

H-10035

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. WH-10-02-82
Registry No. H-10035

LOCALITY

State New Jersey
General Locality Vicinity of Sandy Hook
Sublocality False Hook

19 82

CHIEF OF PARTY
CDR R.K. Matsushige

LIBRARY & ARCHIVES

DATE May 5, 1986



Charts

- 12324a
- 12327
- 12326
- 12300
- 12401
- 12402
- 12330
- 13006

HYDROGRAPHIC TITLE SHEET

H-10035

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.

WH-10-2-82

State New Jersey

General locality ~~New York Harbor~~ Vicinity of Sandy Hook

Locality ~~Lower Bay, Sandy Hook Coastline~~ False Hook

Scale 1:10,000 Date of survey 5 August-7 September, 1982

Instructions dated 3 May 1982 Project No. OPR-B139-WH-82

Vessel NOAA Ship WHITING launches 101⁴ (EDP#2932), 1015 (EDP#2931)

Chief of party CDR Roy K. Matsushige, Commanding Officer

Surveyed by A. ^{N.}Elmor, V. ^{N.}Shaffer, M. ^{E.}Henderson, P. ^{J.}Ruiz, T. ^{A.}Wolf, P. ^{M.}Kenul

Soundings taken by echo sounder, ~~hand lead, pole~~ Ross Finline 5000

Graphic record scaled by VNS, MEH, EAS, PJR, TAW, PMK, frc, fs, cdm, rf, sp, mf, mr, sh, gp,
lm

Graphic record checked by WHITING personnel

Protracted by _____ Automated plot by Hydroplot

XYNETICS 1201 Plotter
(AMC)

Verification by _____

Soundings in ~~fathoms~~ feet at ~~MHW~~ ~~MDLW~~ Mean Lower Low Water

REMARKS: All times are Coordinated Universal Time

Notes in the Descriptive Report were made in red during office processing.

STANDARDS CK'D 5-6-86

C. Coy

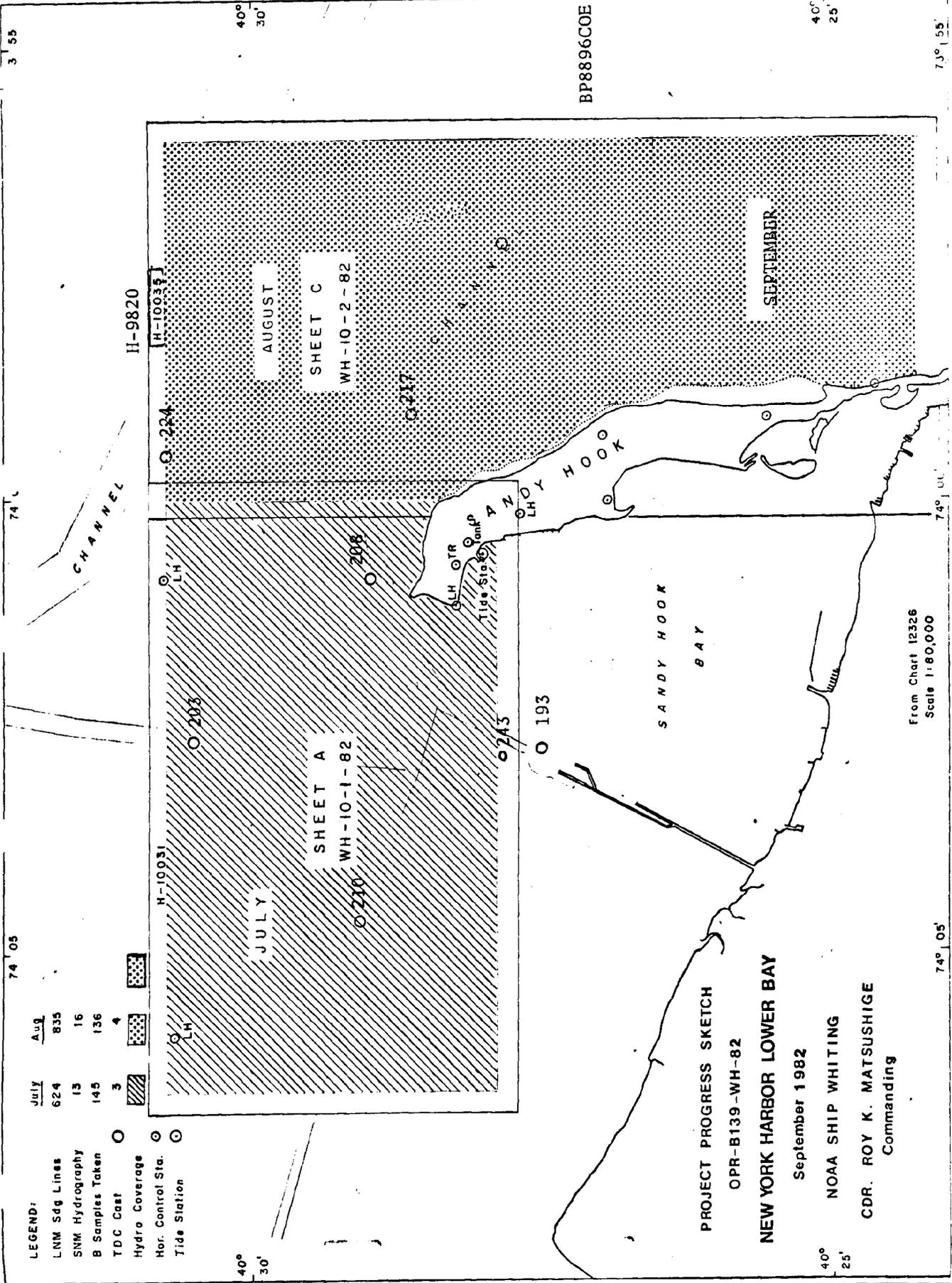
AWOIS/SURF M&M 6/23/87

5012944

LEGEND:

- LNM Sdg Lines
- SNM Hydrography
- B Samples Taken
- TDC Cast
- Hydro Coverage
- Hor. Control Sta.
- Tide Station

July	Aug
624	835
13	16
145	136
3	4



PROJECT PROGRESS SKETCH
 OPR-B139-WH-82
NEW YORK HARBOR LOWER BAY
 September 1982
 NOAA SHIP WHITING
 CDR. ROY K. MATSUSHIGE
 Commanding

From Chart 12326
 Scale 1:80,000

BP8896COE

73° 55'

74° 05'

3 55

74°

74° 05'

40° 30'

40° 30'

40° 25'

40° 25'

AUGUST

SHEET C
 WH-10-2-82

JULY

SHEET A
 WH-10-1-82

SEPTEMBER

CHANNEL

H-9820

H-10035

O 224

LH

H-10031

LH

O 203

O 210

O 208

O 217

LH OTR

Tide Sta

O 193

O 193

SANDY HOOK

SANDY HOOK BAY

74° 05'

74° 05'

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* Removed from the original Descriptive Report and filed with original survey data.

DESCRIPTIVE REPORT
TO ACCOMPANY
BASIC HYDROGRAPHIC SURVEY

WH-10-2-82

H-10035

SCALE: 1:10,000

SURVEYED 5 AUGUST - 7 SEPTEMBER 1982

NOAA SHIP WHITING

CDR Roy K. Matsushige

Commanding Officer

A. PROJECT

Hydrographic survey H-10035 was performed in accordance with Project Instructions OPR-B139-WH-82, New York Harbor, Lower Bay, dated 03 May 1982, amended by Change No. 1, dated 30 June 1982, and by Change No. 2, dated 18 August 1982.

B. AREA SURVEYED

The area surveyed is the southeastern portion of New York Harbor and the eastern coast of Sandy Hook, New Jersey. The surveyed area is bounded by the following points:

Latitude $40^{\circ}30'42''$ ^{46"} N	Longitude $73^{\circ}56'00''$ ^{55' 58"} W	
Latitude $40^{\circ}30'42''$ ^{46"} N	Longitude $74^{\circ}00'00''$ ^{44"} W	✓
Latitude $40^{\circ}24'12''$ ^{15"} N	Longitude $74^{\circ}00'00''$ ^{15"} W	$73^{\circ}56'35''$ W
Latitude $40^{\circ}24'12''$ ^{15"} N	Longitude $73^{\circ}56'00''$ ^{55' 58"} W	

(field sheets)
 This survey was divided in three sections which were defined as North, Central, and South. Sounding lines were driven perpendicular to the coast on the central and southern portions of the sheet and north-to-south for the northern portion. Generally, the area surveyed was characterized by gentle sloping topography of fine to coarse-grained sand with shells. However, bottom irregularities in the form of sand ridges were found along the northern boundary of Sandy Hook Channel and to the south of Ambrose Channel during development of the north sheet (refer to Launch 1014 (EDP 2932) echograms for JD 220 (Pos. 449-539) and JD 222 (Pos. 953-1192)). This hydrographic survey (H-10035) (WH-10-2-82) was conducted from 5 August until 7 September 1982, Julian Days 217-250.

C. SOUNDING VESSEL

The sounding vessels used throughout this survey were WHITING survey launches 1014 and 1015, EDP numbers 2932 and 2931, respectively. The launches worked simultaneously on each section of the survey. Each launch was equipped with the Ross 5000 Fineline echosounder and the Del Norte electronic positioning system.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The sounding equipment used throughout this survey was the Ross 5000 Fineline echosounder for Launches 1014 and 1015. Ross echosounder s/n 1053 was used on Launch 1014 during JD 217. Afterwards, echosounder s/n ¹⁰⁴⁹~~1053~~ was used during JD 218-250. Echosounder s/n 1052 was used on Launch 1015 during the entire hydrographic period, JD 217-249.

The blanking was set at either 5, 10 or 20 feet in order to ensure that the phase and initial were adjusted correctly. Phase checks were recorded routinely to double-check the initial setting.

The following procedures were used to determine corrections to echo soundings:

Velocity Corrections:

Bar checks were recorded once per day usually at slack water. Due to the strong tidal currents in the surveyed areas, bar checks attempted at other than slack water produced inconsistent results. Velocity corrections were determined from a combined plot of daily bar checks

averaged for each launch and the TDC cast data obtained on JD's 217, 224, 232, 238 and 243, using a Martek TDC Model 167 (s/n 127), calibrated February 1982. The positions of the casts are plotted on the progress sketch enclosed with this report. The intervals of time to which these correctors were applied were divided into ten-day periods corresponding to periods of hydrography. The TDC computations and bar checks forms are included in the supplemental data folder. The velocity graphs and velocity table printouts are included in Appendix IV.

TRA Corrections:

The draft for each launch was measured to be 1.5 feet. No instrument error was apparent from the daily bar checks. Settlement and squat trials were run on 10 July 1982 for Launch 1014 and on 11 July 1982 for Launch 1015 near the Sandy Hook Coast Guard Pier at Sandy Hook, New Jersey. A complete report of the trials with the data and the resultant graphs is included in Appendix IV.

Predicted Tides:

The smooth field sheets for this project were plotted using predicted tides from the reference gage station at the Sandy Hook Coast Guard Pier (853-1680), Latitude 40°28.0'N, Longitude 74°00.6'W. Logger tapes were provided by Processing Division, AMC, and were converted to predicted tide tapes using time and height ratio correctors as required by the Project Instructions. The predicted tide tapes were generated by WHITING personnel using AM500 (Predicted Tide Generator), and a printed copy is

included in the supplemental data folder. A field tide note and request for smooth tides for the period of the survey are included in Appendix II.

Velocity corrections and vessel drafts were applied during smooth field sheet soundings. All other TRA corrections as listed on the TRA Corrector Abstract included in Appendix IV will be applied during final processing by OA/CAM3, Processing Division, via TC/TI tapes and smooth tide data. A listing of the TC/TI tapes to be used during smooth plotting are included in Appendix IV. Computer punch tapes are included with the data.

E. HYDROGRAPHIC SHEETS

All field sheets were prepared on board by WHITING personnel using a Houston Instrument DP-3 Roll Plotter. This survey was divided into three sheets, north, central and south, each with a skew of 000° and with the following origins:

	North		Central		South
latitude	40°28'18"N	latitude	40°26'18"N	latitude	40°24'06"N
longitude	74°00'00"W	longitude	74°00'00"W	longitude	74°00'00"W

A total of fifteen sheets were submitted with this survey: 6 rough field sheets with mainscheme, crosslines, bottom samples, channel developments, buoys, and shoreline soundings; 3 smooth field sheets with mainscheme and shoreline soundings; 3 overlay field sheets with bottom samples, crosslines, and buoys; and 3 overlay sheets with all developments. The overlays provided sheet clarity and aided bottom contour delineation. All plotted sheets were submitted to OA/CAM3, Processing Division, along with all field records for verification.

F. CONTROL STATIONS

The following signals were used as electronic positioning control stations and/or visual or fixed point calibration signals:

<u>Signal No.</u>	<u>Name</u>	<u>Year Est'd</u>	<u>Quad & Sta. No.</u>
004	Romer Shoal L.H. LIGHTHOUSE	1900 ✓	4007412 STA 2262
005	Sandy Hook Point Light	1944 1940	4007421 STA 1112
006 *	Sandy Hook LORAN SITE	1982 1950	n/a
007	Sandy Hook Standpipe	1930 ✓	4007421 STA 1113
008	Sandy Hook L.H. Finial	1900 1835	4007421 STA 1108
010	Rich	1940	400733
011	Spermaceti Cove ^{CG} Cupola	1926	C&GS TRI STA #211 pg 11
012	Shrew	1981	400733
014	Navesink Light South	1869	400733
015	Navesink Light North	1877	400733
017	Ammo Pier Cal'n Pt. 82	1982	n/a
019	Romer Shoal L.H. Ecc.	1982	n/a
020	Sandy Hook L.H. Finial Ecc.	1982	n/a

Station numbers 006, 017, 019, and 020 were established to Third Order, Class I standards by WHITING personnel. Positions for stations 004, 005, 007, 008, 010, 011, 012, 014, and 015 were obtained from NGS published data.

Stations 010, 019, and 020 were solely used as electronic control sites. Stations 004, 005, 006, 007, 008, 011, 012, 014, and 015 were used as visual signals for sextant calibrations, and station 017 was used as the fixed point calibration site.

* Station #06 may have been intersected in 1982; the G.P. used originates with NGS Quad 400742, sta 1111.

G. HYDROGRAPHIC POSITION CONTROL

Range/range control using the Del Norte positioning system was used throughout this survey by the two launches.

The following Del Norte components and serial numbers were used aboard

Launch 1014:

<u>JD</u>	<u>DMU</u>	<u>Master</u>	<u>Left Remote</u>	<u>Right Remote</u>
217-221	180	912	1059(76)	1065(72)
222-223	515	278	1059(76)	1065(72)
224	180	278	1059(76)	1065(72)
229	180	278	1065(72)	1059(76)
230-236	180	278	262(74)	1059(76)
237-239	515	278	262(74)	1059(76)
244	180	278	262(74)	1317(76)
245-250	180	278	1317(76)	262(74)

The following Del Norte components and serial numbers were used aboard

Launch 1015:

<u>JD</u>	<u>DMU</u>	<u>Master</u>	<u>Left Remote</u>	<u>Right Remote</u>
217-249	189	281(76)	1059(76)*	1065(72)*

*changes in the remotes correspond to those of Launch 1014.

The following Del Norte remotes were placed at the listed control stations for these periods:

<u>Sta. No.</u>	<u>006</u>	<u>010</u>	<u>019</u>	<u>020</u>
<u>Remote s/n</u>	<u>1059</u> 217-234	<u>1065</u> 229	<u>1065</u> 217-224	<u>1059</u> 235-239
		<u>262</u> 230-239		<u>262</u> 244-250
		<u>1317</u> 244-250		

Slave unit stations were chosen so that intersection angles between the ranges were greater than 30° and no more than 150° . All range/range data for this survey was recorded in real time using RK112 and the launch computer systems.

Calibrations for the Del Norte system were computed in accordance with the Hydrographic Manual. The Del Norte equipment was usually calibrated over a measured baseline before being used for the survey. Baseline calibrations for this survey were conducted at two locations. The first baseline was established between Governors Island, New York and Battery Park, New York, at a distance of 1927.45 meters. This baseline was used for calibration comparisons performed for this survey on the days of August 2, 16, and 30 (JD's 214, 228, and 242). A final baseline calibration was made at the U.S. Naval Weapons Station, Earle, New Jersey on 8 September 1982 (JD 251) over a measured distance of 1351.22 meters, which was the longest possible distance achieved without encountering obstructions, due to construction on the pier. Both baselines were measured using a Hewlett-Packard EDM1 (s/n 1929A00355).

Two supplemental check calibrations were made on August 9 and 10, 1982 (JD 221 and 222). These calibrations were required because one of the Del Norte units was thought to be malfunctioning. To check the daily correctors, the master units were set over a known baseline without removing all the units as for a standard baseline calibration. These calibrations were performed without interrupting operations.

Field calibrations were performed twice a day using three-point sextant fixes with check angles, and on certain occasions the fixed point (Ammo Pier Calibration Point 1982) was used. RK561 was the program used for computing the field calibration correctors from the three-point fixes. An ANDIST corrector of zero was used during all visual and fixed point calibrations. The morning and afternoon correctors were averaged to produce daily correctors and these were later applied during rough plotting. For the final plotting, a combination of daily correctors and baseline calibration correctors were used. In general, daily correctors were applied during a smooth plotting only when: (1) baseline calibration correctors and field calibration correctors were not in close agreement; (2) equipment failures between baseline calibrations excluded the units from being calibrated. It was felt in these cases that the daily correctors were more indicative of the operational state of the system than was the baseline calibration data.

Equipment failures were such that data quality was not affected because the systems required immediate replacement or repair of the units involved.

The major problem encountered during this survey was with Launch 1014's on-line system. Erratic rates were observed throughout the entire survey at various times. Computer components and the parallel buffer were all checked and no apparent improvement was observed. The reasons for the erratic operation are still unknown and the situation will be investigated during the winter inport period; however, it is not considered to be an

accuracy problem within the units themselves.

Applied calibration data and equipment failure for Launches 1014 and 1015: Launch 1014: On 3 August (JD215) the master unit s/n 168(78) malfunctioned during hydrography. This unit was replaced with master unit s/n 912(78), which had not been calibrated on JD 214. During the period of JD 217-219, the daily calibrations were used for hydrography conducted with DMU s/n 180 and master s/n 912(78). Daily correctors were then applied during smooth plotting for this period; (2) On 8 August (JD 220) the master unit s/n 912(78) malfunctioned requiring the replacement of the high voltage card. It was known that this repair significantly altered ranges measured by this unit, however the unit was not baseline calibrated at this time. On 8 and 9 August (JD 220-221), to determine any variations within the repaired unit s/n 912(78), a "baseline calibration check" was conducted at station 016 (Ammo Pier Cal'n Point 82). This calibration was performed as a fixed point calibration. No adjustments were made to the DMU's "range-calibrate" control screws in an attempt to return the display to the computed true distance. Various readings were recorded at the fixed point and were later compared to the computed distance. The new correctors were compared with those computed from visual calibration using the same repaired unit. The correctors compared very well, therefore, the fixed point calibration correctors for JD 220/221 were used for the final field smooth plotting; (3) On 10 August (JD 222) a new master s/n 278(78) was put into use with DMU s/n 515. A "baseline calibration check" for this system was made

during JD 221 at station 016 (Ammo Pier Cal'n Point 82) similar to the one previously described in (2) above. The fixed point calibration correctors for JD 221 were used for the final field smooth plotting;

(4) On 12 August (JD 224) DMU s/n 515 malfunctioned and was replaced with DMU s/n 180. Hydrography was conducted with DMU s/n 180 and master s/n 278(78). The daily calibration correctors with the combination compared very well with the baseline calibrations for DMU s/n 180 and master 278(78) during 16 August (JD 228); (5) On August 16-30 (JD 228-242), during this period the baseline calibration values for remote s/n 262(74), in Launch 1014, drifted beyond the recommended standards noted in AMC OORDER 79. For this period, the amount of shift was prorated by assuming a linear interpolation with respect to time. Therefore, the prorated correctors were used during smooth plotting; (6) 25-27 August (JD 237-239) during this period DMU s/n 515 and master s/n 278 were used due to a malfunction with DMU s/n 180. This combination was never calibrated during the base calibration performed on 16 August (JD 228). On 30 August (JD 242) this combination was checked during baseline calibration without being adjusted. The difference between the baseline and the DMU measured distance were used as the baseline correctors. The daily correctors were used for smooth plotting. It is felt that the daily correctors were more indicative of the operational state of this system; (7) 31 August (JD 243) the DMU s/n 515, which was calibrated to master s/n 912, malfunctioned and was temporarily replaced with DMU s/n 180. The following day JD 244, master s/n 912 was removed from Launch 1014 and replaced by master s/n 278. It

is recommended that the daily correctors for DMU s/n 180 with master s/n 912 be used for this day. Launch 1015: On 16 August 1982 (JD 228) baseline calibration indicated a drift of +16 meters for remote s/n 1065(72) and master s/n 281(76) combination. The data obtained in the daily calibrations did not agree well with this baseline calibration. Examination of the daily system checks indicates fairly consistent daily correctors which indicated that the baseline calibration is in error for these units. The daily correctors were used for smooth plotting instead of the baseline calibration correctors.

H. SHORELINE - See section 2.5 of the Evaluation Report also.

Shoreline for this survey was obtained from TP Sheets #00758A, #00759, and #00760. It was observed that the TP-sheet shoreline depicted on the field edited manuscripts was the same as the present shoreline for "C" central and "C" south sheets. The present shoreline was compared with NOS Chart 12330, 78th Edition, June 19, 1982, and was found to be greatly changed in the following areas:

"C" Central	Lat. 40°28'25"N	to	40°27'35"N
	Long. 74°00'00"W		73°58'59"W
"C" South	Lat. 40°26'40"N	to	40°25'00"N
	Long. 73°58'57"W		73°58'47"W

In general, the coastline on these areas was found to be farther inshore compared to NOS Chart 12330, 78th Edition. It was observed that the new survey (H-10035) shoreline (MLW) agrees with the chart's mean-high water line. This shoreline shift is believed to be caused by strong currents that prevail over these areas.

During shoreline developments the following features were observed:

Launch 1014

1. D.P. on piles awash on the beach, positions 2617-2619.
See survey smooth sheet for delineation.
2. D.P.'s on breakwater made of rocks and riprap foundations along the beach, position numbers 2631-2644 and 3093-3103, JD's 247 and 250, respectively. *Grains delineated from shoreline map shown on survey smooth sheet.*

Launch 1015

1. Position numbers 6401-6406, JD 231, D.P.'s on piling.
Delineated on survey smooth sheet from shoreline map.
2. Position numbers 6713-6714⁺³, JD 232, sand bars were observed.
Sounding line run along shoreline.
3. Position numbers 6718-6719, JD 232, DP's on pilings. Refer to sounding volume #5 for descriptions.
4. Position numbers 6905-6911, JD 234, DP's on submerged rocks and concrete ruins. Refer to sounding volume #5 for description.
See survey smooth sheet for delineation.

I. CROSSLINES - *See section 3.2 of the Evaluation Report.*

The total crossline miles for "C" north was 12.25 linear nautical miles (LNM). This was 8.0% of the total mainscheme miles, which was 158 LNM. Agreement of crosslines with the mainscheme was excellent, with 98% agreeing to within 1 foot.

For "C" central, the total crosslines run was 11.24 LNM, which was 10.0% of the total mainscheme miles. Mainscheme miles totalled 115 LNM. Agreement of crosslines with the mainscheme was excellent, with 98% agreeing to within 1 foot.

For "C" south, the total crosslines run was 12.0 LNM. This was 10.0% of the total mainscheme miles, which was 117 LNM. Agreement of crosslines

with the mainscheme was excellent, with 98% agreeing to within 1 foot.

Total crossline miles for this survey were 35.50 LNM, which was 9% of the total mainscheme mileage of 390 LNM. This criteria meets the criteria stated in Section 1.1.2 of the Hydrographic Manual.

J. JUNCTIONS - See section 5 of the Evaluation Report.

This survey junctioned with the following surveys: H-10031, a 1:10,000 scale contemporary survey completed in 1982 by the WHITING; H-9820, a 1:10,000 scale survey completed in 1979; and BP 88376 COE, a 1:20,000 scale survey conducted by the Corps of Engineers dated 1973. The junction between H-10031 and this survey was excellent with 98% of the depths agreeing to within one foot and 2% agreeing to within 2-3 feet. Agreement with H-9820 was excellent with 98% of the depths agreeing to within one foot and 2% agreeing within 2 feet. Comparison with the Corps of Engineers survey was excellent with 98% of the depths agreeing to within 1 foot. These comparison soundings are within the acceptable limits suggested in Section 1.1.2 of the Hydrographic Manual.

K. COMPARISON WITH PRIOR SURVEYS - See section 6 of the Evaluation Report
Automated

The following pre-survey review items listed in the Wreck and Obstruction Information System (AWOIS) printout dated 25 June 1982 were investigated during this survey:

<u>Item No.</u>	<u>Description</u>	<u>Charted Position</u>	
		<u>Latitude</u>	<u>Longitude</u>
1593	Castalia	40/25/30N	73/58/00W
1625	Barge Dump Scow	40/28/31N	73/57/25W
1631	Anne D II, 22' long	40/29/18N	73/58/54W
1638	McCabe, Cargo	40/30/00N	74/00/00W
1639	Ayvruoca, Cargo	40/30/00N	74/00/00W
1640	Turner, Cargo	40/30/00N	74/00/00W
2454	Barge	40/26/08N	73/57/14W
2456	Obstruction	40/28/35N	73/58/48W
2458	Drydock	40/28/12N	73/57/25W
2459	Concrete Slab	40/25/00N	73/58/48W
2464	Unidentified Wreck	40/25/58N	73/58/47W
2465	Unidentified Wreck	40/25/35N	73/58/43W
2466	Unidentified Wreck	40/27/25N	73/59/25W
2467	Unidentified Wreck	40/27/21N	73/59/24W
2469	Unidentified Wreck	40/27/57N	73/59/40W
2473	Barge	40/28/07N	73/59/49W

PSR Item Number 1593 - CASTALIA was reported sunk at approximate location ^{Latitude} 40/25/30.00N, ^{Longitude} 73/58/00.00W in 17-feet of water in 1880.

Hydrography at 80-meters and splits at 40-meter spacing were run over this area. Hydrographic lines were run on this area in a radial pattern, east-west, with depths ranging between 20-27 feet in conjunction with the investigation of PSR Item 2466. No indication of the wreck was found on any of the echogram records. The hydrographer considers that this development is sufficient enough to cover this item for information purposes only and believes that this wreck is no longer in existence.

PSR Item Number 1625 - This "dump scow" was reported as removed from location ^{Latitude} 40/28/31N, ^{Longitude} 73/57/25W, by Notice to Mariners 33/53. Mainscheme lines were run in the area with 40-meter spacing. No visual contact or indication in the echogram was encountered therefore, the hydrographer concurs with N.M. 33/53.

PSR Item Number 1631 - A 22-foot Chris-Craft was reported sunk at approximate location ^{Latitude} 40/29/18N, ^{Longitude} 73/58/54W. The survey requirements stated in the AWOIS listing defined the investigation to be completed using wire drag methods. It was not considered feasible to complete this item as required. An amendment to the AWOIS listing was issued and a copy is enclosed with this report. Hydrography at 80-meters and splits at 40-meters line spacing running NW-SE and NE-SW were carried out over this area (600 x 600 meters) during Sandy Hook Channel

developments. No indication of the wreck was found on the echo sounder records. The hydrographer considers this development sufficient enough to cover this area and recommends that this item be changed to "Position Doubtful (PD)". See Section 7.a.3) of the Evaluation Report

PSR Items 1638, 1639, and 1640 - These were reported sunk at approximate location ^{Latitude} 40/30/00N, ^{Longitude} 74/00/00W. Hydrography at 80-meters and splits at 40-meters spacing were run on this general area using north-south patterns. Also, during Ambrose Channel development (NW-SE patterns) and Romer Shoal development (NE-SW patterns), 80-meter line spacing were run over this area. No indication of any of the wrecks was observed on the echo sounder records. The hydrographer considers that the area covered is sufficient enough to cover these items for information purposes only. See Section 7.a.4) of the Evaluation Report.

PSR Item 2454 - was reported as a sunken barge at approximate location ^{Latitude} 40/26/08N, ^{Longitude} 73/57/14W showing 2-feet above water. A full investigation of this item was required to include 100% coverage with side scan sonar. Since there was no side scan sonar equipment available, a standard hydrographic investigation was conducted. This 650 x 650 meter area was developed using 40-meter line spacing in a east-west direction and 40-meter line spacing in a north-south direction. Since no indications of a wreck was found on the echo sounder records and no visual contact was made with the section reported being above the water, the hydrographer must concur with N.M. 40/67 and recommends that this item be charted as "Position Doubtful (PD)". ~~It is also recommended that N.M. 38/67, which describes a~~

~~buoy established at position 40/26/08N, 73/57/14W to mark the sunken barge location to be deleted. This buoy is not in existence within the general area. Not considered verified or disproved by the present survey. Retain as charted.~~

PSR item 2456 - An obstruction was reported at approximately ^{Latitude} 42/28/35N, ^{Longitude} 73/58/48W. Hydrography at 80-meters and splits at 40-meters spacing

were run through this area using north-south patterns. The hydrographer considers this sufficient enough to cover this area and corroborates with

Notice to Mariners 44/66, "Omit Obstruction from Chart". See section G.b.6 of the Evaluation Report. General depths in the area are twenty-one (21) to twenty-seven (27) feet.

PSR Item 2458 - This item was reported ^{by LNM 52/81} as a sunken barge at approximate ^{Latitude} 40/28/12N, ^{Longitude} 73/57/25W. A full investigation was required within

a minimum radius of 500 meters from the site. This area (700 x 700 meters) was developed using 40-meter line spacing in a north-south and east-west pattern. A spike in Launch 1015's echo sounder records indicated the possible location of this wreck. The area was investigated by WHITING divers (see Dive Report of 24 August 1982) using a marker float, which was positioned at the dive site by Launch 1015. The dive operation yielded negative results. Instead, the divers found the marker float sitting on top of a structure made of rocks and concrete blocks. This structure is not considered a potential danger to navigation and due to its richness in marine life it is recommended that this structure be charted as a ^{Obstruction, covered by 19-ft,} "Fish

Haven". Communications with Lt. P. Thibault, Station Commander, Coast Guard Station Sandy Hook, revealed that the reported barge was actually a floating drydock. When the drydock sunk, one of the side walls

disintegrated and parts of it were towed to Sandy Hook. The remainder of the wooden structure was presumed to be destroyed and not a danger to navigation. The Coast Guard is required to maintain a buoy at this site until the lawsuit brought against the Corps of Engineers by the

owner has cleared the courts (see "WR"). Delete dangerous sunken wreck, PA, 19 Feet reported, and chart 19 obstr.

PSR Item 2459 - This item was reported as a concrete slab (10 x 15 feet)

at approximate location ^{Longitude} 40/25/00N, ^{Longitude} 73/58/48W. A full investigation was required within a minimum radius of 100-meters. This area (350 x 350 meters) was developed using 40-meter line spacing in a east-west direction and 20-meters line spacing in a north-south direction. Since no indication

of a concrete slab was found on the echo sounder records and no visual contact was reported during low tide, the hydrographer recommends that

the position of this obstruction be charted as "PD". - See section 7.2.5) of the Evaluation Report.

PSR Items 2464 and 2465 - These two unidentified wrecks are charted

approximately ^{Longitude} 40/25/58.03N, ^{Longitude} 73/58/47.28W and ^{Latitude} 40/25/34.85N, ^{Longitude} 73/58/43.12W,

respectively. Both required full investigations. Due to the proximity

to each other, both items were developed within an area of 1300 x 550

meters using 40-meter line spacing in an east-west direction and 20-meters

line spacing in a north-south direction. No indications were found for

either item on the echo sounder records. The hydrographer recommends

these wrecks to be revised as "ED". No additional information was

available from local accounts as for type of wrecks and last sighting.

See section 7.2.6) of the Evaluation Report.

PSR Item 2466 and 2467* - These two unidentified wrecks are charted at approximately ^{Latitude} 40/27/25.22N, ^{Longitude} 73/59/25.38W and ^{Latitude} 40/27/21.07N, ^{Longitude} 73/59/24.19W, respectively. Both items required full investigations.

Because these wrecks are so close inshore and since depths were only ^{foot or less in an area of breakers} one to two feet, the wrecks were considered destroyed. The approximate area for these wrecks was investigated visually by launches 1014, 1015, and by field verification party, with no indications of debris along the shoreline. The hydrographer recommends that these items be removed from the chart since they do not represent any danger to navigation ^{The wreck originated with prior surveys H-4610 (1926) and H-5243a (1932-34)} or at least to state "Wreck ED", if retained as charted.

PSR Item ^{wreck} 2469 and ^{barge} 2473* - The barge charted at ^{Latitude} 40/28/06.7N, ^{Longitude} 73/59/49.2W and the unidentified wreck charted at approximately ^{Latitude} 40/27/55.7N, ^{Longitude} 73/59/39.7W, required full investigation. This area (500 x 400 meters) was developed with 40-meter line spacing sufficiently to cover both items. No indications were found either visually or in the echo sounding records. Because these wrecks are so close inshore, they are considered no longer there. ~~Therefore, the hydrographer recommends that these items be revised to "ED".~~ See also section 7.2.9) of the Evaluation Report

The following prior surveys were used for comparisons during the course of survey WH-10-2-82, H-10035:

<u>Registry No.</u>	<u>Scale</u>	<u>Year of Survey</u>
H-5234a	1:10,000	1932
H-5639	1:20,000	1934
H-5735	1:20,000	1934
H-7866	1:10,000	1950
H-8330 WD	1:25,000	1956

*- PSR items 2467 and 2473 were mistakenly deleted from AWOIS and the numbers were reassigned to other wrecks.
MAM 6/23/87

Prior Survey H-5234a

Ninety-five percent of the surveyed depths from H-5234a agreed within 1 to 2 feet with survey H-10035 except for the eastern inshore section of Sandy Hook coastline, where the present survey depths were between 4 and 20 feet deeper. This difference is most prominent along the coastline from survey H-5234a where the previous shoreline has been shifted further inland. The cause of this shift is due to the strong prevailing currents running north to south over this area as described in the current studies, Appendix XI. Another factor that adds to this change is the constant dredging of Sandy Hook Channel which interferes with the natural sand movement from south to north.

The six, eight, twelve, and eighteen-foot contour lines were found to be in disagreement with the present survey with differences of up to 10 feet, specially northeast of Sandy Hook and the shoal areas between False Hook Channel and Sandy Hook Channel. The areas found in disagreement were the following:

- 1) ^{latitude} 40/25/38N, ^{longitude} 73/59/35W - This area showed 19 feet on H-5234a compared with the shoaler depth of 10 feet on H-10035;
- 2) ^{latitude} 40/28/35N, ^{longitude} 73/59/20W - A shoal of 11 feet is described on H-5234a compared to 22 feet on H-10035;
- 3) ^{latitude} 40/28/38N, ^{longitude} 73/59/32W - This area indicates a depth of 15 feet on H-5234a compared to 9 feet on H-10035;
- 4) ^{latitude} 40/28/42N, ^{longitude} 73/59/46W - This area showed 19 feet on H-5234a compared with the shoaler depth of 10 feet on H-10035;

5) ^{Latitude} 40/28/35N, ^{Longitude} 73/59/56W - The surrounding areas along this position exhibit depths 10 feet deeper than H-5234a.

Prior Survey H-5639 - Agreement with H-5639 was good, with approximately 95% of the depths agreeing within 1 to 2 feet. The remaining five percent agreed within 3 feet, with the depths of H-10035 generally being deeper than those of H-5639. This difference is within the acceptable limits suggested in Section 1.1.2 of the Hydrographic Manual.

Prior Survey H-5735 - Ninety-five percent of surveyed depths from H-5735 agreed within 1 to 2 feet. The remaining five percent agreed within 3 feet, the depths of H-10035 generally being deeper than those of H-5735. This difference is within the acceptable limits suggested in Section 1.1.2 of the Hydrographic Manual.

Prior Survey H-7866 - Generally 90% of the soundings from H-7866 agreed within one to two feet with the remaining 10% varying as much as 12 feet. This 10% discrepancy is most prominent along Sandy Hook eastern coast where erosion is constantly taking place. The previous inshore soundings (shorelines, six, eight, twelve, and eighteen-foot contour lines) do not compare with the recent survey from the 40-meter line spacing developments along Sandy Hook coastline. H-10035 surveyed depths were found to be constantly deeper along this area with shifts in the general coastline trends.

Other areas found in disagreement with H-10035 were:

<u>Location</u>	<u>H-7866</u>	<u>H-10035</u>
^{Latitude} 40/28/45N ^{Longitude} 73/58/50W	30'	43'
40/29/18N 73/59/17W	20'	29'
40/28/35N 73/59/15W	7-17'	20-27'

Prior Survey H-8330 WD - All the wire drag strips on H-8330 WD are shoaler than the depths from the present survey. The difference in depths ranges from ten to fifteen feet with areas of up to 20 feet differences. - See section 6.6 of the Evaluation Report

L. COMPARISON WITH THE CHART - See section 7 of the Evaluation Report

Survey H-10035 was compared with NOS Chart 12327, 78th Edition, 19 June 1982, scale 1:40,000. Where the bottom topography was regular, the depths agreed very well with 90% agreeing within one to two feet, 5% agreeing within three feet, and the remaining 5% in disagreement. The discrepancies were encountered within Sandy Hook northern shoals, and shorelines east of Sandy Hook coastline. The areas are as follows:

"C" north:	Location		Charted	Surveyed
	Latitude	Longitude		
	40/28/36N	73/59/16W	10'	25'
	40/28/31N	73/59/11W	7'	22' 21'
	40/28/35N	73/59/26W	16'	30' 29'-30'
	40/29/15N	73/59/55W	22'	36' 30'-36' sand wave area
	40/29/29N	73/59/58W	20'	26' 24'-26'
	40/29/28N	73/59/35W	23'	29' 27'-32'
	40/30/05N	73/59/35W	11'	15'
	40/29/21N	73/59/15W	20'	31' 29'-32'
	40/29/05N	73/58/45W	23' WD	30' 30'-32'
	40/30/20N	73/57/05W	5'	13' 14'-23'
	40/29/27N	73/58/23W	18'	25' 22'-25'
	40/30/35N	73/57/30W	9'	14' 16'-17'
	40/29/30N	73/58/23W	15'	20' 24'-26'
	40/28/45N	73/58/23W	18' WD	25' 35'
	40/30/00N	73/58/04W	38'	18' 18'-22'
	40/29/30N	73/57/37W	18'	25' 26'-27' - no 18' at this position
	40/29/33N	73/56/35W	18'	26' 26'-29'
	40/28/50N	73/57/33W	18' WD	24' 23'
	40/29/33N	73/56/53W	18'	23' 23'-27'
	40/28/30N	73/57/31W	18' WD	25' 22'

"C" central:	Location		Charted	Surveyed
	Latitude	Longitude		
	40/27/28N	73/57/05W	18'	25' ✓
	40/28/15N	73/57/30W	20'	27' 26'
	40/28/22N	73/59/22W	17'	3' 1-3'
	40/28/30N	73/59/00W	4'	22' 23'
"C" south:	40/24/37N	73/56/00W	40'	47' 48'
	40/25/07N	73/58/43W	3'	10-14' ✓
	40/25/04N	73/58/40W	8'	13-15' 14'
	40/26/15N	73/58/30W	40'	32' 33'
	40/26/25N	73/58/28W	22'	29' 26'

These discrepancies do not conform with the established criteria in the Hydrographic Manual. The hydrographer attributes these differences to the strong currents prevailing over this area and to the interference with the natural movement of the seafloor by the continuous dredging operations along Sandy Hook Channel and Ambrose Channel. The combination of these two are also the main factors that affect the constant erosion of the Sandy Hook coastline and the surrounding shoals. Consequently, a shift of the six, twelve, and eighteen-foot contour lines in a southerly direction has been observed from comparisons with prior surveys. It is recommended that the depths obtained during this survey be used as the new controlling depths for delineating the changes of the standard contour depths and the establishment of new coastline limits.

Within the survey area, portions of five channels were developed as an addition to mainscheme hydrography. Two of the channels, Sandy Hook Channel and Ambrose Channel, are major traffic routes and are dredged periodically. A Corps of Engineers contract vessel, the SUGAR ISLAND, dredged parts of Sandy Hook Channel while the survey was in progress. Because all of the dredged areas were west of H-10035 survey limits,

none of the hydrography had to be revised after the SUGAR ISLAND departed the area, as was the case with survey H-10031. Plans are underway for the Corps of Engineers to conduct an extensive dredging project in Ambrose Channel, and the dredged material will possibly be deposited on the eroding eastern shoreline of Sandy Hook.

Swash Channel is used often by tugs going into New York. The southern portion of Swash Channel is not dredged, but appears to be a natural channel. False Hook Channel is also a natural channel. The old Gedney Channel appears to have been dredged at one time, but has since been replaced by the Sandy Hook Channel entrance to Lower New York Harbor.

On 10 October 1982, Sandy Hook became an island when a section of the road at Latitude ^{Latitude} 40/25/03N, Longitude ^{Longitude} 73/59/00W connecting the mainland to the Hook was destroyed due to high tides. A considerable amount of erosion had been observed during the past several years by residents, in fact, a four-lane highway was built at this location during the summer of 1981; this has since been eroded. The present plan is to rebuild the road using the dredged material from Ambrose Channel. The revision to this survey will be included in the descriptive report for the survey HSB-10-10-82, which is still in progress.

Sandy Hook Channel Development

JD's 219, 223, 232

Channel Configuration

Positions 354-426, 953-1012,

Launch 1014 & 1015

6663-6712

This channel was developed using 50-meter line spacing parallel to the

axis of the channel. In some instances the echo sounder records showed sand ridges. The hydrographer does not consider these ridges hazardous to navigation. Hydrographic lines at 80-meters and splits at 40-meters were also run perpendicular to this channel. The combination of these two (parallel lines & perpendicular lines) provided a clear delineation of the channel's limits, configuration, and controlling depths.

Development 1N

JD 238

Spike Investigation

Positions 7398-7430

Various spikes were discovered on the mainscheme lines on JD 232 (between positions 1634-1636) near Buoy "5" Fl G 4 sec GONG, Sandy Hook Channel. North-south and east-west 40-meter line spacing patterns were used to develop this area. No detached position was taken on the spike during the development. The fathometer trace shows what appears to be a series of sand ridges surrounding this area.

Due to the strong currents surrounding the general locality, it is expected that the ridges will be constantly changing in size and location.

Development 2N

JD 238

Spike Investigation

Position 7433-7444

Various spikes were discovered on the mainscheme on JD 232 (between positions 1668-1670). North-south (40-meter line spacing) and east-west (20-meter line spacing) patterns were used to develop this area. The fathometer trace showed a series of sand ridges surrounding this area. As with development 1N, these ridges are expected to be constantly changing

in size and location. Further developments were made over this area during development of pre-survey item #2458.

<u>False Hook Channel Development</u>	JD's 233, 235, 236, 248, 249
<u>Launch 1014 & 1015</u>	Positions 6726-6763, 7088-7135, 7136-7192, 2830-2883, 2884-3017

This natural channel was developed using hydrographic lines of 80-meters and splits of 40-meters. The lines ran in a east-west pattern perpendicular to the channel's configuration, providing greater details throughout the channel. Close examination of the echo sounder records shows that this area is characterized by a fairly flat bottom (varying from coarse sand to broken shells) with occasional spikes extending 2-3 feet from the bottom.

<u>Romer Shoal Development</u>	JD's 220, 225
<u>Launch 1015</u>	Positions 5593-5663, 6178-6232

This shoal was developed by running 80-meter line spacing parallel to the shoal along its center and sides. Hydrographic lines at 80-meters and splits at 40-meters were also run in a north-south pattern crossing the shoal at an angle to the mainscheme lines. The combination of these two patterns provided greater details throughout the area. Close examination of the echo sounder records shows that this shoal is characterized by a fairly jagged bottom, apparently consisting mainly of rocks and broken shells, extending from 7-10 feet from the water's surface.

Unused Channel Development

JD 223

Channel Configuration

Positions 1013-1115

Launch 1014

Old Gedney Channel (refer to prior survey H-5735) joins with Swash Channel at the entrance to Lower New York Harbor. This channel was developed using 50-meter line spacing run parallel to the channel configuration. The echo sounder records showed a fairly flat bottom with a few spikes and sand ridges. Hydrographic lines at 80-meters were also run across the channel. The combination of these two hydrographic line patterns provided a clear delineation of the channel configuration and limiting depths. No major hazards to navigation were found over this area.

Swash Channel Development

JD 224

Launch 1014

Positions 1244-1331

This channel was developed using 50-meter line spacing along the axis of the channel. Hydrographic lines at 80-meters and splits at 40-meters were also run perpendicular to the channel. The combination of these two (parallel and perpendicular patterns) provided a clear delineation of the channel's limits and its controlling depths. Close examination of the echo sounder records showed places with sand ridges, a few spikes, and a general trend of fairly flat topography.

Ambrose Channel Development

JD's 220, 223

Launch 1014

Positions 540-584, 1116-1243

This channel was developed using 50-meter line spacing along the axis of

the channel. Hydrographic lines at 80-meters and splits at 40-meters were also run in a north-south pattern, crossing the channel at an angle. The combination of these two (perpendicular & parallel patterns) provided a clear representation of depths within the channel limits. Close examination of the echo sounder records showed areas with sand ridges extending 9-feet at the edges of the channel with a fairly flat seafloor elsewhere.

NOTE: Due to strong currents along all the channels, the sand ridges are subject to constant changes in location, size and height.

U/W Obstruction Investigation

JD 236

✓ Dive Operation

Position 7282

This obstruction was reported being awash during low tide by local residents. WHITING divers searched the area and reported finding a submerged bunker made of concrete, surrounding by rubble. This cubicle measured 15 x ~~19~~²⁵ feet, extending ~~19~~¹⁸ feet vertically and listing slightly to one side. It is presently located at Latitude 40/25/55.6N, Longitude 73/58/51.89W. The hydrographer recommends that an area 30 x 30 ~~feet~~^{meters} be indicated as marking the site, and that this feature be charted as "Submerged Obstruction". Refer to Dive Report dated 24 August 1982 for further details.

Spike Investigation

JD 223

Diving Operation

Position 6233 (JD 225)

This spike was discovered on the mainscheme on JD 222, between positions 5888-5889. WHITING divers searched the area and reported finding a structure made from rock and rubble. The structure covered an area of approximately 100-feet in diameter and extended 7-10 feet vertically from the seabed. The observed position of this feature is ^{Latitude} 40/29/26.67N, ^{Longitude} ~~and~~ 73/58/49.08W. The hydrographer recommends that this feature be charted as a "Fish Haven". For further details refer to Dive Report dated 11 August 1982. *Chart as shown on the survey smooth sheet.*

Spike Investigation

JD 249

Diving Operations, Site #3

Position 8103

This spike was discovered on the mainscheme on JD 247, between positions 2680-2681. WHITING divers searched this area and reported finding a section of a submerged bunker made of a concrete cubicle. The bunker measured approximately 9 x 8 feet, extending 6-feet vertically. It is presently located at Latitude 40/25/15.04⁶N, Longitude 73/58/50.02³W. The hydrographer recommends that an area ⁹⁴ 30 x ⁵⁴ 30 feet be indicated as marking the site, and that this feature be charted as a "Submerged Obstruction". For further details, refer to Dive Operations Report for Dive #3. *Chart as shown on the survey smooth sheet.*

Development 3N

JD 250

Bottom Investigation and Diving

Sites #1, #2, and #4

Launch 1014

During mainscheme hydrography on JD 247, (Positions 2635-2698), various underwater features were observed on the fathometer records. These features were investigated as follows: I. Site #1 and #2 (Positions 3076 and 3073 respective DP's). These two sites were first developed using 40-meter line spacing east-west (positions 2674-2704) and north-south (positions 2389-2430) patterns. Afterwards, WHITING divers investigated the developed area and reported finding sand hills on both sites. Dive site #2 was the first section to be investigated. Its present position is Latitude 40/25/06.05N, Longitude 73/58/15.54W (position 3073).

Site #1 was the second section to be investigated. Its present position is at Latitude 40/25/11.22N, Longitude 73/58/07.36W (refer to position 3076). Both of the sand hills are expected to shift from their present locations due to the prevailing currents in this area.

II. Site #4 (position 3127) This area was developed along with PSR Item 2459 ^{see section 7.2 of the Evaluation Report.} development (positions 2459-2467). This feature was described by WHITING divers as an underwater obstruction composed of rocks. This obstruction appeared to be well settled and no movement from its present location of Latitude 40/25/05.4⁵N, Longitude 73/58/45.2¹⁵W is expected. See the dive report dated 20 September 1982 included with this report. The hydrographer recommends that this feature be charted as a "Submerged

Obstruction" as it presents a hazard to navigation.

The northern section of this survey was developed extensively. Main-scheme lines were spaced at 40 meters and additional channel axis sounding lines and PSR developments produced a smooth field sheet with many soundings. It was the opinion of the hydrographer that this redundancy was justified because of the large amount of maritime and pleasure traffic in the area.

The general anchorage areas east of Sandy Hook were reported to be active. This information was obtained from a conversation with LT J. Thibault, Station Commander, Coast Guard Station Sandy Hook.

The pipeline which is charted from Morgan, New Jersey, extending across the survey area, is in use and is a submerged oil pipeline which continues to Long Island. *Retain as charted.*

M. ADEQUACY OF SURVEY

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

NOTE: There is a hole at 40/26/45N, ^{latitude longitude} 73/53/53W in the 18-foot curve inshore east of Sandy Hook. This gap was caused by the early interruption of the hydrographic line by the launch OIC and was overlooked afterward. However, this gap does not affect the minimum line spacing standards set in the Hydrographic Manual, Section 4.3.4.

N. AIDS TO NAVIGATION

Except for charted buoy "9" Qk F1 GONG in Sandy Hook Channel, all floating aids within the survey area were located and positioned by the Del Norte positioning system. The following floating aids to navigation were surveyed:

<u>DESCRIPTION</u> (Sandy Hook Channel)	<u>CHARTED POSITION</u>		<u>SURVEYED POSITION</u>	
	<u>Latitude</u>	<u>Longitude</u>	<u>Latitude</u>	<u>Longitude</u>
R "10" F1 R 4 sec	40/29/18	73/59/24	40/29/13	73/59/19
R "8" F1 R 4 sec BELL	40/28/50	73/58/47	40/28/50	73/58/43
"9" Qk F1 GONG	40/28/44	73/58/54	40/28/44	73/58/52
"1" F1 2.5 sec GONG	40/27/10	73/56/18	40/29/07	73/56/20
R "2" F1 R 4 sec BELL	40/27/17	73/56/12	40/27/16	73/56/11
"3" F1 G 4 sec GONG	40/27/43	73/57/12	40/27/35	73/57/07
R "4" F1 R 4 sec BELL	40/27/49	73/57/06	40/27/49	73/57/05
"5" F1 G 4 sec GONG	40/28/13	73/58/03	40/28/13	73/58/01
R "6" F1 R 4 sec	40/28/19	73/57/55	40/28/20	73/57/55
<u>DESCRIPTION</u> (Ambrose Channel)	<u>CHARTED POSITION</u>		<u>SURVEYED POSITION</u>	
"1" F1 2.5 sec WHISTLE	40/29/33	73/56/02	40/29/30	73/56/00
R "2" F1 R 2.5 sec BELL	40/29/48	73/55/49	40/29/48	73/55/47
C "1A"	40/29/53	73/56/54	40/29/51	73/56/51
R N "2A"	40/40/08	73/56/39	40/30/08	73/56/39
"3" F1 2.5 sec	40/30/06	73/57/29	40/30/05	73/57/29
R N "2S" BELL	40/29/25	73/58/25	40/29/24	73/58/25
R N "4S"	40/29/48	73/59/16	40/29/47	73/59/17
C "5A"	40/30/45	73/59/11	40/30/45	73/59/10

DESCRIPTION (Ambrose Channel)	CHARTED POSITION		SURVEYED POSITION	
	<u>Latitude</u>	<u>Longitude</u>	<u>Latitude</u>	<u>Longitude</u>
"5" F1 2.5 sec	40/30/32	73/58/37	40/30/32	73/58/36
"4" F1 R 4 sec	40/30/21	73/57/11	40/30/20	73/57/10
C "3A"	40/30/18	73/58/02	40/30/18	73/58/01
N "4A"	40/30/32	73/57/46	40/30/34	73/57/47
"6" F1 R 4 sec BELL	40/30/47	73/58/19	40/30/48	73/58/21
"7" F1 2.5 sec GONG	Uncharted		40/28/44	73/58/52

After this period of hydrography, it was observed by WHITING personnel as the ship departed the working area that Buoy "9" Qk F1 GONG had been removed from the channel. This buoy had been replaced by Buoy "7" F1 2.5 sec GONG bearing the same position of Buoy "9". A new position was determined for Buoy "7" using a sextant angle with check angle by the WHITING field party which remained at Sandy Hook to complete the project in conjunction with HFP-5. This position compared very well with the previous Buoy "9". It is recommended that Buoy "9" Qk F1 GONG be removed from the Chart 12327, 78th Edition, June 1982, and be replaced with "7" Qk F1 2.5 sec GONG. *See chart*

There were no fixed aids to navigation within the survey limits.

O. STATISTICS

	<u>Total</u>
Number of Positions	6239
Nautical Miles of Hydrography	1066
Square Miles of Hydrography	23
Bottom Samples	184
TDC Casts	5
Tide Stations installed by the WHITING	0

P. MISCELLANEOUS

A tidal current study was conducted to confirm the validity of published information. A full report is included in Appendix X.

Q. RECOMMENDATIONS - *See Evaluation Report*

Survey H-10035 is adequate and no further field work other than that addressed in Section L is recommended.

R. AUTOMATED DATA PROCESSING

<u>Program No.</u>	<u>Description</u>	<u>Version Date</u>
RK112	Range/Range Real-Time Hydroplot	8/4/81
RK201	Grid, Signal and Lattice Plot	4/18/81
RK211	Range/Range Non-Real Time Plot	2/2/81
RK300	Utility Computations	10/21/80
AM500	Predicted Tide Generator	11/10/72
AM530	Layer Corrector for Velocities	5/10/76
RK561	Range/Range Geodetic Calibration	5/26/81
AM602	Extended Line Oriented Editor	5/21/75

S. REFERRAL TO REPORTS

Tide Station Report submitted to OA/C321, Tidal Requirements and Acquisitions Branch, 9 September 1982;

Horizontal Control Report to be submitted to OA/CAM1, Operations
Division at the completion of the project;

Request letter for smooth tides submitted to OA/C321, Tides and
Water Levels Branch, dated 12 October 1982;

Field edit report to be submitted to OA/CAM3 at the completion of
the project.

Respectfully Submitted,

A handwritten signature in dark ink, appearing to read "Paul J. Ruiz", written over a faint circular stamp or watermark.

Paul J. Ruiz, ENS NOAA

Atlantic Marine Center
439 West York Street
Norfolk, VA 23510

File No: 01
Ser. No: 80-36
OA/CAM311:LGC

November 9, 1982

TO: Commanding Officer
Third Coast Guard District
Governor's Island
New York, NY 10004

FROM: Karl Wm. Kieninger, CDR, NOAA
Chief, Marine Surveys Division, CAM3

SUBJECT: Dangers to Navigation

1. An uncharted obstruction, described as a 15-ft. by 25-ft. concrete bunker surrounded by rubble awash at MLW, predicted tides, has been located in Latitude 40°25'06.05"N, Longitude 73°58'51.89"W. This item is in surrounding depths of 16 to 18 feet. *✓*

2. An uncharted submerged obstruction, described as being a 9-ft. by 8-ft. section of a concrete bunker with a least depth of 9 feet at MLW, predicted tides, has been located in Latitude 40°25'15.04"N, Longitude 73°58'50.02"W. This item is in surrounding depths of 13 to 14 feet. *✓*

3. An uncharted submerged obstruction, described as being a structure made from rock and rubble approximately 100 feet in diameter and extending 7-10 feet vertically from the seabed, has been located in Latitude 40°29'26.67"N, Longitude 73°58'49.03"W. The least depth over this item was 25 feet at MLW, predicted tides. *✓*

4. An uncharted submerged obstruction, described as being a structure made from rocks and concrete blocks approximately 100 square feet and extends 5-7 feet vertically from the seabed, has been located in Latitude 40°28'11.32"N, Longitude 73°57'22.02"W. The least depth over this item was 24 feet at MLW, predicted tides. *✓*

5. An uncharted shoal depth, described as being a sandhill with a least depth of 12 feet at MLW, predicted tides, has been located in Latitude 40°25'06.05"N, Longitude 73°58'15.54"W. The general bottom depths in this area are from 19 to 21 feet. *✓*

6. An uncharted shoal depth, described as being a sandhill with a least depth of 14 feet at MLW, predicted tides, has been located in Latitude 40°25'11.22"N, Longitude 73°58'07.36"W. The general bottom depths in this area are from 19 to 21 feet. *✓*

November 9, 1982

Dangers to Navigation

7. An uncharted submerged obstruction, described as rocks with a least depth of 4 feet at MLW, predicted tides, has been located in Latitude $40^{\circ}25'05.43''N$, Longitude $73^{\circ}58'45.22''W$. Surrounding present survey depths are 12 to 14 feet. P 119
AW015
2459

8. An uncharted submerged obstruction, with a least depth of 19 feet at MLW, predicted tides, has been located in Latitude $40^{\circ}28'14.0''N$, Longitude $73^{\circ}57'27''W$. The general bottom depths in this area are from 25 to 28 feet. P 120
P 118
20

The charted depths in the area of the above items are in conflict with the depths found by the present survey, H-10035 (1982). It is evident that considerable change in the bottom configuration has taken place. Three of the above items (Items 1, 2, and 7) are in an area charted as awash at MLW. The present survey depths were found to be 12 to 13 feet.

Source: NOS Survey H-10035 (1982)

Charts: 12327, 12326, 12324

cc: OA/C322
C.O., WHITING

NATIONAL OCEAN SURVEY
WRECK AND OBSTRUCTION INFORMATION SYSTEM
AUGUST 12, 1982

NAME	REG #	LATITUDE	LONGITUDE	AREA	GP AC	SVY ST	CARTO CODE	CHART
01631 ANNE D IT	0000000	40/29/18.00N	073/58/54.00W	B	53	11	0100	12300

HISTORY

LN25/75-CHRIS CRAFT, 22 FT. L, SUNK IN SWASH CHANNEL, DEPTH OVER UNKNOWN.
FE221/78-79--OPR-C622, ITEM 10; NOT INVESTIGATED DUE TO TIME CONSTRAINTS.
REQUIRED 1/2 MILE RADIUS WD TO VERIFY/DISPROVE
CL1748/78--CES 12327, OPR-B408, ITEM 10; SEARCHED FOR WITH 25-METER LINE
SPACING, NOT FOUND.

SURVEY REQUIREMENTS

FULL--VERIFY OR DISPROVE. DISPROVE BY WIRE DRAG, BOTTOM DRAG OR SIDE SCAN
SURVEY (400%), 500 METER MINIMUM RADIUS.
ADDITIONAL WORK IS DESIREABLE AS FOLLOWS: INITIAL SIDE SCAN SURVEY (100%) OR
WIRE DRAG SWASH CHANNEL N. TO S. TO 18 FT. ED WITHIN MAX. WIDTH OF CHARTED
BUOYS, AND W. TO E. SWEEP OF GEDNEY CHANNEL TO 28 FT. ED FROM SANDY HOOK
CHANNEL BUOYS E. TO AT LEAST LONGITUDE 73-56N.
ESTIGATION BY ECHO SOUNDER ONLY SHOULD CONSIST OF A LIMITED TYPE SEARCH
A 500 METER RADIUS.
ASSIGNED: OPR-B139

THESE DATA UPDATE THE PSR ISSUED JUNE 18, 1979 TO AUGUST 12, 1982.

VI. LIST OF STATIONS

SIGNAL TAPE LISTING

001	6	40	31	17579	074	07	55491	250	0008	000000	GR. KILLS L.H. 1926
002	6	40	30	43892	074	05	56860	250	0015	000000	OLD ORCH. L.H. 1900
003	6	40	32	15232	074	02	35796	250	0021	000000	WEST BANK L.H. 1917
004	6	40	30	46443	074	00	50175	250	0016	000000	ROMER SHL L.H. 1900
005	6	40	28	14463	074	01	03758	250	0011	000000	SANDY HOOK PT LT 1944
006	6	40	28	21559	074	00	44196	250	0000	000000	SY. HOOK LORAN 1982
007	6	40	28	08591	074	00	28098	139	0000	000000	SY. HOOK ST'PIPE
008	6	40	27	41798	074	00	03811	250	0026	000000	SY. HOOK L.H. FINIAL 1900
009	6	40	26	56385	074	00	11397	250	0010	000000	HORSE SHOE 1940
010	6	40	23	45337	073	59	09162	250	0074	000000	RICH 1940
011	6	40	25	35696	073	59	04774	139	0000	000000	SP COVE CUPOLA 1926
012	6	40	24	38137	073	58	46611	139	0000	000000	SHREW 1981
013	6	40	23	45789	073	58	40347	139	0000	000000	NEW BRIDGE 1934
014	6	40	23	45240	073	59	09203	250	0074	000000	NAVESINK LT SOUTH
015	6	40	23	47050	073	59	10544	139	0000	000000	NAVESINK LT NORTH
016	6	40	27	02492	074	03	09194	139	0000	000000	LEON. PIER FRONT R. LT
017	6	40	27	21691	074	03	00569	139	0000	000000	AMMO PIER CAL'N 1982
018	6	40	32	16189	074	02	35730	250	0000	000000	W BANK L.H. ECC. 1982
019	6	40	30	46333	074	00	50220	250	0020	000000	ROMER SHOAL L.H. ECC. 82
020	6	40	27	41722	074	00	08808	250	0026	000000	SANDY HOOK L.H.FINIAL ECC.

IX. LANDMARKS FOR CHARTS

RESPONSIBLE PERSONNEL		ORIGINATOR
TYPE OF ACTION	NAME	
OBJECTS INSPECTED FROM SEAWARD	James E. Dunford WHITING personnel	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	James E. Dunford, WHITING personnel	FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' (Consult Photogrammetric Instructions No. 64)		
OFFICE	FIELD (Cont'd)	
I. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75	B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982	
FIELD	II. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75	
I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection	III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75	
A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.	
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.		

RESPONSIBLE PERSONNEL		ORIGINATOR
TYPE OF ACTION	NAME	
OBJECTS INSPECTED FROM SEAWARD	James E. Dunford WHITING personnel	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	James E. Dunford, WHITING personnel	FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' (Consult Photogrammetric Instructions No. 64)		
OFFICE	FIELD (Cont'd)	
I. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75	B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982	
FIELD	II. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75	
I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection	III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75	
A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.	
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.		

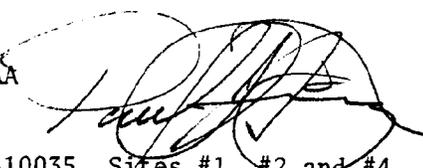
X. DIVE OPERATIONS



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
NOAA Ship WHITING S-329
439 W. York Street
Norfolk, VA 23510

September 20, 1982

TO : Lt. Virginia N. Shaffer, NOAA
Field Operations Officer
NOAA Ship WHITING

FROM : Ensign Paul J. Ruiz, NOAA
Diver 

SUBJECT: Diving Operations for H-10035, Sites #1, #2 and #4,
OPR-B139-WH-82, dated September 7, 1982

The purpose of these dives was to investigate two areas along the east coast of Sandy Hook, New Jersey, where spike traces were observed during hydrography by Launch 1015 (see positions #1968-1969). For this investigation three dives were scheduled, one for each site.

At 0813 LMT, Launch 1014 departed the WHITING with divers Ensign P.J. Ruiz and SS R.C. Brewington, and cox'n OS M. Randall, and headed for the first dive site at Latitude 40/25/10N, Longitude 73/58/08W. After arriving, Launch 1014 began running hydrography in search of the spikes. Once the locations were determined, a marker buoy was set on each site (#1 & #2) using Launch 1014's Del Norte system. Then the launch was anchored alongside each buoy, where diving operations were performed.

Dive site #2 was the first section to be investigated. Operations lasted from 1207 LMT to 1243 LMT when the divers cleared the water surface. The divers found a steep, coarse sand hill with sides dropping off to 36.0 feet measured by depth gauge. A least depth leadline from the highest point measured 13.5 feet at 1240 LMT. Its present position is at Latitude 40/25/06.0⁶N, Longitude 73/58/15.5⁰W (see position #3073). Chart as 10 foot shoal shown on the survey smooth sheet

The second section to be investigated was dive site #1. This operation lasted from 1356 LMT to 1410 LMT. The divers found the marker buoy sitting on top of another steep, coarse sand hill. Its present position is at Latitude 40/25/11.2²N, Longitude 73/58/07.3⁶W (refer to position #3076). Both of the sand hill positions were determined from Del Norte rates. It is suspected that both features will gradually shift from their present locations, due to the prevailing currents (1-3 knots) in these areas.

The second area, which shows some indications of an underwater obstruction (dive site #4), is located approximately 75 meters from the eastern shore



of Sandy Hook at Latitude 40/25/04N, Longitude 73/58/45W. This site was marked with a buoy, and the dive lasted from 1600 LMT to 1610 LMT. The divers reported rocks as the feature marked by the buoy. The least depth as determined by leadline was 4.5 feet at ~~1608 LMT~~. This feature was not awash at low water and it appears to be well settled. No movement from its present position of Latitude 40/25/05.43N, Longitude 73/58/45.22W⁵ (see position #3127) is expected. It is recommended that this feature be charted as a "Submerged Obstruction", as it presents a hazard to navigation.

2459

201242 GMT

✓

4RK is shown on the survey smooth sheet.

See section 7.2 of the Evaluation Report.



**U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

NATIONAL OCEAN SURVEY

NOAA Ship WHITING S-329
439 W. York Street
Norfolk, VA 23510

August 25, 1982

TO : Virginia N. Shaffer, Lt., NOAA
Field Operations Officer
NOAA Ship WHITING

FROM : Ensign Paul J. Ruiz, NOAA
Diver 

SUBJECT: Diving Operations for PSR Item #2458, Survey H-10035,
OPR-B139-WH-82, dated August 24, 1982

This dive was conducted to investigate the existence of a sunken floating drydock wreck about 1.5 nautical miles east of Sandy Hook, New Jersey at approximate Latitude 40/28/12N, Longitude 73/57/25W. At 0930 LMT the MonArk with LCdr. A.N. Flior (DiveMaster), Ensign P.J. Ruiz (diver), and CB M. Rose (cox'n), departed the WHITING for the suspected wreck site, which was previously marked by Launch 1015 with a marker buoy.

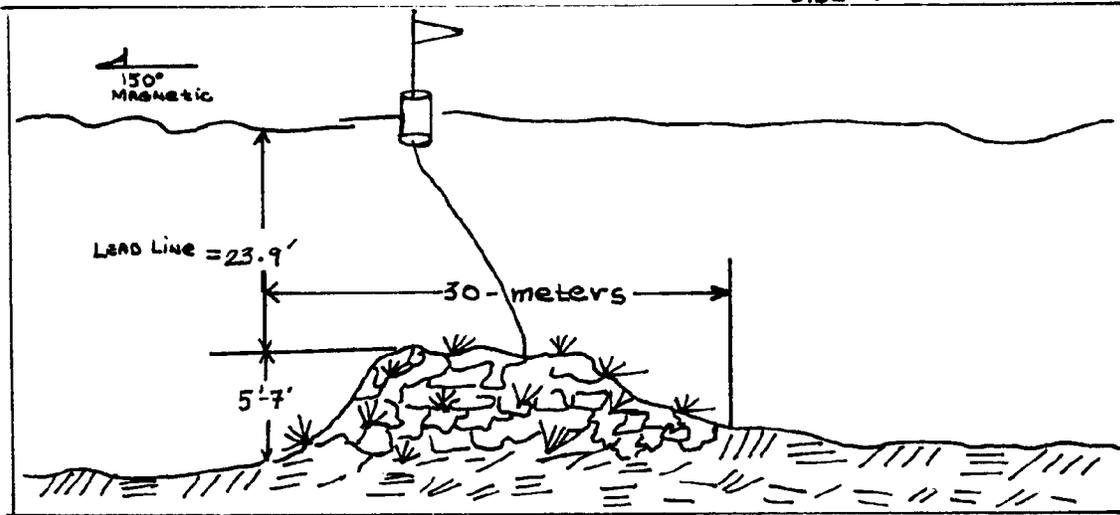
When the dive party reached the site, the MonArk was anchored alongside the float and the diving operations began. An investigation was made from 1031 LMT to 1055 LMT, when the divers surfaced.

The dive operation yield negative results. No wreck was found at the site. Instead, the divers found the marker float sitting on top of a structure made from rocks and concrete blocks (see attached sketch), which was observed during the development of the area by Launch 1015 (see positions #6859-6894). This structure covers an area approximately 100-square feet and extends 5-7 feet vertically from the seabed. The least depth of the feature as determined by leadline was 23.9 feet at 1055 LMT. Its position was determined to be Latitude 40/28/11.32N, Longitude 73/57/22.02W, derived from Del Norte rates (see position #7200). ✓

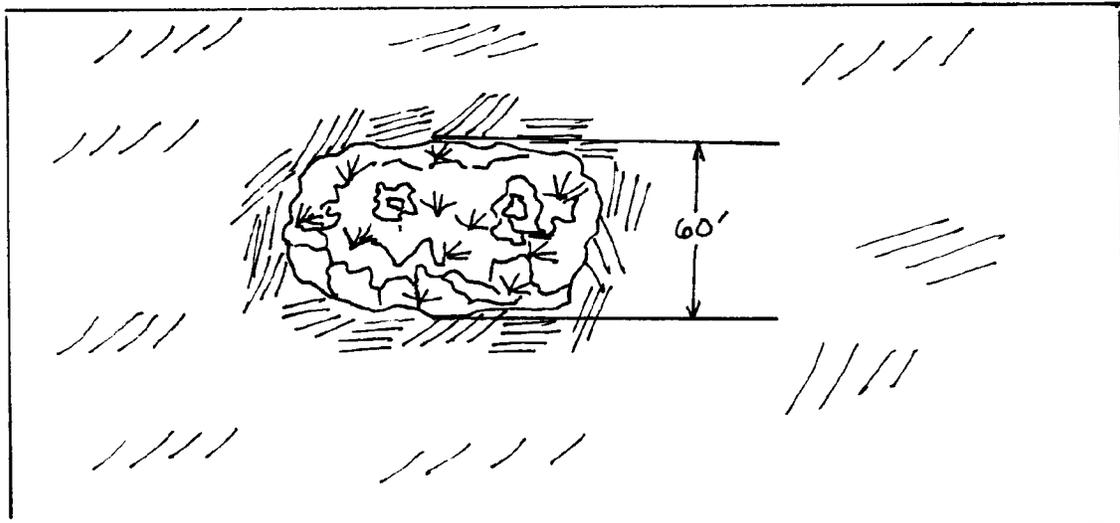
152945 GMT
A strong NNE current (2-3 knots) was prevailing during this dive. The underwater visibility was 10-15 feet horizontally and 15-20 feet vertically, with water temperatures ranging from 72°F to 74°F. This structure was found to be full of marine life and it appears to be well settled. It is recommended that this area be charted as a "Fish Haven". Chart as 19 Obstr on survey smooth sheet.



Side View



TOP VIEW





U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
NOAA Ship WHITING S-329
439 W. York Street
Norfolk, VA 23510

September 8, 1982

TO : Lt. Virginia N. Shaffer, NOAA
Field Operations Officer
NOAA Ship WHITING S-329

FROM : Ensign Paul J. Ruiz, NOAA
Diver

SUBJECT: Diving Operation for Site #3, Survey H-10035 (WH-10-2-82),
dated 06 September 1982

The purpose of this dive was to investigate the existence of a submerged structure south of False Hook Channel, Sandy Hook, New Jersey.

The site is about 900 meters southeast of Gateway National Park Public Swimming Beach, and approximately 300 meters due east of the shoreline.

The dive team was composed of YS J. Lowery (DiveMaster), Ensign P. Ruiz and SS R. Brewington, all NOAA divers. The dive team departed the NOAA Ship WHITING at 0845 LMT aboard Launch 1015. After arriving at the dive site, Launch 1015 began running hydrography in search of the bunker's location. Once the location was determined, a marker buoy was set using Launch 1015's Del Norte System. Thereafter, the launch was anchored alongside the buoy and dive operations began. An investigation was made from 1120 until 1140 LMT, when the divers cleared the surface water.

The divers found a section of a submerged bunker made of a concrete cubicle. The bunker measured about 9 x 8 feet, extending 6 feet vertically. It is presently located at latitude 40/25/15.04N, longitude 73/58/50.02W. This position (#8103) was determined by Launch 1015's Del Norte system. A least leadline depth was taken from the bunker's highest point, measuring ~~9.5~~ ^{6.7} feet at ~~1150~~ ¹⁵⁵⁵⁶ LMT. The structure was not awash at low water. ^{15556 GMT}
Chart as 60bstr as shown on survey smooth sheet.

This structure appeared to be well settled and no movement from its present position is expected (the current in this area ranges from 1-2 knots). It is recommended that an area 90 x 50 feet be marked to depict this area, and that the bunker be charted as a "submerged obstruction", as it presents a danger to navigation.

Other points of interest: underwater visibility was 5-8 feet horizontally and 8-10 feet vertically with the water temperatures ranging from 72°F to 76°F. The structure was also found to be full of marine life.





**U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

NATIONAL OCEAN SURVEY
NOAA Ship WHITING S-329
439 W. York Street
Norfolk, VA 23510

August 25, 1982

TO : Lt. Virginia N. Shaffer, NOAA
Field Operations Officer
NOAA Ship WHITING

FROM : Ensign Paul J. Ruiz, NOAA
Diver

SUBJECT: Diving Operations for Survey H-10035, OPR-B139-WH-82,
dated 11 August 1982

The purpose of this dive was to investigate an area about 1½ miles northeast of Sandy Hook, New Jersey (Approximate position 40/29/27N ~~and~~ 73/58/49W), where a spike was observed on the echogram during hydrography by Launch 1015 (see positions #5888-5889). Two dives were scheduled for the same location.

At 1332 LMT, the MonArk with LCdr. A.N. Flior (DiveMaster), Ensign P.J. Ruiz (diver), and SS. R.C. Brewington (diver) departed the WHITING for the dive site, which was previously marked by Launch 1015 using a marker buoy. When the dive party reached the site, the boat was anchored alongside the buoy and the diving operations began. The first investigation was made from 1436 LMT to 1515 LMT. This was followed by a second investigation from 1542 LMT to 1614 LMT.

The divers reported a structure (fish haven) made from rock and rubble. The structure covered an area of approximately 100 feet in diameter and extended 7-10 feet vertically from the seabed. On both dives, the sweeping technique was used to clear the area and verify the location of the structure.

Despite the strong current (2-3 knots) that prevailed during the operation, this structure appears to be well settled and no movement from its present position of 40/29/26.67N and 73/58/49.08W (determined by Del Norte rates) is expected. The least ^{27.22} depth as determined by leadline was ³⁶ ~~25~~ feet at ~~1010 LMT.~~ ₂₃

140931 GMT

Due to the abundance of marine life found around the structure, it is recommended that this area be charted as a "Fish Haven". *Chart as 23 PK as shown on the survey smooth sheet.*

Other data of interest: underwater visibility was 8-12 feet horizontally and 15-20 feet vertically with water temperatures ranging from 74°F to 77°F.





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

NOAA Ship WHITING S-329
439 W. York Street
Norfolk, Virginia 23510

August 26, 1982

TO : Lt. Virginia N. Shaffer, NOAA
Field Operations Officer
NOAA Ship WHITING S-329

FROM : Ensign Paul J. Ruiz, NOAA
Diver

SUBJECT: Diving Operations, Survey H-10035, OPR-B139-WH-82, dated
24 August 1982.

This dive was conducted to investigate the existence of a submerged structure (underwater bunker) south of False Hook, New Jersey. It is about 200-300 meters east of Gateway National Park Public Beach, and approximately 33 meters northeast from the northernmost regulatory marker buoy.

The dive team of LCDR A.N. Flior (DiveMaster), Ens. P. Ruiz (Diver), and CB Rose (cox'n), was assisted by personnel from the National Park Service in locating the submerged bunker. It was learned from the Park Rangers that the structure could be seen awash during low tide. When the dive party onboard the MonArk reached the site, a marker buoy was dropped and the boat was anchored alongside. The dive operation was conducted from 1452 LMT to 1532 LMT, when the divers surfaced.

The divers found the submerged bunker to be a concrete cubicle, surrounded by rubble. The cubicle measured 15 x 25 feet, extending 18 feet vertically and listing slightly to one side (see attached sketch). Its position (#7882) is Latitude 40/25/55.6⁶⁸N, Longitude 73/58/51.8⁶⁴W (determined from Del Norte rates), and this structure is awash at low water.

Despite the strong current (2-3 knots @ NNE) that prevails over this area, the structure appears to be well settled and no movement from its present position is expected. The underwater visibility was 8-12 feet horizontally and 15-20 feet vertically, with the water temperatures ranging from 74°F to 77°F. This structure was found to be full of marine life.

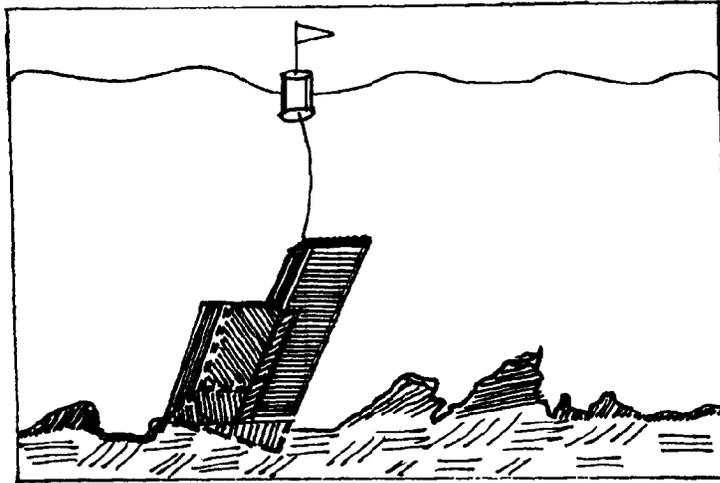
It is recommended that an area 33 x 33 meters be indicated as marking the site, and that the bunker be charted as "Submerged Obstruction".

Chart 20bstr as shown on the survey smooth sheet.

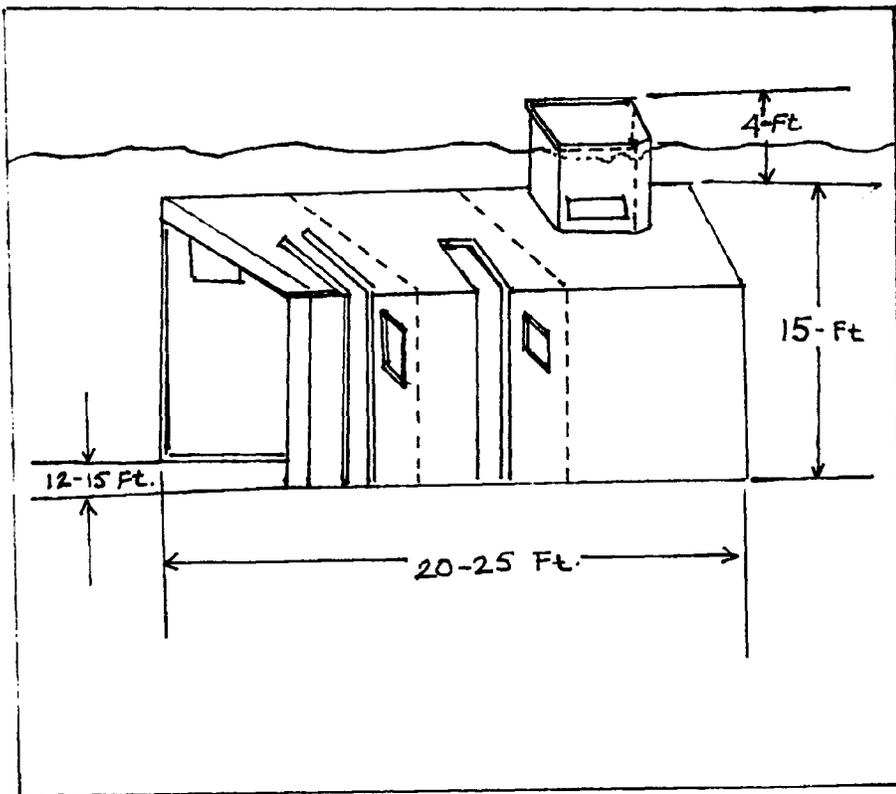
OK
1206H



Side View



Top View



XII. APPROVAL SHEET

Supervision of all field and office work on this hydrographic survey was continuous and on a day to day basis to ensure completeness. All work was done in accordance with the Project Instructions and the Hydrographic Manual. This survey is complete and adequate for charting purposes.

Approved and Forwarded

Roy K. Matsushige
Commander Roy K. Matsushige, NOAA
Commanding Officer
NOAA Ship WHITING S-329

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NO.: H-10035

Number of positions	5828
Number of soundings	37113
Number of control stations	13

	<u>TIME-HOURS</u>	<u>DATE COMPLETED</u>
Preprocessing Examination	41	29 NOV 82
Verification of Field Data	497	29 OCT 84
Quality Control Checks	102	
Evaluation and Analysis	82	10 APR 85
Final Inspection		03 MAY 85
TOTAL TIME	764	
Marine Center Approval		24 MAY 85

Transmittal letter of survey and survey records will be included in the Descriptive Report to identify the records accompanying the survey.

REFERENCE NO.

MOA 23-43-86

LETTER TRANSMITTING DATA

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

- ORDINARY MAIL AIR MAIL
 REGISTERED MAIL EXPRESS
 GBL (Give number) _____

TO:

CHIEF, DATA CONTROL SECTION
HYDROGRAPHIC SURVEYS BRANCH, N/CG243
NATIONAL OCEAN SERVICE, NOAA
ROCKVILLE, MD 20852

DATE FORWARDED

29 April 1986

NUMBER OF PACKAGES

4 (3 boxes & 1 tube)

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

H-10035 (WH-10-2-82) OPR-b139
New York Harbor

Package# 1(tube)

- 1-- Smooth Sheet
- 1-- Smooth Position Overlay
- 3-- Excess Overlays
- 1-- Smooth Field Sheet (9 parts)

Package# 2(box)

- 3-- Accordion Folders containing fathograms and printouts for the following days: (vessel #2931) 217, 218, 219, 220, 221, 222, 223, 224, 225, 230, 231, 232, 233, 234, 235, 236, 238, 239, 236, 239, 244, 245, 246, 247 & 249
- 6-- Sounding Volumes (NOAA Form 77-44)

FROM: (Signature)

David B. Mac Farland, CDR. NOAA

RECEIVED THE ABOVE
(Name, Division, Date)

Dwayne S. Clark
May 5, 1986
N/CG243

Return receipted copy to:

ATLANTIC MARINE CENTER
HYDROGRAPHIC SURVEYS BRANCH, N/MOA33
NOAA, NATIONAL OCEAN SERVICE
439 W. YORK STREET
NORFOLK, VA 23510

REFERENCE NO.

MOA 23-43-86

LETTER TRANSMITTING DATA

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

- ORDINARY MAIL AIR MAIL
 REGISTERED MAIL EXPRESS
 GBL (Give number) _____

TO:

CHIEF, DATA CONTROL SECTION
HYDROGRAPHIC SURVEYS BRANCH, N/CG243
NATIONAL OCEAN SERVICE, NOAA
ROCKVILLE, MD 20852

DATE FORWARDED

29 April 1986

NUMBER OF PACKAGES

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

H-10035 (WH-10-2-82) OPR-B139
New York Harbor

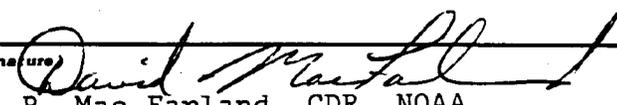
Package# 3(box)

- 2-- Binders containing Daily Electronic Calibration Data
- 1-- Binder containing Velocity Correction Data
- 3-- Accordion Folders containing fathograms and printouts for the following days: (vessel# 2932) 217, 218, 219, 220, 221, 222, 223, 224, 229, 230, 231, 232, 235, 238, 244, 248, 249, 234, 233, 236, 238, 239, 245, 246, 247, 248 & 250

Package# 4(box)

- 1-- Envelop containing ~~xxx~~ copies of Corps of Engineers survey BP-88376(6 parts)
- 1-- Envelop containing material removed from original Descriptive Report
- 1-- Cahier containing Final Position Printout & Control Listing
- 1-- Cahier containing Final Sounding Printout & L-File Listing

FROM: (Signature)



David B. Mac Farland, CDR. NOAA

RECEIVED THE ABOVE
(Name, Division, Date)

Dwayne S. Clark
May 5, 1986
N/CG243

Return receipted copy to:

ATLANTIC MARINE CENTER
HYDROGRAPHIC SURVEYS BRANCH, N/CG243
NOAA, NATIONAL OCEAN SERVICE
439 W. YORK STREET
NORFOLK, VA 23510

2/28/83

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): 853 1681 Sandy Hook, NJ

Period: August 5-September 6, 1982

HYDROGRAPHIC SHEET: H-10035

OPR: B139

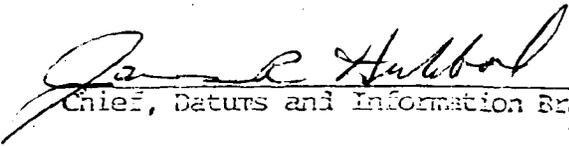
Locality: Sandy Hook Bay, New Jersey

Plane of reference (mean ~~low~~-low water): 2.47 ft.

Height of Mean High Water above Plane of Reference is 4.7 ft.

REMARKS: Recommended Zoning:

1. West of longitude $74^{\circ}00.0'$ zone direct.
2. East of longitude $74^{\circ}00.0'$ apply -15 minutes time correction and x.094 range ratio.


Chief, Data and Information Branch

GEOGRAPHIC NAMES

H-10035

Name on Survey	<div style="display: flex; justify-content: space-between;"> <div style="width: 10%;">A</div> <div style="width: 10%;">ON CHART NO.</div> <div style="width: 10%;">B</div> <div style="width: 10%;">ON PREVIOUS SURVEY NO.</div> <div style="width: 10%;">C</div> <div style="width: 10%;">ON U.S. QUADRANGLE MAPS</div> <div style="width: 10%;">D</div> <div style="width: 10%;">FROM LOCAL INFORMATION</div> <div style="width: 10%;">E</div> <div style="width: 10%;">ON LOCAL MAPS</div> <div style="width: 10%;">F</div> <div style="width: 10%;">P.O. GUIDE OR MAP</div> <div style="width: 10%;">G</div> <div style="width: 10%;">RAND McNALLY ATLAS</div> <div style="width: 10%;">H</div> <div style="width: 10%;">U.S. LIGHT LIST</div> <div style="width: 10%;">K</div> </div>																						
	AMBROSE CHANNEL	X																					1
FALSE HOOK	X																						2
FALSE HOOK CHANNEL	X																						3
NEW JERSEY(title)	X																						4
ROMER SHOAL	X																						5
SANDY HOOK	X																						6
SANDY HOOK CHANNEL	X																						7
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Approved:

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

18 MARCH 1985

ATLANTIC MARINE CENTER
EVALUATION REPORT

SURVEY NO.: H-10035

FIELD NO.: WH 10-2-82

New Jersey, Vicinity of Sandy Hook, False Hook

SURVEYED: 5 August through 7 September 1982

SCALE: 1:10,000

PROJECT NO.: OPR-B139-WH-82

SOUNDINGS: Ross Digital Echo
Sounder, Hand Lead

CONTROL: Del Norte (Range/
Range)

Chief of Party.....R. K. Matsushige

Surveyed by.....A. N. Flior
.....V. N. Shaffer
.....M. E. Henderson
.....E. A. Steigerwald
.....T. A. Wolf
.....P. M. Kenul
.....P. J. Ruiz

Automated Plot by.....Xynetics 1201 Plotter (AMC)

1. INTRODUCTION

- a. No unusual problems were encountered during office processing.
- b. Notes in the Descriptive Report were made in red during office processing.

2. CONTROL AND SHORELINE

- a. Control is adequately described in sections F, G, and S of the Descriptive Report.
- b. Shoreline originates with final reviewed photogrammetric manuscripts TP-00758-00760 (Revision Prints) of 1974/75-1978 with revisions from 1981 photography.

3. HYDROGRAPHY

- a. Soundings at crossings agree within the criteria stated in sections 4.6.1 and 6.3.4.3 of the HYDROGRAPHIC MANUAL.
- b. The standard depth curves could be adequately delineated. The zero (0) curve and portions of the six (6) foot curve were not delineated because they were in close proximity to breakers and beyond the limit of safe navigation.
- c. Development of the bottom configuration and determination of least depths is considered adequate with the following exception:

In the vicinity of Latitude 40°30'30"N, Longitude 73°56'30"W the lines of hydrography were run parallel to portions of the thirty (30) foot depth curve.

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 with the following exceptions:

a. The hydrographer did not submit a report on dangers to navigation or a negative report. The hydrographer did state on pages 31 and 32 of the Descriptive Report that an obstruction found in Latitude 40°25'11.23"N, Longitude 73°58'45.15W, "..... should be charted as a "Submerged Obstruction" as it presents a hazard to navigation." Eight (8) Notice to Mariner items were identified and information forwarded to the appropriate Coast Guard district and NOS Headquarters, Rockville, MD during office processing. A copy of the letter with these items is appended to the Descriptive Report.

b. The NOAA Form 76-155 "GEOGRAPHIC NAMES" submitted by the hydrographer, page 49 of the Descriptive Report lists four (4) names from local information. None of these names were applied to the final or rough field sheets. No documentation, names of individuals, phone numbers, etc., was provided to allow possible addition of these names to future chart editions.

c. The field unit did not meet the requirements for data disposition and transmittal found in AMC OORDER 75. The NOAA Forms 61-29 submitted were incomplete as submitted.

d. The shoal (least depth) soundings should be plotted on the final field sheet as required by section 4.5.7.2 of the HYDROGRAPHIC MANUAL. The least depths were plotted on the overlays and not the main scheme sheets. These least depths could be overlooked if the overlays were not available to the personnel processing the hydrographic data. Least depths should be plotted on or carried forward to the main scheme sheets and labeled as the least depth.

e. The hydrographer failed to verify the published azimuths of charted ranges within the survey area.

f. It is difficult to ascertain whether or not the field unit submitted a Coast Pilot Report as required by sections 8.5.1, 8.5.2 and 8.5.3 of the Project Instructions. A brief note in section S (Referral to Reports) of the Descriptive Report would clarify this situation.

g. Four (4) of the six (6) velocity tables submitted did not adequately represent the velocity curves prepared by the field unit - no zero (0) correction. This was corrected during office processing.

h. The NOAA Forms 76-40 submitted in the Descriptive Report do not contain all of the fixed aid and/or landmarks charted within the present survey area. The responsibility for landmarks was assigned to AMC

Photogrammetry Division (OA/CAM51) not the hydrographer; however, there is no landmark form for SANDY HOOK LIGHTHOUSE in the Descriptive Report.

i. The hydrographer did not always describe the methods of search employed by the divers during their operations. Section 7.13 of the Project Instructions outlines this requirement.

j. The hydrographer did not make comparison with the U. S. Army Corps of Engineers surveys as required by section 6.10.1 of the Project Instructions.

k. Discrepancies were noted between the information in the dive reports and section L of the Descriptive Report. Depths were not consistent between the two (2) documents. These discrepancies were examined and the information in the two (2) documents is now in agreement.

l. No signal tape was received with the survey data package.

m. On year day 243 the TDC cast was taken two and one-half (2.5) miles from the survey area. This TDC was taken in Sandy Hook Bay. Oceanographic data for velocity correctors should be taken in the obtained survey area.

n. The hydrographer never took two (2) daily bar checks for either survey launch used as required by section 1.5.2 of the HYDROGRAPHIC MANUAL. For launch 2931 fourteen (14) out of a possible forty-six (46) bar checks were taken and for launch 2932 twenty-two (22) out of a possible forty-six (46) bar checks were taken.

o. The hydrographer did an excellent job scanning echograms for this survey.

p. The hydrographer should be commended for his current observations work in the survey area.

5. JUNCTIONS

H-9820 (1979) to the north
H-10031 (1982) to the west

An adequate junction was effected with H-10031 (1982) to the west.

The smooth sheet for H-9820 (1979) has been forwarded to Headquarters, Rockville, Maryland and a standard junction could not be effected. A partial butt junction was effected because of apparent bottom change in the area junctional area of the two surveys. Copies of the areas of H-9820 (1979) that are superseded are appended to this report.

There are no NOS contemporary surveys to the south and east; present survey depths and charted hydrography are in harmony.

U. S. Army Corps of Engineers surveys 88371 and 88374 of 1973 covers the area south and east of the present survey and is in general harmony

with the present survey. Additional discussion of the survey is in section 6.c of this report.

6. COMPARISON WITH PRIOR SURVEYS

a. Hydrographic

H-5234a and Additional Work (1932-34) 1:10,000
H-5639 (1934) 1:20,000
H-5735 (1934) 1:20,000
H-6190 (1936) 1:40,000
H-7864 (1956) 1:10,000
H-7866 (1950) 1:10,000

The above surveys taken together cover the present survey area in its entirety.

The area of survey H-5234a and Additional Work (1932-34) in common with the present survey is very dynamic. Differences from thirty (30) feet shoaler to twenty (20) feet deeper were found in prior survey depths ranging from thirty (30) to sixty-six (66) feet. Features in common such as False Hook and False Hook Channel are still evident, albeit with a somewhat different delineation. There are four (4) sunken wrecks, AWOIS items 2464, 2465, 2466, and 2469 which originate with this prior survey but will be addressed in section 7.a of this report.

There are dramatic changes to the shoreline and nearshore in the common area. From Longitude $74^{\circ}00'00''\text{W}$ to Longitude $73^{\circ}59'56''\text{W}$ the shoreline has accreted from two hundred (200) to zero (0) meters, respectively. From Longitude $73^{\circ}59'56''\text{W}$ to Longitude $73^{\circ}59'30''\text{W}$ the shoreline has receded from zero (0) to a maximum of approximately one hundred eighty (180) meters to zero (0) meters, respectively. From Longitude $73^{\circ}59'30''\text{W}$ to Longitude $73^{\circ}58'58''\text{W}$ the shoreline has accreted from zero (0) meters to a maximum of approximately one hundred fifty (150) meters to zero (0) meters, respectively. From Longitude $73^{\circ}58'58''\text{W}$ to Longitude $73^{\circ}58'48''\text{W}$ the shoreline has receded from zero (0) meters to a maximum of approximately three hundred (300) meters to zero (0) meters, respectively. These changes can be attributed to dynamic alongshore currents which keep the area in a constant state of change.

H-5639 (1934) shows excellent agreement with the present survey with a one (1) to two (2) foot deepening trend throughout the entire survey area. Extreme differences range from plus or minus (+/-) five (5) feet; these differences are attributable to natural processes. The exception is in Sandy Hook Channel where present survey depths are from four (4) to twenty (20) feet deeper than prior survey depths. The dredging of Sandy Hook Channel to accommodate deeper draft vessels is the probable reason for these changes.

H-5735 (1934) compares well with the present survey. There is a general deepening trend throughout the common area. Romer Shoal has migrated south and east, the present survey is generally one (1) to five (5) feet deeper than the prior survey. Extreme differences up to twenty

(20) feet are found in Sandy Hook Channel and in the natural channel that runs from Latitude 40°29'15"N, Longitude 73°58'30"W to Latitude 40°29'55"N, Longitude 73°58'00"W to Latitude 40°29'08"N, Longitude 73°56'00"W where present survey depths are three (3) to ten (10) feet deeper.

H-6910 (1936) covers only the extreme eastern edge of the present survey. Depths compare very well with present survey depths being one (1) to two (2) feet deeper than prior survey depths.

H-7864 (1950) compares favorably with the present survey in portions of the common areas. In the southern area depths vary plus or minus (+/-) one (1) to eight (8) feet. The extreme differences are in approximate Latitude 40°29'15"N, Longitude 73°59'30"W where there are sand waves. The northern area depths vary from one (1) to twelve (12) feet. These differences are attributable to natural processes. Major differences are in the present Ambrose Channel and along the north side of the channel. The dredging of Ambrose Channel may have influenced these differences.

H-7866 (1950) compares well with portions of the present survey. The area of False Hook is very dynamic. The shoalest area in the vicinity of Latitude 40°28'30"N, Longitude 73°59'00"W has migrated south and east up to 600 meters. Depths inshore of eighteen (18) foot curve have shoaled considerably; the probable cause is sand transport by the alongshore currents. Extreme differences because of dredging are also found in the Sandy Hook Channel. Seaward of the eighteen (18) foot depth curve present survey depths are one (1) to four (4) feet deeper. Several shoal depths were subsequently cleared by wire-drag surveys and will be addressed in section 7.b of this report.

Except as noted above, the present survey is adequate to supersede the above prior surveys in the common area.

b. Wire Drag Surveys

FE-129WD (1954) 1:40,000

H-8330WD (1956) 1:25,000

H-8330WD (1956) covers parts of Ambrose Channel, Swash Channel and Sandy Hook Channel. There were five (5) hangs within the common area.

1) A forty (40) foot hang, cleared by thirty-eight (38) feet is in Latitude 40°30'22"N, Longitude 73°57'27"W. This hang was in the Corps of Engineers maintained Ambrose Channel and is surrounded by present survey depths of fifty-two (52) to fifty-seven (57) feet. The clearance depth with wire drag basket is not presently charted. It is recommended that the area remain as charted.

2) A thirty-nine (39) foot hang, cleared by thirty-six (36) feet is in Latitude 40°30'12"N, Longitude 73°57'28"W. The hang was in the Corps of Engineers maintained Ambrose Channel and surrounded by present survey depths of fifty (50) to fifty-two (52) feet. The

clearance depth with wire drag basket is not presently charted. It is recommended that the area remain as charted.

3) A twenty-eight (28) foot hang, cleared by twenty-three (23) feet is in Latitude 40°29'05"N, Longitude 73°58'45"W. This wire drag hang is in survey depths of thirty (30) to thirty-three (33) feet. The hang is presently charted with a twenty-three (23) in a wire drag basket and should be retained as charted. The hang depth has been brought forward to supplement the present survey.

4) A twenty-four (24) foot hang cleared by thirteen (13) feet is in Latitude 40°28'44"N, Longitude 73°58'24"W. Present survey depths in the area are thirty-five (35) to thirty-six (36) feet. This hang is presently charted as an eighteen (18) with wire drag basket. The charting source of the eighteen (18) is U. S. Army Corps of Engineers blueprint 67330/64 and Chart Letter 202 of 1965. This should be retained as charted, and the hang depth has been brought forward to supplement the present survey.

5) A nineteen (19) foot hang, cleared by seventeen (17) is in Latitude 40°28'32"N, Longitude 73°58'42"W. Present survey depths are twenty-six (26) to twenty-nine (29) feet. Neither the hang depth nor the clearance depth are presently charted.

6) AWOIS item 2456, an uncharted obstruction, reported by NTM 44/56 was seventy (70) feet long with seventeen (17) feet of water over it about 2750 yards at 49° from Sandy Hook Light. NTM 44/66 was apparently the authority for removal from the chart. This wire-drag survey was the apparent source for NTM 44/56. No further charting action is recommended.

There are several conflicts between the effective depths and present survey depths. These conflicts are attributable to natural processes and dredging in the area.

There are no hangs in the area common to the present survey and FE-129WD (1954). Development hydrography was completed over a reported obstruction, in Latitude 40°29'14"N, Longitude 73°58'42"W, with no indication of the obstruction. The source of the obstruction was Coast Guard NTM 1/53 which was an obstruction with a least depth of thirty (30) feet. The obstruction was removed from the chart. Present survey depths in this area are thirty-six (36) to thirty-nine (39) feet. No change in charting status is recommended.

c. Corps of Engineers Surveys

BP-88371 (1973) 1:20,000

BP-88374 (1973) 1:20,000

A comparison was made with surveys 88371 and 88374 of 1973 and the present survey. Differences of one (1) to four (4) feet are seen throughout the common area. These differences may be attributable to a deepening trend or differences in survey methods.

7. COMPARISON WITH CHART 12327 (78th Edition, JUNE 19/82)

a. Hydrography

Comparison was made with the 78th edition of the chart rather than the 77th edition as required by the Project Instructions because the hydrographer used the later edition which is contemporary with the present survey.

The charted hydrography within the common area originates with the previously discussed prior surveys, U. S. Army Corps of Engineers surveys and miscellaneous sources. A tabulation of extreme differences between charted depths and present survey soundings is found in section L, pages 23 and 24, of the Descriptive Report. Attention is directed to the following:

1) AWOIS item 1593, an uncharted wreck, "CASTILIA", in Latitude 40°25'30"N, Longitude 73°58'00"W, in seventeen (17) feet of water in 1880, was searched for by the hydrographer with a negative result. The hydrographer's search was done in the wrong location. Present survey depths in the area are twenty-two (22) to twenty-three (23) feet. No indication of the wreck was seen on the echograms. No change in charting status is recommended.

2) AWOIS item 1613, the uncharted sunken wreck of the "CLYDE", in Latitude 40°27'30"N, Longitude 73°59'24"W, was searched for with a negative result. The source of the wreck is SHIPWRECKS OFF THE NEW JERSEY COAST, by Walter and Richard Krotee, 1968 and reported sunk in 1853. Present survey depths in the listed position are seven (7) feet, and the area is subject to dynamic change. No change in charting status is recommended.

3) AWOIS item 1631 is a charted , dangerous sunken wreck, PA, in Latitude 40°29'18"N, Longitude 73°58'54"W. The wreck, "ANNE D II", is twenty-two (22) feet long and originates with LNM 25/75. The depth over the wreck is unknown. Because the field unit did not cover the minimum search area (500 meter radius), the investigation by the present survey is not considered adequate to verify or disprove its existence. This item should be retained as charted.

4) AWOIS items 1638, 1639, and 1640, in Latitude 40°30'00"N, Longitude 74°00'00"W, are all cargo vessels sunk in the 1940's. They are information items with a positional accuracy of three (3) to five (5) miles. No indication of these wrecks was found by the present survey. No change in charting status is recommended.

5) AWOIS item 2459, a charted dangerous submerged obstruction, in Latitude 40°25'00"N, Longitude 73°58'43"W, originates with LNM 28/78. This item was searched for by the hydrographer with negative results; however, a dive made on 7 September 1982 in the vicinity of Latitude 40°25'04"N, Longitude 73°58'45"W found some rocks with a least depth of four (4) feet in Latitude 40°25'05.45"N, Longitude

73°58'45.15"W. It is believed that these rocks, 160 meters north of the charted obstruction, are AWOIS item 2459 and should be charted as shown on the present survey.

6) AWOIS item 2464, a charted sunken dangerous wreck, in Latitude 40°25'58.03N, Longitude 73°58'47.25"W, originates with survey H-5234a (1932-34). This wreck was previously located at the Mean Low Water line. The present Mean Low Water line is two hundred fifty (250) meters to the west and present survey depths are seventeen (17) to eighteen (18) feet at the location of the charted wreck. The wreck has probably broken up, dispersed, and/or moved since the prior survey. Considering the changes that have occurred in the area, it is recommended that the wreck be deleted from the chart.

7) AWOIS item 2465, a charted dangerous sunken wreck, in Latitude 40°25'34.85"N, Longitude 73°58'43.12"W, was located on H-4610 (1926) and subsequently located on H-5234a (1932-34) in the above position. This wreck falls on the Mean Low Water line on the prior survey. The present Mean Low Water line has receded approximately two hundred fifty (250) meters to the west. Present survey depths in the wreck location are seventeen (17) to twenty (20) feet. The wreck has probably broken up, dispersed, and/or moved since the prior survey. Considering the changes that have occurred in this area, it is recommended that the wreck be deleted from the chart.

8) AWOIS item 2468, an uncharted unidentified wreck, in Latitude 40°26'09.08"N, Longitude 73°58'44.55"W, originates with an earlier prior survey, H-4610 (1926). Present survey depths are nineteen (19) to twenty (20) feet in this area, which is subject dynamic change. The wreck was not brought forward to the subsequent survey, H-5234a (1932-34), and no evidence of the wreck was found on the present survey. No change in charting status is recommended.

9) AWOIS items 2469 and 2473, a charted dangerous submerged wreck and an uncharted barge, in Latitude 40°27'55.7"N, Longitude 73°59'39.7"W and Latitude 40°28'06.7"N, Longitude 73°59'49.2"W, respectively, originate with prior survey H-5234a (1932-34). They were at or near the Mean Low Water line on the prior survey. The dangerous submerged wreck falls on the charted Mean Low Water line and the barge falls inshore of the charted Mean Low Water line. The investigation conducted by the field unit found soundings of twelve (12) to fourteen (14) feet in this area. It is extremely doubtful that either of these presently exist; however, the field unit did locate a concrete ruin that bare six (6) feet at Mean Low Water and a submerged rock covered by three (3) feet in Latitude 40°27'59.55"N, Longitude 73°59'44.44"W. Ruins are charted in this location. It is recommended that the concrete ruins and rock be charted and the charted wreck be deleted from the chart.

10) The charted breaker limit lines alongshore Sandy Hook in the area of the present survey originating with the shoreline maps discussed in section 2.b of this report should be deleted; however, the "breakers" notes should be retained. The coastal area is very dynamic, and the shoreline map limits are not static.

11) A charted pier and ruin, in Latitude 40°24'48.5N, Longitude 73°58'44.0"W and two (2) charted ruins, in Latitude 40°24'22"N, Longitude 73°58'39"W and Latitude 40°24'20"N, Longitude 73°58'39"W, were not searched for by the field unit during hydrographic operations. It is recommended that these ruins and pier be retained as charted unless subsequent information indicates otherwise.

12) Five (5) charted 18-ft. wire drag clearances are located in the following positions:

Latitude	Longitude
40°28'15"N	73°56'40"W
40°28'16"N	73°56'30"W
40°28'30"N	73°57'30"W
40°28'55"N	73°57'34"W
40°29'00"N	73°57'37"W

These wire drag clearance depths originate with U. S. Army Corps of Engineers blueprint 67330 of 1964 and Chart Letter 202 of 1965. These items should be retained as charted.

The present survey is adequate to supersede the charted hydrographic data except as noted above and in section 6.b.3) and 6.b.4) of this report.

b. Controlling Depths

There are no conflicts between the present survey and the tabulated controlling depths for Sandy Hook Channel and Ambrose Channel.

c. Aids to Navigation

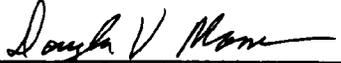
There are twenty-four (24) floating aids and one (1) fixed aid within the common area. These aids appear adequate to serve their intended purpose.

8. COMPLIANCE WITH PROJECT INSTRUCTIONS

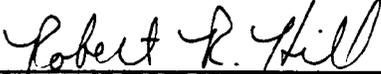
This survey adequately complies with the Project Instructions except as noted in sections 4 and 7.a.3) of this report.

9. ADDITIONAL FIELD WORK

This is a good basic survey; no additional field work is recommended.


Douglas V. Mason
Cartographic Technician
Verification of Field Data


Robert G. Roberson
Supervisory Cartographer
Evaluation and Analysis


Robert R. Hill, Jr.
Senior Cartographic Technician
Verification Check

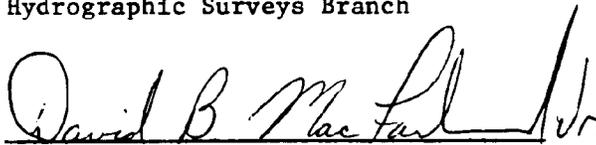
Inspection Report
H-10035

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts of the survey have been made. The survey complies with National Ocean Service requirements except as noted in the Evaluation Report. The survey records comply with NOS requirements except where noted in the Evaluation Report.

Inspected



R. D. Sanocki
Chief, Hydrographic Surveys
Processing Section
Hydrographic Surveys Branch



David B. MacFarland, Jr., LCDR, NOAA
Chief, Hydrographic Surveys Branch

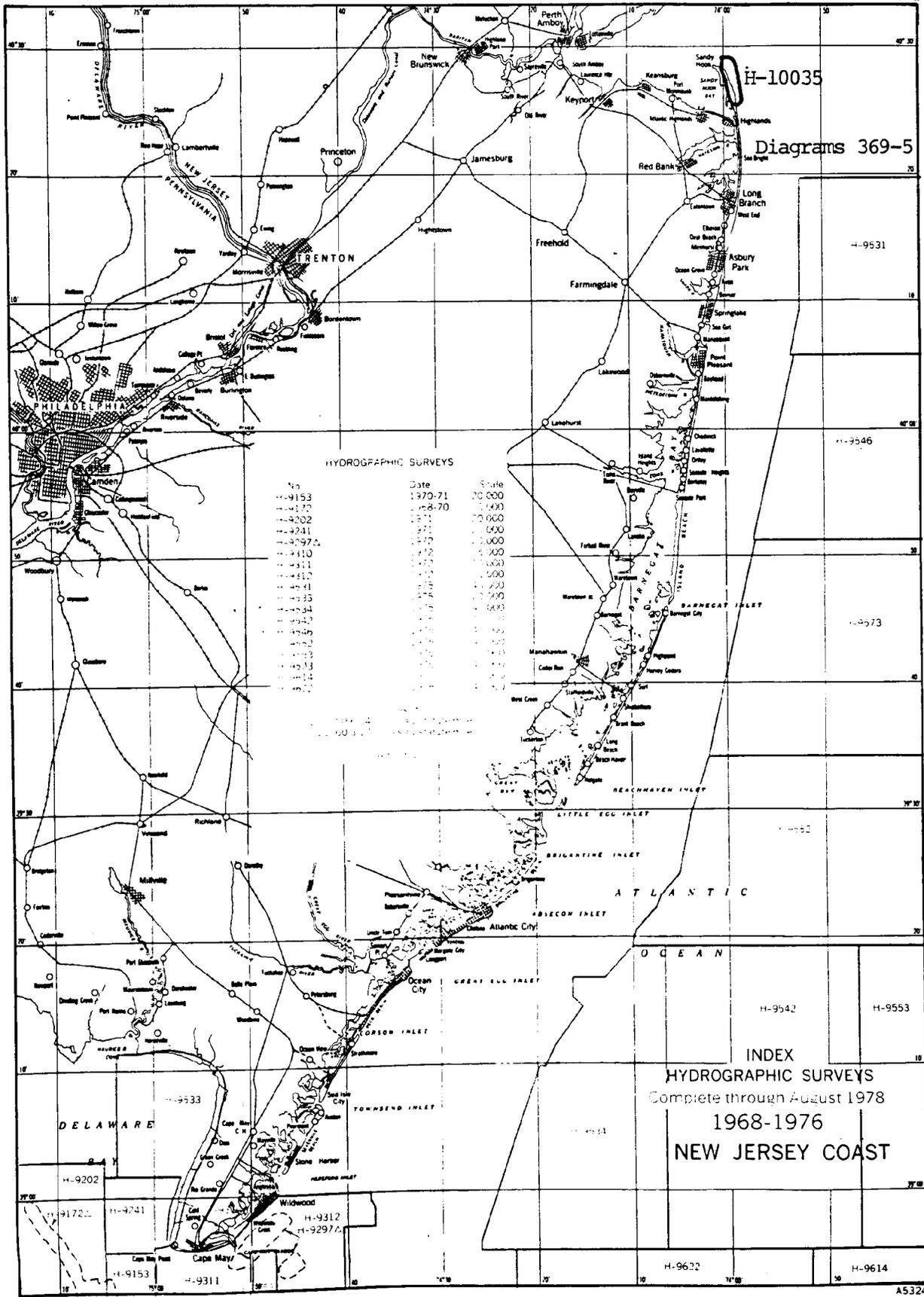
Approved May 24, 1985



Wesley V. Hull, RADM, NOAA
Director, Atlantic Marine Center

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

Hydrographic Index No. 66 L



HYDROGRAPHIC SURVEYS

No.	Date	Scale
11-9153	1970-71	20,000
11-9177	1968-70	1:500
11-9302	1971	20,000
11-9241	1971	1:500
11-9272	1972	20,000
11-9110	1972	1:500
11-9311	1972	1:500
11-9317	1972	1:500
11-9341	1972	1:500
11-935	1972	20,000
11-934	1972	1:500
11-943	1972	1:500
11-946	1972	1:500
11-952	1972	1:500
11-953	1972	1:500
11-954	1972	1:500
11-957	1972	1:500

H-10035

Diagrams 369-5 & 1215-3

H-9531

11-9546

11-9573

11-9551

H-9542

H-9553

INDEX
HYDROGRAPHIC SURVEYS
Complete through August 1978
1968-1976
NEW JERSEY COAST

H-9622

H-9614

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10035

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
12401	10-20-86	R. Hammond	Full Part Before After Marine Center Approval Signed Via Drawing No. 1
12402	9-12-76	E. B. ...	Full Part Before After Marine Center Approval Signed Via Drawing No. *1 common area with 12401
12324-A	2/6/89	CORDTS	Full Part Before After Marine Center Approval Signed Via Drawing No. 25A 24th Ed.
12326	2/7/89	P. Hunt	Full Part Before After Marine Center Approval Signed Via Drawing No. 38
12327	3/2/85	E. ...	Full Part Before After Marine Center Approval Signed Via Drawing No. 96 81st Ed.
13006	5-23-89	Joy ...	Full Part Before After Marine Center Approval Signed Via
13006	5-23-89	Joy ...	Full Part Before After Marine Center Approval Signed Via Drawing No. 47
13300	7-9-91	Betty ...	Full Part Before After Marine Center Approval Signed Via Drawing No. 55 Exam thru 12326
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.