H10936

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic / Side Scan Sonar

Field No. WH-20-2-99

Registry No. H10936

LOCALITY

State New Jersey

General Locality North Atlantic Ocean

Locality 10.5 NM Southeast of Sewell Point

1999

CHIEF OF PARTY
LCDR Gerd F. Glang

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JUL 2 4 2000
DATE

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NOS:
	HYDROGRAPHIC TITLE SHEET	H-10936
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-20-02-99

State: New Jersey / Delaware

General locality: North Atlantic Ocean

Locality: Approaches to Delaware Bay

Scale: 1: 20,000 Date of survey: October 3, 1999 – October 31, 1999

Instructions dated: July 1, 1999 Project Number: OPR-D392-WH-99

Vessel(s): NOAA Ship WHITING, NOAA Launch 1014, NOAA Launch 1015

Chief of Party: LCDR Gerd F. Glang

Surveyed by: LCDR Gerd F. Glang, LT. T Haupt, LT L. Krepp, M.J. Annis, U.L. Gardner, P. Lewit, C. Clemens, C. Kemp

Soundings taken by echo sounder, hand lead-line, or pole: ODOM Echotrac DF 3200 echosounder

Graphic record scaled by: WHITING Personnel

Graphic record checked by: WHITING Personnel

Protracted by: N/A Automated plot by: HP ~~750C~~ DESIGN JET 2500 CP

Verification by: ~~Hydrographic Surveys Division~~ ATLANTIC HYDROGRAPHIC BRANCH PERSONNEL

Soundings in: Feet: ✓ Fathoms: ____ Meters: (*) at MLW: ____ MLLW: (*)

Remarks: All Times UTC
Basic Hydrographic and 200% Side Scan Sonar
UTM Grid Zone 18 Northern Hemisphere

HAND WRITTEN NOTES IN THE DESCRIPTIVE REPORT WERE MADE DURING OFFICE PROCESSING.

AWOIS/SURFV 6/26/00 SJV

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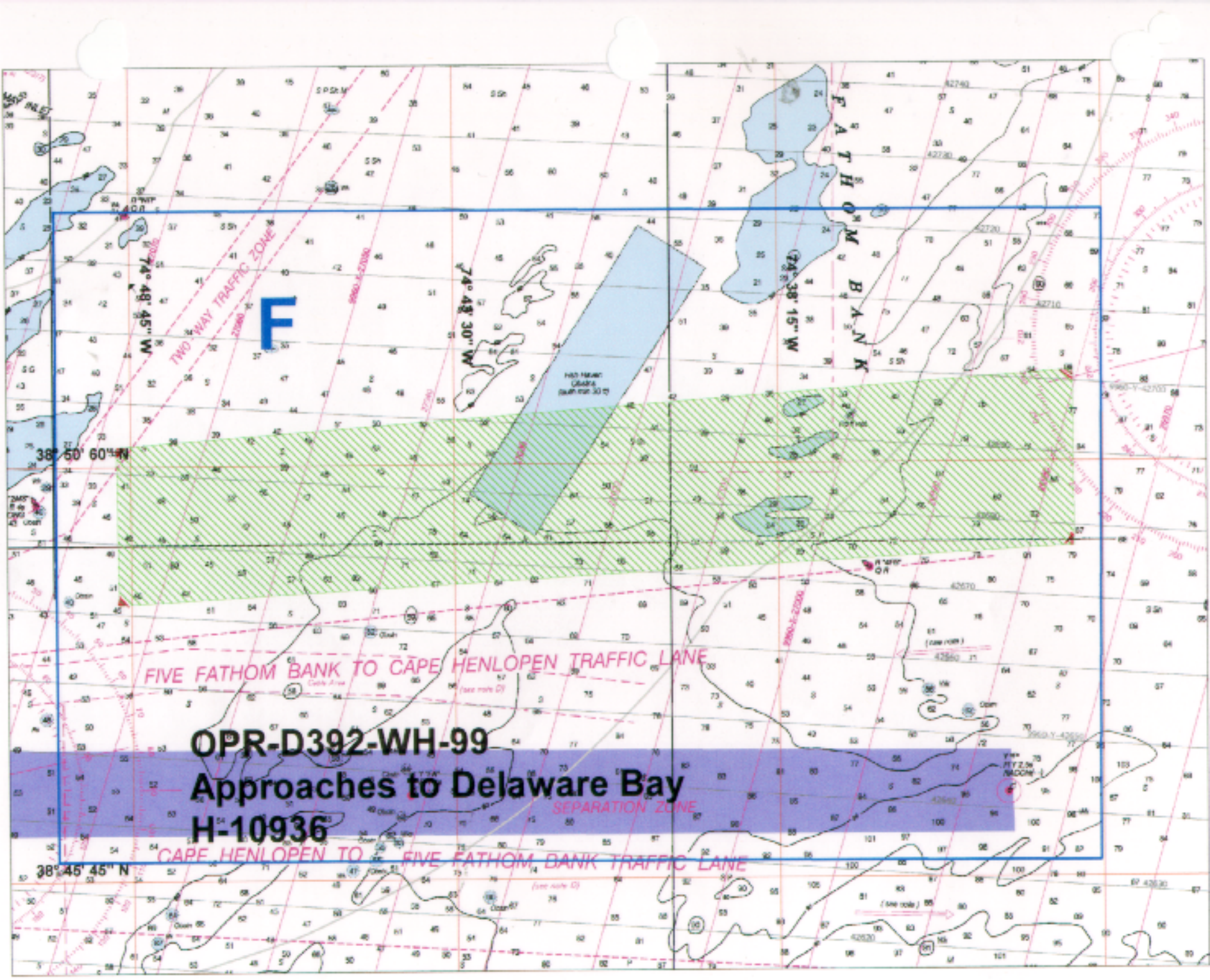
* DATA FILED WITH ORIGINAL FIELD RECORDS


F
38° 50' 60" N
38° 45' 45" N
74° 48' 45" W
74° 43' 30" W
74° 38' 15" W
FATHOM BANK
TWO-WAY TRAFFIC ZONE
FIVE FATHOM BANK TO CAPE HENLOPEN TRAFFIC LANE
CAPE HENLOPEN TO FIVE FATHOM BANK TRAFFIC LANE
SEPARATION ZONE
OPR-D392-WH-99
Approaches to Delaware Bay
H-10936

A. PROJECT

A.1. This basic hydrographic survey was conducted in accordance with Hydrographic Survey Letter Instructions OPR-D392-WH-99, Delaware Bay and Approaches, New Jersey - Delaware.

A.2. The original instructions are dated July 1, 1999.

A.3. There is one change to the original project instructions. This change specifies that sheets "E" and "F" be combined into a single 1:20,000 scale survey designated as sheet "E"; sheets "G" and "H" were combined into a single 1:20,000 scale survey designated as sheet "F"; and sheets "I", "J", "K", "L", "M", and "N" were combined into a single 1:40,000 scale survey designated as sheet "G". At present, no written change has been received from N/CS31.

A.4. This Descriptive Report applies to sheet "F" of OPR-D392-WH, survey registry number H-10936. Survey H-10936 lies 10.5 nautical miles southeast of Sewell Point, New Jersey. See section B.2 for exact survey boundaries.

A.5. Project OPR-D392-WH responds to requests from The Pilots' Association Bay and River, Delaware, and the Mariners Advisory Committee for the Bay and River, Delaware. Both groups are concerned with routing vessel traffic in and out of Delaware Bay. The acquisition of modern hydrography and the detection or disproval of wrecks and obstructions will provide more options for vessel traffic management.

B. AREA SURVEYED

B.1. This survey approximately covers the navigable waters east of McCrie Shoal and bounded to the south by the traffic lanes of the eastern approach to Delaware Bay, New Jersey - Delaware.

B.2. Sheet "F" has the following geographic boundaries:

Latitude	Longitude
38°52'09.00" N	074°33'28.79" W
38°49'56.01" N	074°33'28.16" W
38°49'14.71" N	074°48'56.79" W
38°51'15.37" N	074°48'56.79" W

B.3. Data collection for this survey began on October 3, 1999, (DN 276). Data collection ended on October 31, 1999 (DN 304).

C. SURVEY VESSELS

C.1. The following vessels were used during this survey:

Vessel	EDP Number	Operations
NOAA Ship WHITING	2930	Hydrography and Side Scan Operations
NOAA Launch 1014	2932	Hydrography and Side Scan Operations
NOAA Launch 1015	2931	Hydrography and Side Scan Operations

C.2. No unusual vessel configurations were used during this survey.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

SEE ALSO THE EVALUATION REPORT

D.1. A detailed list of data acquisition and processing software used for this survey can be found in appendix H.*

Vertical beam echosounder (VBES) data acquisition was accomplished using Coastal Oceanographics **HYPACK** software. VBES data processing was accomplished using **HPS** (HYDROGRAPHIC PROCESSING SYSTEM) software and assorted utility programs contained on the **HYDROSOFT** version 9.4 compact disk provided by the Systems Support Branch (N/CS32).

All side scan data was acquired digitally using Triton Elics International (TEI) ISIS version 4.31 software. Digital side scan data was processed using Universal Systems Limited (USL) CARIS/SIPS version 4.3 (UNIX) software.

The Sea-Bird SBE-19 SEACAT CTD instrument was utilized with **SEASOFT 3.3M** and **SEACAT 2.0** software. The program **VELOCIWIN** (Version 4.0, March 1999) was used to process CTD data and calculate sound velocity corrections.

* DATA FILED WITH ORIGINAL FIELD RECORDS

E. SONAR EQUIPMENT

E.1. WHITING conducted all side scan sonar operations using a 500kHz Klein T-5500 multibeam digital high speed, high resolution side scan sonar (HSHRSSS) system. Both WHITING launches used the 100kHz EdgeTech Model 272-T towfish, configured with an AU32 A/D converter throughout this survey.

E.2. The Klein and EdgeTech towfish are configured with a standard 20° below-horizontal beam angle depression.

E.3. The frequencies of 500kHz for the Klein and 100kHz for the Edgetech were used throughout the survey.

E.4(a) A range scale of 100 meters was used with a line spacing of 80 meters throughout the survey area. This range scale was used to obtain complete (200%) area coverage and provide optimal contact detection. The line spacing is in accordance with section 6.4 of the Field Procedures Manual (FPM, dated March 1999).

E.4(b) Periodic (usually daily) confidence checks were conducted during data acquisition by observing bottom features such as sand waves, scours, and naturally-occurring contrast of sea floor characteristics in the side scan imagery.

E.4(c) Two hundred percent side scan sonar coverage was completed for this survey. Side scan lines were assembled into mosaics using **CARIS/SIPS**. Mosaic rasters were viewed in **MapInfo** to assess sonar coverage after exporting them from **CARIS/SIPS** using the "**mosaic2tiff**" program developed by SSB. A holiday line plan was compiled over apparent gaps in the mosaic rasters using a **MapBasic** utility program; and then exported as **HYPACK** line files for acquisition. Any holidays with a length of 200 meters or less not covered with 200% side scan sonar were covered with 100% side scan sonar. All relevant and questionable contacts were investigated using a reduced side scan range scale.

E.4(d) No data was adversely affected by factors such as system interference, thermoclines, clutter, etc.

E.4(e) Aboard WHITING, the Klein towfish was deployed using a SEA-MAC winch and armored coaxial cable from the stern A-frame. On launch 1014 and 1015, the EdgeTech SSS towfish was deployed on a Kevlar-jacketed cable over the vessels' sides using a Superwinch and J-arm.

E.4(f) Cable-out aboard WHITING was determined using an MD-TOTCO digital sheave meter installed on the stern A-frame block. The MD-TOTCO digitized cable-out values were acquired in real-time into **HYPACK** via an RS-232 serial cable. Cable-out aboard the launches was determined manually and entered into **HYPACK** during acquisition.

E.5. Contact investigations were conducted using VBES. Line spacing for VBES investigations was reduced to ensure 100% ensonification coverage for the particular sensor. Detailed descriptions of all investigated contacts are addressed in the Item Investigation Reports found in Section M.

E.6. Sonar coverage determination is described in E.4.c above. Sonar targets were initially evaluated during data acquisition. After ISIS data conversion, sonar targets were evaluated in CARIS/SIPS. Imagery analysis for targets during SIPS processing resulted in contact files and images for each line. These data were then exported into HPS for contact correlation and to rank contact significance using the **CORRELATOR** program. Positions of significant contacts were then exported into HYPACK target tables and further investigated using method discussed in Section E.5.

F. SOUNDING EQUIPMENT

F.1. All hydrographic soundings were acquired using an ODOM ECHOTRAC DF3200 MKII precision survey echosounder. The following ECHOTRAC sounders were used:

Vessel	EDP Number	ECHOTRACK S/N
NOAA Ship WHITING	2930	9656
NOAA Launch 1014	2932	9644
NOAA Launch 1015	2931	9655

F.2. No Diver Least Depth Gauges (DLDG) were used during this survey. No dive investigations were conducted in conjunction with this survey.

F.3. There were no faults in sounding equipment that affected data accuracy or quality.

F.4. Both high (100kHz) and low (24kHz) frequency depths were recorded during data acquisition. The high frequency digitized depths are used throughout this survey.

G. CORRECTIONS TO SOUNDINGS

G.1(a) Velocity of sound through water was determined using SeaBird SBE 19 SeaCat Sound Velocity Profilers (SVP s/n 196093-1060 and SVP s/n 192472-286). SeaCat Data Quality Assurance Tests were conducted in accordance with the FPM after each cast. The SeaCat SVP units were calibrated January 14, 1999, by SEA-BIRD ELECTRONICS, INC.

All sound velocity data were processed using **VELOCIWIN** version 4.0. Computed velocity correctors were entered into HPS sound velocity tables and re-applied during post-processing to both high and low frequency depths.

The following is a list of sound velocity casts which apply to this survey, H-10936:

Table	DN	Vessel	Position Of Cast		DN Period	Cast Depth (M)
			Latitude	Longitude		
29	272	2930	38°57'00"N	074°43'06"W	272-281	20.1
30	272	2931-2932	38°57'00"N	074°43'06"W	272-281	20.1
36	280	2930	38°49'54"N	074°33'18"W	280-281	31.7
37	280	2931-2932	38°49'54"N	074°33'18"W	280-281	31.7
43	302	2931-2932	38°50'09"N	074°43'51"W	300-304	30.7
44	302	2930	38°50'09"N	074°43'51"W	300-304	30.7

G.1(b) The following dual Leadline comparisons with the ECHOTRAC DF 3200 MKII were conducted for WHITING, launch 1014, and launch 1015 for this project and apply to this survey, H-10936:

Vessel	Area	Latitude	Longitude	DN
2930	Delaware Bay	38°55'24"N	075°07'30"W	230
2931	Harbor of Refuge	38°48'37"N	075°07'51"W	223

Vessel	Area	Latitude	Longitude	DN
2931	Harbor of Refuge	38°48'37"N	075°07'24"W	224
2932	Delaware Bay	38°48'48"N	075°05'30"W	224

Weather and sea conditions were calm and proved ideal for the leadline comparisons. No corrections to soundings were needed. Leadlines were calibrated on May 17, 1999; and the calibrations confirmed that leadline errors were negligible. Refer to the echogram records for the above listed day numbers.

G.1(c) Static draft corrections for launch 1014 and 1015 were measured on July 28, 1993 (HPS Offset Tables 1 and 2*. The static draft correction for WHITING (3.2 meters) was measured on May 3, 1999 at Mayport Naval Station, Florida (HPS Offset Table 9). Static draft correctors were applied during data post-processing for each survey vessel.

G.1(d) Settlement and squat values for WHITING were determined on April 19, 1999 *HPS Offset Table 9). Settlement and squat values for both launches were determined March 16, 1998 (HPS Offset Tables 1 for launch 1015, and HPS Offset Table 2 for launch 1014*. The settlement and squat correctors were applied during data processing.

G.1(e) WHITING and each launch are equipped with a TSS DMS-05 Dynamic Motion Sensor. Heave correctors determined by the DMS-05 sensors were acquired in **HYPACK** during data acquisition and applied to raw data during processing. Serial numbers for these sensors are as follows:

Vessel	EDP Number	DMS-05 S/N
NOAA Ship WHITING	2930	2040
NOAA Launch 1014	2932	2062
NOAA Launch 1015	2931	2068

G.4. No DLDG correctors were used. DLDG gauges were calibrated on February 9, 1999 by PTC Electronics Incorporated. See *appendix E for calibration information.

G.5. No other factors were determined to affect corrections to soundings.

* DATA FILED WITH ORIGINAL FIELD RECORDS

G.6(a) The tidal datum for this project is Mean Lower Low Water (MLLW). The operating tide station at Lewes, Delaware (855-7380) served as control for datum determination.

G.6(b) Zoning for this survey is consistent with the project instructions. HPTools was used for Tide table creation and was used for the application of Preliminary Water Level Data during data processing. The following tide zone was used:

Zone Station	Time Corrector (Minutes)	Range Ratio	Predicted Reference
MAC306	-66	0.94	855-7380

Approved tides for H-10936 were requested by letter to N/OPS1 dated January 6, 2000. See *Appendix D. *DATA FILED WITH ORIGINAL FIELD RECORDS

APPROVED TIDES AND ZONING HAVE BEEN APPLIED DURING OFFICE PROCESSING

H. Hydrographic Position Control SEE ALSO THE EVALUATION REPORT

H.1 The horizontal datum for this survey is North American Datum of 1983 (NAD 83). No horizontal control stations were established for this survey.

H.2. This survey was conducted using the Global Positioning System (GPS) corrected by U.S. Coast Guard (USCG) Differential GPS reference stations.

H.3. USCG DGPS stations used were Cape Henry and Cape Henlopen.

H.4. No horizontal control stations were established during this survey.

H.5. The Horizontal Dilution of Precision (HDOP) and Expected Position Error (EPE) specified by the Draft NOAA Hydrographic Project Instructions were monitored during on-line data collection. If the positioning degraded beyond the acceptable limits while on-line, the data was either smoothed or rejected.

Performance checks for WHITING and both launches were conducted with launches secured in davits using the program **Pcheck** (from the Hydrosoft 9.4 CD-ROM). Differential correctors from the Cape Henry or Cape Henlopen USCG DGPS stations were used to correct GPS signals. Simultaneous **HYPACK** positions on all three platforms were acquired and an offset distance and azimuth computed between the ship and each launch system. The computed offset distances and azimuths were compared to measured values. A summary of the DGPS performance checks is included in *Appendix G. All DGPS performance checks confirmed that the equipment was working properly. * DATA FILED WITH ORIGINAL FIELD RECORDS

H.6. Serial numbers for the Trimble DSM212L receivers are as follows:

Vessel	EDP Number	DSM212L S/N
NOAA Ship WHITING	2930	System 1: 0220159721 System 2: 0220159722
NOAA Launch 1014	2932	0220159716
NOAA Launch 1015	2931	0220159723

Trimble receivers were initialized to the appropriate station and frequency using the **Trimble TSIP Talker** software.

H.7(a) There were no unusual methods used to operate or calibrate electronic positioning equipment.

H.7(b) No equipment malfunctions affected the quality of survey data collected.

H.7(c) No unusual atmospheric conditions affected data quality.

H.7(d) The maximum allowed HDOP value of 4.0 was never exceeded. Weak differential signals or satellite problems did not affect the survey data quality.

H.7(e) No systematic errors were detected which required adjustments.

H.7(f) DGPS antenna offsets were measured on April 15, 1999 for WHITING. For VBES data, offsets and laybacks were measured using the high-frequency echosounder transducer as the reference point. Correctors were entered into *Offset Table 9. The DGPS antennae were installed on launches 1014 and 1015 on April 2, 1996, directly over the echosounder transducer. Antenna height was also measured on the same respective dates shown above, using the water line as the reference. Correctors were entered into *Offset Table 1 for launch 1015 and Table 2 for launch 1014. A minimum of four satellites were used throughout this survey providing altitude-unconstrained positioning.

H.7(g) The SSS offset and layback distances for the launch J-arms were measured on July 28, 1993, and verified on April 15, 1999.

* DATA FILED WITH ORIGINAL FIELD RECORDS

The SSS offset and layback distances for WHITING's A-frame were measured on April 15, 1999.

The offset and layback values were entered into the appropriate CARIS Vessel Configuration Files (VCF) and applied during CARIS/SIPS data processing.

I. SHORELINE

No shoreline is contained within the boundaries of this survey.

J. CROSSLINES

J.1. A total of 47.91 linear nautical miles (lnm) of crossline hydrography, representing approximately 6.7% of the 713.72 lnm of mainscheme hydrography, were acquired for this survey.

J.2. Mainscheme-to-crossline soundings were compared at their common intersections. Agreement was excellent, with the majority of soundings found to be within 1 to 2 feet of each other.

J.3. No significant discrepancies between mainscheme and crossline soundings were observed.

J.4. Vessels acquiring crossline data did not necessarily acquire the mainscheme data.

K. JUNCTIONS SEE ALSO THE EVALUATION REPORT

K.1. Survey H-10936 junctions along the extreme northwest corner with contemporary survey H-10935. Survey H-10935 is sheet "E" of OPR-D392-WH-99 (1:20000 scale).

K.2. A comparisons of junction soundings between H-10936 and H-10935 showed no significant differences. Agreement was generally excellent, with occasional differences of up to three feet.

K.3. These minor junction discrepancies are likely due to positioning and beam-footprint uncertainties inherent in the VBES systems.

K.4. No recommendations are made.

L. COMPARISON WITH PRIOR SURVEYS

SEE ALSO THE EVALUATION REPORT

A comparison with prior surveys is not required due to the completion of 200% side scan sonar coverage.

M. ITEM INVESTIGATION REPORTS

Significant SSS contacts were developed using the VBES with a combination of 10m line spacing and supplemental wagon wheel pattern. The following SSS contacts were subsequently determined to be insignificant:

Contact Number	Position	Dev. Day #
299_132_0837_1	38°50'02.50" N 074°48'29.10" W	304
293_230_2254_1	correlates with 299_132_0837_1	304
294_234_0447_1	38°50'47.90" N 074°39'41.20" W	304

N. COMPARISON WITH THE CHART

SEE ALSO THE EVALUATION REPORT

N.1. Three charts are affected by this survey:

Chart No. 12214
Cape May to Fenwick Island
42nd Ed., September 25, 1999
1:80,000

Chart No. 12200
Cape May to Cape Hatteras
45th Ed., December 12, 1998
1:419,706

Chart No. 13003
Cape Sable to Cape Hatteras
44th Ed., October 9, 1999
1:1,200,000

N.2. No Danger to Navigation Reports were issued as a result of this survey.

N.3(a) Survey depths were converted from meters to feet and overlaid on the largest scale raster chart of the area using MapInfo. In general, survey depths agreed well with charted soundings.

N.3(b) No significant shoaling or deepening trends were observed within the limits of this survey.

N.3(c) No hydrographic findings of special note are reported.

N.3(d) No maintained channels occur within the limits of this survey.

N.3(e) This survey is bounded to the south by the Five Fathom Bank to Cape Henlopen traffic lane in the approaches to Delaware Bay. During the course of this survey, the hydrographer observed a combination of recreational boaters and commercial fishing vessels within the survey limits. Tug and barge traffic was noted at the northwestern corner and occasionally north of the inbound Five Fathom Bank to Cape Henlopen traffic lane.

The survey depths generally agreed well with the charted soundings. The shoalest depths observed, 25 to 30 feet, were identified in the vicinity of three previously charted shoal areas (delineated by the 30-foot curve) east of the fish haven. The northernmost of these three shoals has moved westward over a charted 40-foot sounding. CONCUR

N.4(a) All non-sounding features within the survey area are adequately charted.

N.4(b) The hydrographer recommends removing the wreck with danger circle charted as position doubtful (PD) at 38°51'35"N, 074°37'04"W and a reported least depth of 35 feet. DO NOT CONCUR SEE ALSO THE EVALUATION REPORT

No significant contacts were found within the area during the course of mainscheme hydrography.

N.4(c) thru N.6(k) These sections not applicable to this survey.

O. ADEQUACY OF SURVEY SEE ALSO THE EVALUATION REPORT

This survey is sufficiently complete and fully adequate to supersede prior survey data within common areas.

P. AIDS TO NAVIGATION

P.1. There were no floating or fixed aids to navigation included within the limits of this survey.

P.2. Not applicable to this survey.

P.3. Not applicable to this survey.

P.4. Not applicable to this survey.

P.5. Not applicable to this survey.

P.6. Not applicable to this survey.

Q. STATISTICS

	Total number of Non-Rejected Positions	198070
Q.1.a.	Linear Nautical Miles of SSS	713.7
Q.1.b	Linear Nautical Miles of VBES-only	49.7
Q.1.c.	Square Nautical Miles of VBES	25.4
Q.1.d.	Square Nautical Miles of SSS	25.4
Q.2.a.	Days of Data Acquisition	24
Q.2.b.	Total Number of Soundings	16781
Q.2.c.	Number of Soundings on Final Field Sheet	NA
Q.2.d.	Number of Detached Positions	0
Q.2.d.	Number of Bottom Samples	12
Q.2.e.	Number of Velocity Casts	6
Q.2.f.	Number of Tide Stations Installed	1

R. MISCELLANEOUS SEE ALSO THE EVALUATION REPORT

Due to WHITING'S detachment from Delaware Bay working grounds on October 31, 1999, time permitted collection of only 12 bottom samples. Bottom samples collected were sent to the Smithsonian Institution as per project letter.

S. RECOMMENDATIONS

No further survey work is recommended. DO NOT CONCUR
SEE EVALUATION REPORT SEC. N.1.

T. REFERRAL TO REPORTS

A Coast Pilot Report will be submitted to N/CS26 at the conclusion of project OPR-D392-WH.

A Tide Station Report for station 855-4399 (Mahon River Entrance) will be submitted to N/OPS1 at the conclusion of project OPR-D392-WH.

This is a multi-year project for WHITING and is expected to be complete in September 2000.

Respectfully Submitted,

Holly A. DeHart, ENS, NOAA

Holly A. DeHart
Ensign, NOAA
Junior Officer
NOAA Ship Whiting

3-23-00
Date

-x-

APPENDIX K

APPROVAL SHEET

OPR-D392-WH-99
Delaware Bay and Approaches
New Jersey - Delaware

10.5 nautical miles SE of Sewell Point, New Jersey
Survey Registry No. H-10936

Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy. All field sheets, this Descriptive Report, and all accompanying records and data are approved.

This survey is adequate to supersede all prior surveys in common areas, and for application to the relevant NOS nautical charts.

Respectfully,

Gerd F. Glang
Lieutenant Commander, NOAA
Commanding Officer
NOAA Ship WHITING

MARCH 23, 2000
Date

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: March 8, 2000

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-D392-WH-99
HYDROGRAPHIC SHEET: H-10936

LOCALITY: Approaches to Delaware Bay, NJ/DE
Atlantic Ocean

TIME PERIOD: October 3 - 31, 1999

TIDE STATION USED: 855-7380 Lewes, DE
Lat. 38° 46.9'N Lon. 75° 07.2'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.314 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: ATL524, ATL525 & ATL526.

Refer to attachments for zoning information.

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

For ----------
CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

Printed on Recycled Paper

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10936

Name on Survey	A ON CHART NO. 12214	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
FIVE FATHOM BANK	X		X							1
NEW JERSEY (title)	X		X							2
NORTH ATLANTIC OCEAN	X		X							3
SEWELL POINT (title)	X		X							4
										5
										6
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Approved

Daniel J. Romaglino

JUN - 6 2000

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 61-29
(12-71)

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

REFERENCE NO.
N/CS33-42-00

LETTER TRANSMITTING DATA

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

☐ ORDINARY MAIL ☐ AIR MAIL

☐ REGISTERED MAIL ☒ EXPRESS

☐ GBL *(Give number)* _____

TO:

NOAA / National Ocean Service
Chief, Data Control Group, N/CS3x1
SSMC3, Station 6815
1315 East-West Hwy.
Silver Spring, MD 20910-3282

DATE FORWARDED
6-22-0

NUMBER OF PACKAGES
ONE TUBE

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

H10936 ORR-B663-RU-98

NEW JERSEY

Descriptive Report / Evaluation Report
Drawing History forms 76-71 for NOS Chart 12214

1 Smooth Sheet

1 Mylar H-Drawing
2 Paper Composite Plots

FROM: *(Signature)* Maxine Fetterly

Maxine Fetterly

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

Maxine Fetterly
Atlantic Hydrographic Branch
439 W. York St.
Norfolk, VA 23510

NOAA FORM 61-29 SUPERSEDES FORM C & GS 413 WHICH MAY BE USED.

This form was electronically produced by Elite Federal Forms, Inc.

06/21/2000

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H10936

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	16793
NUMBER OF SOUNDINGS	16793

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	8.0	03/30/2000
VERIFICATION OF FIELD DATA	26.5	05/26/2000
QUALITY CONTROL CHECKS	3.0	
EVALUATION AND ANALYSIS	10.5	
FINAL INSPECTION	7.5	04/20/2000
COMPILATION	48.0	05/24/2000
TOTAL TIME	103.5	

ATLANTIC HYDROGRAPHIC BRANCH APPROVAL 05/02/2000

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10936 (1999)

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

D. AUTOMATED DATA ACQUISITION AND PROCESSING

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

Hydrographic Processing System
NADCON, version 2.10
MicroStation 95, version 5.05
I/RAS B, version 5.01

The smooth sheet was plotted using a Hewlett Packard DesignJet 2500CP plotter.

H. CONTROL STATIONS

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

To place this survey on the NAD 27, move the projection lines 0.411 seconds (12.685 meters or 0.63 mm at the scale of the survey) north in latitude, and 1.423 seconds (34.123 meters or 1.71 mm at the scale of the survey) east in longitude.

K. JUNCTIONS

H10935 (1999) to the northwest

A standard junction was effected between the present survey and survey H10935 (1999). There are no additional junctional surveys. Present survey depths are in harmony with the charted hydrography.

L. COMPARISON WITH PRIOR SURVEYS

A comparison with prior surveys was not done during office processing in accordance with section 4. of the memorandum titled "Changes to Hydrographic Survey Processing", dated May 24, 1995.

N. COMPARISON WITH CHART 12200 (45th Edition, Dec 12/98)
12214 (42nd Edition, Sep 25/99)
13003 (44th Edition, Oct 9/99)

Hydrography

The charted hydrography originates with the prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in sections N. and O. of the Descriptive Report. Attention is directed to the following:

1) Automated Wreck and Obstruction Information System (AWOIS) Item #1164, a charted dangerous wreck (35 foot rep) PA, in Latitude 38°51'36"N, Longitude 74°37'06"W, originates with Local Notice to Mariners 26 of 1956 (LNM26/56). The wreck was investigated during survey operations for H09700 (1977). The recommendation from the reports for H09700 was to revise the notation to Position Doubtful. This feature was not adequately investigated by the field unit. No change in charting status is recommended. Additional field work should be considered in order to resolve this item.

2) The southern half of a charted Obstr Fish Haven (auth min 30 feet), from Latitude 38°51'45.5"N to Latitude 38°50'05.0"N, was within the boundaries of the present survey. There are no conflicts between the authorized minimum depth and present survey depths.

The present survey is adequate to supersede the charted hydrography within the common area.

O. ADEQUACY OF SURVEY

This is an adequate hydrographic/side scan sonar survey. Additional work is recommended in section N.1 of this report.

R. MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland.

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

12214 (42nd Edition, Sep 25/99).

Robert Snow

Robert Snow
Cartographic Technician
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H10936

Initial Approvals:

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

Maxine Fetterly Date: 4/25/00

Maxine Fetterly
Cartographer
Atlantic Hydrographic Branch

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

Andrew L. Beaver Date: 5/2/00

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

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Final Approval:

Approved: Samuel P. DeBow Jr. Date: July 24, 2000

Samuel P. DeBow, Jr.
Captain, NOAA
Chief, Hydrographic Surveys Division

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H10936

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
12214	5/30/00	[illegible]	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
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SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED