

9614

Diag. Cht. No. 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-80-1-76  
Office No. .... H-9614

**LOCALITY**

State ..... DELAWARE  
General Locality ..... ATLANTIC OCEAN  
Locality ..... OFF CAPE HENLOPEN

19 76

CHIEF OF PARTY  
Wesley V. Hull

**LIBRARY & ARCHIVES**

DATE ..... Sept. 19, 1977

9614

*Handwritten notes:*  
1000-4  
1000-4  
1000-4

HYDROGRAPHIC TITLE SHEET

H-9614

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-80-1-76

State ~~NEW JERSEY~~ DELAWARE

General locality ~~NORWICH~~ ATLANTIC <sup>OCEAN</sup> ~~COAST~~

Locality ~~OFFSHORE~~ CAPE MAY HENLOPEN

Scale 1:80,000 Date of survey 12 MAY 1976 - 11 June 1976

Instructions dated 1 OCT 1975 Project No. OPR-516-MI-76

Vessel NOAA SHIP MT. MITCHELL

Chief of party WESLEY V. HULL, CAPT, NOAA

Surveyed by See Remarks

Soundings taken by echo sounder, hand lead, pole ECHO SOUNDER (ROSS 4 RAYTHEON WGR)

Graphic record scaled by PWS, FL, SG, RM

Graphic record checked by PWS Verification Branch (AMC)

Protracted by N/A Automated plot by CALCOMP-AGIB EDR-AMC HYDROPLOT SYSTEM, NOAA SHIP MT. MITCHELL

Soundings penciled by N/A

Soundings in ~~fathoms~~ ~~feet~~ at MLW MLLW <sup>and tenths</sup> FATHOMS AT MLW

REMARKS: LCDR W. Daniels, LT A. Potok, LTJG D. Waltz, LTJG S. Iwamoto,

ENS R. Mann, ENS L. Cosgriff, ENS W. Dewhurst, ENS V. Newell,

ENS D. Rice, ENS J. Bailey

NOTE ALL CHANGES IN RED MADE DURING VERIFICATION LGC

Applied To Stds. 6-7-78 RW

RWW 10/6/92

A. Project

This survey, MI-80-1-76 (H-9614), was conducted by the NOAA SHIP MT MITCHELL MSS-22, as a portion of the Atlantic Seaboard Area Project, OPR-516-MI-76, "DELMARVANC" phase, in accordance with Project Instructions Dated 1 Oct 1975, and Changes Nos. 1, 2, and 3 Dated 25 Nov 1975, 7 April 1976, and 4 May 1976. ✓

B. Area Surveyed

This survey was conducted offshore of the Atlantic Coast between Atlantic City, New Jersey and Cape Henlopen, Delaware, generally between the 20 and 100 fathom curves. The limits of the survey are described by lines connecting the following points in a clockwise direction:

- |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|
| (1) 38°56.0'N<br>072°51.5'W | (3) 38°25.0'N<br>074°10.0'W | (5) 38°50.0'N<br>073°52.0'W |
| (2) 38°25.0'N<br>073°23.0'W | (4) 38°50.0'N<br>074°10.0'W | (6) 38°56.0'N<br>073°52.0'W |

This survey was conducted on the following dates:

- May 12 (JD 133) through May 20 (JD 141)
- May 25 (JD 146) through May 29 (JD 150)
- May 31 (JD 152) through June 2 (JD 154)
- June 9 (JD 161) through June 11 (JD 163)

C. Sounding Vessel

All soundings for this survey were taken by the NOAA SHIP MT MITCHELL MSS-22 (VESNO 2220 for all survey records) using a fully automated hydroplot survey system.

D. Sounding Equipment and Corrections to Echo Soundings

In depths generally less than 200 fathoms, soundings were obtained by a Ross Model 5000 Fineline Recorder (S/N 1050, changed to S/N 1052 on 26 May 1976) using one skeg mounted transducer and a Ross Model 4000 transceiver (S/N 1050). In depths greater than 200 fathoms, a Raytheon Universal Graphic Recorder (S/N 170) was used with one skeg mounted transducer and an EDO Model 248-1 transceiver (S/N 219). All soundings obtained by the Ross Recorder were digitized by a Ross Depth Digitizer, Model 6000 (S/N 1039-2). Soundings from the UGR Recorder were either entered manually or digitized by a Digitrak Model 261C (S/N 202).\*

All sounding recorders 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, digitizing errors were corrected, and the effects of seas were meaned and corrected on the electronic corrector tape. \* When the CESP unit (a signal correlator) for deep water sounding was used a TRK corrector at 238 fathoms was used. This corrector is the sum of 260 fms. soundings by a 6.5 m. sec delay associated with the CESP operation and the 2.2 fathom depth of the sounding vessel. Excerpt from the Descriptive Report for H-9587 (MI-125-1-76)

Phase calibration checks on the Ross fathometer were made at frequent intervals to ensure proper belt speed. Any necessary adjustments were made and noted in 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 the salinity and temperature data of Nansen Casts and an STD taken at the following locations:

Casts:	Latitude:	Longitude:	Julian Date:
Cast 1	38°57'54"N	073°57'00"W	147
Cast 2	38°34'30"N	073°11'45"W	148
Cast 3 & STD	38°17'00"N	072°53'30"W	192

Casts 1 and 2 used only Nansen Bottles for data collection, while Cast 3 used Nansen Bottles above 200 meters and an STD below that depth. Also, 1 XBT Cast was taken at the following location and date:

XBT 1	38°38'00"N	073°57'00"W	147
-------	------------	-------------	-----

For depths less than 18 fathoms, correctors were averaged from Cast 1 & 2. From 18 fathoms to 110 fathoms data from Cast 2 was used. STD data from Cast 3 determined the correctors below 110 fathoms. The final field sheet was plotted with an incorrect velocity corrector tape showing errors increasing with depth from 110 fathoms of one to five fathoms. The corrected corrector tape and its printout plus other tables are included in this report.

A draft of 2.2 fathoms was applied to all soundings during the on-line process. Significant changes in the draft, along with settlement and squat correctors, are incorporated into the TC/TI tape included with the survey data. A printout of this tape is included with this report. A copy of settlement and squat correctors versus engine RPM is also included with this report. These correctors were determined on July 22, 1974 in Mayport, Florida.

This survey was conducted using predicted tides based on daily predictions for Breakwater Harbor, DE as found in the Tide Tables for 1976. Prezoned tide correctors were supplied by the Rockville Tides Branch. Two hours and eighteen minutes were subtracted from the high and low water times, and the high and low water heights were multiplied by 0.77. A copy of the request for actual tides for the area surveyed is included with this report. Tide correctors were inserted on the master data tape while the survey was being conducted.

#### E. Hydrographic Sheets

This survey was plotted on two complot roll plotter sheets by the NOAA Ship 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. Two plotter sheets joined at hmc into composite one sheet.

The final smooth sheet will be plotted at the Atlantic Marine Center, Norfolk, Virginia.

The following tapes will be forwarded with the other records to the Atlantic Marine Center:

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

F. Control Stations

Two shore control stations at the following locations were used:

Signal No:	Signal Name:	Position:
100	McCabe 1976	38°14'32.217"N 075°08'04.599"W
200	Haven 1975	39°32'51.112"N 074°15'12.847"W

Both shore stations were located by personnel from the Atlantic Marine Center, Operations Division.

G. Hydrographic Position Control

A Decca Sea Fix System, operating at a frequency of 1618.650 KHZ, in the Range-Range Mode, provided the position control for this survey. The following Sea Fix equipment was used:

<u>Type</u>	<u>Serial No.</u>
Ship Equipment:	
Master MDU	004
Master Transmitter	009
Master Receiver	129
Interface (Panalogic)	006
Sawtooth Recorder	9511
Shore Station One Equipment:	
Slave Control Unit	025 (Changed to 027 on 25 May)
Power Supply (Solar)	102
Transmitter Amplifier	007
Coupler	133
Shore Station Two Equipment:	
Slave Control Unit	026
Power Supply (Solar)	101
Transmitter Amplifier	011
Coupler	132

Sea Fix calibration was accomplished using three point sextant fixes and comparing observed range values with computed values obtained from the Hydroplot Calibration Program RK561. A check fix was also taken with each calibration. Only those fixes with an inverse distance <sup>difference</sup> of less than five meters were used for calibration.

When visibility conditions precluded three point sextant fixes, calibration was accomplished by comparing Sea Fix values with ranges observed from two Del Norte stations at the following locations:

Signal No:	Signal Name:	Position:	Ser No:	Unit Type:
136'	Coast Guard Lookout Tower	38°19'30.836"N 075°05'18.229"W	927	C
150'	Fenwick I Light	38°27'04.478"N 075°03'19.186"W	527	B

The ship's master Del Norte Station serial No. was 169. Both shore Del Norte stations were located by personnel from the Atlantic Marine Center, Operations Division.

The calibrating area was located approximately three miles off-shore from Atlantic City and Wildwood, New Jersey, and Ocean City, Maryland. Calibration fixes were taken with the ship on reciprocal headings, and the corrections determined were found not to vary more than 0.1 to 0.2 of a lane. The results were meaned and these corrections were applied to all positions until the next calibration. Whenever it became necessary for the whole lane count to be established, one of the following buoys were circled:

Buoy:	Position:
"2TS"	38°50.1'N 074°37.3'W
"2FB"	38°58.3'N 074°31.7'W
"2"	39°05.3'N 074°34.0'W
"EB-41 NOAA"	38°43.2'N 073°38.1'W
"4"	38°16.3'N 075°00.4'W

The lane count was constantly monitored by the Survey Department, by comparing the navigation interface readout with a running count on the sawtooth recorder. Loran-C rates were compared with Sea Fix rates using Program RK611, as a check on the sawtooth running count, but were not used to set the lane count if the count was lost. An abstract of the calibration data is included with the records accompanying the report.

During work on this survey, some time was lost and several positions rejected due to Sea Fix malfunctions and weather interference. Two entire lines (positions 1652 to 1698) were rejected because of many lane jumps and a sea fix malfunction making subsequent calibration impossible. These lines were subsequently rerun. An abstract of electronic correctors applied is included with this report.

#### H. Shoreline

There was no shoreline within the limits of this survey.

#### I. Crosslines

Crosslines were run at least 45° to the main scheme sounding lines. Mileage of crosslines amounted to about 6% of the regular sounding lines. Crossings agreed well with the main lines, the only exceptions being in the eastern edge of the survey area, in regions of high bottom relief.

#### J. Junctions

This survey junctions well with MI-80-1-75 (H-9553) to the North, with MI-80-2-76 (H-9623) to the East, and with MI-80-4-76 (H-9632) and MI-80-3-76 (H-9631) to the South. It also compares well with MI-40-1-76 (H-9622) and MI-40-3-76 (H-9621) to the West. The latter two surveys were plotted in feet. <sup>29</sup> H-9639 (MI 40-2-76) & H-9614 to the West and Southwest. <sub>39</sub>

#### K. Comparison with Prior Surveys

The only prior survey available at the time of preparation of this report was Number H-6219 of 1937 at a scale of 1:120,000. This survey compared well with the prior survey at most depths. <sup>H-5350(1933) 1:120,000; H-6220 (1937) 1:120,000</sup>  
<sub>H-6345(1938) 1:80,000.</sub>

There were two presurvey review items in this survey area.

Presurvey Review Item No. One was an unidentified five fathom obstruction charted in Lat 38°40.4'N and Long 073°52.5'W. The source was Chart Letter No. 478 of 1946 which was not available. This item was investigated running several sets of closely spaced development lines over the charted position. No indication of shoaling or obstruction was found and it is recommended that this item be deleted from the chart. <sup>concur</sup>

Presurvey Review Item No. Two was a dangerous sunken wreck charted in Lat 38°33.5'N and Long 073°50.2'W. The source was the Navy Wreck List, assigning the Wreck No. 519 and identifying it as the American Tanker India Arrow, sunk in 1942. Item No. Two was investigated by running closely spaced development lines over its charted position, and the wreck was found in position Lat 38°33'08.6" <sup>08.6"</sup>N and Long 073°50'22.8" <sup>22.8"</sup>W. Detached Position No. 1594 indicates a least depth of 25.4 fathoms over the wreck. <sup>concur</sup>

A wreck covered by 25 fathoms should be charted in the above position based on the above investigation (25 Wk).

L. Comparison with the Chart

This survey is covered by Chart No. 12200 (C&GS No. 1109). All soundings compared very well with the chart, except as noted in Section K regarding Presurvey Review Item No. 1. *No Edition No or date*

M. Adequacy of the Survey

Due to an oversight, the distance between soundings in the northern part of the survey area exceed the 5 to 6 mm recommended by the Hydrographic Manual. The spacing in this area is from 7 to 8 mm. Because of the relatively flat bottom in the area this interval is considered acceptable, and therefore this survey is considered sufficiently complete and adequate to warrant its use to supercede prior surveys for charting.

N. Aids to Navigation

There were no aids to navigation in the survey area that were listed in the light list. One buoy, however, was located that does not appear in the light list. This buoy is for environmental monitoring purposes and is maintained by NOAA. This buoy is yellow and has a white flashing light. It is marked "NOAA EB-41" and is in position Lat 38°43'14"N and Long 073°38'04"W.

O. Statistics

Linear Nautical Miles Main-Scheme Hydrography	3261.15
Linear Nautical Miles of Crosslines	179.0
Linear Nautical Miles of Development	63.0
Total Linear Miles of Hydrography	3503.15
Total Miscellaneous Miles	806.65
Total Miles	4309.8
Square Miles of Hydrography	1416.9
Total Number of Positions	1901
Nansen Casts	2
XBT Casts	1
Bottom Samples	15

P. Miscellaneous

None

Q. Recommendations

None



R. Automated Data Processing

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

Program 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 Generator	10 Nov 1972
RK 530 Velocity Correction Computations	25 Jun 1974
RK 561 H/R Geodetic Calibration	19 Feb 1975
RK 602 Extended Line Oriented Editor	21 Mar 1975

S. Reference to Reports

None

Respectfully Submitted;



David A. Waltz  
LT(jg), NOAA

APPROVAL SHEET

MI-80-1-76

H-9614

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



Wesley V Hull  
Captain, NOAA  
Commanding

PRINTOUT

SIGNAL TAPE  
MI-80-1-76 H-9614

100	7	38	14	32217	075	08	04599	250	0000	161865
132	7	38	19	26626	075	05	06924	139	0000	000000
134	7	38	19	39961	075	05	27474	139	0000	000000
136	7	38	19	30836	075	05	18229	139	0000	000000
144	7	38	22	06121	075	04	23899	139	0000	000000
146	7	38	24	43509	075	03	25333	139	0000	000000
149	7	38	26	30359	075	03	20043	139	0000	000000
150	7	38	27	04478	075	03	19186	139	0000	000000
164	7	38	55	58383	074	57	38759	139	0000	000000
172	7	38	56	13558	074	54	54986	139	0000	000000
178	7	38	56	58068	074	52	02425	139	0000	000000
180	7	38	58	26258	074	50	21996	139	0000	000000
184	7	38	59	32638	074	48	50112	139	0000	000000
188	7	39	00	18103	074	47	48913	139	0000	000000
190	7	39	00	24048	074	47	30965	139	0000	000000
200	7	39	32	51112	074	15	12847	250	0000	161865
201	7	38	23	19348	075	04	02751	139	0000	000000
313	7	39	19	28587	074	30	53706	139	0000	000000
314	7	39	20	03068	074	30	11664	139	0000	000000
315	7	39	21	09739	074	26	38701	139	0000	000000
317	7	39	21	58343	074	24	52376	139	0000	000000

VELOCITY CORRECTOR TAPE PRINTOUT

copy check; DAW

MI - 80 - 1 - 76

50 ENTRIES

000044	0	0000	0001	001	222000	080176
000083	0	0001				
000124	0	0002				
000174	0	0003				
000212	0	0004				
000255	0	0005				
000297	0	0006				
000340	0	0007				
000380	0	0008				
000422	0	0009				
000462	0	0010				
000502	0	0011				
000542	0	0012				
000580	0	0013				
000620	0	0014				
000660	0	0015				
000698	0	0016				
000735	0	0017				
000773	0	0018				
000812	0	0019				
000850	0	0020				
000885	0	0021				
000925	0	0022				
000962	0	0023				
001000	0	0024				
001038	0	0025				
001073	0	0035				
001108	0	0045				
001143	0	0055				
001178	0	0065				
001213	0	0075				
001248	0	0085				
001283	0	0095				
001318	0	0105				
001353	0	0115				
001388	0	0125				
001423	0	0135				
001458	0	0145				
001493	0	0155				
001528	0	0165				
001563	0	0175				
001598	0	0185				
001633	0	0195				
001668	0	0205				
001703	0	0215				
001738	0	0225				
001773	0	0235				
001808	0	0245				
001843	0	0255				
999999	0	0255				

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

SIGNAL NAMES TAPE PRINTOUT

MI-80-1-76

H-9614

100 MC CABE SEAFIX  
132 NORTH JETTY LIGHT  
134 COAST GUARD RADIO TOWER  
136 COAST GUARD LOOKOUT TOWER  
144 OCEAN CITY NORTH MUNICIPAL TANK  
146 CONDOMINIUM (HIGHEST LIGHT)  
149 LIGHT GREEN TANK  
150 FENWICK ISLAND LIGHT  
164 CAPE MAY LIGHTHOUSE  
172 CAPE MAY TANK  
178 LORAN TOWER  
180 WILDWOOD, LARGE STANDPIPE  
184 WILDWOOD STANDPIPE  
188 NORTH WILDWOOD STANDPIPE  
190 HERFORD INLET L.H.  
200 HAVEN SEAFIX  
201 AZIMUTH TANK 16TH ST.  
313 MARGATE CITY STANDPIPE, 1962  
314 MARGATE CITY WATER TANK, 1962  
315 RITZ AERO BEACON, 1931  
317 ABS.ECON LIGHT, 1931

VOL 2 P86  
VOL 2 P86  
VOL 2 P101  
VOL 2 P105

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: May 12 - June 11, 1976

HYDROGRAPHIC SHEET: H-9614

OPR: 516

Locality: Offshore, east of Delaware

Plane of reference (mean ~~lower~~ low water): 3.4 ft.

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

Remarks: Recommended zoning:

	<u>Time Correction</u>	<u>Range Ratio</u>
(1) West of 73°50'	-40 min.	x0.94
(2) 73°50' - 73°30'	-1 hr.	x0.89
(3) East of 73°30'	-1 hr. 20 min.	x0.83

*James R. Hubbard*  
for Chief, Tides Branch

H-9614

GEOGRAPHIC NAMES

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				
SPENCER CANYON												1
WILMINGTON CANYON												2
CARTERET CANYON												3
												4
												5
												6
												7
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												9
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												22
												23
												24
												25

APPROVED

*Chas. E. Harrington*

STAFF GEOGRAPHER - CS 1x2

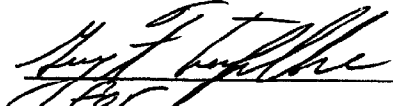
22 Sept. 1977



APPROVAL SHEET  
FOR  
SURVEY H-9614

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

Date: August 29, 1977

Signed:   
Title: Chief, Verification Branch

**HYDROGRAPHIC SURVEY STATISTICS**

H-9614 (1976)

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		36
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	1		1			
CAHIERS	1		1-with			
VOLUMES	2	2				
BOXES			1-final &	4 bundles of	sawtooth rec.	

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			1902
POSITIONS CHECKED		190	
POSITIONS REVISED		20	
SOUNDINGS REVISED		30	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	8		8
VERIFICATION OF CONTROL		2	2
VERIFICATION OF POSITIONS		18	18
VERIFICATION OF SOUNDINGS		41	41
COMPILATION OF SMOOTH SHEET		26	26
APPLICATION OF TOPOGRAPHY		0	0
APPLICATION OF PHOTOBATHYMETRY		0	0
JUNCTIONS		10	10
COMPARISON WITH PRIOR SURVEYS & CHARTS		5	5
VERIFIER'S REPORT		5	5
OTHER		0	0
<b>TOTALS</b>	<b>8</b>	<b>107</b>	<b>115</b>

Pre-Verification by  
R. Robertson, D. Mason, K. Ainsley

Beginning Date  
09/07/76

Ending Date  
06/06/77

Verification by  
L. Cram

Beginning Date  
07/13/77

Ending Date  
08/12/77

Verification Check by  
G. Trefethen, W. Jonns

Time (Hours)  
10

Date  
08/24/77

Marine Center Inspection by  
Hydrographic Inspection Team (AMC)

Time (Hours)  
10

Date  
08/26/77

Quality Control Inspection by  
RW. Derkazan

Time (Hours)  
16

Date  
9/26/77

Requirements Evaluation by  
B.H.M.

Time (Hours)  
2

Date  
11-22-77

Carstens 4 hr 11/11/77

Reg. No. H-9614

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

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

CARDS CORRECTED

DATE \_\_\_\_\_ TIME REQ'D \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:

Reg. No. \_\_\_\_\_

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

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

MAGNETIC TAPE CORRECTED

DATE \_\_\_\_\_ TIME REQ'D \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:

H-9614

Information for Future Presurvey Reviews

Two wrecks that fall within the limits of the present survey have not been verified or disproved in latitude 38°40.25', longitude 74°07.75' and latitude 38°50.00', longitude 73°12.25'. These wrecks provide no hazard to surface navigation; no action is recommended. Future work should include closer development of the two canyons shown on the present survey.

<u>Position Index</u>		<u>Bottom Change</u>	<u>Use</u>	<u>Resurvey</u>
<u>Lat.</u>	<u>Long.</u>	<u>Index</u>	<u>Index</u>	<u>Cycle</u>

Soundings on the present survey are in excess of 20 fathoms, thus obviating the need for Resurvey Cycle information.

ATLANTIC MARINE CENTER  
VERIFIER'S REPORT

REGISTRY NO. H-9614

FIELD NO. MI-80-1-76

New Jersey; Northeast Atlantic Coast; Offshore Cape May

SCALE: 1:80,000

PROJECT NO.: OPR-516

SURVEYED: May 12 through June 11, 1976

SOUNDINGS: Ross Fineline and  
Universal Graphic  
Recorder

CONTROL: Sea-Fix  
(Range-Range)

Chief of Party ..... CAPT W. V. Hull  
Surveyed by ..... LCDR W. Daniels  
..... LT A. Potok  
..... LTJG D. Waltz  
..... LTJG S. Iwamoto  
..... ENS R. Mann  
..... ENS L. Cosgriff  
..... ENS W. Dewhurst  
..... ENS V. Newell  
..... ENS D. Rice  
..... ENS J. Bailey  
Automated Plot by ..... Calcomp Plotter #618 (AMC)  
Verified and Inked by ..... L. G. Cram *L.G. Cram*  
August 30, 1977

1. Introduction

a. Two unusual problems were encountered during verification: One was that the field failed to take a detached position on a buoy ("EB-41 NOAA"). A position number was assigned by using the five bearings and ranges given for its location. The position number is 1907, day 163. The other problem was with the application of the -23.8 fathom TRA corrector as called for in the Descriptive Report, page 1, paragraph D. It was determined at the time of verification that some of these correctors had been applied in error; changes were made to correct this problem. Refer to Descriptive Report, Section D, page 1, for additional information.

b. The only computations changed were the projection parameter and a few changes to the TRA table to comply with the problem as described in the Descriptive Report, Section D, page 1. There were only minor wording changes made to the Descriptive Report.

## 2. Control and Shoreline

a. The control is adequately described in the Descriptive Report, Section F, page 3.

b. There is no shoreline on this survey.

## 3. Hydrography

a. The agreement of crossings is good, within two- or three-tenths in the shoaler water, and five-tenths in the deeper water.

b. The depth curves are complete and adequate, with the exception of two areas. It would have been desirable to have run 400 meter line spacing in the areas of the Wilmington and Spencer Canyons.

c. The development of least depths and bottom configuration is adequate, except for the two canyons.

## 4. Condition of the Survey

a. Bottom sample spacing is not as proscribed by the Provisional Hydrographic Manual 1.6.3. However, the prior surveys confirm that the bottom sediments are pretty much the same.

b. The locating of buoy "EB-41" by ranges and bearing from a regular hydro line does not conform to the requirements as specified by the Provisional Hydrographic Manual 1.6.5.

c. The delineation of the two canyons on this sheet was not as prescribed by the Provisional Hydrographic Manual 4.3.4.3.

d. The sounding volumes were not complete; no latitude and longitude was noted for the starting and ending of lines, nor were the detached positions disposed of as prescribed by the Provisional Hydrographic Manual 4.8.3.10.

e. The current chart used for comparison in the field with the present survey was not forwarded with the survey records. Also, the edition and date of the chart used was not indicated in the Descriptive Report.

With the exceptions listed above, the survey is satisfactory and the Smooth Sheet and accompanying overlays, hydrographic records, and reports are adequate to conform to the requirements of the Provisional Hydrographic Manual.

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## 5. Junctions

The present survey junctions with the following surveys:

H-9553 (1975) 1:80,000 to the north  
H-9622 (1976) 1:80,000 to the north and northwest  
H-9639 (1976) 1:40,000 to the west  
H-9632 (1976) 1:80,000 to the south ✓  
H-9631 (1976) 1:80,000 to the south and southeast ✓  
H-9623 (1976) 1:80,000 to the east

All junctions were completed and all curves brought into coincidence with no problems.

## 6. Comparison With Prior Surveys

Comparison was made with the following prior surveys:

H-5350 (1933) 1:120,000  
H-6219 (1937) 1:120,000  
H-6220 (1937) 1:120,000  
H-6345 (1938) 1:80,000

It appears that the prior surveys agree within two- to three-tenths in the shoaler depths on the western part of the present survey. It was difficult to make a detailed comparison, however, as only one of the four prior surveys was in fathoms and tenths; the other three were in whole fathoms. It would appear the differences between the prior surveys and the present survey increased the further east the comparison took place. The differences in depths reached a maximum of ten fathoms in the eastern most extreme of the survey, in some areas of the continental slope. The lesser amount of change (0.2 to 0.3 fathoms) could be attributed to natural changes. The one to ten fathom differences can be attributed to less accurate methods of surveying. There were no charted items that appeared on these prior surveys that were not verified or disproved by the present survey.

The prior surveys in the area common to the present survey are considered superseded by the present survey.

## 7. Comparison With Chart 12200 (29th Edition, April 9, 1977)

### a. Hydrography

*See Q.C. Report*

The charted hydrography originates primarily with the previously discussed prior surveys, which require no further consideration.

The field did not give the <sup>chart</sup> edition for their comparison; however, the only chart available at the time of verification was the one listed above, which was published after the present survey was completed.

There were two Presurvey Review Items which came from chart letters. Item #1 is a reported five fathom obstruction, approximate latitude 38° 40' 24" and longitude 73° 52' 30". The field developed this item on day 153, position #1605 to position #1630. No indication of the obstruction was found. Recommend deleting from the chart. Item #2 is a submerged wreck from Navy wreck #519. The wreck was found on three intersecting lines of the development (position #1594, position #1587 through #1588, and position #1597) with a least depth of 25.4 fathoms over the wreck, position #1594, day 153. At the extreme difference between chart and survey scales, it was hard to tell, but believe the wreck to be 0.30 nautical miles south of its charted position. Recommend retaining the wreck on chart with possible revision of charted position. *origin NAVY WRECK LIST (1957)* *CONCUR*

There were three items not verified or disproved by the present survey, listed as follows:

(1) Charted, nondangerous wreck, approximate latitude 38° 40' 15" and longitude 74° 07' 45" - The field did not run a development on this item. Two adjacent lines of hydrography (position #912 through #914 and position #916 through #918) show a slight rise in the bottom topography. The least depth is 25.3 fathoms in this area. Recommend retaining this item as charted. *Origin NAVY WRECK LIST (1957)* *CONCUR*

(2) Submerged pipes (29 fathoms), approximate latitude 38° 43' 12" and longitude 73° 38' 06" and latitude 38° 33' 30", longitude 73° 30' 30" - It is believed that these pipes may have something to do with the buoys "EB-41" and "W Or". Fathograms of the area were closely looked at and no indication of these pipes was found. Insofar as these pipes could be of small diameter and would not appear on fathograms, recommend retaining on chart, at the discretion of Quality Control. *Origin of pipes NM 38/76 (subsequent to present survey)* *CONCUR*

(3) Lighted Buoy W Or and submerged pipe, approximate latitude 38° 33' 48", longitude 73° 30' 48" - This item was not mentioned in the Descriptive Report and is believed to have been put in after this survey was completed. Recommend this item be handled by Quality Control in Headquarters. *Retain buoy (origin LNM 43/76, charted subsequent to present survey)*

The charted data originated with the prior surveys and was disposed of in that section of this report. The present survey is considered adequate to supersede the charted information with the disposition of the three items listed above.



b. Aids to Navigation

There were no aids to navigation as such on this survey. The two buoys mentioned under the chart comparison section of this report are believed to be environmental buoys.

8. Compliance With Instructions

Two items were noted that did not comply with the Project Instructions dated October 1, 1975. The first item was under Section 6.4, "Spacing and Orientation". The steep slopes of the Wilmington and Spencer Canyons should have had closer line spacing. Item two was the spacing of bottom samples, which was a little excessive on this sheet.

This survey adequately complies with the Project Instructions, except as noted above.

9. Additional Field Work

This survey is a good basic survey. No additional work is needed for nautical charting purposes. It would be desirable, however, for bathymetric purposes to better delineate the canyon areas on this survey.



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SURVEY  
Atlantic Marine Center  
439 West York Street  
Norfolk, Virginia 23510

File No: D6-5  
Ser. No: 77-117

August 31, 1977

CAM3/RAT

TO: RADM Robert C. Munson  
Director, Atlantic Marine Center

FROM: *Robert A. Trauschke*  
CDR Robert A. Trauschke  
Chief, Processing Division

SUBJECT: Hydrographic Inspection Team Report, H-9614 (1976)

This survey was accomplished by the MT. MITCHELL and is in compliance with the Project Instructions, except as noted in the Verifier's Report. It is part of the continuing DELMARVANC project, OPR-516.

#### FIELD WORK

The Hydrographic Inspection Team had no additional comments on the field work other than what has already been discussed in the Verifier's Report.

#### VERIFICATION

A number of brown depth curves were added after HIT and the depth curves in Spencer and Wilmington Canyons were altered slightly.

The HIT Team devoted approximately 10 hours to this sheet.




SURVEY H-9614  
Examined and Approved:  
Hydrographic Inspection Team  
Date: August 25, 1977

  
CDR Robert A. Trauschke, NOAA  
Chief, Processing Division

CDR Charles H. Nixon  
Chief, Operations Division


  
C. Douglas Mason, LT, NOAA  
Chief, EDP Branch

  
R. D. Sanocki  
Technical Assistant  
Processing Division

  
Guy F. Trefethen  
Verification Branch

\* Absent TDY

Approved/Forwarded

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



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

C352

September 26, 1977

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

THRU: Chief, Quality Control Branch

FROM: R. W. DerKazarian *R.W. DerKazarian*  
Quality Evaluator

SUBJECT: Quality Control Report for H-9614 (1976), Off Cape Henlopen,  
Atlantic Ocean, Delaware

Survey H-9614 was inspected to evaluate the accuracy and adequacy of the survey 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.

Junctional surveys H-9622, H-9629, and H-9639 of 1976 have not been received at Headquarters as of the date of this report. The adequacy of their junctions will be considered at the time of their quality evaluations.

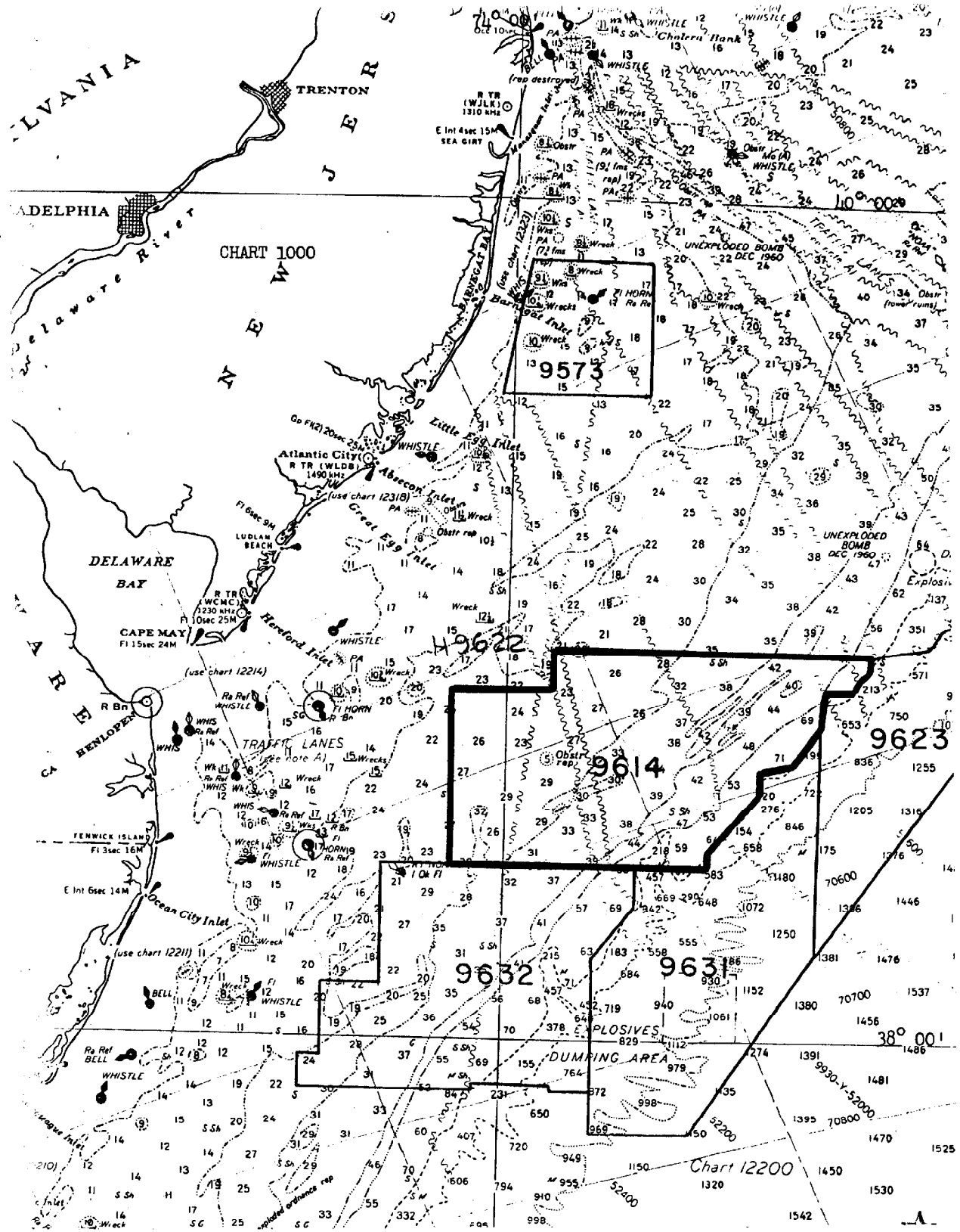
In general, the survey was found to conform to the National Ocean Survey's standards and requirements except the following item should have been addressed under "Comparison with Chart" in the Verifier's Report:

The charted wreck PA in latitude 38°50.00', longitude 73°12.25' from Notice to Mariners 30/1954 was not verified or disproved by the present survey and should be retained as charted.

The verification of this survey was well done and as a result a minimal time was required for quality evaluation.

cc:  
C351





9573

9614

9623

9632

9631

1001

Chart 12200



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9614

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
1109 (12200)	10/20/78	<i>Ed. Hall</i>	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. #45
1108 (12300)	10/24/78	<i>B. M. Wankell</i>	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 48
1109 (12200)	4/26/79	<i>B. Wankell</i>	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 45 Fully applied in area of 0/6 with cht 1108, thru cht 1108 Dwg #48
1109 (12200)	5/1/79 HW	<i>B. Wankell</i>	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 45 Fully applied in part thru cht 1108 Dwg #48
13003 (1000)	7/17/80	<i>Robert Lutz</i>	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. #57 Applied thru reduction of chart 12200 #45
			<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No.
			<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No.
			<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No.
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