F00400

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-5-1-94

Registry No. FE-400

LOCALITY

State MASSACHUSETTS

General Locality WOODS HOLE BAY

Sublocality NATIONAL MARINE FISHERIES PIER

19 94

CHIEF OF PARTY

CDR. J. D. WILDER, NOAA

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DATE FEB 21 1996

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NOAA FORM 77-28
(11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NOS.

FE-400SS

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

WH-5-1-94

State: MASSACHUSETTS

General locality: WOODS HOLE, ~~MA~~

Locality: NATIONAL MARINE FISHERIES PIER

Scale: 1:5,000 Date of Survey: June 21 - July 24, 1994

Instructions dated: February 23, 1994 Project No.: OPR-B616-WH

Vessel: 2932

Chief of Party: CDR John D. Wilder, NOAA

Surveyed by: J.D. Wilder, S.R. Barnum, J.S. Verlaque, W.G. Kitt, J.L. Riley, E.W. Berkowitz, K.A. Pavelle, J.C. George, M.M. Cisternelli, F.R. Cruz, B.C. Detrich, J.C. Gaskin

Soundings taken by echo sounder: DSF-6000N

Graphic record scaled by: WHITING SURVEY PERSONNEL

Graphic record checked by: WHITING SURVEY PERSONNEL

Protracted by: N/A Automated plot by: ENCAD NOVAJET III (AHB) ZETA 936 PLOTTER (FIELD)

Verification by: ATLANTIC HYDROGRAPHIC BRANCH PERSONNEL

Soundings in MLLW: ~~METERS~~ FEET

REMARKS: Field Examination of National Marine Fisheries Pier, turning basin and small boat basin.

Time Zone used, GMT (+0)

100% Side Scan Sonar along pier and turning basin

NOTES IN THE DESCRIPTIVE REPORT WERE MADE IN RED DURING OFFICE PROCESSING.

OSC FEB 7 1996 AWOIS + SURF ✓ RWS 2/7/96

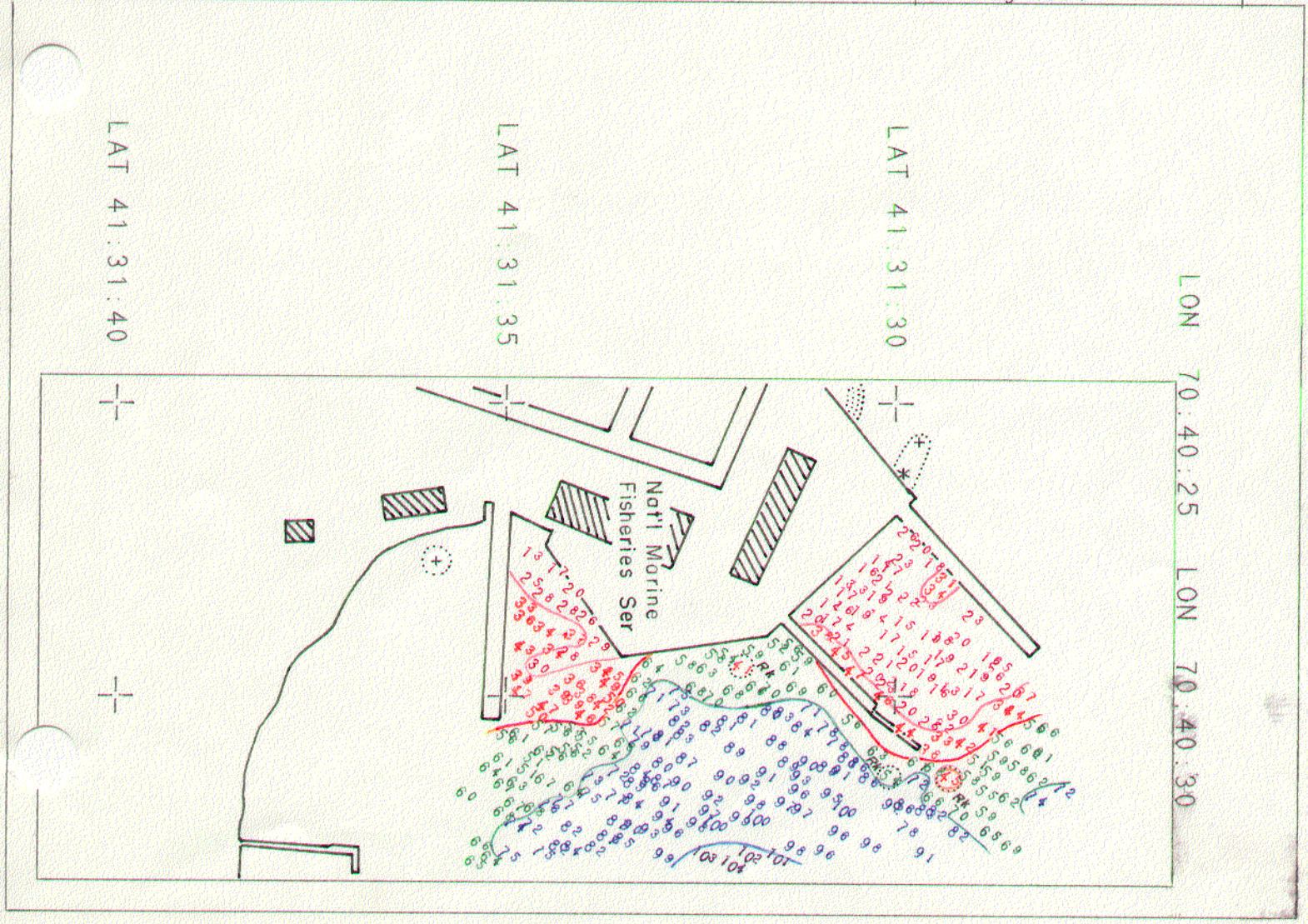
NOAA FORM 77-28 SUPERSEDES FORM C & GS-537

Advance information subject to office review. Not for use in navigation.

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST AND GEODETIC SURVEY — RADM J. A. YEAGER — DIRECTOR

WOODS HOLE, MASSACHUSETTS
NATIONAL MARINE FISHERIES PIER

FIELD SHEET: WH-5-1-94 REG. NO. FE400SS	SHEET LETTER:
HORIZONTAL DATUM: NAD 83	PROJECT: OPR-B616
SOUNDING DATUM: Mean Lower Low Water	CONTROL LATITUDE: 041:15:00.000
PROJECTION: MODIFIED UTM PROJECTION	CENTRAL MERIDIAN: 071:01:00.000
SCALE: 1: 2500 (POSITIONAL ACCURACY 1:5000)	SOUNDINGS IN: METERS
SURVEYED BY: NOAA Ship WHITING CDR JOHN D. WILDER	30 Aug 1994



DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY
OPR-B616-WH
WH-5-1-94
FE-400SS

NOAA SHIP WHITING
CDR John D. Wilder, NOAA
Commanding Officer

A. PROJECT

Project OPR-B616-WH is a basic hydrographic survey with 200-percent side scan sonar (SSS) bottom coverage of Vineyard and Nantucket Sounds. This specific field examination survey stems from requests made by both the National Marine Fisheries Service and the Woods Hole Oceanographic Institution (WHOI). WHOI was hoping to moor the R/V KNORR at the NMFS pier. There are charted depths along the pier face which are shoaler than the KNORR's 17-foot draft. Because the area has been recently dredged, parties involved felt the pier may have deeper controlling depths than charted.

Survey operations were conducted in accordance with Hydrographic Project Instructions OPR-B616-WH dated February 23, 1994. No changes to the original project instructions or the Automated Wreck and Obstruction (AWOIS) listings were made.

Project OPR-B616-WH was designed to consist of five survey sheets. The survey described in this report is an unplanned field examination not assigned any sheet letter. This survey was assigned field sheet number WH-5-1-94 and registry number FE-400SS.

B. AREA SURVEYED

FE-400SS covers the NOAA National Marine Fisheries Pier, and goes out to the area used as a turning basin by ships maneuvering for the pier. The small boat basin to the south of the finger pier was surveyed by echosounder only. Sheet limits are bounded by 41° 31' 38.9" N and 41° 31' 26.9" N to the north and south respectively, and by 070° 40' 24.7" W and 070° 40' 33.5" W to the east and west respectively.

Survey operations were conducted on June 21, June 27, July 23, and July 24, 1994 (DN 172, 178, 204, and 205).

C. SURVEY VESSELS

NOAA Ship WHITING (VESNO 2930) was used for data processing and plot generation. NOAA Launch 1015 (VESNO 2931) performed the first velocity cast for the survey. NOAA Launch 1014 (VESNO 2932) was used as the platform for side scan sonar and echosounder lines and detached positions. NOAA Vessel 1285, operated by the Woods Hole Port Captain, was used as a dive platform.

No unusual vessel configurations were used nor were any problems encountered.

D. AUTOMATED DATA ACQUISITION AND PROCESSING - SEE ALSO THE EVALUATION REPORT.

Survey data acquisition and processing were accomplished using the HDAPS system with the following software:

PROGRAM NAME	VERSION	DATE INSTALLED
BACKUP	2.00	March 07, 1994
BASELINE	1.14	March 07, 1994
BIGABST	2.07	March 07, 1994
BIGAUTOST	3.01	March 07, 1994
BLKEDIT	2.02	March 07, 1994
CARTO	2.12	April 17, 1994
CLASSIFY	1.01	March 07, 1994
CONTACT	2.34	April 17, 1994
CONVERT	3.62	March 07, 1994
DAS_SURV	6.67	April 17, 1994
DIAGNOSE	3.03	April 17, 1994
DISC_UTIL	1.00	March 07, 1994
DP	2.14	March 07, 1994
DPCONVERT	1.01	June 17, 1994
EXCESS	4.21	March 07, 1994
FILESYS	3.21	April 17, 1994
GRAFEDIT	1.06	March 07, 1994
HIPSTICK	1.01	March 07, 1994
HPRAZ	1.26	March 07, 1994
INVERSE	2.01	March 07, 1994
LISTDATA	1.02	March 07, 1994
LOADNEW	2.10	March 07, 1994
LSTAWOIS	3.07	April 17, 1994
MAINMENU	1.20	March 07, 1994
MAN_DATA	2.01	March 07, 1994
NEWPOST	6.01	March 07, 1994
PLOTALL	2.27	April 17, 1994

POINT	2.10	March 07, 1994
PREDICT	2.01	March 07, 1994
PRESURV	7.08	April 17, 1994
PRINTOUT	4.03	March 07, 1994
QUICK	2.04	April 17, 1994
RAMSAVER	1.02	March 07, 1994
REAPPLY	2.10	March 07, 1994
RECOMP	1.02	March 07, 1994
SCANNER	1.00	March 07, 1994
SELPRINT	2.04	March 07, 1994
SYMBOLS	2.00	March 07, 1994
VERSIONS	1.00	March 07, 1994
ZOOMEDIT	2.24	April 17, 1994

SHIPDIM version 1.2 was used for DGPS performance checks. Sound velocity corrections were determined using *CAT* version 2.00 and *VELOCITY* version 2.10.

There were no nonstandard automated acquisition or processing methods used.

E. SIDE SCAN SONAR EQUIPMENT

Side scan sonar (SSS) operations were conducted using an EG&G model 260 slant-range corrected SSS recorder (S/N 16671) and an EG&G 272-TH dual-channel, single frequency towfish (S/N 16630). The towfish was operated on the 100 kHz frequency and configured with a 20° beam depression. To improve image resolution all lines were run on the 50-meter range scale, even though only 25 meter swath width was needed for adequate coverage. As a result the towfish was allowed to fall as low as 4 percent of the range scale, or 2 meters off the bottom. SSS operations were limited to speeds of 3.5 knots or slower.

Confidence checks were obtained by noting rocks on the sea floor at the outer edges of the 50 meter range scale.

All potentially significant contacts in the survey area were measured off the sonagram and entered into an HDAPS contact table. Using the contact utility program WHITING hydrographers determined contact heights, positions and correlations to one another. Significant items were then further developed by echosounder investigation. Refer to Section N and to Separate V for more information. DATA FILES WITH FIELD RECORDS.

F. SOUNDING EQUIPMENT

A Raytheon Digital Survey Fathometer (DSF 6000N) echo sounder (S/N C076) was used to measure water depths during the survey. The DSF-6000N produced a graphic record of the high frequency (100 kHz) and low frequency (24 kHz) depth. The high and low frequency digital depths were recorded by the HDAPS acquisition system. The high frequency depths were selected as the primary depths as shown on the sounding plots. In addition, echograms were carefully reviewed for significant features along the track line. Any significant features on the graphic record that were not selected as primary soundings were manually selected.

Electronic technicians performed daily accuracy checks and preventive maintenance on the DSF-6000N. As a result, the echosounder on launch 1014 operated without any problems.

G. CORRECTIONS TO SOUNDINGS

Sound-velocity profiles of the water column were determined using a Seacat Conductivity, Temperature and Depth (CTD) profiler (model SBE 19, S/N 286). The profiler was calibrated on December 17, 1993, during WHITING's winter inport period. A copy of the calibration report is included in Separate IV. *

After each CTD cast, programs *CAT 2.00* and *VELOCITY 2.10* were used to process the data, select significant data points, and create a corrector table. The velocity correctors were manually entered into an HDAPS velocity table. The correctors were reapplied to both high (100 khz) and low (24 kHz) frequency beams following acquisition. Velocity profile data are in Separate IV submitted with this survey. *

Data Quality Assurance (DQA) for the Seacat CTD profiler was performed by using a hydrometer and a thermometer to measure the density and temperature of a surface water sample taken during the CTD cast; program *CAT* compared these values to the CTD surface values, and confirmed that the velocity probe was working properly.

Two casts were taken. There were as follows:

DN	Latitude	Longitude	Max. Depth
173	41° 31' 35" N	070° 40' 35" W	13.0 meters
206	41° 31' 33" N	070° 40' 32" W	8.0 meters

There were no variations in instrument initials.

Bar checks were performed weekly on launch 1014 as per the requirements stated in the Field Procedures Manual throughout project OPR-B616-WH. No deficiencies were noted.

* DATA FILED WITH FIELD RECORDS.

Leadline comparisons were performed on a routine basis as part of OPR-B616-WH. No corrections were applied to the survey data.

The correction for the static draft for launch 1014 was determined on July 28, 1993, to be 0.55 meters. Settlement and squat measurements for launch 1014 were conducted and correctors determined on April 4, 1994. The correctors were entered in Offset Table 2 and reapplied to all data collected by launch 1014. Settlement and squat correctors are in Separate IV. DATA FILED WITH FIELD RECORDS.

There is no heave sensor on launch 1014. No sea action was observed on the fathogram, so no manual scanning for heave was required.

The tidal datum for this project was Mean Lower Low Water. The operating tide station at Woods Hole, Massachusetts (844-7930), served as direct control for datum determination. Mr. Larry Neeson, Atlantic Operations Section, N/OES213, confirmed the proper operation of the tide station during the survey. This station also served as the reference station for predicted tides. No time or height correctors were used.

Tidal data used during data acquisition were taken from Table 2 of the East Coast of North and South America Tide Tables and were applied on-line to the digital data using HDAPS software. The tidal data, in digital form, were received on floppy disk from N/CG24, Hydrographic Surveys Branch. A request for smooth tides was submitted to Product and Services Branch, Datum Section, N/OES231 on August 12, 1994. APPROVED TIDES AND ZONING WERE APPLIED DURING OFFICE PROCESSING.

Leveling is performed on the Woods Hole tide station by the Atlantic Operations Section on a yearly basis. At the time of the survey the last leveling was performed on October 20, 1993, and the next leveling is scheduled for early October, 1994.

H. CONTROL STATIONS - SEE ALSO THE EVALUATION REPORT.

The horizontal datum for this project is the North American Datum of 1983 (NAD-83). Two B-order horizontal control stations were used as DGPS reference stations for this survey: one at Montauk Point, New York and one at Portsmouth, New Hampshire. The adjusted NAD-83 positions, computed by GPS methods, were provided by the Hydrographic Surveys Branch, N/CG24, on April 23, 1993. The positions are as follows:

	Latitude	Longitude	Frequency
Montauk Point	41° 04' 02.088" N	071° 51' 38.484" W	293 kHz
Portsmouth	43° 04' 15.066" N	070° 42' 36.804" W	288 kHz

The Montauk Point beacon was used as control while on-line; the Portsmouth beacon served as a check station for performance checks.

I. HYDROGRAPHIC POSITION CONTROL

A Differential Global Positioning System (DGPS) was used as the navigation system for this survey. Launch 1014 used an Ashtech Sensor GPS receiver (S/N 700471B1203) with a Communications Systems International, Inc. (CSI) model MBX1 differential radio receiver (S/N 1078) supplying correctors for DGPS navigation. The Ashtech receiver was initialized by HDAPS; the CSI receiver was initialized with CSI firmware via controls on the front of the unit.

DGPS positioning was accomplished in accordance with the Field Procedures Manual (FPM), section 3.4. Positioning difficulties were experienced on DN 172 as a result of moored ships blocking the beacon and/or satellite signals. Any position which had even remotely questionable control was rejected. Horizontal Dilution of Precision (HDOP) limits were computed as required in section 3.4.2 of the FPM. Based on a maximum distance from the differential beacon of 70 miles, the HDOP limit for this 1:5,000-scale survey using the Montauk Point beacon was 1.7. No position flyers were encountered.

Performance checks were conducted on a weekly basis as part of OPR-B616-WH. All performance checks indicated properly working signals and hardware. Refer to the Separates for hydrographic surveys H-10498, H-10504 and H-10547 for performance checks during this time frame.

Offset and layback corrections for the launch 1014 side scan winch were measured on July 28, 1993, and verified on April 5, 1994.

J. SHORELINE - SEE ALSO THE EVALUATION REPORT.

Shoreline on the plotter sheets was traced from an enlargement of chart 13235.

DP's were taken on the pier corners. The two positions (1115 & 1116) agree with the charted representation. Additionally, DP's were taken on all dolphins (DP #1110 through 1114, 1171 in the small boat basin). Since the last publication of chart 13235, two new dolphins have been laid in along the finger pier. DP's 1111 and 1112 indicate the positions of the new dolphins.

No other discrepencies between the charted and actual shoreline were noted. CONCUR

K. CROSSLINES

The small area of this field examination made crosslines impractical. No crosslines were acquired.

L. JUNCTIONS

This survey does not junction with any contemporary surveys.

M. COMPARISONS WITH PRIOR SURVEYS - SEE ALSO THE EVALUATION REPORT.

No prior survey comparisons were made with this survey.

N. ITEM INVESTIGATIONS - SEE ALSO SECTION O. OF THE EVALUATION REPORT.

There were no AWOIS items within the survey limits. Three items discovered during side scan sonar operations were further developed.

N.1 Contact 1050.22P

Latitude:	41° 31' 34.793" N
Longitude:	070° 40' 31.223" W
Cross References:	None

Contact 1050.22P had an estimated height of 1.1 meters based on side scan sonar. An echosounder development over the item on DN 178 gave a least depth of ~~5.8~~ 6.2 meters (at (20FT) MLLW with ~~predicted~~ APPROVED tides). DP ~~#1098~~ 1173 was the position taken.

Divers examined the item on DN 205 and discovered a rock, 3 feet long and 2 feet wide. The least depth by pneumatic depth gauge was 5.1 4 meters, (17FT) reduced to MLLW with ~~predicted~~ APPROVED tides.

WHITING recommends that 5.1 meter sounding be charted at the above position. DO NOT CONCUR IT IS RECOMMENDED THAT A ROCK WITH A KNOWN DEPTH OF 5.4m, (17FT) BE CHARTED IN LAT 41°31'34.793"N, LON 70°40'31.223"W.

N.2 Contact 1052.10S

Latitude:	41° 31' 30.139" N
Longitude:	070° 40' 31.316" W
Cross References:	1054.00S

Contact 1052.10S had an estimated height of 2.2 meters based on side scan sonar. An echosounder development over the item on DN 178 gave a least depth of ~~6.0~~ 5.8 meters (at (19FT) MLLW with ~~predicted~~ APPROVED tides). DP ~~#1101~~ 1172 was the position taken.

Divers examined the item on DN 205 and discovered a large rock. It has a 6-foot radius and is 5 feet tall. Diver least depth by pneumogauge was 5.4 meters, reduced to MLLW with ~~predicted~~ APPROVED tides. (18FT)

WHITING recommends that a rock with a least depth known by diver of 5.4 meters be charted at the above position. CONCUR (18FT)

N.3 Contact 1054.49P

Latitude:	41° 31' 32.046" N
Longitude:	070° 40' 29.443" W
Cross References:	None

Contact 1054.49P had an estimated height of 2.5 meters based on side scan sonar. Echosounder DP#1108 over the item on DN 178 gave a least depth of 4.8 meters (at MLLW with ~~predicted~~ APPROVED tides). An inserted depth from earlier that day, however, yielded a least depth of 4.6 meters (at MLLW with ~~predicted~~ APPROVED tides). As a result, position 1108 was kept, although a dive was deemed necessary. (17FT)

Divers examined the item on DN 205 and discovered a large rock, 10 feet long, 8 feet wide and roughly 4 feet tall. Least depth by pneumatic depth gauge was 4.1 meters, reduced to MLLW with ~~predicted~~ APPROVED tides. (15FT)

The NOAA Port Office indicated a desire to have this feature removed. WHITING recommends that a rock with a least depth known by diver of 4.1 meters be charted at the above position, unless documentation of this feature's removal is obtained. CONCUR (15FT)

In addition to these three items the 4.2 sounding at 41° 31' 28.901" N, 070° 40' 31.573" W was examined by divers on DN 242. They discovered a rock 3 feet long, 3 feet wide and two feet high. Least depth by pneumatic depth gauge was 5.5 meters reduced to MLLW with ~~predicted~~ APPROVED tides.* A twenty-meter circle search revealed a second rock nearby. This one was 7 feet long, 7 feet wide, and had a least depth by pneumogauge of 4.6 meters (at MLLW with ~~predicted~~ APPROVED tides). Fix 1176 represents the position of the new-found rock. Based on this investigation WHITING believes the 4.2 sounding is inaccurate and should not be charted. Instead, WHITING recommends that a rock with a least depth known by diver of 4.6 meters be charted at 41° 31' 29.370" N, 070° 40' 31.333" W. CONCUR (14FT) (14FT) (15FT) (15FT)

* NO CHANGE IN CHARTING IS RECOMMEND.

O. COMPARISON WITH THE CHART SEE ALSO THE EVACUATION REPORT

Two 1:5,000 charts cover the survey area: Chart 13229, 25th edition, March 27, 1993, and Chart 13235, 5th edition, August 31, 1991. No Notices to Mariners have been published for areas within the survey limits since either chart release date.

Because of the restricted access to the area near the significant contacts, no Danger to Navigation reports were submitted fot this survey. DO NOT CONCUR
DANGER TO NAVIGATION REPORT APPENDED TO THIS REPORT.
Charted depths were compared to soundings acquired during the survey. Most soundings are 0 to 1 meter deeper than the charted depths. A 9-foot shoal along the north end of the pier was not found; the nearby soundings were 4 meters deeper. The area around the pier was dredged from August 1993 to March 1994. CONCUR

No changes to the scale, coverage, or format of Charts 13229 or 13235 are recommended. CONCUR

P. ADEQUACY OF SURVEY – SEE ALSO THE EVALUATION REPORT.

All items found during this survey have been completely resolved. This survey is complete and of adequate quality to supersede all prior surveys of the area.

Q. AIDS TO NAVIGATION

There were no floating aids to navigation in the survey area.

There were no bridges, overhead cables, pipelines, submarine cables, ferry routes or ferry terminals in the survey area.

R. STATISTICS

Number of Positions	172
Main-scheme Sounding Lines (Nautical Miles)	2.93
Crosslines (Nautical Miles)	N/A
Square Nautical Miles Surveyed	0.01
Days of Production	4
Detached Positions	22
Bottom Samples	None
Tide Stations Installed	None
Current Stations	None
Number of CTD Casts	2
Magnetic Stations	None

S. MISCELLANEOUS

No anomalies in either tide or current and/or unusual magnetic variations were encountered in the survey area. No unusual submarine features were discovered. No bottom samples were taken.

T. RECOMMENDATIONS – SEE ALSO SECTION D OF THE EVALUATION REPORT.

FE-400SS is complete and adequate. No additional fieldwork is required. The NOAA Port Office indicated that negotiations are underway with the dredge company for removal of the feature described in N3. Otherwise, there are no current plans for construction or dredging in the survey area.

U. REFERRAL TO OTHER REPORTS

There are no other relevant reports submitted as a part of OPR-B616-WH. For pertinent information on equipment system checks please refer to the Separates accompanying hydrographic surveys H-10498, H-10504, and H-10547.

Submitted By:

ENS Kenneth A. Pavelle, NOAA
Junior Officer, NOAA Ship WHITING

FY 1173

NOAA SHIP WHITING
ITEM INVESTIGATION REPORT
OPR-B616-WH

SURVEY FE-~~####~~SS (4cc) **FIELD SHEET** WH-5-1-94
ITEM NUMBER 1050.22P
CHART NO. (largest scale) 13235, 5th Edition, August 1991

DESCRIPTION OR CROSS REFERENCE(S):
Dive investigation, echosounder already (see attached)

AWOIS POS: (NAD 83) L 41° ' " N, λ 070° ' " W
SSS POS: L 41° ' " N, λ 070° ' " W
E 123490.2
N 30742.2

METHOD OF INVESTIGATION: (circle)
Echosounder (Diver) Other (specify) _____

DIVE DATA: Divers Berkowitz (Pavelle) (Riley) Quinn Verlaque
Time of Dive (UTC): Commenced 1910 Completed 1914
Current Slack 0.5 kts 1 kt 1.5+ kts Bottom Type S Sh M P
Visibility 0 1 2 3 4 5 6 7 8 9 >10

INVESTIGATION NOTES: DIVERS FOUND A ROCK IN 20' OF WATER DIVER GAUGE 2.P. 18'. 3'X2'. 2.5' TALL.

CC 263 RK 1173

POSITION: Date/DN 27 Jun 94 ~~178~~ 178 Time (UTC) 140906 Fix # ~~1098~~ ✓
Easting 123487.4 Northing 30745.4
Latitude 41° 31 ' 34.793 " N ✓ Longitude 070° 40 ' 31.223 " W ✓
LORAN C: W 14 X 25 Y 43 Z 60
(LORAN for AWOIS only. GRI = 9960, N.E. United States.)

LEAST DEPTH: Date/DN 7-24-94 1205 Time (UTC) 913 ✓
Method (Pneumogauge) Leadline DSF-6000N
S/N ~~13892130~~ 8406714N A105N A106N A112N C076

Measured Depth: 1. 18.7 2. 18.6 3. 18.6 Avg. 18.6 m (ft)

Uncorrected Depth:	5.6 ✓	meters
Tide Corrector:	-0.52	meters
Draft Corrector:		meters
Velocity Corrector:	—	meters
CORRECTED LEAST DEPTH:	5.1.4 (17FT)	meters

Recorder _____ **Checked by** _____

SEE SECTION N.1., PAGE 7, OF THIS REPORT FOR CHARTING RECOMMENDATION.

fix = 1172 =

NOAA SHIP WHITING
ITEM INVESTIGATION REPORT
OPR-B616-WH

SURVEY FE-~~400~~SS FIELD SHEET WH-5-1-94
ITEM NUMBER 1052.105
CHART NO. (largest scale) 13235, 5th Edition, August 1991

DESCRIPTION OR CROSS REFERENCE(S):

Dive Investigation, echosounder dev. already (See Attached)

AWOIS POS: (NAD 83) L 41° ' " N λ 070° ' " W
SSS POS: L 41° ' " N λ 070° ' " W
E 123485.2
N 30660.2

METHOD OF INVESTIGATION: (circle)
Echosounder (Diver) Other (specify) _____

DIVE DATA: Divers Berkowitz ~~Pavelle~~ Riley Quinn Verlaque
Time of Dive (UTC): Commenced 1845/1853 Completed 1852/~~1855~~ 1858
Current (Slack) 0.5 kts 1 kt 1.5+ kts
Bottom Type S Sh (M) P & Rocks
Visibility 0 1 2 3 (4) 5 6 7 8 9 >10

INVESTIGATION NOTES: Divers found a RK 6'x6', 5' Tall Diver Gauge Least Depth 18.5 IN 23' OF WATER

cc 263 RK 1172

POSITION: Date/DN 27Jun94 178 Time (UTC) 141705 Fix # ~~1104~~ 1172 ✓
Easting 123485.8 Northing 30601.8
Latitude 41° 31 ' 30.139 " N ✓ Longitude 070° 40 ' 31.316 " W ✓
LORAN C: W 14 X 25 Y 43 Z 60
(LORAN for AWOIS only. GRI = 9960, N.E. United States.)

LEAST DEPTH: Date/DN 7-24-94 1205 Time (UTC) 1848 ✓
Method (Pneumogauge) Leadline DSF-6000N
S/N (13892130) 8406714N A105N A106N A112N C076

Measured Depth: 1. 19.2 2. 19.2 3. 19.2 Avg. 19.2 m (ft)

Uncorrected Depth:	5.8 ✓	meters
Tide Corrector:	-0.42	meters
Draft Corrector:	—	meters
Velocity Corrector:	—	meters
CORRECTED LEAST DEPTH:	5.46 (18FT)	meters

Recorder _____ Checked by _____

SEE SECTION N.2.) PAGE 8 OF THIS REPORT FOR CHARTING RECOMMENDATION.

fix = 1174

NOAA SHIP WHITING
ITEM INVESTIGATION REPORT
OPR-B616-WH

SURVEY FE-400SS FIELD SHEET WH-5-1-94
ITEM NUMBER 1054.49P
CHART NO. (largest scale) 13235, 5th Edition, August 1991

DESCRIPTION OR CROSS REFERENCE(S):

follow-up dive, echosounder already (see other Item Inv. Report)

AWOIS POS: (NAD 83) L 41° ' " N λ 070° ' " W

SSS POS: L 41° ' " N λ 070° ' " W
E 123521.4
N 30675.2

METHOD OF INVESTIGATION: (circle)
Echosounder (Diver) Other (specify) _____

DIVE DATA: Divers Berkowitz (Pavelle) (Riley) Quinn Verlaque
Time of Dive (UTC): Commenced 1933 Completed 1940
Current (Slack) 0.5 kts 1 kt 1.5+ kts Bottom Type S Sh (M) P
Visibility 0 1 2 3 (4) 5 6 7 8 9 >10

INVESTIGATION NOTES: DIVERS FOUND A RK 10' X 8' X 4' high IN 20' OF WATER.

CC863 RK

POSITION: Date/DN 27Jun 94 178 Time (UTC) 144953 Fix # 1174 ~~1108~~ ✓
Easting 123529.0 Northing 30660.8
Latitude 41° 31 ' 32.046 " N ✓ Longitude 070° 40 ' 29.443 " W ✓
LORAN C: W 14 X 25 Y 43 Z 60
(LORAN for AWOIS only. GRI = 9960, N.E. United States.)

LEAST DEPTH: Date/DN 7-24-94 1205 Time (UTC) 1937 ✓
Method (Pneumogauge) Leadline DSF-6000N
S/N (138921 30) 8406714N A105N A106N A112N C076

Measured Depth: 1. 15.6 2. 15.5 3. 15.6 Avg. 15.6 m (ft)

Uncorrected Depth:	4.7 ✓	meters
Tide Corrector:	-0.61	meters
Draft Corrector:	—	meters
Velocity Corrector:	—	meters
CORRECTED LEAST DEPTH:	4.76 (15 FT)	meters

Recorder _____ Checked by _____

SEE SECTION N.3., PAGE 8 OF THIS REPORT FOR CHARTING RECOMMENDATION.

NOAA SHIP WHITING
ITEM INVESTIGATION REPORT
OPR-B616-WH

fix=1175

SURVEY FE-400SS **FIELD SHEET** WH-5-1-94
ITEM NUMBER 4.0m Sounding
CHART NO. (largest scale) 13229, 25th Edition, June 1993

DESCRIPTION OR CROSS REFERENCE(S):

AWOIS POS: (NAD 83) L 41° ' " N λ 070° ' " W
SSS POS: L 41° ' " N λ 070° ' " W
E
N

METHOD OF INVESTIGATION: (circle)
Echosounder Diver Other (specify) _____

DIVE DATA: Divers Berkowitz Pavelle (Quinn) (LOGAN)
Time of Dive (UTC): Commenced _____ Completed _____
Current Slack 0.5 kts 1 kt 1.5+ kts Bottom Type S Sh M P
Visibility 0 1 2 3 4 5 6 7 8 9 >10

INVESTIGATION NOTES: Divers located a rock 3'x3', 2' high

POSITION: Date/DN 7/23/94 /204 Time (UTC) _____ Fix # 1166.10 (1175)
Easting 123480.6 Northing 30583.6
Latitude 41° 31 '28.901 " N Longitude 070° 40 '31573 " W
LORAN C: W 14 X 25 Y 43 Z 60
(LORAN for AWOIS only. GRI = 9960, N.E. United States.)

LEAST DEPTH: Date/DN 8/30/94 /242 Time (UTC) 1312
Method (Pneumogauge) Leadline DSF-6000N
S/N (138921 30) 8406714N A105N A106N A112N C076

Measured Depth: 1. 19.8 2. 19.8 3. 19.9 Avg. 19.8 m (ft)

Uncorrected Depth:	6.0	meters
Tide Corrector:	-0.52	meters
Draft Corrector:		meters
Velocity Corrector:		meters
CORRECTED LEAST DEPTH:	5.48	meters
	(19)	FT

Recorder _____ **Checked by** _____

SEE SECTION N.A.3) PAGE 8 OF THIS REPORT FOR CHARTING RECOMMENDATION.

NOAA SHIP WHITING
ITEM INVESTIGATION REPORT
OPR-B616-WH

SURVEY FE-400SS **FIELD SHEET** WH-5-1-94
ITEM NUMBER New Rock
CHART NO. (largest scale) 13229, 25th Edition, June 1993

DESCRIPTION OR CROSS REFERENCE(S):

AWOIS POS: (NAD 83) L 41° ' " N λ 070° ' " W

SSS POS: L 41° ' " N λ 070° ' " W
E
N

METHOD OF INVESTIGATION: (circle)
Echosounder (Diver) Other (specify) _____

DIVE DATA: Divers Berkowitz Pavelle (Quinn) (EGAN)
Time of Dive (UTC): Commenced _____ Completed _____
Current Slack 0.5 kts 1 kt 1.5+ kts Bottom Type S Sh M P
Visibility 0 1 2 3 4 5 6 7 8 9 >10

INVESTIGATION NOTES: Divers found a rk, 7'x7', 5' high

POSITION: Date/DN 8/30/94 / 242 Time (UTC) 1338 Fix # 1176
Easting [redacted]123485.5 Northing 30578.1
Latitude 41°31'29.370" N Longitude 070°40'31.333" W
LORAN C: W 14 X 25 Y 43 Z 60
(LORAN for AWOIS only. GRI = 9960, N.E. United States.)

LEAST DEPTH: Date/DN 8/30/94 / 242 Time (UTC) 1338
Method (Pneumogauge) Leadline DSF-6000N
S/N 13892130 8406714N A105N A106N A112N C076

Measured Depth: 1. 16.4 2. 16.5 3. 16.5 Avg. 16.5 m (ft)

Uncorrected Depth:	5.0	meters
Tide Corrector:	-0.54	meters
Draft Corrector:		meters
Velocity Corrector:		meters
CORRECTED LEAST DEPTH:	4.56	meters
	(15)	FT

Recorder _____ **Checked by** _____

SEE SECTION N.A. 3, PAGE 8 OF THIS REPORT FOR CHARTING RECOMMENDATION.

Station No ?

No	Type	Lat	Lon	H	Cart	Freq	Vel Code	MM/DD/YY	Station Name
001		041:04:02.088	071:51:38.484	0	0	293.0	0	03/01/92	MONTAUK POINT
0(		043:04:15.066	070:42:36.804	0	0	288.0	0	03/01/92	PORTSMOUTH
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	
		000:00:00.000	000:00:00.000	0	0	0.0	0	03/01/92	

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship WHITING S-329
439 W. York Street
Norfolk, VA 23510-1114

September 15, 1994

Commander, First Coast Guard District
Aids to Navigation Branch
408 Atlantic Avenue
Boston, MA 02110-3350

ADVANCE INFORMATION

Dear Sir or Madam:

While conducting hydrographic survey operations in Nantucket Sound, three uncharted rocks were discovered. Attached are reports on these features and a chartlet indicating their locations. The following table is a summary of our findings:

Feature	Latitude	Longitude	Depth (ft)
Rock	41°31'30.139"N	070°40'31.316"W	18
Rock	41°31'32.046"N	070°40'29.443"W	13
Rock	41°31'29.370"N	070°40'31.333"W	15

Differential DPS was used to determine the items' positions. Positions are referenced to NAD-83. All depths are referenced to MLLW using predicted tides. Charts 13229 and 13235 are the largest scale charts affected.

A copy of this letter and attachments have been forwarded to the following offices:

Chief, Nautical Charting Division, NOAA
Chief, Atlantic Hydrographic Section
Chief, Operations Division, NOAA
Director, Defense Mapping Agency
Hydrographic/Topographic Center

Sincerely,

John D. Wilder
Commander, NOAA
Commanding Officer

Attachments
cc: AMC1
N/CG2
N/CG244
DMAHTC

REPORT OF UNCHARTED SUBMERGED FEATURE

Hydrographic Survey Registry Number: FE-400SS

State: Massachusetts

General Locality: Woods Hole, MA

Sublocality: National Marine Fisheries Pier

Project Number: OPR-B616-WH-94

The following item was found during hydrographic survey operations by the NOAA Ship WHITING:

Object Discovered:

A rock with a six-foot radius was found with side scan sonar and examined by divers.

Covers:

Divers used a pneumatic depth gauge to determine the least depth. Their findings indicate a least depth of 5.4 meters (18 feet) corrected to MLLW with predicted tide correctors.

Affected Nautical Charts:

Chart Number	Edition No.	Reported Date	Reported Depth	Chart Datum	Geographic Location Latitude	Geographic Location Longitude
13229	25	3/27/93	18 ft	NAD83	41°31'30.139"N	070°40'31.316"W
13235	5	8/31/91				

Questions concerning this report should be directed to the Atlantic Hydrographic Section in Norfolk, Virginia, at telephone number (804) 441-6746.

REPORT OF UNCHARTED SUBMERGED FEATURE

Hydrographic Survey Registry Number: FE-400SS

State: Massachusetts

General Locality: Woods Hole, MA

Sublocality: National Marine Fisheries Pier

Project Number: OPR-B616-WH-94

The following item was found during hydrographic survey operations by the NOAA Ship WHITING:

Object Discovered:

A rock, ten feet long and 8 feet tall was found with side scan sonar and examined by divers.

Covers:

Divers used a pneumatic depth gauge to determine the least depth. Their findings indicate a least depth of 4.1 meters (13 feet) corrected to MLLW with predicted tide correctors.

Affected Nautical Charts:

Chart Number	Edition No.	Edition Date	Reported Depth	Chart Datum	Geographic Location Latitude	Geographic Location Longitude
13229	25	3/27/93	13 ft	NAD83	41°31'32.046"N	070°40'29.443"W
13235	5	8/31/91				

Questions concerning this report should be directed to the Atlantic Hydrographic Section in Norfolk, Virginia, at telephone number (804) 441-6746.

REPORT OF UNCHARTED SUBMERGED FEATURE

Hydrographic Survey Registry Number: FE-400SS

State: Massachusetts

General Locality: Woods Hole, MA

Sublocality: National Marine Fisheries Pier

Project Number: OPR-B616-WH-94

The following item was found during hydrographic survey operations by the NOAA Ship WHITING:

Object Discovered:

A rock, seven feet long and seven feet wide, was found with side scan sonar and examined by divers.

Covers:

Divers used a pneumatic depth gauge to determine the least depth. Their findings indicate a least depth of 4.5 meters (15 feet) corrected to MLLW with predicted tide correctors.

Affected Nautical Charts:

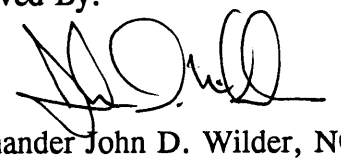
Chart Number	Edition No.	Edition Date	Reported Depth	Chart Datum	Geographic Location Latitude	Geographic Location Longitude
13229	25	3/27/93	15 ft	NAD83	41°31′29.370"N	070°40′31.333"W
13235	5	8/31/91				

Questions concerning this report should be directed to the Atlantic Hydrographic Section in Norfolk, Virginia, at telephone number (804) 441-6746.

APPROVAL SHEET
HYDROGRAPHIC SURVEY
OPR-B616-WH
1994
WH-5-1-94
FE-400SS

The data for this field examination survey were acquired and checked under my daily supervision. Position and sounding accuracy meet the requirements specified in the Field Project Instructions, Hydrographic Manual, Hydrographic Survey Guidelines and the Field Procedures Manual for Hydrographic Surveying. This survey is complete and adequate for the intended purpose of delineating bottom topography, determining depths and identifying all potential dangers to navigation. No final field sheets were prepared for this survey. The survey data and accompanying records are complete for the preparation of the smooth sheet.

Approved By:



Commander John D. Wilder, NOAA
Commanding Officer, NOAA Ship WHITING

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: March 3, 1995

HYDROGRAPHIC SECTION: Atlantic

HYDROGRAPHIC PROJECT: OPR-B616

HYDROGRAPHIC SHEET: FE-400SS

LOCALITY: Woods Hole, Massachusetts

TIME PERIOD: June 21 - August 30, 1994

TIDE STATION USED: 844-7930 Woods Hole, Ma.
Lat. 41° 31.5'N Lon. 70° 40.4'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 2.41 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.0 ft.

REMARKS: RECOMMENDED ZONING

Times and heights are direct on Woods Hole, Ma. (844-7930).

Note: Times are tabulated in Eastern Standard Time.

William D. Hubbard

CHIEF, DATUMS SECTION

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

FE-400

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 13235	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	
GREAT HARBOR	X		X							1
MASSACHUSETTS (title)	X		X							2
WOODS HOLE	X		X							3
										4
										5
										6
										7
										8
										9
										10
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										21
										22
										23
										24
										25

Approved

Chief Geographer

SEP 29 995

NOAA FORM 76-155 SUPERSEDES C&GS 197

01/31/96

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: FE-400

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	172
NUMBER OF SOUNDINGS	750

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	34	10/07/94
VERIFICATION OF FIELD DATA	54	01/03/96
QUALITY CONTROL CHECKS	4	
EVALUATION AND ANALYSIS	12	
FINAL INSPECTION	12	09/21/95
COMPILATION	36	01/25/96
TOTAL TIME	152	

ATLANTIC HYDROGRAPHIC BRANCH APPROVAL 10/02/95

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR FE-400 (1994)

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 (HPS)
AUTOCAD, Release 12
NADCON, version 2.10

The smooth sheet was plotted using an ENCAD NovaJet III plotter.

H. CONTROL

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). 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 0.392 seconds (12.08 meters or 1.21 mm at the scale of the survey) north in latitude, and 1.891 seconds (43.85 meters or 4.38 mm at the scale of the survey) east in longitude.

J. SHORELINE

Shoreline originates with chart 13235 (5th Edition, Aug. 31/94) and is shown in brown on the smooth sheet for orientation purposes only.

M. COMPARISON WITH PRIOR SURVEYS

Hydrographic

H-8170 (1954) 1:5,000

Prior survey depths from H-8170 (1954) compare favorably and show a general trend of being 0^3 to 0^9 m (1 to 3 ft) shoaler than present survey depths. There are some scattered prior survey depths that are 1^8 to 3^9 m (6 to 13 ft) shoaler than the present survey depths.

The following should be noted:

A charted rock awash, in Latitude 41°31'28.4"N. Longitude

70°40'30.1"W, originating with the prior survey was located by the field unit. A rock with a known depth of 2 m (6 ft) was located in Latitude 41°31'28.59"N, Longitude 70°40'29.84"W. The rock shown on the present survey is 8 meters southeast of the rock shown on the prior survey. It is recommended that the charted rock awash be deleted and a rock with a known depth of 2 m (6 ft) be charted as shown on the present survey.

A charted rock awash, in Latitude 41°31'28.9"N, Longitude 70°40'30.7"W, was neither verified nor disproved by the field unit. The rock awash has been brought forward from the prior survey to supplement the present survey. It is recommended the rock awash be charted as shown on the present survey.

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

O. COMPARISON WITH CHARTS 13229 (25th Edition, Mar. 27/93) 13235 (5th Edition, Aug. 31/94)

The charted hydrography originates with the previously discussed prior survey and requires no further consideration. The hydrographer makes adequate chart comparisons in sections N. and O. of the Descriptive Report. The following should be noted:

An uncharted rock with a known depth of 5^6 m (18 ft), in Latitude 41°31'28.29"N, Longitude 70°40'30.44"W, was located by the field unit. It is recommended that a rock with a known depth of 5^6 m (18 ft) be charted as shown on the present survey.

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

Dangers To Navigation

The field unit submitted one Danger to Navigation report to Commander (oan), First Coast Guard District, Boston, Massachusetts for inclusion in the Local Notice to Mariners, and to the Marine Chart Division, N/CS3x1, Silver Spring, Maryland. A copy of the report is appended to this report.

P. ADEQUACY OF SURVEY

This is an adequate hydrographic/side scan sonar survey; no additional work is recommended.

S. MISCELLANEOUS

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

WHITING Processing Team

Robert Snow
Cartographic Technician
Verification of Field Data

Norris A. Wike
Cartographer
Evaluation and Analysis

At the time this report was written, officials at the NOAA Woods Hole facility contracted a company to remove several of the rocks that were reported by the WHITING. The Atlantic Hydrographic Branch has established a line of communication with the Woods Hole facility and will obtain documentation concerning the removal of these rocks. Work is expected to be completed by December, 1995.

APPROVAL SHEET
FE-400

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 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. A final sounding printouts of the survey has been made. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Deborah A. Bland Date: 10/2/95
Deborah A. Bland
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.

Nicholas E. Perugini Date: October 2, 1995
Nicholas E. Perugini
Commander, NOAA
Chief, Atlantic Hydrographic Branch

****

Final Approval:

Approved: Andrew A. Armstrong Date: 2-21-96
Andrew A. Armstrong, III
Captain, NOAA
Chief, Hydrographic Surveys Division

70° 40′ 35″ | 70° 40′ 30″ | 70° 40′ 25″ | 70° 40′ 20″

41° 31′ 35″

41° 31′ 30″

70/40/25W
NAD 27 — 41/31/35N
CHECKED BY: RS
8/29/95

ramp

pier

bkhd

WOODS HOLE

pier

bkhd

pier

* from prior survey H-8178 (1954)

GREAT HARBOR

FE-400
MASSACHUSETTS
WOODS HOLE
NATIONAL MARINE FISHERIES PIER
JUNE 21 - JULY 24, 1994
1:1,250
SOUNDINGS IN FEET AT MLLW
HORIZIONTAL DATUM: NAD 83
SHEET 1 OF 1

Shoreline in brown is for orientation purposes only
and originates with NOS chart 13235, 5th Ed.,Aug 31,1991

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. FE-400

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
13229	11/17/95	Robert Hill	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 26 (Thru BP-15-7398)
13235	2-28-96	RK Rose	(Full) Part Before After Marine Center Approval Signed Via
			Drawing No. 6 applied in full BP-15-7397 (amc application)
			Ref L-189/96
13230	2-28-96	RRose	(Full) Part Before After Marine Center Approval Signed Via
			Drawing No. 52 Exam No Corr - Area Now 3E
			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.
			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.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.