with the previous method was very good. An abstract of all calibration data is included with the records accompanying this report.

While using the HYDROTRAC system, the whole lane count was constantly monitored by comparing the navigation interference readout with a running count on the sawtooth recorder. The sawtooth recorder was annotated by hand with the whole lane count during the monitoring. All lane jumps detected on line were corrected by entering the appropriate whole lane correctors into the hydroplot controller as soon as possible. Offline, the correctors were applied to all affected soundings via the electronic corrector tape.

Lane jumps were found twice during the survey. On JD 191, four lanes were gained on Pattern 1. These gains may have been caused by the electrical storm that caused a power failure at Station 100 or by atmospheric conditions created by the storm. A one lane loss occurred to Pattern 2 on JD 194. The lane was regained before calibration. It was noted that the air condition unit at Station 200 had failed and temperatures were over 100°F at the shore station, this could be a possible cause of the lane loss and gain on JD 194.

#### H. SHORELINE

No shoreline was within the limits of the survey.

#### I. CROSSLINE See section 3. a. of the Verification Report

Crossline soundings totaled 60.7 nautical miles of the 1057.9 main scheme nautical miles. This is 5.7% of the main scheme. A total of 471 ~~junctions~~<sup>CROSSINGS</sup> between crossline

and main scheme <sup>hydrography were</sup> ~~were~~ compared on the smooth boat sheet. 88% of the soundings were either in exact agreement or differed by  $\pm 1$  foot. The remaining 12% of the junctions has 10% agreement by  $\pm 2$  feet and 2% agreement by  $\pm 3$  feet.

It should be noted that the majority of the north boat sheet was sounded using Fatho Depth Recorder SN 1089 while 23.6 nautical miles of the 31.2 nautical miles of crossline sounding for the north sheet used Depth Recorder SN 1050. No statistical difference was noted when comparing the soundings recorded by the different depth recorders.

J. JUNCTIONS See section 5 of the Verification Report

This survey does not junction with any contemporary surveys.

K. COMPARISON WITH PRIOR SURVEYS See section 6.a. of the Verification Report

The following prior surveys were within the area of this survey:

<u>Survey Number</u>	<u>Scale</u>	<u>Date</u>
H-5988	1:40,000	1935
H-5990	1:40,000	1935
H-5992	1:40,000	1935
H-4089	1:40,000	1919 - Not available to field
H-4193	1:40,000	1921 - Listed in P.I., but not discussed in D.R.

A comparison with 10 random soundings from H-5988 showed general agreement with this survey. 67% of the 18 soundings agreed within  $\pm 1$  foot with the remaining 6 soundings (33%) agreeing within  $\pm 4$  feet.

A comparison of 154 soundings from H-5990 showed 73% in agreement by  $\pm 1$  foot with 5% (7 soundings) of this survey being shoaler and 23% (35 soundings) being deeper. Two of the shoaler soundings showed a 9 foot difference:

<u>Prior Survey</u>	<u>This Survey</u>	<u>Latitude</u>	<u>Longitude</u>
83	74	36° 57'.33 N	75° 28'.94 W
94	85	36° 57'.21 N	75° 26'.59 W

The remaining 5 soundings were in agreement by -2 feet. The deeper soundings had the following range:

<u>Agreement</u>	<u>Number of Soundings</u>	<u>Percent of Soundings</u>
+2 feet	15	10%
+3 feet	10	6%
+4 feet	6	4%
+5 feet	4	3%

The comparison with H5992 follows the pattern of the other Prior surveys. 63% of the 75 comparison soundings have an agreement of + 3 feet. The range of the sounding are:

<u>Agreement</u>	<u>Number of Soundings</u>	<u>Percent of Soundings</u>
0 To $\pm 1$	27	36%
$\pm 2$ To $\pm 3$	20	27%
$\pm 4$ To $\pm 5$	12	16%
$\pm 6$ To $\pm 13$	16	21%

The  $\pm 6$  to  $\pm 13$  feet range has 10 deeper and 6 shoaler depths than the prior survey.

In an overall comparison the general bottom contour of the three prior surveys agrees with the major findings of this survey. The discrepancies that have been noted on the prior surveys are probably due to length of time between Surveys (46 years) and the sandy bottom characteristics of the survey area.

Three "Limited Investigation," presurvey review items were developed during the survey using a reduced line spacing of the main scheme and bracketing the center of each PSR item with seven crosslines at a radius of 1000 meters of it's charted position.

PSR #74 Non Dangerous Sunken Wreck, PA

Latitude  $37^{\circ}00'30''$ <sup>06"</sup>N Longitude  $75^{\circ}39'00''$ <sup>34'30"</sup>W

No indication of any obstruction was found on the fathogram while developing this area.

PSR #75 Non Dangerous Sunken Wreck,

Latitude  $37^{\circ}00'30''$ N Longitude  $75^{\circ}39'00''$ W

No indication of any obstruction was found on the fathogram while developing this area.

PSR #76 Non Dangerous Sunken Wreck, PA

Latitude  $36^{\circ}56'36''$ N Longitude  $75^{\circ}31'00''$ W ✓

No indication of any obstruction was found on the fathogram while developing this area.

It is recommended that the wrecks be deleted from the chart. *No, see section 7.a. of the Verification Report. Fathometer investigation ineffective to determine existence of wrecks in these cases.*

#### L. COMPARISON WITH THE CHART

<u>Chart Number</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>
12221	49th Nov. 8	1980	1:80,000
12200	48th April	1980	
	33rd Oct. 25	1980	

A comparison was made with 282 soundings on chart 12221. The comparison showed 71% of the sounding were in agreement by  $\pm 3$ feet, 85% were within  $\pm 5$  feet. The remaining 15% varied over a wide range, -12 feet to  $\pm 15$  feet with 83% being deeper than the charted depth. A list of the 15% follows:

*Note: Statistical analysis completed in field prior to AMC verification. Therefore, comparison based on uncorrected survey data.*

(+6)	Charted (Feet)	Survey (Feet)	Latitude	Charted Longitude	on present survey
68	74/72	36°58.125N	75°29.138W(69 ft approx. 70 meters W)	△	
67	72/74	37°01.22N	75°31.20W(68 ft. " 80 " NW)	△	
57	682	37°01.51N	75°31.90W(59 " " 62 " SW)	△	
63	688	36°56.41N	75°32.93W(65 " " 95 " SE)	○	
62	68/66	36°54.93N	75°32.51W(64 " " 105 " SE)	○	
64	70/80	36°57.30N	75°34.05W	*	
60	63/65 66	36°55.20N	75°39.88W(61 " " 115 " W)	○	
57	63	36°54.45N	75°40.50W(59 " " 110 " SW)	*	
44	508	36°55.03N	75°41.36W(49 " " 240 " W)	*	
48	54/51	36°56.28N	75°41.40W(49 " " 90 " NE)	*	
48	54	36°56.57N	75°41.42W(51 " " 55 " SE)	*	
47	53	36°57.27N	75°40.39W(47 " " 135 " NW)	○	
62	68	37°00.45N	75°40.09W(64 " " 70 " S.W.)	□	
59	652	37°01.00N	75°40.59W(56 " " 85 " SW)	□	

Comparison with the Chart (Cont)

Which represents 33% of the Remaining 15%.

	Charted (Feet)	Survey (Feet)	Latitude	CHARTED Longitude	ON PRESENT SURVEY
(+7)	51	586	36°55.51N	75°41.45W(54 ft. approx. 65 meters SW)	*
	68	75	37°00.61N	75°38.30W(69 " " 60 " )	□
	60	676	37°00.10N	75°37.98W(63 " " 135 " W)	*
	67	7466	36°55.71N	75°36.70N	○
	71	7880	36°56.74N	75°32.10N(75 ft. approx. 100 meters NE)	○

△ Soundings from prior survey H-5992 (1935)  
 ○ " " " " H-5990 (1935)  
 \* " " Unidentified sources  
 □ " " prior survey H-5988 (1935)  
 ○ " " " " H-4089 (1935)

Which represents 12% of the remaining 15%.

	Charted (Feet)	Surveyed (Feet)	Latitude	Longitude	CHARTED ON PRESENT SURVEY
(8 to 15)	62	7063	37°01.'63N	75°33.'30W	(60' approx. 45 meters W) □
	69	77'	36°58.'23N	75°34.'05W	(69 " " 235" W) *
	61	69'	37°00.'59N	75°36.'195N	(62 " " 125" SW) □
	56	6460	36°58.'29N	75°40.'18W	(56 " " 95" SW) *
	47	5351	37°00.'49N	75°41.'11W	(48 " " 95" SW) *
	63	7280	37°03.'32N	75°29.'51W	(68 " " 150" SW) Δ
	75	8580	36°58.'57N	75°30.'40W	(78 " " 40" E) Δ
	69	7900k	36°57.'67N	75°31.'64W	(75 " " 85" S) ○
	69	79077	37°02.'07N	75°33.'60W	(68 " " 50" S) □
	71	68/79	36°01.'20N	75°32.'21W	(68 " " 50" S) □
	43	5342	36°54.'40N	75°41.'192W	(41 " " 40" N) ○
	50	60'	36°57.'68N	75°40.'08W	(55 " " 80" NE) ○
	56	6604	36°59.'70N	75°40.'14W	(59 " " 110" SW) *
	57	6863	37°01.'20N	75°31.'90W	(58 " " 180" N.W) Δ
	54	6764	36°59.'45N	75°39.'05W	(61 " " 150" SW) ○
	59	7459	36°56.'86N	75°36.'58W	(59 " " 35" W) ○

Which represent 38% of the remaining 15% in a range of +8 feet to +15 feet.

The shallower soundings are as follows:

	<u>Charted (Feet)</u>	<u>Surveyed (Feet)</u>	<u>Latitude</u>	<u>Longitude</u>
(-6)	91	85	37°02.159N	75°30.155W
	63	57	36°58.122N	75°40.175W
	60	54	37°02.131N	75°41.167W
(-7)	59	52	36°56.130N	75°41.170W
(-10)	75	65	36°56.163N	75°36.117W
(-11)	63	52	36°58.187N	75°40.158W
(-12)	82	70	36°55.140N	75°31.188W

Representing 17% of the remaining 15% that are shallower than Charted.

The 60 foot depth contour centered around the following latitudes and longitudes should be revised for any future charting:

<u>Latitude</u>	<u>Longitude</u>
37°01.11N	75°31.16W
37°01.14N	75°31.19W
37°56.19N	75°36.15W
37°00.10N	75°38.10W

M. ADEQUACY OF THE SURVEY See Verification Report, sections 6. a. & 7. a.

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

N. AIDS TO NAVIGATION

Chesapeake Light Tower is the only aid to navigation within the sheet limits. It is a Third Order Class I station and no attempts were made to verify the Light Tower's position to that order of accuracy during the survey.



O. STATISTICS

Linear Nautical miles of hydrographic	1057.9NM
Linear Nautical Miles Of Crosslines	60.7NM
Linear Nautical Miles Of Developments	75.1NM
Total Linear Miles Of Hydrography	1193.7NM
Total Miscellaneous Miles	313.6NM
Total Miles Run	1507.3NM
Square Miles Of Hydrography	112.1 Square Nautical Miles
Total Number Of Positions	3674
Nansen Cast	1
Vertical Cast	1
Bottom Samples	72

P. MISCELLANEOUS

Program RK112, Range-Range and Hyperbolic Hydroplot, was tried initially to conduct the survey. The program failed because it was unable to accept the Gyrocompass input information to the computer. Program RK111, Range-Range Real Time Plot, was used to conduct this survey operation.

The on-line paper punch unit was replaced twice during the survey. On JD 192, although the punch unit had not failed, it was operating with unusual noises and replaced. On JD 194, the replaced punch unit was replaced due to an increasing number of invalid punches causing parity errors and invalid characters.

Upon completion of the final plotting, it was found that the velocity tape was in error by two tenths of a foot through out its ranges. Due to this rather small error no attempts were made to correct the smooth boat sheets. A correct velocity tape was made and will be submitted along with the survey data.

Q. RECOMMENDATIONS See section 9. of the Verification Report.

The western region of this survey will be evaluated by the U.S. Army Corps of Engineers for use as a dumpsite for future dredging in the Chesapeake Bay Area.

R. AUTOMATED DATA PROCESSING

The following Hydroplot programs were used to acquire and process the survey data:

	<u>Program Name</u>	<u>Version</u>
RK111	Range/Range Real Time Plot	1-30-76
RK201	Grid, Signal And Lattice Plot	4-18-75
RK211	Range/Range Non Real Time Plot	1-15-76
RK300	Utility Computation	10-21-80
RK330	Data Reformat and Check	5-4-76
PM360	Electronic Corrector Abstract	2-2-76
AM500	Predicted Tide Generator	11-10-72
RK530	Velocity Correction Calibration	5-10-76
RK561	Hyperbolic And Range-Range Geoditic Calibration	2-19-75
RK602	Extended Line Oriented Editor	5-21-78

S. REFERENCE TO REPORTS

Settlement and Squat report, 1981 NOAA Ship MT. MITCHELL.

Respectively Submitted,

*Frederick W. Rossmann*

Frederick W. Rossmann

Ensign, NOAA

"APPENDICES"

- \* A. HYDROGRAPHIC SHEET PROJECTION AND ELECTRONIC CONTROL PARAMETERS
- B. FIELD TIDE NOTE
- ✓ C. GEOGRAPHIC NAMES LIST *Form 76-155 inserted by AMC for Descriptive Report.*
- D. ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS
- ✓ E. ABSTRACT OF CORRECTIONS TO ELECTRONIC POSITION CONTROL
- F. LIST OF STATIONS
- ✓ G. ABSTRACT OF POSITIONS
- ✓ H. BOTTOM SAMPLES
- ✓ I. LANDMARKS FOR CHARTS
- J. APPROVAL SHEET

\* Removed and filed with survey Records

*✓ Appendices deleted - filed in survey cabinet at Headquarters.*



000025 1 0006 0001 000 222000 020181

000062 1 0004

000103 1 0002

VELOCITY TABLE PRINTOUT

000153 0 0000

OPR-DI03-MI-8I

000206 0 0002

MI-20-1-81

H-9955

VESNO 2220

000255 0 0004

CAST #1 TABLE #1

000305 0 0006

000370 0 0008

000440 0 0010

000550 0 0012

000605 0 0014

000686 0 0016

000770 0 0018

000855 0 0020

000925 0 0022

001010 0 0024

001085 0 0026

001160 0 0028

999999 0 0000 ✓

NOAA Ship MT MITCHELL S 222

Settlement and Squat Test

26 July 1981

A settlement and squat test was run for NOAA Ship MT MITCHELL on 26 July 1981, 8 miles off of Cape Charles, Virginia to validate settlement and squat correctors derived on 12 June 1978 at Galveston, Texas. The test consisted of comparisons of depths taken when passing a calibration buoy set in 40 feet of water on a flat-bottom area by MT MITCHELL for OPR D103-MI-81.

The ship made several passes at various speeds on approximate headings of 160° and 340°, and with the ship dead in the water; each time the ship was west of the buoy. Depth measurements were made when the buoy was 10 meters east of the after transducer, i.e. the only transducer to be used during the 1981 field season. Initial depth readings were made with the ship dead in the water immediately before and after any passes were made; initial readings were subsequently adjusted for tidal change. Each difference between the initial reading and the average depth of those taken during the two passes at a given speed were used to construct a graph of correctors. That new graph was compared with the graph of 12 June 1978 for validation. The corrector for standard speed (11 knots) was validated, but the test indicates that a different curve is necessary for lesser speeds. The new curve is recommended for the 1981 field season.

The ship carried a full load of fuel and a Jensen launch in davit #3. This is the typical configuration when the ship is conducting hydrography during this field season. A transducer draft of 14.1 feet was determined before the test by direct comparisons of leadline casts and echo soundings. The test was conducted with both engines at 160 RPM with pitches of 0 foot, 3 feet, 6 feet, and full pitch ahead for the various passes. During the test, the seas were 0 to 1 foot from the south, with the wind also southerly at 5 knots. Lateral stability of the buoy was assured by the short scope of its anchor line and checked by noting the Hydrotrac rates at the buoy.

A new settlement and squat corrector curve and a table of correctors is appended. A graph of the ship's speed curves is included.

Respectfully submitted,

*E. Scott Varney*

E. Scott Varney  
Lieutenant, NOAA

NOAA Ship MT MITCHELL S 222

Settlement and Squat Correctors

Speed vs. Corrector

<u>Speed</u>	<u>Corrector</u>
0.0	0.0
1.0	+0.1
2.0	+0.2
3.0	+0.2
4.0	+0.2
5.0	+0.3
6.0	+0.3
7.0	+0.3
8.0	+0.3
9.0	+0.3
10.0	+0.3
11.0	+0.3
12.0	+0.4
13.0	+0.4

These correctors are derived from the settlement and squat curve dated 26 July 1981. The speed in knots is that taken from the graph of the ship's speed curves and may not necessarily be the speed over the ground. The correctors are in feet, rounded to the nearest tenth; see the graph of correctors if rounding to the nearest even tenth, i.e., to the nearest two tenths, is needed.

NOAA Ship MT MITCHELL  
Settlement and Squat Correctors  
26 July 1981

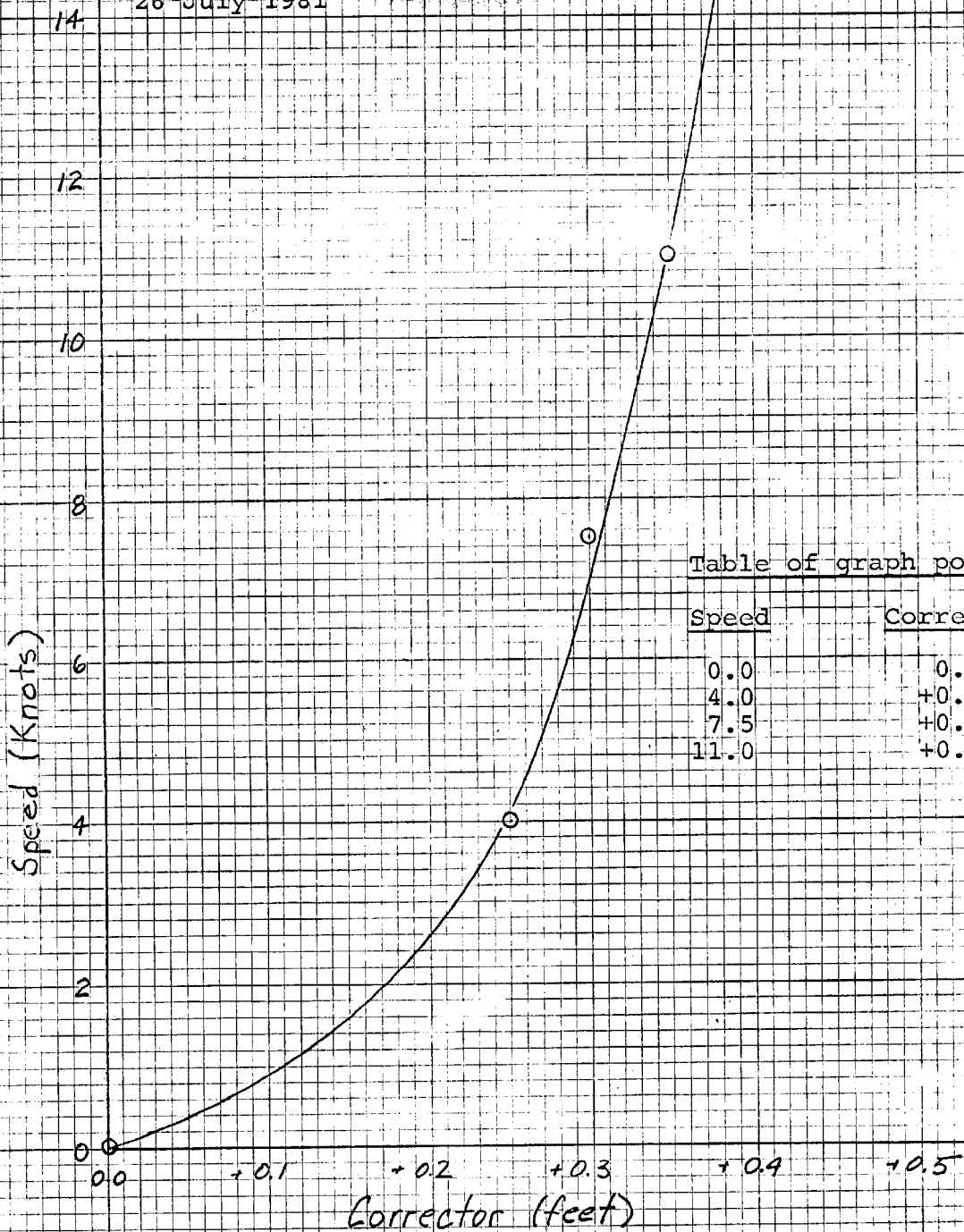
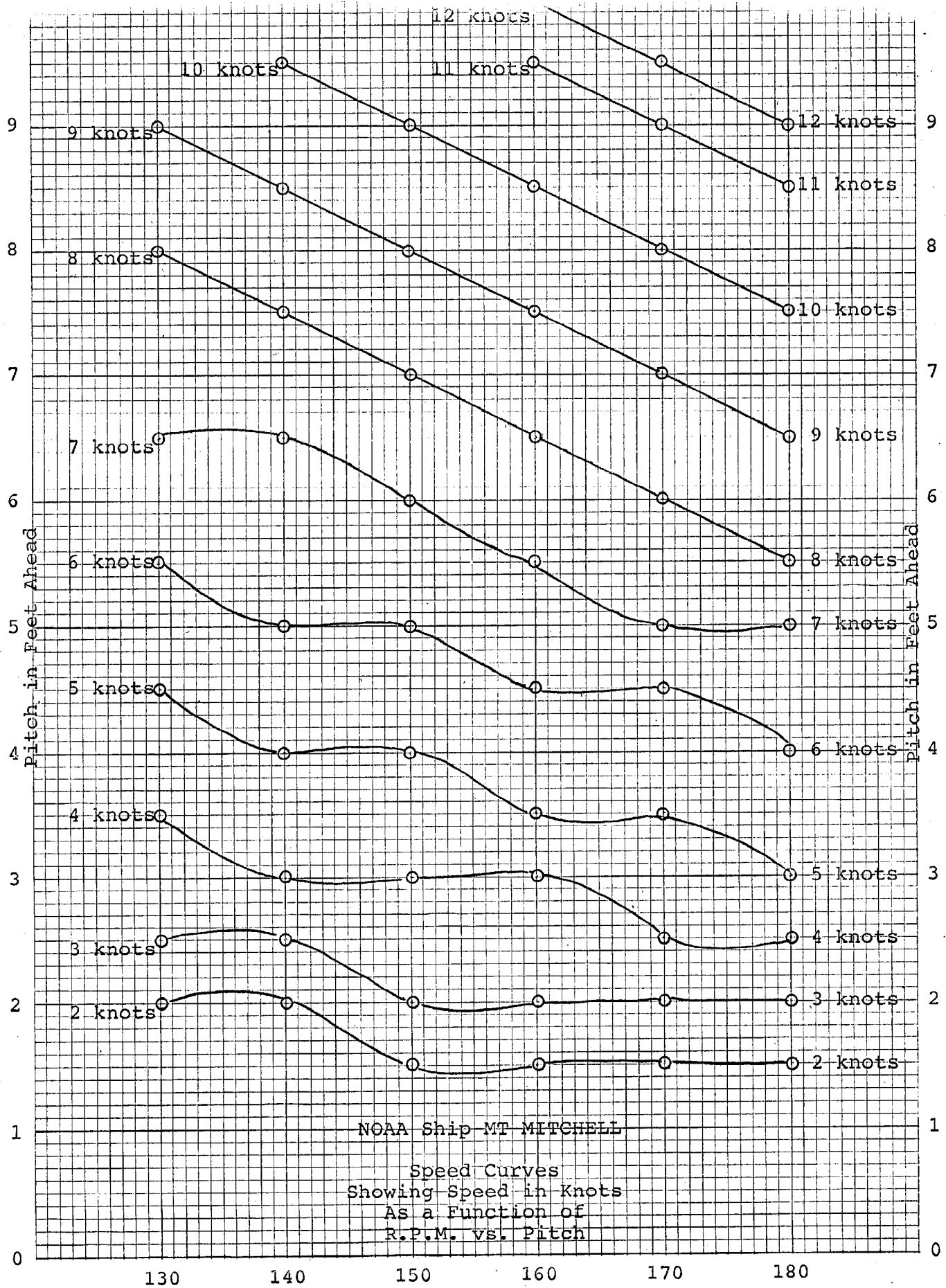


Table of graph points

Speed	Corrector
0.0	0.0
4.0	+0.25
7.5	+0.30
11.0	+0.35



PRIME-10 X 10 TO 11 INCH  
BOTH LINE HEAVY



GEOGRAPHIC NAMES AND SIGNAL NUMBERS

SIGNAL NAME TAPE

STA.#	NAME
100	SANDBRIDGE HYDROTRAC SITE GRAVITY, 1965 Electronic Control
129	CHESAPEAKE LIGHT TOWER (CALIBRATION PT.) 1966
130	PARCEL C TOWER A (LOOKOUT TOWER), 1939 CALIBRATION
131	DAM NECK MILLS NAVY TANK G-10217
132	VIRGINIA BEACH MUNICIPAL TANK G-10217 } NOT USED (DELETED)
133	CAPE HENRY LIGHTHOUSE, OLD
134	CAVALIER HOTEL CUPOLA, 1929 CALIBRATION
135	CAPE HENRY LIGHTHOUSE ECC. SW (DEL NORTE STA.) NOT USED
136	CAPE HENRY LIGHTHOUSE 1887 CALIBRATION
200	FEN, 1960 (HYDROTRAC SITE) ELECTRONIC CONTROL
201	FISH ISLAND TANK
202	FISH ISLAND TOWER
204	FISH ISLAND SHORAN
210	CAPE CHARLES LIGHT
212	" " 771ST TWR RED/WHITE
213	" " 771ST AN/FPS N
214	" " " " S
215	SMITH ISLAND TOWER A
216	" " " B
217	" " " C
218	BOWDEN
219	MOCKHORN
220	CAROL
221	GOOD
222	SANDERLIN
223	COBB ISLAND COAST GUARD LOT
224	PIG
225	LIPHAM
300	ASSATEAGUE HYDROTRAC SITE (HAH8VA78)

Not used

SIGNAL TAPE PRINTOUT

OPR-D103-MI-81

MI-20-1-81

H-9955

VESNO 2220

100	4	36	40	31453	075	54	56471	250	0004	171859
129	3	36	54	16158	075	42	47123	139	0039	000000
130	3	36	53	35785	075	59	18153	139	0033	000000
131	3	36	46	13694	075	57	51981	139	0040	000000
132	3	36	50	31980	075	59	23523	139	0040	000000
133	6	36	55	32330	076	00	30516	139	0000	000000
134	6	36	52	08381	075	59	02012	139	0000	000000
135	4	36	55	34302	076	00	27323	139	0050	000000
136	3	36	55	34335	076	00	27216	139	0050	000000
200	7	37	05	36243	075	58	17556	250	0050	171859
<del>201</del>	<del>3</del>	<del>37</del>	<del>06</del>	<del>04124</del>	<del>075</del>	<del>58</del>	<del>43436</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>202</del>	<del>3</del>	<del>37</del>	<del>05</del>	<del>57091</del>	<del>075</del>	<del>58</del>	<del>45131</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>204</del>	<del>3</del>	<del>37</del>	<del>05</del>	<del>51122</del>	<del>075</del>	<del>58</del>	<del>45459</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>210</del>	<del>3</del>	<del>37</del>	<del>07</del>	<del>22007</del>	<del>075</del>	<del>54</del>	<del>24576</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>212</del>	<del>4</del>	<del>37</del>	<del>07</del>	<del>57096</del>	<del>075</del>	<del>57</del>	<del>14854</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>213</del>	<del>3</del>	<del>37</del>	<del>08</del>	<del>03976</del>	<del>075</del>	<del>57</del>	<del>04192</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>214</del>	<del>3</del>	<del>37</del>	<del>08</del>	<del>02246</del>	<del>075</del>	<del>57</del>	<del>04202</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>215</del>	<del>4</del>	<del>37</del>	<del>07</del>	<del>19792</del>	<del>075</del>	<del>54</del>	<del>22064</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>216</del>	<del>4</del>	<del>37</del>	<del>07</del>	<del>19730</del>	<del>075</del>	<del>54</del>	<del>23296</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>217</del>	<del>4</del>	<del>37</del>	<del>07</del>	<del>19170</del>	<del>075</del>	<del>54</del>	<del>24248</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
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<del>219</del>	<del>4</del>	<del>37</del>	<del>11</del>	<del>54088</del>	<del>075</del>	<del>54</del>	<del>19060</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>220</del>	<del>4</del>	<del>37</del>	<del>12</del>	<del>29159</del>	<del>075</del>	<del>48</del>	<del>38976</del>	<del>139</del>	<del>0040</del>	<del>000000</del>
<del>221</del>	<del>4</del>	<del>37</del>	<del>12</del>	<del>48739</del>	<del>075</del>	<del>49</del>	<del>15776</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>222</del>	<del>4</del>	<del>37</del>	<del>17</del>	<del>40884</del>	<del>075</del>	<del>47</del>	<del>55438</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>223</del>	<del>4</del>	<del>37</del>	<del>18</del>	<del>14815</del>	<del>075</del>	<del>46</del>	<del>35441</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>224</del>	<del>4</del>	<del>37</del>	<del>19</del>	<del>23903</del>	<del>075</del>	<del>45</del>	<del>03809</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
<del>225</del>	<del>4</del>	<del>37</del>	<del>16</del>	<del>08039</del>	<del>075</del>	<del>47</del>	<del>41820</del>	<del>139</del>	<del>0000</del>	<del>000000</del>
V 300	4	37	51	46270	075	22	03968	250	0004	171859

APPROVAL SHEET

The field work on this Hydrographic Survey was under my daily supervision. The boat sheet and records have been reviewed and approved by me.

CHART NO. 1111  
Commanding Officer

APPENDIX "J"

SHIP MT. MITCHELL S-222  
WEST YORK STREET.  
NORFOLK, VIRGINIA 23510

Date : 16 JUL 1981  
To : Chief, Tides and Water Levels Branch, OA/C23  
From : *[Signature]*  
Commanding Officer  
NOAA Ship Mt. Mitchell S-222  
Subj. : Tidal Data for OPR-D103-MI-81, "DELMARVANC",  
Hydrographic Survey H- , (MI-20-1-81)

It is requested that verified hourly heights of Tides, using Greenwich Mean Time, from the operating tide gages listed below be forwarded to the Processing Division (CAM3), Atlantic Marine Center, Norfolk, VA. 23510

<u>GAGE NAME</u>	<u>NUMBER</u>	<u>LATTITUDE</u>	<u>LONGITUDE</u>
HAMPTON RDS (Pier 2, NOB)	863-8610	36°56.8'N	76°19.9'W
SANDBRIDGE	863-9428	36°41.5'N	75°55.2'W
DUCK, N.C.	865-1370	36°10.9'N	75°45.0'W

It is requested that the Time and Height Correctors for each gage be zoned as per Project Instructions for the area described within the following points:

LATTITUDE 36°53.8'N, 37°03.6'N, 37°03.6'N, 36°53.8'N  
LONGITUDE 75°43.7'W, 75°43.7'W, 75°25.0'W, 75°25.0'W

This information is requested for the following periods:

0000 GMT JD 188 until 2359 GMT JD 195 (7 July thru 14 July 1981)

APPENDIX "B"



## FIELD TIDE NOTE

Field tide reduction of soundings were based on Predicted Tides from Hampton Roads (Sewells Pt.) VA, and were corrected for predetermined tidal zone values from OPR-D103-MI, PE-80, utilizing a PDP8/E Computer and Program RK500. All times of both Predicted and Recorded Tides are Universal Coordinated Time (GMT).

The number and type of Tide Gages installed, their geographic locations, dates of installation/removal, Leveling, Plane of Reference and period of operation are appended to this note, along with a copy of a letter to OA/C23 requesting verified hourly heights of tides from gages listed in this report.

The respective gages reportedly operated properly/improperly during this Project, with any exceptions noted under "REMARKS" on the appended Tide Gage Sheets.

APPENDIX "B"

November 24, 1981

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): 863-8863 Chesapeake Bay Bridge Tunnel, VA

Period: July 7-14, 1981

HYDROGRAPHIC SHEET: H-9955

OPR: D103

Locality: Chesapeake Bay Entrance, Virginia

Plane of reference (mean lower low water): 24.83 ft.

Height of Mean High Water above Plane of Reference is 2.74 ft.

REMARKS: Recommended Zoning

Apply -35 minute time correction and x1.38 range ratio.

*Milton S. Rubel*  
for Chief, Datums and Information Branch

GEOGRAPHIC NAMES

H-9955

Name on Survey	Source of Name											
	A	B	C	D	E	F	G	H	K			
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND McNALLY ATLAS	U.S. LIGHT LIST				
Virginia (TITLE)	18221											1
Atlantic Ocean (TITLE)	18221											2
CHESAPEAKE BAY ENTRANCE (TITLE)												3
												4
												5
												6
												7
												8
												9
												10
												11
												12
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												21
												22
												23
												24
												25

Approved:

*Charles E. Harrington*  
Chief Geographer - N/CG 2x5

10 MAY 1983





REGISTRY NO. H-9955

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  
VERIFICATION REPORT

REGISTRY NO.: H-9955

FIELD NO.: MI-20-1-81

Virginia, Atlantic Ocean, Offshore Chesapeake Bay Entrance

SURVEYED: July 8, 1981 through July 14, 1981

SCALE: 1:20,000

PROJECT NO.:  
OPR-DI03

SOUNDINGS:  
Ross Digital Echo Sounder

CONTROL:  
ARGO (Range-Range)

Chief of Party .....	R. A. Trauschke
.....	K. W. Perrin
.....	F. W. Rossmann
.....	J. W. Humphrey
.....	J. Zabitchuck
.....	R. D. Henegar
.....	B. L. Coakley
.....	A. Orris

Automated Plot by ..... Xynetics 1201

1. INTRODUCTION

- a. There were no unusual problems encountered on this survey. ✓
- b. Notes and changes were made in red ink in the Descriptive Report. *(by verification)*

2. CONTROL AND SHORELINE

*Also, in black ink for H-5992  
and Chart 12221 changes on pg 3 of VR.*

- a. The source of control is adequately described in sections F and G of the Descriptive Report.
- b. No shoreline is shown on this survey. This is an offshore survey.

3. HYDROGRAPHY

- a. The agreement at crossings on this survey is adequate; depths agree within the limits prescribed by the Hydrographic Manual.
- b. The standard depth curves could be drawn in their entirety. Dashed curves and brown curves were used to better delineate some bottom features.

c. This survey is considered adequate to delineate the basic bottom configuration and to determine least depths with the following exceptions:

1) The shoal feature found on the survey in the vicinity of Latitude  $37^{\circ}01'00''$ , Longitude  $75^{\circ}32'45''$ , with surveyed depths of 53 feet on the charted 54 foot shoal. Additional development would have been desirable to insure that the least depths were obtained. ✓

2) Shoaling to 43 feet in Latitude  $36^{\circ}57'06''$ , Longitude  $75^{\circ}41'54''$ , in charted depths of 45 to 48 feet should have been split to assure that the least depth and extent of this feature was found. ✓

3) Shoaling to 46 feet in the vicinity of Latitude  $36^{\circ}57'42''$ , Longitude  $75^{\circ}39'41''$ , in charted depths to 47 feet should have been further developed to assure the least depth was found. ✓

4) Shoaling to 52 feet in Latitude  $36^{\circ}56'44''$ , Longitude  $75^{\circ}38'23''$ , in charted depths of 53 feet should have been developed to assure that the least depth was found.

5) Shoaling to 48 feet in the vicinity of Latitude  $36^{\circ}54'41''$ , Longitude  $75^{\circ}33'41''$ , is the least depth on a charted 45-ft. shoal. This shoal should have been developed to assure that the least depth and extent of the shoal was found. ✓

#### 4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports comply with the requirements of the Hydrographic Manual with the following exceptions:

a. The Nansen cast used to determine sound velocity corrections was taken to 92 feet, whereas the survey depths were up to 113 feet. No supporting data for either the Nansen cast nor the vertical cast described in section D of the Descriptive Report were included with this survey's data. ✓

b. Section 10.4. of the Project Instructions required the development of discontinued "disposal areas" with a maximum of 50 meter line spacing. The "disposal area" charted in the vicinity of Latitude  $36^{\circ}59'$ , Longitude  $75^{\circ}43'$ , upon inquiry with the Norfolk District, U. S. Army Corps of Engineers was found to be discontinued. An inquiry to Requirements Branch, Hydrographic Surveys Division in Rockville revealed that NOS was not informed of its discontinuance. Requirements Branch recommended that the area not be surveyed with 50 meter line spacing. ✓

c. The wrong edition of chart number 12221 was used (48th Ed. used, should have been 49th Ed.) and chart number 12200 which covers the eastern portion of the survey was not used for comparison in the Descriptive Report. ✓

d. There were several significant features in the survey area (see sections 3.c.1 through 6 of this report) where if the lines were split at the shoalest depths obtained by the main scheme hydrography or lines were run along the axis of the features the assurance of least depths would have been ascertained. In several instances charted depths were less than survey depths or the survey depths less than the charted depths. Generally, in this report regarding the survey area, significant features were those features that were isolated and shoaled 15% or more from the surrounding depths. ✓

Discontinuance was verified with the Corps in Norfolk. See L-252 (off) 4/4/84 JWD/alg

e. The field used a statistical approach in its comparison with prior surveys. It appears that a comparison with the most significant features on the present survey and those on the prior surveys and the nautical chart, as per page 5-8 and 5-9 of the Hydrographic Manual, may have been more effective.

## 5. JUNCTIONS

H-9919 (1980-81) to the west  
 H-9959 (1981) to the south *(not rec'd in Standards Sec)*  
 H-9962 (1981) to the north  
 H-9978 (1981) to the southeast *(not rec'd in Standards Sec)*

The junctions with these surveys are complete and require no further work. There were no contemporary junctional surveys to the east of the present survey at the present time. H-9978 (1981) to the southeast was not processed sufficiently at this time to effect a junction. A junction with H-9978 will be effected when that survey is processed. *Estimated processing completion date at RMC for H-9978 was Jan 1983. Not rec'd in Standards Section on May 9, 1983.*

## 6. COMPARISON WITH PRIOR SURVEYS

a. H-4089 (1919) 1:40,000  
 H-4193 (1921) 1:40,000  
 H-5988 (1935) 1:40,000  
 H-5990 (1935) 1:40,000  
 H-5993 (1935) 1:40,000

These are the most recent prior surveys in this area that provide complete coverage.

In general these prior surveys agree with the present survey within 1 to 3 feet, with the present survey being shoaler by that amount most of the time. There are random differences of up to 15 feet. These differences are adequately discussed in section K of the Descriptive Report.

It is reasonable to attribute some of the changes to natural causes and the rest to improved methods of obtaining soundings and to improved positioning methods. There were several charted soundings that were carried forward to supplement the present survey data from the above prior surveys where the present survey development was considered inadequate to disprove their existence.

The present survey is considered adequate to supersede the prior surveys in the common area when supplemented by the soundings that were added to the present survey from the prior surveys.

### b. Wire Drag Survey

*WD*  
 FE-223 ~~WD~~ (1975) 1:40,000

The comparison with FE-223 WD (1975) revealed no conflicts between the present survey depths and the wire drag effective depths in the common area.

## 7. COMPARISON WITH CHARTS <sup>12221</sup> #1221 (49th Edition, November 8, 1980) #12200 (33rd Edition, October 25, 1980)

a. Hydrography*Miscellaneous*

The charted hydrography (95%) originates with the previously discussed prior surveys which need no further discussion. The remaining soundings from ~~unascertainable~~ sources with the exception of nine soundings which agree within the limits as stated under the comparison with prior surveys section of this report. The following nine charted soundings discussed below should be evaluated by the chart compiler as to source and value for consideration of retention on the chart.

1) A 64-ft. charted depth is in the vicinity of Latitude <sup>6</sup>36°57.30', Longitude 75°34.05', the depth range in this vicinity on the present survey is from 70 to 80 feet. ✓

2) A 57-ft. charted depth is in the vicinity of Latitude 36°54.45', Longitude 75°40.50'. The depth range in this vicinity on the present survey is from 63 to 66 feet, with a 59-~~8~~ ft. depth approximately 110 meters southwest. ✓✓

3) A 51-ft. charted depth is in the vicinity of Latitude 36°55.51', Longitude 75°41.45'. The depth range in this area on the present survey is from 56 to 59 feet, with a 54-ft. depth approximately 65 meters southwest. ✓✓

4) A 60-ft. charted depth is in the vicinity of Latitude 37°00.01', Longitude 75°37.98'. The depth range in this area on the present survey is from 66 to 68 feet, with a 63-ft. depth approximately 135 meters west. ✓✓

5) A 69-ft. charted depth is in the vicinity of Latitude 36°58.23', Longitude 75°34.05'. The depth range in this area on the present survey is from 77 to 80 feet, with a 69-ft. approximately 235 meters to the west. ✓✓

6) A 56-ft. charted depth is in the vicinity of Latitude 36°58.29", Longitude 75°40.18'. The depth range in this area on the present survey is from 60 to 68 feet, with a 59-ft. approximately 95 meters to the southwest. ✓✓

7) A 47-ft. charted depth is in the vicinity of Latitude 37°00.49', Longitude 75°42.11'. The depth range in this area on the present survey is from 51 to 53 feet, with a 48-ft. approximately 95 meters to the north. ✓ *Deleted*

8) A 56-ft. charted depth is in the vicinity of Latitude 36°59.70', Longitude 75°40.14'. The depth range in this area on the present survey is from 64 to 68 feet, with a 59-ft. approximately 110 meters to the southwest. ✓✓

9) A 45-ft. charted depth is in the vicinity of Latitude 36°54.33', Longitude 75°34.0'. The depth range in this area on the present survey is from 53 to 55 feet, with a 49-ft approximately 170 meters to the northeast. ✓✓

These depths, for the most part, were not investigated by the field unit. They tend to be shallower than the present survey depths by amounts greater than the trend (1 to 3 feet) stated in section 6. of this report. ✓

Three Presurvey Review Items (numbers 74, 75, 76) were within the survey area. A discussion of these items can be found in section K of the Descriptive Report with additional information as follows:

1) Presurvey Review Item Number 74, a non-dangerous sunken wreck PA, charted (chart number 12221) in Latitude  $37^{\circ}00'06''$ , Longitude  $75^{\circ}34'30''$ , originates with Chart Letter 191 of 1972 and 624 of 1975. Chart Letter number 624 of 1975 describes this item as originating with a report from a private individual who observed the wreck on a sonar device. This wreck was wire swept to a depth of 65.5 feet without a hang by survey FE-223 WD (1975), item number 2. The present survey depths in this area are from 71 to 79 feet. It is recommended this item be retained as charted. *CONCUR* ✓

2) Presurvey Review Item Number 75, a non-dangerous sunken wreck, charted (chart number 12221) in Latitude  $37^{\circ}00'30''$ , Longitude  $75^{\circ}39'00''$ , originates with an unknown source, sunk November 14, 1942, and was reported on December 5, 1946 with a positional accuracy of 3-5 miles. This wreck is listed in the 1957 Wreck List, item number 1001. The present survey depths in this area are from 69 to 70 feet. It is recommended this item be retained as charted. *CONCUR* ✓

3) Presurvey Review Item Number 76, a non-dangerous sunken wreck, position approximate, charted (chart number 12221) in Latitude  $36^{\circ}56'36''$ , Longitude  $75^{\circ}31'02''$ , originates with Chart Letter 1457 of 1969. This wreck is the yacht EASYGO of 7 gross tons, length of 31.9 feet, of wood construction, and was reported sunk on June 25, 1969. The present survey depths in this area are from 66 to 68 feet. It is recommended this item be retained as charted. *CONCUR* ✓

Except as indicated above and discussed elsewhere in this report the present survey is considered adequate to supersede the charted hydrography in the common area.

b. Aids to Navigation

The only aid to navigation is Chesapeake Light and it adequately marks the intended features.

8. COMPLIANCE WITH INSTRUCTIONS

This survey adequately complies with the Project Instructions except as noted elsewhere in this report.

9. ADDITIONAL FIELD WORK

This is considered to be a good basic survey. Additional work is recommended when convenient on the Presurvey Review items discussed in section 7 of this report. It is felt these items could best be investigated by wire drag or possibly side scan sonar.

*James B. Wilson*  
J. B. Wilson  
Cartographic Technician  
Verification of Field Data

*Harry R. Smith*  
Harry R. Smith  
Senior Cartographic Technician  
Verification Check

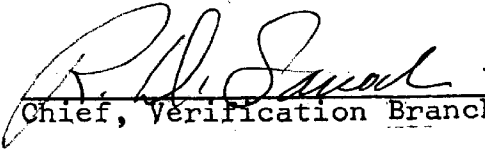
*L. G. Cram*  
L. G. Cram  
Cartographer  
Evaluation & Analysis  
August 13, 1982



APPROVAL SHEET  
FOR  
SURVEY H-9955

- 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~~ ~~XXXXXXXX~~ been made. A new final sounding printout has/~~has not~~ ~~XXXXXXXX~~ 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 Verification Report.

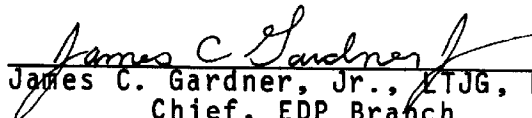
Date: Aug 1982

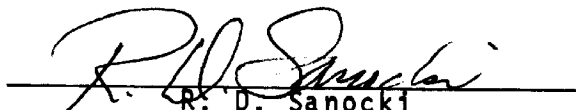
  
Chief, Verification Branch

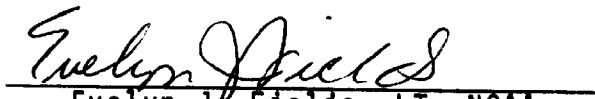
INSPECTION REPORT  
H-9955

The completed survey has been inspected by the Hydrographic Inspection Team with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The Verification Report has presented the facts accurately and properly, the procedures used were appropriate, and the recommendations are logical and justifiable. The survey complies with National Ocean Survey requirements except as noted in the Verification Report. The survey records comply with NOS requirements except where noted in the Verification Report. The Hydrographic Inspection Team concurs with the verifier's findings, actions, and recommendations.

Examined and Approved  
Hydrographic Inspection Team

  
James C. Gardner, Jr., LTJG, NOAA  
Chief, EDP Branch  
Processing Division

  
R. D. Sanocki  
Chief, Verification Branch  
Processing Division

  
Evelyn J. Fields, LT, NOAA  
Field Procedures Officer  
Operations Division

Approved/Forwarded  
August 13, 1982

  
Richard H. Houlder, RADM, NOAA  
Director, Atlantic Marine Center



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SERVICE  
CHARTING AND GEODETIC SERVICES  
Rockville, Md. 20852

N/CG242:GKM

January 13, 1984

TO: Roy K. Matsushige *BSM*  
Chief, Hydrographic Surveys Branch

FROM: *George K. Myers*  
George K. Myers  
Chief, Standards Section

SUBJECT: Quality Control Report for Survey H-9955 (1981), Virginia, Atlantic Ocean, Offshore Chesapeake Bay Entrance

A quality control inspection of survey H-9955 was accomplished to monitor the survey for adequacy with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, smooth plotting, decisions made and actions taken by the verifier, and the cartographic presentation of data. Revisions and additions to the smooth sheet, plus helpful comments made to the verifier, are identified on a one-half scale copy of the survey to be furnished the verifier. In general, the survey was found to conform to National Ocean Service standards and requirements except as stated in the Verifier's Report and the HIT Report.

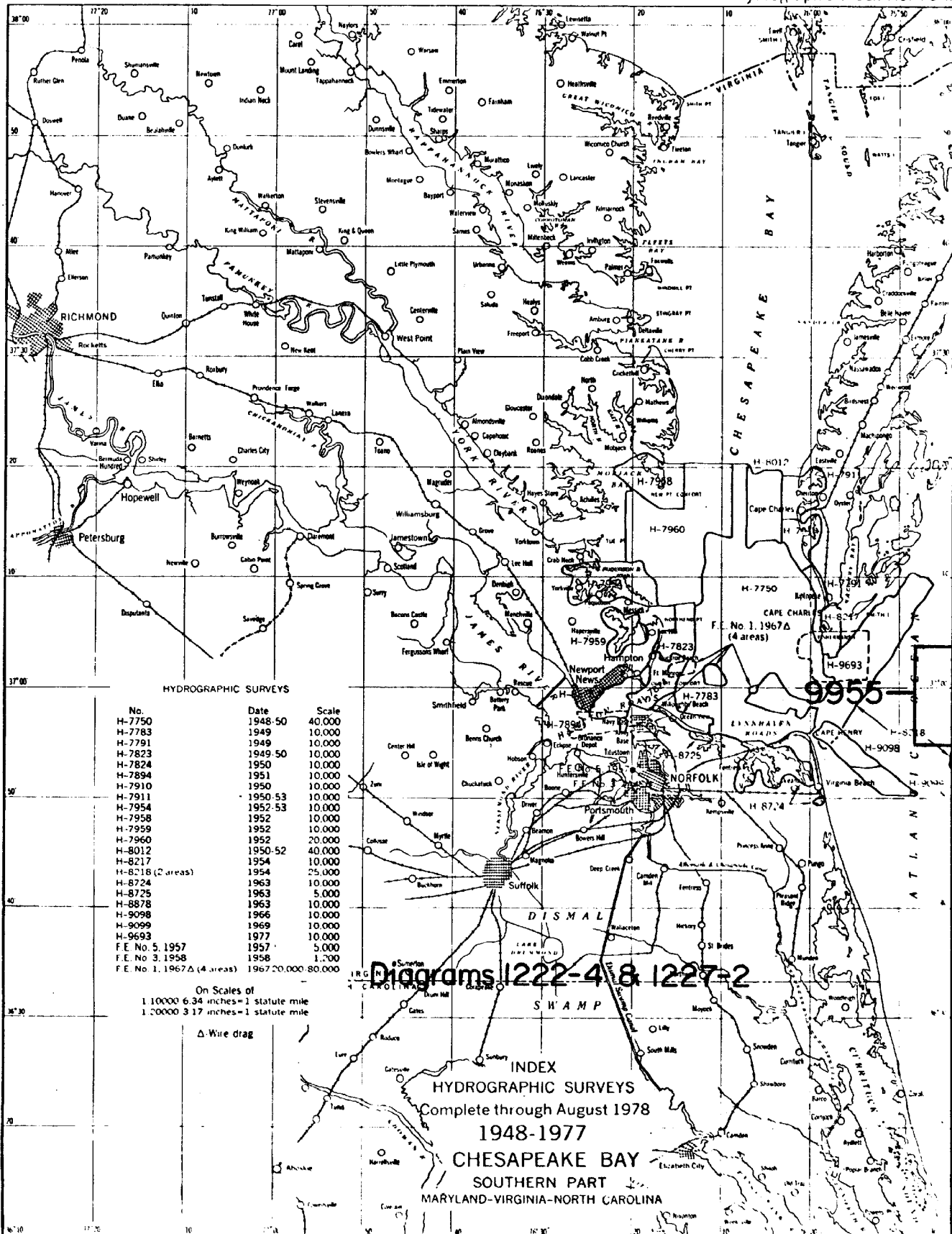
A significant amount of survey effort was expended in developing three charted nondangerous wrecks. This effort would have been better expended in further developing some important shoals.

cc:  
N/CG241



DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Ocean Survey  
Rockville, Maryland

Hydrographic Index No. 70 M



HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-7750	1948-50	40,000
H-7783	1949	10,000
H-7791	1949	10,000
H-7823	1949-50	10,000
H-7824	1950	10,000
H-7894	1951	10,000
H-7910	1950	10,000
H-7911	1950-53	10,000
H-7954	1952-53	10,000
H-7958	1952	10,000
H-7959	1952	10,000
H-7960	1952	20,000
H-8012	1950-52	40,000
H-8217	1954	10,000
H-8218 (2 areas)	1954	25,000
H-8724	1963	10,000
H-8725	1963	5,000
H-8878	1963	10,000
H-9098	1966	10,000
H-9099	1969	10,000
H-9693	1977	10,000
F.E. No. 5, 1957	1957	5,000
F.E. No. 3, 1958	1958	1,200
F.E. No. 1, 1967Δ (4 areas)	1967	20,000 80,000

On Scales of  
1:10000 6.34 inches=1 statute mile  
1:20000 3.17 inches=1 statute mile

Δ Wire drag

Diagrams 1222-4/8 1227-2

INDEX  
HYDROGRAPHIC SURVEYS  
Complete through August 1978  
1948-1977  
CHESAPEAKE BAY  
SOUTHERN PART  
MARYLAND-VIRGINIA-NORTH CAROLINA



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SERVICE  
CHARTING AND GEODETIC SERVICES  
Rockville, Md. 20852

MAR 5 1984

N/CG241: SJV

TO: N/MOA - Wesley V. Hull

FROM: for N/CG2 - C. William Hayes

*Sign of R. Peters*

SUBJECT: Report of Compliance for Survey H-9955

The smooth sheet and Descriptive Report for survey H-9955 (1981), Virginia, Atlantic Ocean, Offshore Chesapeake Bay Entrance, have been reviewed. This survey, except as noted in the Quality Control Report, dated January 13, 1984 (copy attached), and the Hydrographic Survey Inspection Team Report, dated August 13, 1982, is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-D103-MI/PE-81, dated March 31, 1981.

Attachment

cc:  
N/CG242 w/o att.



