

9640

Diag. Cht. Nos. 1220-2 & 1000-4

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. MI-40-4-76
Office No..... H-9640

LOCALITY

State MARYLAND
General Locality . OFFSHORE . SOUTHEAST OF OCEAN
Locality . GREAT GULE BANK TO WINTER CITY
QUARTER SHOAL

1976

CHIEF OF PARTY
Wesley V. Hull

LIBRARY & ARCHIVES

DATE June 8, 1978

9640

Area 291

CHIT

12211(1220)

12200(109)

1300: area 1(1000)

HYDROGRAPHIC TITLE SHEET

H-9640

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-40-4-76

State MARYLAND

General locality SOUTHEAST OF OCEAN CITY
OFFSHORE NORTH ATLANTIC COAST

Locality GREAT GULL BANK
OCEAN CITY to WINTER QUARTER SHOAL, MARYLAND

Scale 1:40,000

Date of survey 4 AUG to 22 OCT 1976

Instructions dated OCTOBER 1, 1975

Project No. OPR-516-MI-76

Vessel NOAA SHIP MT MITCHELL MSS-22

Chief of party CAPT WESLEY V. HULL, NOAA

Surveyed by SEE REMARKS

Soundings taken by ROSS ECHO SOUNDER
echo sounder, hand lead, pole

Graphic record scaled by PS, FS, RW, WD, EM, SG, DR

Graphic record checked by RW, PS, FS, EM, SG, DR, WD

Projected by N/A Automated plot by NOAA SHIP MT MITCHELL MSS-22
HYDROPLOT SYSTEM

Verification by N/A CalComp-618 (AMC)
D.V. Mason

Soundings in fathoms feet at MLW MLLW FEET AT MLW

REMARKS: LCDR G. MILLS, LTJG D. WALTZ, LTJG S. IWAMOTO, LTJG R. MANN,

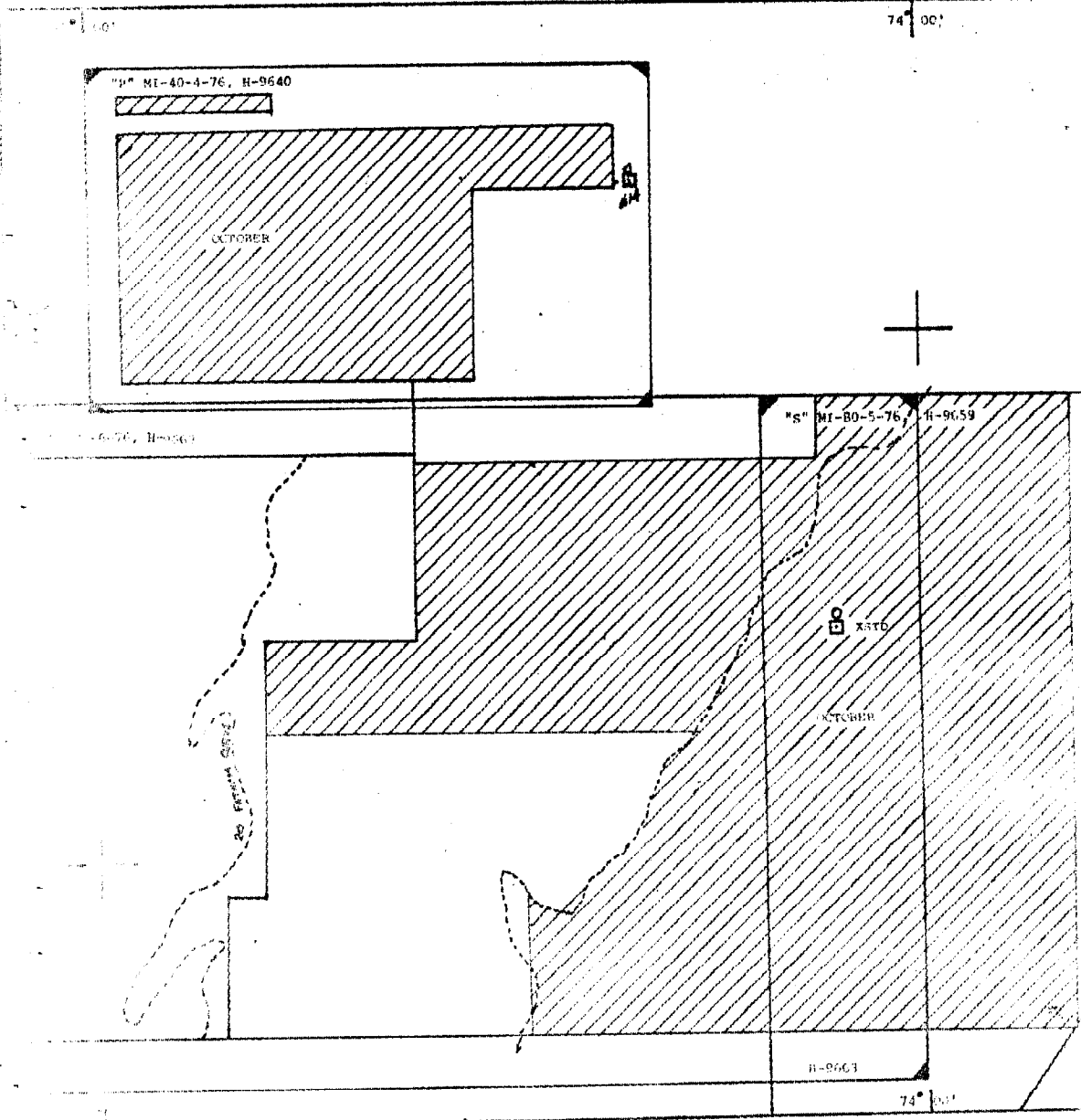
ENS W. DEWHURST, ENS V. NEWELL, ENS D. RICE, ENS L. COSGRIFF

ENS M. HENDERSON, ENS K. COX, ENS K. OLSON, ENS P. DAUGHERTY

Applied to stds 10/26/78

[Signature]

XWW 10/6/92



PROGRESS SKETCH
 HYDROGRAPHIC OPERATIONS
 PER-514-MI-76
 DELMAV/NC
 OCT./NOV. 1976

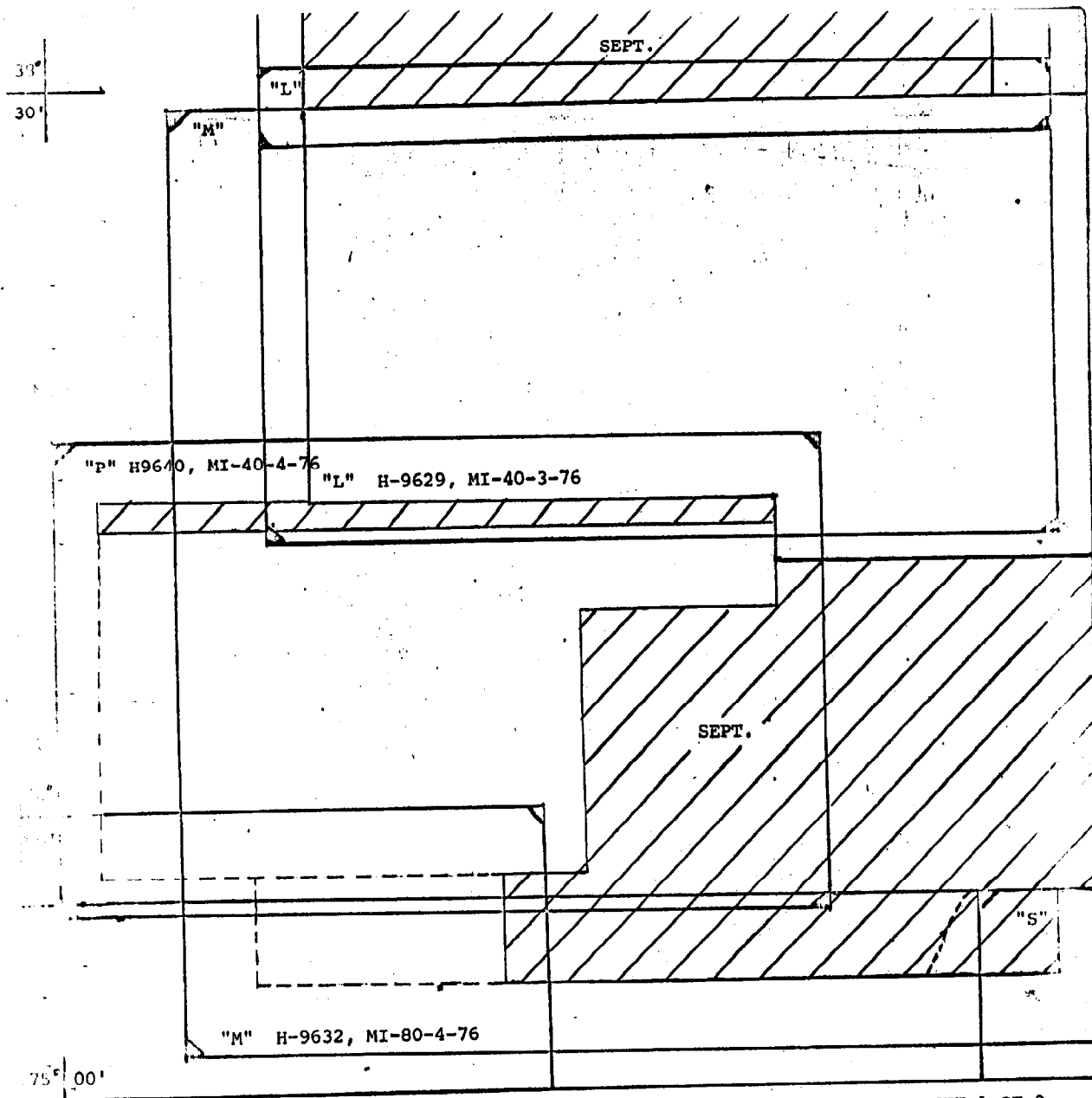
NOAA SHIP MT. MITCHELL MSS-22

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LEGEND
 LHM SOUNDING LINE (3011)
 SUN SOUNDING AREA (3011)
 SUNSCN CAST (SEE 3011)
 BOTTOM SAMPLES
 XSTD/STD
 KBT

SCALE OF CHART 12290

WILEY V. HULL, CAPT, NOAA, COMMANDING



PROGRESS SKETCH

HYDROGRAPHIC OPERATIONS

OPR-516-MI-76

DELMARVANC

SEPT. 1976

NOAA SHIP MT. MITCHELL MSS-22

LEGEND

SHEET 1 OF 2

2481
953
/
/

LNM SOUNDING LINE (SHIP)
 SNM SOUNDING AREA (SHIP)
 BOTTOM SAMPLES
 NANSEN CAST

SCALE OF CHART 12200

WESLEY W. HULL, CAPT, NOAA, COMMANDING

A. PROJECT

This Survey, MI-40-4-76 (H-9640), was conducted by the NOAA SHIP MT MITCHELL MSS-22, as a portion of Project "ASAP", OPR-516-MI-76, DELMARVANC Phase in accordance with Project Instructions dated 1 October 1975 and Changes No.1 dated 25 November 1975, No.2 dated 7 April 1976 and No.3 dated 4 May 1976. ✓

B. AREA SURVEYED

This survey was conducted offshore of the Atlantic Coast between Ocean City and Winter Quarter Shoal, Maryland generally between the 40 and 150 foot curve. The limits of the survey are described by the lines connecting the following corner points in a counter clockwise direction:

- | | | | |
|---------------------------|---------------------------|---------------------------|-----------------------------|
| 1) 37°57.2'N
74°32.0'W | 2) 38°08.1'N
74°32.0'W | 3) 38°08.1'N
74°21.5'W | 4) 38°12.7'N
74°21.5'W |
| 5) 38°12.7'N
74°46.6'W | 6) 38°13.6'N
74°46.6'W | 7) 38°13.6'N
74°58.0'W | 8) 37°57.2'N
74°58.0'W ✓ |

This survey was conducted on the following dates:

Aug 4 (JD 217), Aug 10 (JD 223) and Aug 11 (JD 224) Bottom Samples Only
Aug 13 (JD 226) through Aug 23 (JD 236)
Sep 17 (JD 261) and Sep 28 (JD 272)
Oct 4 (JD 278) through Oct 20 (JD 294) ✓
~~Oct 22 (JD 296) Nansen Casts~~

C. SOUNDING VESSEL

All soundings for this survey were taken by the NOAA SHIP MT MITCHELL MSS-22 (Vessno 2220 for all survey records) using a fully Automated Hydroplot System. ✓

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

All soundings were obtained by a Ross Laboratories Model 5000 Fineline Recorder (S/N 1052) using one skeg-mounted transducer and a Ross Model 4000 Transducer (S/N 1050). All soundings obtained by the Ross were digitized to the nearest tenth of a foot by a Ross 6000 Depth Digitizer (S/N 1039-2).

All records were scanned by trained Survey Department personnel and checked by the officer in charge. Peaks and deeps considered significant that occurred between soundings were inserted, digitized errors were corrected and the effects of seas were meaned and corrected on a corrector tape.

Phase calibration checks on the Ross fathometer were made at frequent intervals to ensure proper belt speeds. Any necessary adjustments were made

and noted ⁱⁿ on the sounding volume and on the fathogram. Also, any departures of the trace from the calibration due to phase differences were corrected during the scanning process.

Velocity corrections were obtained from 3 Nansen Casts taken on the following dates at the following locations:

	Dates:	Latitude:	Longitude:
Velocity Table #5	Aug 4, 1976 (JD 217)	38°01'12"N	74°23'12"W
Velocity Table #9	Sep 8, 1976 (JD 252)	38°02'00"N	74°23'00"W
Velocity Table #14	Oct 13, 1976 (JD 287)	38°08'24"N	74°20'24"W

Corrections for velocity were made from the salinity and temperature data obtained from these Nansen Casts using RK 530 velocity corrections computations and a depth versus velocity corrections curve was made. Printouts of the velocity tapes and all tables are included within this report.

In order to more accurately describe changes in the water column during this survey, the velocity corrections were zoned using 2 corrector tapes as follows:

Velocity Corrector Tape #1 (an average of Tables #5 and #9) applies to hydrographic data from JD 226-261 (Pos. 028-219). Velocity Corrector Tape #2 (an average of Tables #9 and #14) was applied on the smooth boat sheet to all hydrographic data, but should only be applied to data from JD 272-294 (Pos. 220-3234). Data from Tables #9 and #14 was rerun through RK 530 to produce a continuous curve for depths greater than the 128 foot scope of Table #14. The results of this combined computations are in the corresponding appendix.

A vertical cast was made north of Little Creek, Virginia in Chesapeake Bay to determine instrument error. The error was less than 0.2 feet and is considered to be 0 due to the accuracy of the casts. The computations for this vertical cast is included in Appendix 3.

Several draft readings were taken throughout the work on this survey. A draft of 14.0 feet was applied to all soundings during the on-line process. ~~Changes of the draft are in the TC/TT Tape included with the survey data.~~ A printout of this tape is included with this report. *No. The only thing found to be on the TC/TT Tape was the settlement and squat.*

A copy of the settlement and squat correctors were determined on May 10, 1974 in Mayport, Florida.

This survey was conducted using predicted tides based on daily predictions for Breakwater Harbor, Delaware as found in the Tides Tables for 1976. Pre-zoned tide correctors were supplied by the Rockville Tides Branch. A copy of the request for the actual tides for the area surveyed is included with this report.

E. HYDROGRAPHIC SHEETS

This survey was plotted on two complot roll plotter sheets by the Mt. Mitchell Hydroplot System. The skew used was 00, 21, 60. The survey was plotted off-line using an electronic corrector tape and a velocity corrector tape. Soundings on the field sheets were corrected for predicted tides, draft, initial and digitizing error and sound velocity. They are not corrected for settlement and squat and instrument error.

The final smooth sheet will be plotted at the Atlantic Marine Center, Norfolk, Virginia. The following tapes and their printouts will be forwarded with the records to the Atlantic Marine Center:

Master Range-Range Data Tape
Electronic Corrector Tape
Parameter Tapes
ASCII Signal Tapes
Velocity Tapes
Transducer Corrector/Table Indicating Tape

F. CONTROL STATIONS

Two control stations on shore at the following locations were used:

Name:	Signal No:	Latitude:	Longitude:
Assateague (H-1-VA-76)	300	38°51'46.378"N	75°22'03.957"W
Indian River (H-3-76-DL)	400	38°34'45.917"N	75°03'32.067"W

Both shore stations were located by personnel from the Operations Division, Atlantic Marine Center. Stations were erected and maintained by ship's personnel.

G. HYDROGRAPHIC POSITION CONTROL

A Decca Sea Fix system, operating at a frequency of 1618.650 KHZ, in range-range mode was used to provide positioning control on the following dates:

4 August 1976 (JD 217) through 13 August 1976 (JD 226)
17 September 1976 (JD 261) through 20 October (JD 294)

An Odum offshore Hydrotrac system, operating at a frequency of 1618.70 KHZ, in range-range mode, was used to provide positioning control on the following days:

19 August 1976 (JD-232) through 23 August 1976 (JD 236)

As the difference in frequency between Odom Offshore Hydrotrac and Decca Sea Fix affected the position control by less than 3 meters at 1000 lanes from the station, data obtained using Odom Offshore Hydrotrac was plotted using the same frequency as the Decca Sea Fix.

The following Decca Sea Fix Equipment was used:

Type:	Serial No:
Shipboard:	
Master MDU	004
Master Transmitter	009
Master Receiver	129
Interface (Panalogic)	005 (Changed to 006 18 October)
Sawtooth Recorder	9511(Changed to N264 18 October)
Shore Stations 300:	
Slave Control Unit	027
Power Supply (Solar)	102
Transmitter Amplifier	007
Coupler	133
Shore Stations 400:	
Slave Control Unit	026
Power Supply (Solar)	101
Transmitter Amplifier	007
Coupler	132

The following Odum Offshore Hydrotrac equipment was used:

Type:	Serial No:
Shipboard:	
Master MDU	106
Master Transceiver	308 Model #73-116
Power Amplifier	009 Type 610
Sawtooth	9511
Shore Stations 300:	
SDU	206
Power Supply (Solar)	102
Transmitter Amplifier	007
Coupler	133
Shore Stations 400:	
SDU	208
Power Supply (Solar)	101
Transmitter Amplifier	011
Coupler	132

Initial calibration of the electronic positioning control was accomplished using three point sextant fixes and comparing observed ranges with computed values by use of Hydroplot Calibration Program RK 561. A simultaneous check fix was taken with each calibration. Only those fixes with inverses of less than 10 meters were accepted. Fixes were taken from both port and starboard bridge wings with the resultant port and starboard values meaned to obtain the final corrector. This corrector was then used until a new calibration was obtained. Differences in partial lane values between consecutive calibrations were insignificant at the scale of the survey (1:40,000) so that partial lane values were not averaged between consecutive calibrations.

When visibility conditions precluded sextant fixes, calibration was accomplished by comparing Sea Fix (or Hydrotrac) values with values computed from Del Norte positioning. The following Del Norte stations and equipment were used:

Station No:	Signal No:	Position:	Type:	Serial No:
136	Coast Guard Lookout Tower	38°19'30.836"N 75°05'18.229"W	A	927
150	Fenwick Island Light	38°27'04.478"N 75°03'19.186"W	B	527
	Ship's Master			169

Both Del Norte stations were located by the Operations Division of the Atlantic Marine Center. Also, Del Norte was calibrated visually along with Sea Fix whenever possible. An abstract of the calibration data is included with the records accompanying this report.

Whenever it became necessary for the whole lane count to ^{be} established, one of the following four buoys was circled:

Buoy:	Latitude:	Longitude:
(1) OTTS #2	38°01.5'N	74°23.0'W
(2) "DA"	38°32.7'N	74°47.0'W
(3) "2JS"	38°05.4'N	74°45.2'W
(4) Mt Mitchell #3	37°50.8'N	74°11.6'W

The Sea Fix lane count was constantly monitored by the Survey Department personnel by comparing the navigation interface readout with a running count on the sawtooth recorder.

Bottom samples were taken using LORAN C control during times when Sea Fix was not functioning.

H. SHORELINE

There was no shoreline within the limits of this survey. ✓

I. CROSSLINES

Crosslines equal 6.7% of the main scheme lines of this survey. Crosslines were run at angles greater than 45° to main scheme and when operationally practical to correspond to predicted mean low water. Agreement between crosslines and main scheme was very good. ✓

J. JUNCTIONS

This survey junctions well with H-9629, MI-40-3-76 to the north and H-9632, MI-80-4-76 to the east. Most soundings were in general agreement. ✓

K. COMPARISON WITH PRIOR SURVEYS

The prior surveys conducted in the area are as follows:

H-5355 (1933), H-5348 (1933), H-5350 (1933) and H-5351 (1933)
H-5354 (1933), ~~H-5348 (1933)~~, H-5713 (1934-48) W.D. - FE No. 8 (1949)

The prior surveys compared very well with the survey at most depths. There were four un-numbered pre-survey review items which did not require extensive investigations. They are described by the following:

(1) A 90 foot wire dragged obstruction was investigated at the pre-survey position of 38°06.2'N and 74°37.1'W. No evidence of an obstruction was found in this area, however two 100 foot soundings were found 200 meters northeast of this position within an area of general shoaling. *see Verifiers Report.*

(2) An 84 foot sounding was investigated at the pre-survey position of 38°00.5'N and 74°41.1'W. A development was not done over this position since shoaling was observed 1000 meters to the southeast. Development of this area found a least depth of 87 feet which agrees with prior survey H-5355. *See Verifiers Report 8*

(3) A 50 foot wire dragged obstruction was investigated at the pre-survey position of 38°05.5'N and 74°48.6'W. No indication of an obstruction was found in this area which is 800 meters northwest of the 60 foot curve on Jack Spot Shoal. *See Verifiers Report*

(4) A 72 foot sounding was investigated at the pre-survey position of 38°11.7'N and 74°41.5'W. An 85 foot sounding was found in this position which is on the northwest edge of an area of general shoaling. A least depth of 88 feet was found 400 meters south of this position. *See Verifiers Report*

In addition, a spike was discovered on the fathogram during main scheme hydrography. Further investigation revealed a least depth of 96 feet at 38°04.9'N and 74°35.6'W. *100* ✓

L. COMPARISON WITH THE CHART

This survey is covered by Charts No. 12200 (formerly C&GS No. 1109) 27th Edition, April 12, 1975 and No. 12211 (formerly C&GS No. 1220) 21st Edition, June 15, 1974. Chart 12211 agreed generally to within one to three feet. Chart No. 12200 was generally three to five feet shoaler than this survey. However 12200 had soundings in fathoms and were converted to feet for comparison purposes. Discrepancies were found at the following four locations - an 11 fathom sounding (66 feet) charted at 38°00.7'N and 74°46.6'W was surveyed at 94⁵ feet. This 11 fathom sounding was derived from a 70 foot sounding on Survey H-5355 at 38°00.8'N and 74°46.3'W. 200 meters northeast of this location a 78⁶ foot sounding was found. An 18 fathom sounding (108 feet) charted at 37°59.0'N and 74°35.3'W was surveyed at 117⁸ feet. A 14 fathom (84⁸ feet) sounding charted at 38°05.8'N and 74°42.7'W was surveyed at 112² feet. Finally, a 44 foot sounding charted at 38°08.7'N and 74°52.5'W was surveyed at 52 feet. *See Verifiers Report* ✓

M. ADEQUACY OF SURVEY

This survey is complete and adequate to supercede all prior work in the area. ✓

N. AIDS TO NAVIGATION

There was one navigational aid within the survey area. The buoy "2JS" is described by the Light List (No.135) as being located at 38°05.3"N and 74°45.1'W with characteristics of Fl.W. 4s and 89 feet of water. By circling this buoy its position was found to be 38°05'26.5"N and 74°45'14.2"W in 69 feet of water about 500 meters west of an 89 foot sounding. "2JS" is maintained by the Coast Guard and adequately marks the northeast corner of Jack Spot Shoal. ✓

O. STATISTICS

Linear Nautical Miles of Hydro	1945.5
Linear Nautical Miles of Crosslines	130.5
Linear Nautical Miles of Development	45.0
Total Linear Nautical Miles of Hydro	2121.0
Total Linear Miscellaneous Miles	504.5
Total Linear Nautical Miles Run	2625.5
Square Miles of Hydro	339.5
Total Positions	3234
Nansen Casts	3
Bottom Samples	26

P. MISCELLANEOUS

None

Q. RECOMMENDATIONS

None

R. AUTOMATED DATA PROCESSING

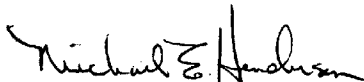
The following Hydroplot Programs were used to complete the processing of the survey:

	Name:	Version Date:
RK 111	Range-Range Real Time System	30 Jan 1976
RK 201	Grid, Signal and Lattice Plot	18 Apr 1975
RK 211	Range-Range Non Real Time Plot	16 Aug 1974
PM 360	Electronic Tape Abstract	21 Mar 1974
AM 500	Predicted Tide Generators	10 Nov 1972
RK 530	Layer Corrections for Velocity	25 Jun 1974
RK 561	H/R Geodetic Claibration	19 Feb 1975
RK 602	Elinore Line Editor	21 Mar 1975

S. REFERENCE TO REPORTS

None

Respectfully Submitted:


Michael E. Henderson
Ensign, NOAA Corps

APPENDIX 1

HYDROGRAPHIC SHEET PROJECTION

AND

ELECTRONIC CONTROL PARAMETERS



National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
NOAA SHIP MT MITCHELL MSS-22
439 West York Street
Norfolk, Virginia 23510

Date : December 15, 1976

Reply to Attn. of:

To : Director, National Ocean Survey (Attn: C331)

From : Commanding Officer, NOAA SHIP MT MITCHELL MSS-22

Subject: Tidal Data for Survey H-9640

It is requested that verified hourly heights of tides (using Greenwich Mean Time) from the tide gages listed below be forwarded to the Processing Division (CAM 3), Atlantic Marine Center, Norfolk, Virginia 23510.

	Latitude:	Longitude:
Ocean City, Maryland	38°19.6'N	75°05.0'W
Wallops Island, Virginia	37°50.5'N	75°28.6'W

It is requested that this times and heights corrections for each gage be zoned as per Project Instructions for the area described within the following corner points:

1) 37°52.2'N 74°32.0'W	2) 38°08.1'N 74°32.0'W	3) 38°08.1'N 74°21.5'W	4) 38°12.7'N 74°21.5'W
5) 38°12.7'N 74°46.6'W	6) 38°13.6'N 74°46.6'W	7) 38°13.6'N 74°58.0'W	8) 37°57.2'N 74°58.0'W

This information is requested for the following periods:

0000 4 August 76 JD 217) to 2359 20 October 76 (JD 294).

ATLANTIC MARINE CENTER

TIDE NOTE

OPR-516-MI-76

1. Project No: OPR-516 2. Vessel/~~Field Unit~~: NOAA Ship MT MITCHELL (MSS-22)
 3. Year: 1976 4. Meridian Time Zone: GMT
 5. Tide Station Name: OCEAN CITY, MARYLAND

6. Position: Lat. 38° 19.6' N. Long. 75° 05.0' W.

7. Plane of Reference: MLW, MLLW corresponds to _____ feet on the tide staff for the period 0000 JD 217 to 2359 JD 294.

8. Hourly Heights: Standard Gauge, furnished from Rockville.
 Scaled and logged from field marigrams.

9. Tidal Zoning: Not applicable.
 By two or more gauges automatically zoned.
 By applying tidal differences and constants

for the area(s): a. _____

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

b. _____

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

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

10. Remarks: All Times and Dates used on the survey are Greenwich Mean Time

ATLANTIC MARINE CENTER

OPR-516-MI-76

TIDE NOTE

1. Project No: OPR- 516 2. Vessel/~~Field Station~~: NOAA Ship MT MITCHELL (MSS-22)
 3. Year: 1976 4. Meridian Time Zone: GMT
 5. Tide Station Name: WALLOPS ISLAND, VIRGINIA
 6. Position: Lat. 37° 50.5' N. Long. 75° 28.6' W.
 7. Plane of Reference: MLW, MLLW corresponds to _____ feet on the tide staff for the period 0000 JD 217 to 2359 JD 294.

8. Hourly Heights: Standard Gauge, furnished from Rockville.
 Scaled and logged from field marigrams.
 9. Tidal Zoning: Not applicable.
 By two or more gauges automatically zoned.
 By applying tidal differences and constants for the area(s): a. _____

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

b. _____

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

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

10. Remarks: All Times and Dates used on the survey are Greenwich Mean Time

3/8/77

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): Bethany Beach, De.

Period: August 4 - October 20, 1976

HYDROGRAPHIC SHEET: H-9640

OPR: 516

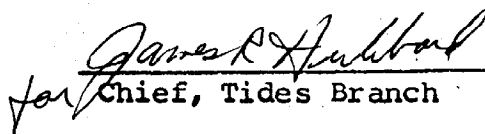
Locality: Offshore, east of Assateague Island

Plane of reference (mean ~~lower~~ low water): Aug: 3.7 ft.
Sept.-Oct.: 4.3 ft.

Height of Mean High Water above Plane of Reference is
3.6 ft. - Bethany

Remarks: Recommended zoning:

Apply - 20 minute time correction and range ratio x0.94.


for Chief, Tides Branch

M1-40-4-7L

1053A 60 11

Launch VESNO 2220
 Survey No. _____
 OPR No. 516-M1-76
 L.L. No. SHIPS FEET

Record of simultaneous leadline
 and echo sounder comparisons

Echo Sounder No. ROSS 1052

Julian Day	Date (197 <u>6</u>)	L.L. Sndg.	L.L. Corr.	L.L. Depth	Echo Sndg.	Echo Sndg. Corr.	Echo Depth	
296	10/22							
	STBD 1	30.1 ^v	-.04 ^v	30.06 ^v	16.1 ^v	14.30 ^v	30.40 ^v	-.34 ^v
	2	30.0 ^v	↓	29.96 ^v	16.0 ^v	↓	30.30 ^v	-.34 ^v
	3	30.0 ^v	↓	29.96 ^v	16.1 ^v	↓	30.40 ^v	-.44 ^v
	4	30.0 ^v	↓	29.96 ^v	16.0 ^v	↓	30.30 ^v	-.34 ^v
	5	30.0 ^v	↓	29.96 ^v	16.2 ^v	↓	30.50 ^v	-.54 ^v
								-.40 ^v
	PORT 1	30.5 ^v	-.04 ^v	30.46 ^v	16.0 ^v	14.30 ^v	30.30 ^v	+ .16 ^v
	2	30.4 ^v	↓	30.36 ^v	16.1 ^v	↓	30.40 ^v	-.04 ^v
	3	30.4 ^v	↓	30.36 ^v	15.9 ^v	↓	30.20 ^v	+ .16 ^v
	4	30.4 ^v	↓	30.36 ^v	16.0 ^v	↓	30.30 ^v	+ .06 ^v
	5	30.3 ^v	↓	30.26 ^v	16.1 ^v	↓	30.40 ^v	-.14 ^v
								+ .04 ^v
DRAFT NET 13.95 FEET ✓						Instrument Corr = -.13 Feet ✓		
Velocity Correction +.35 feet ✓								
Echo Sndg Corr 14.30 feet ✓								
LL Corr. measured 10/22 after Cast ✓								
at 30 FEET MARK on LL vs STEEL TAPE = 29.96 FEET ✓								
LL Corr = -.04 Feet ✓								
						CHECKED ✓ WVF		
						COMPLETED PRW		

July 22, 1974

NOAA SHIP MT MITCHELL MSS-22

ABSTRACT OF SETTLEMENT AND SQUAT CORRECTORS

RPM'S	S+S CORRECTORS (FM)	S+S CORRECTORS (FT)
105	0.00	0.0
110	0.00	0.0
120	0.02	0.1
130	0.03	0.2
140	0.05	0.3
150	0.07	0.4
160	0.07	0.4
170	0.07	0.4
180	0.08	0.5
190	0.08	0.5

Computed by: Evelyn J. Fields

Checked by: David Pasciuti

VELOCITY
CORRECTION TO DEPTHS
(FROM GRAPHS OF
EACH VELOCITY TABLE)

40-4-76
FEET
TABLE # 1

CORRECTION

VELOCITY TABLES

FT	# 5	# 9	AVERAGE OF 5 & 9	FT	# 5	# 9	AVERAGE OF 5 & 9
0.0	15.2	14.5	14.9 ✓	2.6	73.5	76	74.7 ✓
0.1	17.7	17.0	17.4 ✓	2.7	76.2	78	77.1 ✓
0.2	20.2	20.5	20.4 ✓	2.8	79.2	80	79.6 ✓
0.3	22.3	23	22.7 ✓	2.9	82.5	82.5	82.5 ✓
0.4	25	25.5	25.2 ✓	3.0	86.1	85.2	85.6 ✓
0.5	27	27.5	27.2 ✓	3.1	90	88.1	89.1 ✓
0.6	29	29.5	29.2 ✓	3.2	94.2	91.5	92.9 ✓
0.7	31	31.3	31.2 ✓	3.3	98.9	94.3	96.6 ✓
0.8	33	33.4	33.2 ✓	3.4	103.5	97.8	100.6 ✓
0.9	35	35.5	35.2 ✓	3.5	108.5	101	104.8 ✓
1.0	37	38	37.5 ✓	3.6	113.5	104.5	109.0 ✓
1.1	38.8	40.1	40.0 ✓	3.7	119.2	108.5	113.8 ✓
1.2	40.8	42.5	41.6 ✓	3.8	125	113	119 ✓
1.3	43	45	44.0 ✓	3.9	130.2	118	124.1 ✓
1.4	45	47.2	46.1 ✓	4.0	136.2	123	129.6 ✓
1.5	47.3	49.8	48.5 ✓	4.1	143	128.5	135.7 ✓
1.6	49.5	52.2	50.9 ✓	4.2	147.8	134	140.9 ✓
1.7	52	54.7	53.4 ✓	4.3	153	139.5	146.3 ✓
1.8	54.2	57	55.6 ✓	4.4	158.5	145	151.7 ✓
1.9	56.5	59.5	58.0 ✓	4.5	164	151.3	157.6 ✓
2.0	59	61	60 ✓	4.6	169.5	157	163.3 ✓
2.1	61.3	64.2	62.7 ✓	4.7	174.5	164	169.2 ✓
2.2	63.8	66.8	65.3 ✓	4.8	180.3		180.3 ✓
2.3	66.2	69.0	67.6 ✓	4.9	190.5		190.5 ✓
2.4	68.8	71.3	70.0 ✓	—			
2.5	71.2	73.5	72.4 ✓				

VESSEL =2220

DATE =AUGUST 4 1976 (J.D. 217)

TIME =1500 GMT

LATITUDE = 038/01/12.00

LONGITUDE = 074/23/12.00

TYPE OF OBSERVATION =NANSEN CASTOTTS #2 DEPLOY
VELOCITY TABLE #5

CAST-DEPTH (SURFACE) (M)	TEMP (DEG C)	SALINITY (0/00)	SND VEL (M/SEC)
0000.0	23.61	32.00	1528.10
0005.0	23.62	31.99	1528.19
0010.0	23.60	31.99	1528.23
0015.0	23.58	31.99	1528.26
0020.0	20.00	32.13	1519.10
0025.0	16.10	32.42	1508.10
0030.0	12.63	32.75	1497.29
0035.0	10.02	33.00	1488.47
0040.0	09.98	33.03	1488.44
0045.0	09.73	33.03	1487.61

VELOCITY CORRECTOR TAPE PRINTOUT

MI - 40 - 4 - 76

TAPE # 2

750

000150 0 0000 0002 000 222000 040476
000180 0 0001
000210 0 0002
000240 0 0003
000270 0 0004
000300 0 0005
000328 0 0006
000355 0 0007
000385 0 0008
000412 0 0009
000442 0 0010
000470 0 0011
000495 0 0012
000525 0 0013
000553 0 0014
000585 0 0015
000613 0 0016
000645 0 0017
000675 0 0018
000705 0 0019
000740 0 0020
000770 0 0021
000805 0 0022
000840 0 0023
000875 0 0024
000905 0 0025
000945 0 0026
000980 0 0027
001020 0 0028
001060 0 0029
001103 0 0030
001150 0 0031
001190 0 0032
001235 0 0033
001280 0 0034
001325 0 0035
001375 0 0036
001427 0 0037
001475 0 0038
001525 0 0039
001575 0 0040
001630 0 0041
001680 0 0042
001735 0 0043
001790 0 0044
001845 0 0045
001900 0 0046
999999 0 0046

VELOCITY
CORRECTION TO DEPTHS
(FROM GRAPHS OF
EACH VELOCITY TABLE)

FEET

TABLE #2

SCALED BY VEW

DAW

CORRECTION	VELOCITY TABLES							
	9 1/4			9 1/2				
0.0	15		2.6	94.5				
0.1	18		2.7	98				
0.2	21		2.8	102				
0.3	24		2.9	106				
0.4	27		3.0	110.5				
0.5	30		3.1	115				
0.6	32.8		3.2	119				
0.7	35.5		3.3	123.5				
0.8	38.5		3.4	128				
0.9	41.2		3.5	132.5				
1.0	44.2		3.6	137.5				
1.1	47.0		3.7	142.7				
1.2	49.5		3.8	147.5				
1.3	52.5		3.9	152.5				
1.4	55.3		4.0	157.5				
1.5	58.5		4.1	163				
1.6	61.3		4.2	168				
1.7	64.5		4.3	173.5				
1.8	67.5		4.4	179				
1.9	70.5		4.5	184.5				
2.0	74		4.6	190				
2.1	77		4.7	-				
2.2	80.5							
2.3	84							
2.4	87.5							
2.5	90.5							

VESSEL =2220

DATE = SEPT. 8 (#9) : OCTOBER 13 (#14)

TIME = 2100 GMT (#9) : 1522 GMT (#14)

LATITUDE = 038/02/00.00 : 38/08/24.0
TABLE #9 TABLE #14

LONGITUDE = 074/23/00.00 : 74/20/24.0

TYPE OF OBSERVATION = TABLES #9, 14

	CAST-DEPTH (SURFACE) (M)	TEMP (DEG C)	SALINITY (0/00)	SND VEL (M/SEC)
	0000.0	17.62	32.12	1511.94
#14	0010.0	17.56	32.13	1511.86
	0020.0	17.00	32.25	1510.49
	0030.0	13.53	32.77	1500.27
	0040.0	12.46	32.95	1497.04
#9	0045.0	09.91	33.30	1488.53

VESSEL =2220

DATE =SEPT 8 1976 (J.D. 252)

TIME =2100 GMT

LATITUDE = 038/02/00.00

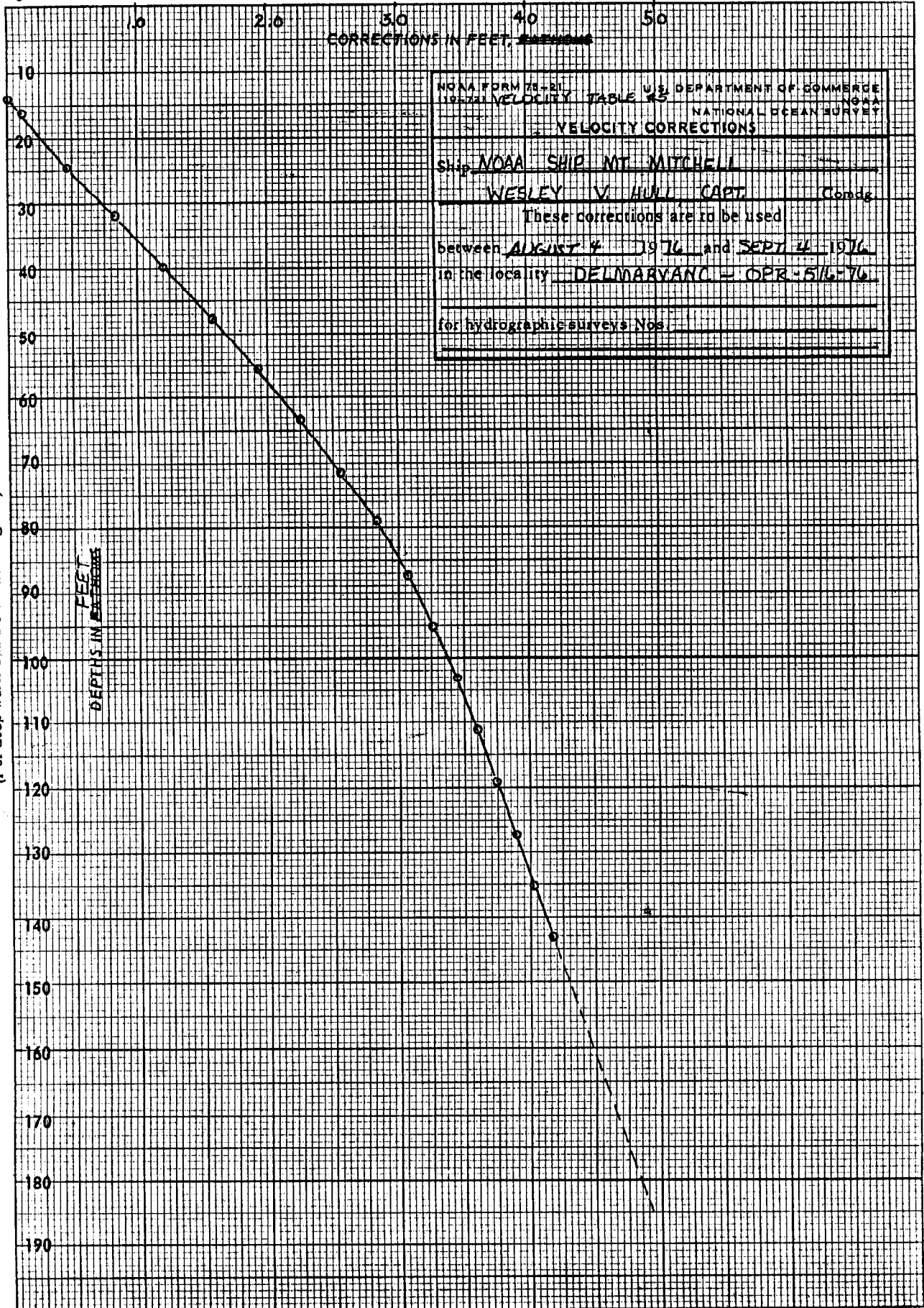
LONGITUDE = 074/23/00.00

TYPE OF OBSERVATION =NANSEN CASTOTTS GAGE#2 RETRIEVAL
VELOCITY TABLE #9

CAST-DEPTH (SURFACE) (M)	TEMP (DEG C)	SALINITY (0/00)	SND VEL (M/SEC)
0000.0	21.74	32.51	1523.90
0005.0	21.54	32.66	1523.63
0010.0	21.44	32.80	1523.61
0015.0	21.06	32.87	1522.76
0020.0	20.69	33.30	1522.35
0025.0	21.60	34.49	1526.22
0030.0	14.86	33.61	1505.73
0035.0	11.42	33.24	1493.80
0040.0	10.30	33.21	1489.84
0045.0	09.91	33.30	1488.61

90M

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



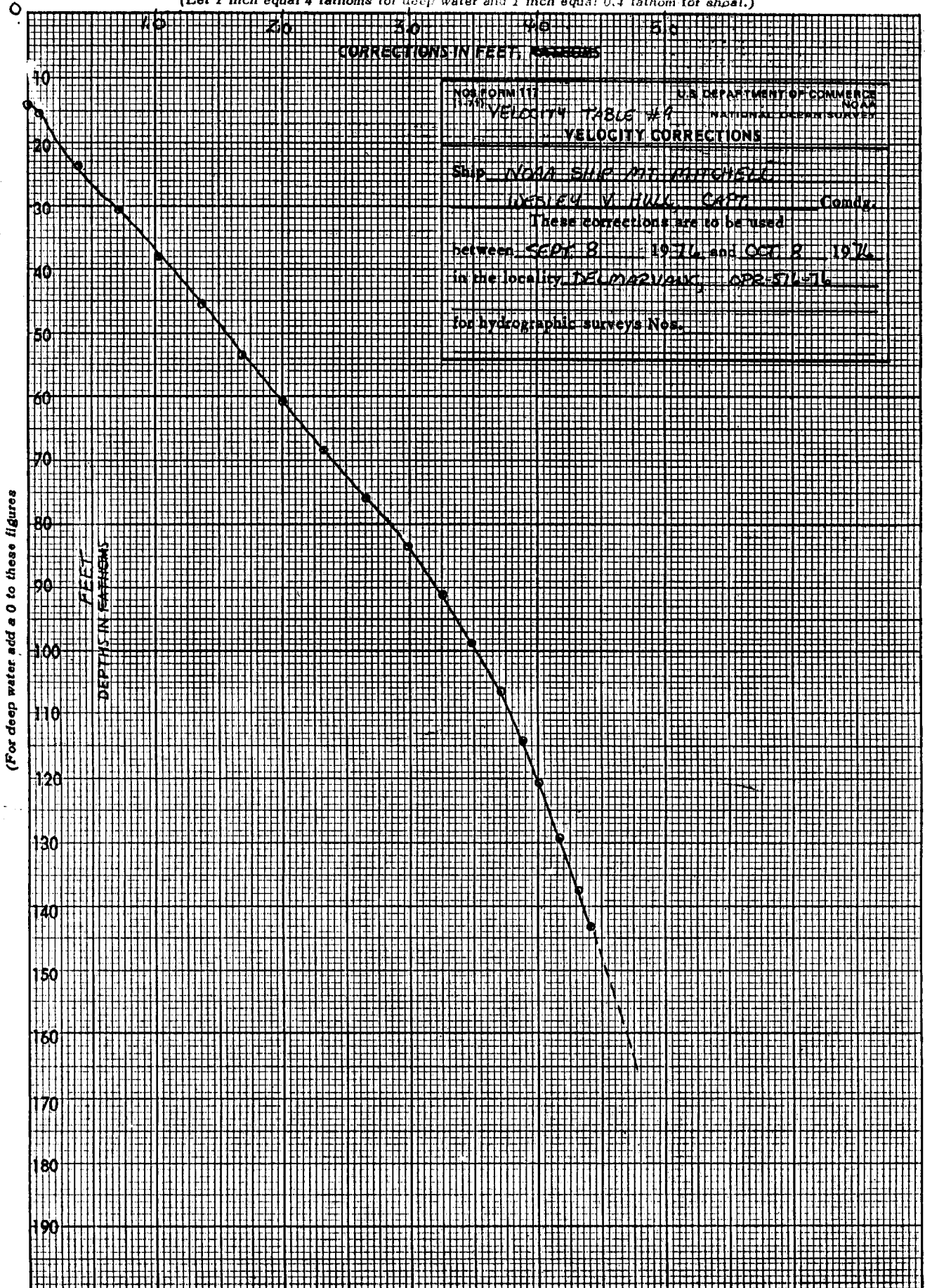
46 1240

20 X 20 TO THE INCH • 7 X 10 INCHES
 KEUFFEL & ESSER CO. MADE IN U.S.A.

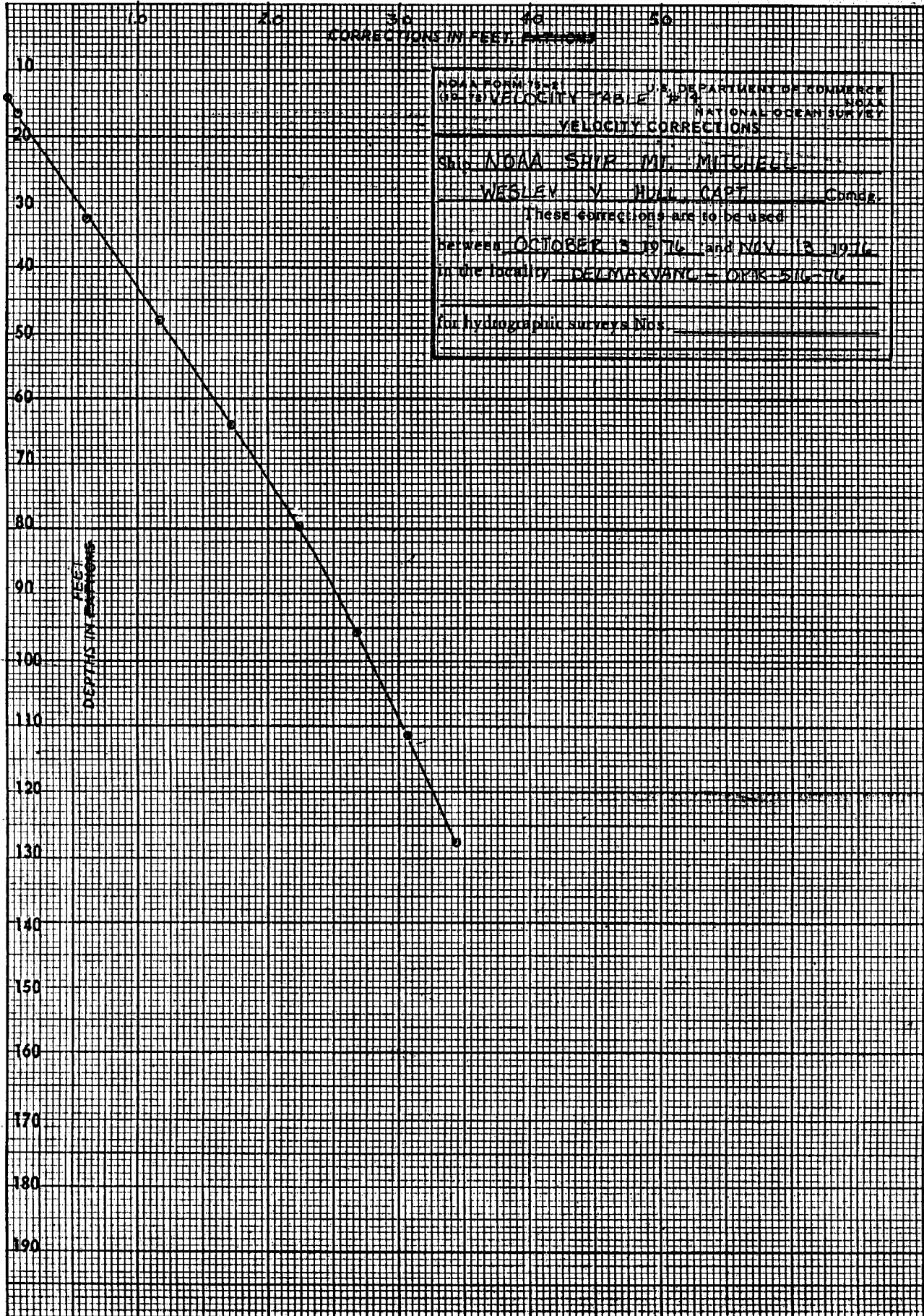


(For deep water add a 0 to these figures)

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



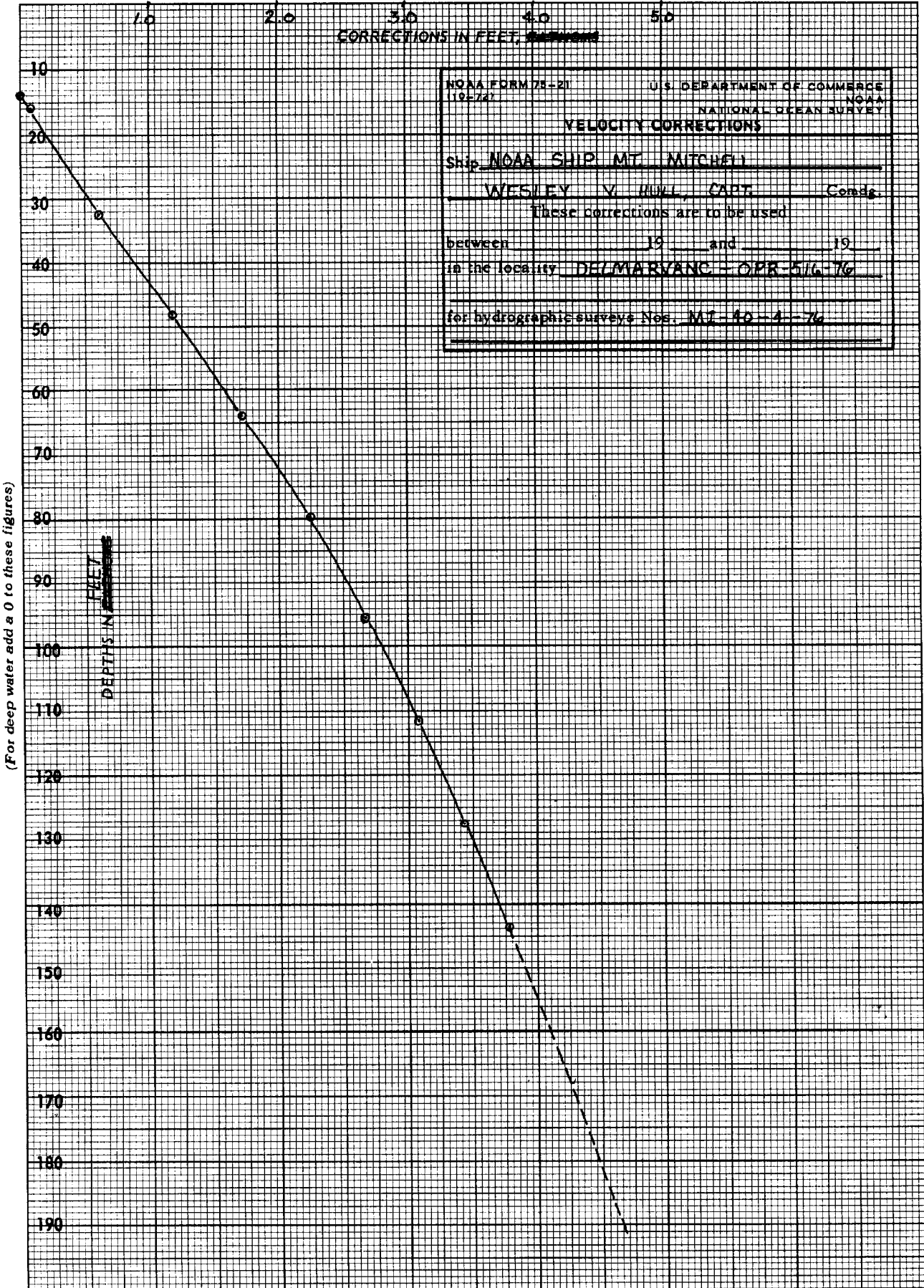
(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



(For deep water add a 0 to these figures)

K&E 20 X 20 TO THE INCH 46 1240
 MADE IN U.S.A.
 KEUFFEL & ESSER CO.

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



46,1240

20 X 20 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.



(For deep water add a 0 to these figures)

DEPTH IN FEET

SIGNAL NAMES TAPE PRINTOUT

128	MYSTIC HARBOR TANK	AMC OPER DIV
132	NORTH JETTY LIGHT	AMC OPER DIV
134	COAST GUARD RADIO TOWER	AMC OPER DIV
136	OCEAN CITY TOWER #146	MD VOL 2 PG 662△
138	OCEAN CITY SOUTH TANK	MD VOL 2 PG 663△
142	OCEAN CITY CENTER TANK	AMC OPER DIV
144	OCEAN CITY NORTH MUNICIPAL TANK	MD VOL 2 PG 665△
149	LIGHT GREEN TANK	AMC OPER DIV
150	FENWICK ISLAND LIGHT	DEL VOL 2 PG 83△
201	AZIMUTH TANK 66 STREET	AMC OPER DIV
300	ASSATEAGUE	AMC OPER DIV
400	INDHAN RIVER	AMC OPER DIV

APPROVAL SHEET

MI-40-4-76

H-9640

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



Wesley V. Hull
Captain, NOAA
Commanding

APPROVAL SHEET
FOR
SURVEY H-9640

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not been made~~. A new final sounding printout has/~~has not been made~~.
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the Verifier's Report.

Date: 5-17-78

Signed: Billy J. Stephenson
Title: Chief, Verification Branch
Acting

GEOGRAPHIC NAMES

H-9640

Name on Survey	Source of Name									
	A	B	C	D	E	F	G	H	K	
	ON CHART NO.	ON PREVIOUS SURVEY NO.	CON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND McNALLY ATLAS	U.S. LIGHT LIST		
JACK SPOT										1
OCEAN CITY										2
GREAT GULL BANK		}	TITLE							3
WINTER QUARTER SHOAL										
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

APPROVED

Chris E. Harrington

CHIEF GEOGRAPHER - C3x8

9 Aug. 1978

HYDROGRAPHIC SURVEY STATISTICS

H-9640

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS 10-B/S, 6-MYLAR, 4 PAPER		2 10	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		2	
DESCRIP- TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	X					1-misc. data
CAHIERS	2-with Printouts		X 2			
VOLUMES	2					
BOXES			1-Smooth			1-sawtooth records

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			3228
POSITIONS CHECKED		300	
POSITIONS REVISED		8	
SOUNDINGS REVISED		256	
SOUNDINGS ERRONEOUSLY SPACED			
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED			
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	9		
VERIFICATION OF CONTROL		0	
VERIFICATION OF POSITIONS		32	
VERIFICATION OF SOUNDINGS		86	
COMPILATION OF SMOOTH SHEET		35	
APPLICATION OF TOPOGRAPHY		0	
APPLICATION OF PHOTOBATHYMETRY		0	
JUNCTIONS		7	
COMPARISON WITH PRIOR SURVEYS & CHARTS		62	
VERIFIER'S REPORT		28	
OTHER		0	
TOTALS	9	250	259
Pre-Verification by D. Mason	Beginning Date 01/03/77	Ending Date 01/04/77	
Verification by T. Duncan, D. Mason, L. Cram	Beginning Date 02/08/77	Ending Date 05/08/78	
Verification Check by B. Stephenson	Time (Hours) 4	Date 05/09/78	
Marine Center Inspection by Hydrographic Inspection Team (AMC)	Time (Hours) 8	Date 05/12/78	
Quality Control Inspection by F.P. SAULSBURY	Time (Hours) 39	Date 6/30/78	
Requirements Evaluation by J. Baumgardner	Time (Hours) 4	Date 10/4/78	

REGISTRY NO. H-9640

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

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

CARDS CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. _____

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: A 61 ft. sounding in the vicinity of lat. $38^{\circ}10.13'$, long. $74^{\circ}57.98'$ was excessed to effect the junction between H-9640 and H-9788 (1476). The printout was not appropriately annotated since it was not readily available. During update the automated data bank for H-9640 should be appropriately altered to reflect the "excessed" status of the referenced 61 ft. sounding. X.W.W. 8-7-79
The following sdg's were erased from the smooth sheet, but not excessed in the print-out, so that shoaler sdg's could be transposed from H-9759.

Sdg.	Lat	Long
70'	$38^{\circ}13.60$	$74^{\circ}54.65'$
65'	$38^{\circ}13.50$	$74^{\circ}54.00'$
65'	$38^{\circ}13.60$	$74^{\circ}53.55'$
60'	$38^{\circ}13.50$	$74^{\circ}53.45'$

ZRS. 10/31/79

ATLANTIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9640

FIELD NO. MI-40-1-76

Maryland, Offshore Southeast of Ocean City, Jack Spot

SURVEYED: August 4 through October 22, 1976

SCALE: 1:40,000

PROJECT NO.: OPR-516

SOUNDINGS: Ross Model 5,000
Ross Model 4,000

CONTROL: Sea-Fix (Range-
Range), Del-Norte,
Visual, Hydrotrac
(Range-Range),
LORAN C

Chief of Party W. Hull
Surveyed by G. Mills
..... D. Waltz
..... S. Iwamoto
..... R. Mann
..... W. Dewhurst
..... V. Newell
..... D. Rice
..... L. Cosgriff
..... M. Henderson
..... K. Cox
..... K. Olson
..... P. Daugherty
Automated Plot by CALCOMP-618 Plotter (AMC)
Verified and Inked by D. V. Mason *D.V. Mason*
May 9, 1978

1. Introduction

a. No unusual problems were encountered during the verification of this survey.

b. The projection parameter was revised during verification. The red changes in the Descriptive Report were made by the verifier.

2. Control and Shoreline

a. The source of control is adequately described under Sections F and G of the Descriptive Report.

b. There is no shoreline in the survey area.

3. Hydrography

- a. Depths at crossings are in good agreement.
- b. The standard depth curves were adequately delineated, with the inclusion of a 90-foot brown curve to further define the bottom configuration.
- c. The development of bottom configuration and the investigation of least depths are considered adequate.

4. Condition of Survey

The smooth sheet and accompanying overlays, hydrographic records, and reports are adequate and conform to the requirements of the Hydrographic Manual, except as follows:

- a. Bottom samples were not taken in the northeastern pan-handle of the survey.
- b. The submerged dangerous wreck, PA, 24 feet reported, *See Q.C. Critique* charted in latitude 38° 09.1', longitude 74° 57.2', originates with Local Notice to Mariners No. 18 of 1961. The wreck is the bow section of the tanker AFRICAN QUEEN. This wreck was not investigated and no reference was made to it in the Descriptive Report.
- c. Latest edition of Chart 12211 was not used by the field for chart comparison.

5. Junctions

Adequate junctions were effected with the following surveys:

- H-9632 (1976) 1:80,000 to the east
- H-9629 (1976) 1:40,000 to the north

There are no contemporary surveys to the south, west, or northwest at this time.

6. Comparison With Prior Surveys

- a. H-5348 (1933) 1:40,000
- H-5351 (1933) 1:40,000
- H-5350 (1933) 1:120,000
- H-5354 (1933) 1:20,000
- H-5355 (1933-34) 1:40,000
- H-5713 and Add. Work (1934-48) 1:120,000

A comparison between the above prior surveys and the present survey revealed relatively minor to significant differences in depths. Different methods of sounding and position control were used on the above prior surveys, and in part, differences with the findings of the present survey may be attributed to the survey methods. However, a detailed comparison with each survey revealed the following:

H-5354 - This survey covers the area northeast of Winter Quarter Shoal. Agreement between the prior survey and the present survey is from 0 to 2 feet shoaler on the prior survey.

H-5355 - Depths from this prior survey are 2 to 10 feet shoaler. These differences can in most part be attributed to differences in survey equipment, methods, position control, and bottom configuration. Four soundings from the prior survey were investigated and are listed in the Descriptive Report under Sections J and K, pages 6 and 7 of the Descriptive Report. These four soundings are listed below:

Chart No.	Charted Depth	Lat., Long.	Present Survey Depth
12200	84' <i>PSR-dashed circle item</i>	38°00.5', 74°41.1'	88' 1000m to the SW ✓
12200	109'	37°59.0', 74°35.3'	{112' 200m SW ✓ 115' 200m to the N ✓
12211	44'	38°08.7', 74°52.5'	54' ✓
12211	70'	38°00.5', 74°46.3'	76' ¹²⁰ 200m to the NE SW ✓

H-5351 - Depths from this prior survey are 2 to 10 feet shoaler. These differences can be attributed to differences in survey methods, position control and bottom configuration. One sounding (84 feet) from this prior survey is listed under Section J, page 7 of the Descriptive Report. This sounding is listed below:

Chart No.	Charted Depth	Lat., Long.	Present Survey Depth
12200	14fm (84 ft)	38°05.8', 74°42.7'	{98' 800m to the SNE ✓ 79' 2800m to S.E.

H-5350, H-5713, and H-5348 - Comparison with the above prior surveys are in good agreement and no discussion is necessary.

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

b. F.E. No. 8 WD (1949) 1:40,000

The sunken wreck, a barge, GORDEN C. COLE, charted at latitude

38° 05.47', longitude 74° 48.68' was cleared at 50.5 feet. This *See* wreck was investigated and the least depths found were 70 to 84 *Q.C.* feet. A spike was picked up between positions 1860 and 1861. *Critique* The least depth, meaned out to 79 feet, is considered part of the barge GORDEN C. COLE. The charted, *cleared* wire drag depth of 520 feet should be retained as charted, ~~and has been brought forward to the present survey.~~ *Least depth obtained on present survey - 79 ft.*

The sunken wreck, SAN OIL, charted at reported latitude 38° 06.1', longitude 74° 37.0' was cleared by wire drag at a depth of 91 feet. A sonar search of the area was made with negative results. *(1949) W.D.* Review of F.E. No. 8, dated November 17, 1950 also stated that the wreck should be expunged from the chart. A 100-foot spike *concur* was surveyed at latitude 38° 04' 47.86", longitude 74° 35' 36.44" *7PS* between positions 2160 and 2161. This area was cleared by 94 feet during F.E. No. 8, 1949 WD. Although not hung, it is the opinion of this verifier that the wreck indication found by the present survey is the SAN OIL previously investigated by F.E. No. 8, 1949 WD without conclusive results. The 15-fathom wire drag, *cleared depth* sounding should be expunged from the chart (No. 12200). A wreck ~~symbol~~ *indicated* was added to the present survey at latitude 38° 04' 47.86", longitude 74° 35' 36.44" *where a 100-ft. sdg. is plotted.*

Except where noted above, no conflicts exist between present survey depths and the effective depths for this wire drag survey. *See* *QC.* *Critique*

7. Comparison With Charts 12200 (27th Edition, April 12, 1975)
 12211 (21st Edition, June 15, 1974)
 12211 (23rd Edition, February 14, 1976)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys and requires no further consideration.

Recommend deleting the 15-fathom cleared depth in latitude 36° 06.1', longitude 74° 37.0' and charting 100-foot wreck at latitude 38° 04' 47.86", longitude 74° 35' 36.44". *100 ft wreck was (38° 04.79') (74° 35.56') cleared by 94 ft. on 1949 W.D. survey*

As stated under item 4.b. of this report, the reported bow section of the tanker AFRICAN QUEEN was not verified or disproved so this 24-foot sounding should be retained as charted. *concur 7PS*

The present survey is adequate to supersede the charted hydrography within the common area. *concur 7PS.*

b. Aids to Navigation

The floating aid to navigation, Buoy "2JS", located on the present survey is in substantial agreement with its charted position and adequately serves the purpose intended.

8. Compliance With Instructions

This survey complies with the Project Instructions except as noted in Section 4 of this report.

9. Additional Field Work

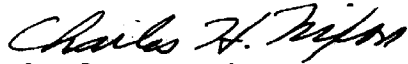
This is an excellent survey and no additional field work is recommended. During future field work in the area, however, the item discussed in item 4.b. should be investigated and verified or disproved. *WRECK, P.A., 29th rep.*


Inspection Report
H- 9640

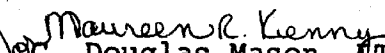
Any verification errors regarding procedures and presentation of survey data detected during inspection by the Hydrographic Inspection Team have been corrected before submission for administrative approval. HIT comments regarding quality of field work, compliance with instructions, and adequacy of the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


Examined and Approved:
Hydrographic Inspection Team
Date:


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

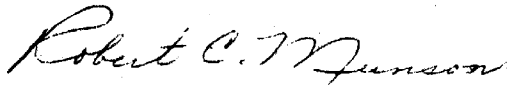

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

C352/FPS

July 3, 1978

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

THRU: Chief, Quality Control Branch

FROM: F. P. Saulsbury *F.P. Saulsbury*
Quality Evaluator

SUBJECT: Quality Control Report for H-9640 (1976), Maryland, Offshore -
Southeast of Ocean City, Great Gull Bank to Winter Quarter Shoal

A quality control inspection of H-9640 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, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. In general, it 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. A few depth curves were revised where in conflict with soundings. A few brown curves were added to emphasize rises.

The hydrographic development in the southeast portion of the survey is inadequate for an accurate portrayal of bottom configuration with the 120-foot depth curves.

2. In the junctional area on the north with H-9629 (1976) overlapping curves were made coincidental during quality control.

3. The work addressed in item 4.b. of the Verifier's Report was investigated with development lines run at 100- to 500-meter spacing. No evidence of the wreck was found. The investigation is considered inadequate to disprove the wreck's existence and, therefore, it should be retained on the chart.

4. The depth of 51 feet in latitude 38°05.47', longitude 74°48.68' by wire drag was apparently confused with the wire-drag cleared depth. The statement contained in item 6.b. of the Verifier's Report should be amended from "The charted wire-drag depth of 51 feet should be retained as charted" to "The cleared wire-drag depth of 50 feet should be retained as charted."



5. A 71-foot sounding plotted on the present survey in latitude $38^{\circ}11.9'$, longitude $74^{\circ}46.00'$ is in conflict with an area cleared by a 74-foot drag on F.E. 8 W.D. (1949). The area is considered to have shoaled since the 1949 survey and the 71-foot sounding is considered reliable.

6. The Presurvey Review dashed circle 12-fathom (72-foot) sounding charted from H-5351 (1933) in latitude $38^{\circ}11.70'$, longitude $74^{\circ}41.50'$ is discredited by 83- to 85-foot depths on the present survey. The present least depth in this area is an 82-foot sounding approximately 300 meters south of the charted 72-foot sounding.

cc:
C35
C351

