H10668

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. RU-10-1-96

Registry No. H10668

LOCALITY

State New York

General Locality North Atlantic Ocean

Locality 5 NM SE of Rockaway Point

1996

CHIEF OF PARTY
CDR S.P. DeBow

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTER NO.
	HYDROGRAPHIC TITLE SHEET	H-10668
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. RU-10-1-96

State New York

General locality ~~Approaches to New York Harbor~~ NORTH ATLANTIC OCEAN

Locality 5.0 NM SE of Rockaway Point

Scale 1:10,000 Date of survey April 4 - May 31, 1996

Instructions dated March 4, 1996 Project No. OPR-C399-RU-96

Vessel NOAA Ship RUDE S590

Chief of party CDR S.P. De Bow

Surveyed by CDR S.P. De Bow, LT C.L. Thacker, LTJG J.M. Klay, LTJG N.L. Hill, ENS J.J. Walker

Soundings taken by:(echo sounder, hand lead, pole) Raytheon DSF-6000N Echosounder

Graphic record scaled by SPD, CLT, JMK, JJW, ST M.T. Lathrop, AST C.A. Neely

Graphic record checked by SPD, CLT, JMK, NLH, JJW, MTL, CAN

Protracted by ~~Bruning Zeta model 936~~ HP DESIGNJET 350c Automated plot by

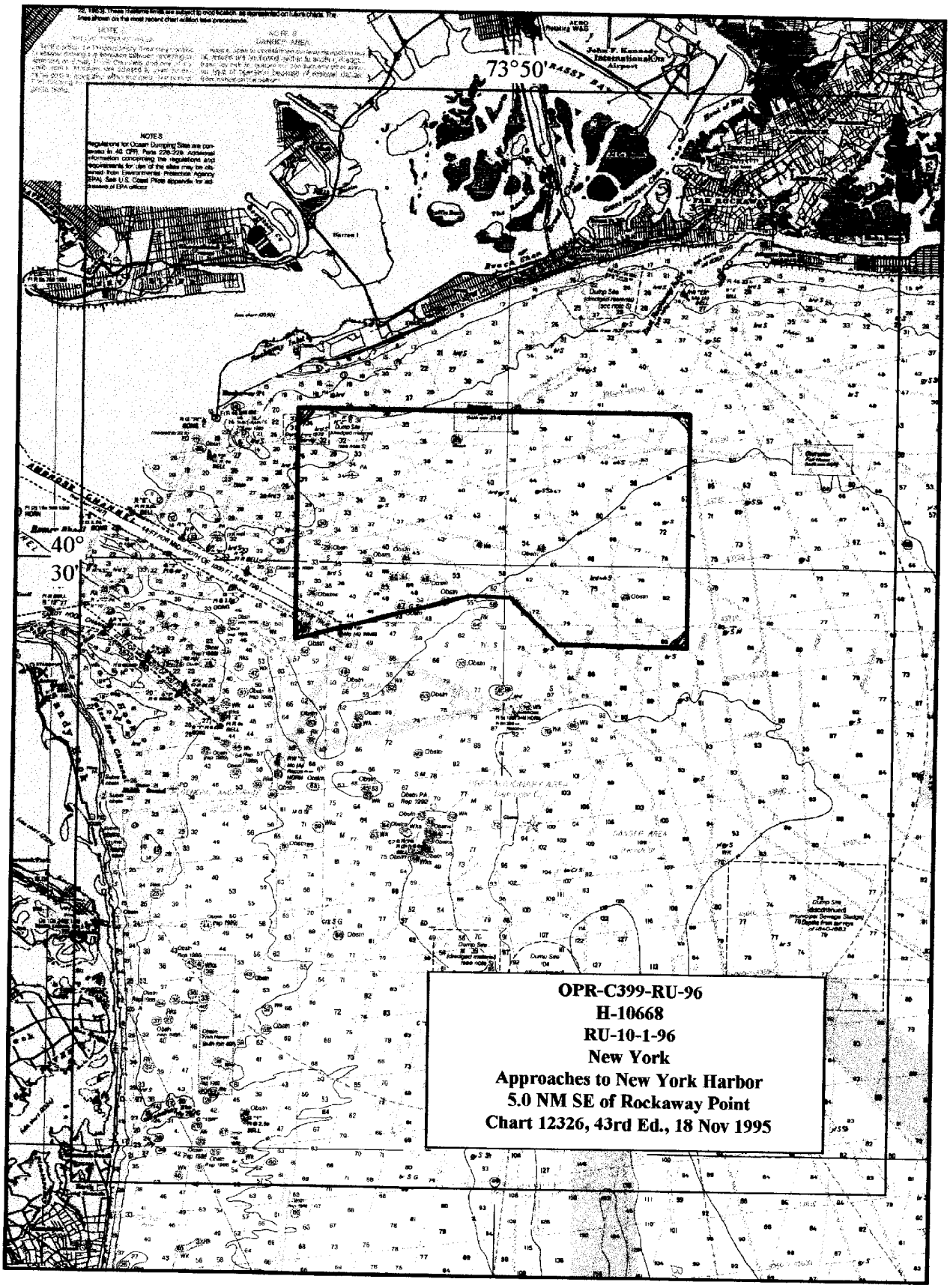
Verification by ATLANTIC HYDROGRAPHIC BRANCH PERSONNEL

Soundings in ~~(fathoms, feet, or meters at MLW or MLLW)~~ ~~meters~~ feet at MLLW

REMARKS: All times recorded in UTC.

The DSF-6000N was used as the primary sounding instrument; however, as warranted, the SEABAT 9001 shallow-water multibeam sonar system was employed for distinct item investigations and is documented as such.

NOTES IN RED WERE MADE DURING OFFICE PROCESSING.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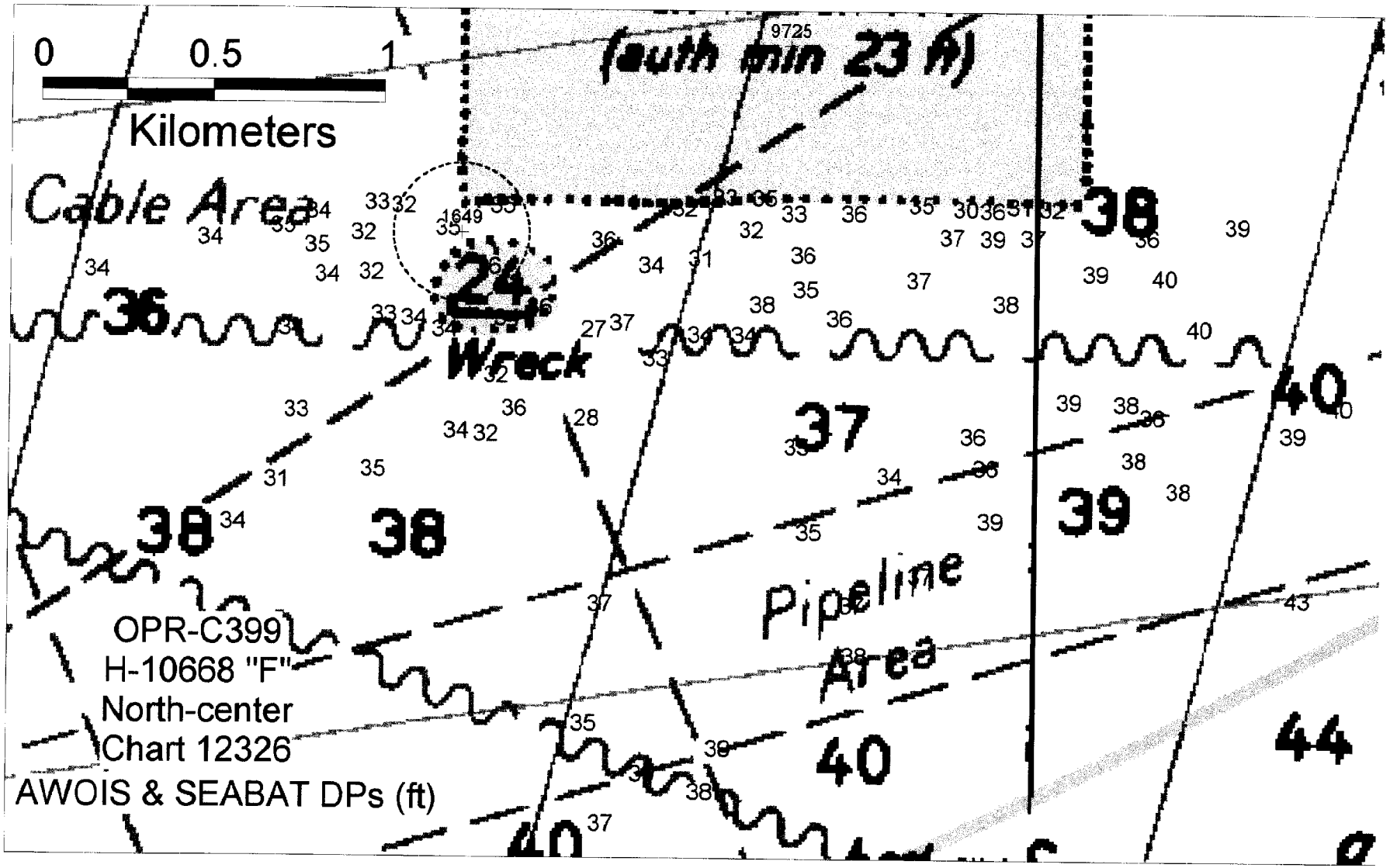
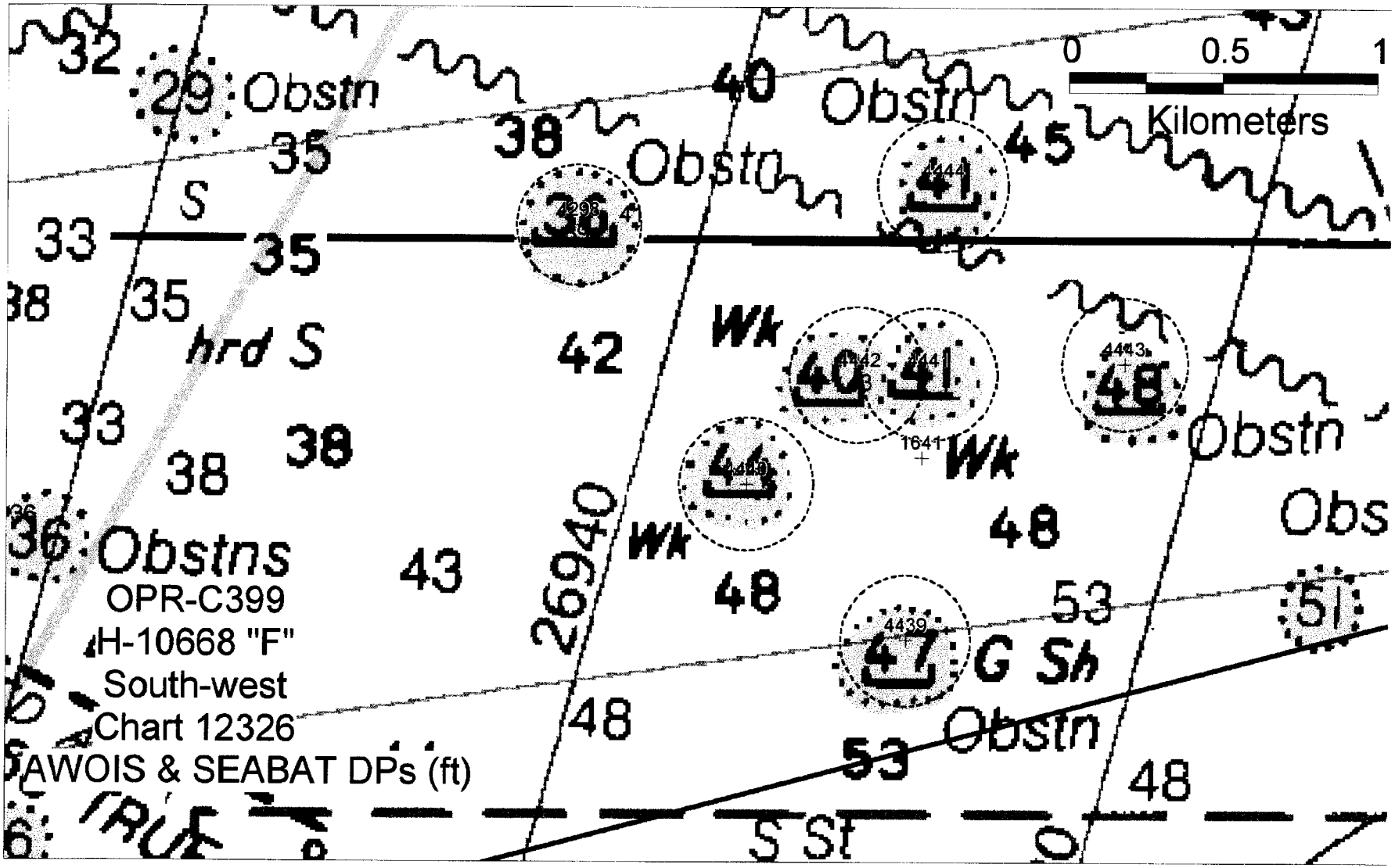
40°
30'
OPR-C399-RU-96
H-10668
RU-10-1-96
New York
Approaches to New York Harbor
5.0 NM SE of Rockaway Point
Chart 12326, 43rd Ed., 18 Nov 1995


0
0.5
1
Kilometers
fauth min 23 ft)
Cable Area
24
Wreck
36
37
38
39
40
Pipeline
Area
OPR-C399
H-10668 "F"
North-center
Chart 12326
AWOIS & SEABAT DPs (ft)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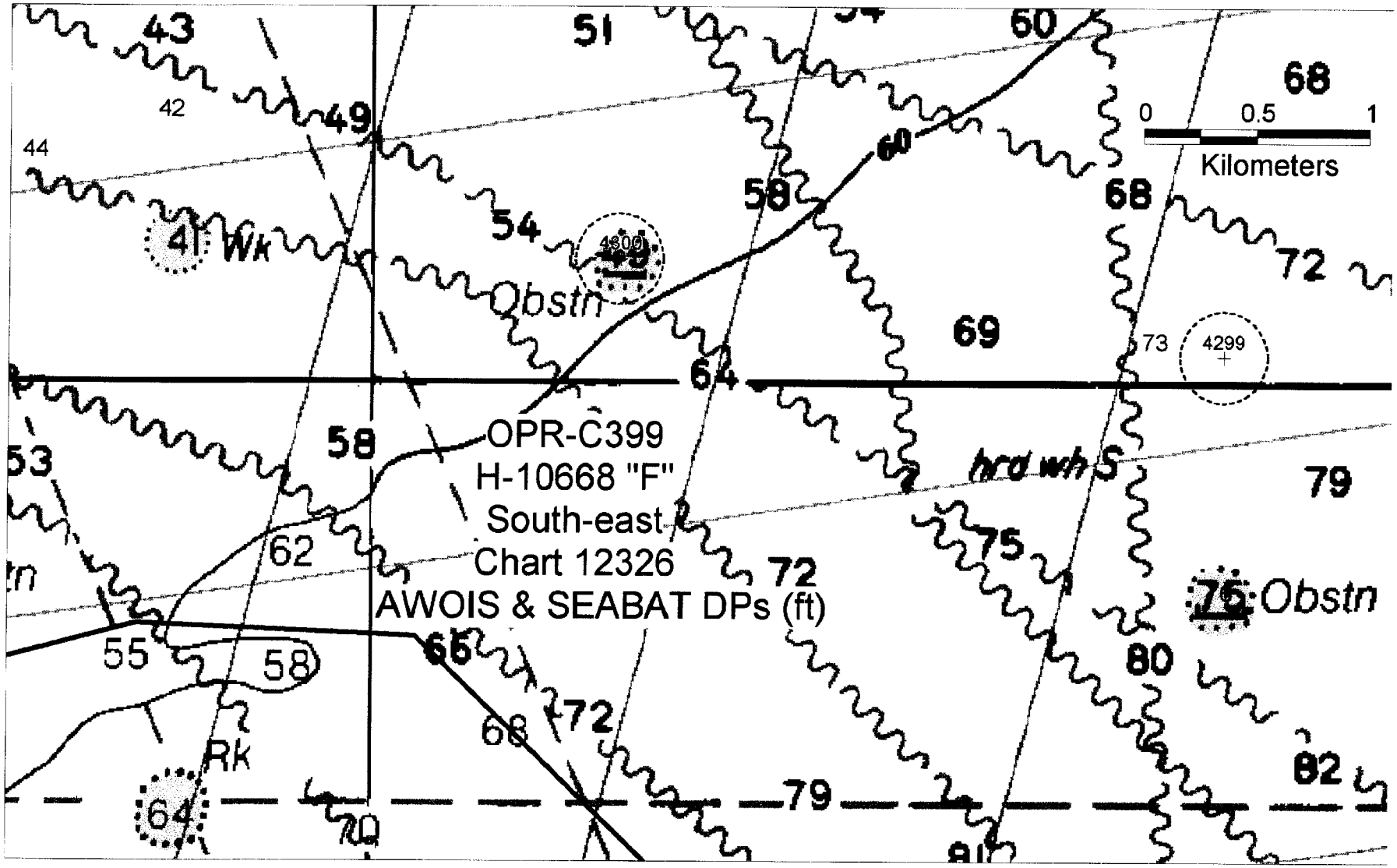
Kilometers
Obstns
OPR-C399
H-10668 "F"
South-west
Chart 12326
AWOIS & SEABAT DPs (ft)


0
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Kilometers
OPR-C399
H-10668 "F"
South-east
Chart 12326
AWOIS & SEABAT DPs (ft)
Obstn
Obstn
Wk
Rk
4299

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A. PROJECT

A.1 This survey was conducted in accordance with Hydrographic Project Instructions OPR-C399-RU, Approaches to New York Harbor, New York and New Jersey.

A.2 The original instructions are dated March 4, 1996.

A.3 There have been no changes to the original instructions.

A.4 This Descriptive Report covers the navigable area survey conducted on sheet "F" of project OPR-C399-RU in the Atlantic Ocean Approaches to New York Harbor, as specified in the Project Instructions.

A.5 This portion of OPR-C399-RU responds to requests from the U.S. Coast Guard, Port Authority of New York and New Jersey, and the United Pilots Benevolent Associations of New York and New Jersey (Sandy Hook Pilots). This survey was requested due to the large volume of deep draft (42-foot) traffic using the approaches to New York Harbor. The area was last surveyed by the Coast and Geodetic Survey between 1950 and the late 1980's.

B. AREA SURVEYED

B.1 This survey covers an off-shore area of the Atlantic Ocean Approaches to New York, approximately 5.0 nm south of Rockaway Beach, NY.

B.2 The survey comprises one sheet with the following approximate boundaries:

NE Corner - 40°32'15"N, 073°46'19"W
NW Corner - 40°32'10"N, 073°54'14"W
SW Corner - 40°28'56"N, 073°54'14"W
SE Corner - 40°28'38"N, 073°46'19"W

B.3 Data acquisition for this survey began on April 4, 1996 (DN 095) and ended on May 31, 1996 (DN 152).

C. SURVEY VESSELS

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

Vessel	EDP Number	Primary Function
NOAA Ship RUDE (S590)	9040	Hydrography, Side Scan Operations and SEABAT Investigations
RUDE Whaler		Dive Operations

C.2 During the RUDE's January 1994 dry-dock period, the ship was outfitted with a pivoting armature to carry the transducers for the Reson SEABAT 9001 shallow-water multibeam sonar system. This armature was mounted on the port side, approximately amidships. Since the transducers were not designed for permanent deployment, the arm was rotated into the down, or operating, position only during times of data acquisition.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

D.1 Coastal Oceanographics' **HYPACK for Windows** (Version 5.9) was used for data acquisition on this survey. The following HDAPS software versions were used for data processing:

Program	Version	Program	Version
BACKUP	2.00	LSTAWOIS	3.12
BLKEDIT	2.03	MAINMENU	1.30
CARTO	2.18	MAN_DATA	3.05
CLASSIFY	2.14	NEWPOST	6.13
CONTACT	2.49	PLOTALL	2.37
CONVERT	3.67	PREDICT	2.01
DAS_SURV	6.83	PRESURV	7.14
DP	2.19	QUICK	2.09
EXCESS	4.33	RAMSAVER	1.02
FILESYS	3.46	REAPPLY	2.13
GRAFEDIT	1.10	ZOOMEDIT	2.36
INVERSE	2.02		

D.2 The SEABIRD SBE-19 sound velocity profile unit was utilized with **SEASOFT 3.3M** and **SEACAT 2.0** software. The program **VELOCITY** (Version 2.11, September 21, 1994) was used to process the acquired data and calculate velocity corrections. VELOCITY's **REFRACT** subroutine was used to correct SEABAT multiple slant-

range depths for sound velocity, and position of soundings (cross track distance) for refraction.

D.3 Triton Corporation's **ISIS** software (Versions 2.11 and 2.14) was used to acquire SEABAT multibeam and digital side scan sonar data. Due to format compatibility problems between the ISIS SEABAT data and the post-processing software early in the field season, all SEABAT files for this sheet were processed, twice, at NOAA headquarters under the direction of Dr. Lloyd Huff, Director of NCRDL HTP, and Alan Greenberg, HTP. It is unknown what steps were taken during processing for quality control. All ISIS files for a given development were processed together, without regard to contact location. Least depths for some items were acquired on edge beams (beams #1 to 5, and 55 to 60), where accuracy is diminished. These were accepted as the ship was unable to reprocess the files. RUDE received the files of 15 least depths (*.lst) generated for each SEABAT investigation in September, and one or more depths were later entered into HDAPS via the **HSDUtils Convert 15 Point Files** program.

The conversion software to translate HYPACK data into HDAPS-compatible format was supplied by NOAA's Hydrographic Surveys Division. The **HSDUtils Convert HYPACK Data** program was revised numerous times during the course of the survey.

E. SONAR EQUIPMENT

E.1 The RUDE conducted all side scan sonar operations using an EG&G Model 260 image-corrected side scan sonar recorder and a 100 kHz Model 272-T towfish.

E.2 The towfish was configured with a 20° beam depression, which is the normal setting and yields the optimum beam correction.

E.3 The 100 kHz frequency was used throughout the survey.

E.4 a. Given the average depth of water in the survey area, both the 100-meter and 75-meter range scales were used, at a line spacing of 160 meters and 120 meters respectively, to obtain complete area coverage and provide optimal contact resolution. Although the 160-meter line spacing was 10 meters less than the value specified in section 7.3.2.1 of the Field Procedures Manual (FPM), it was chosen to allow an even number of lines to be run during hydro splits. Data acquired with an EPE of 15 or greater were either rejected or smoothed during post-processing, so the maximum line spacing was never exceeded.

b. Confidence checks were obtained whenever features such as buoys or sand waves were encountered. These features were routinely annotated on the sonar grams.

c. Two hundred percent side scan coverage was completed for this survey. Areas of reduced coverage occasionally occurred when the ship was forced to maneuver for traffic or obstacles in the water, such as lobster pots. These areas were easily recognized because the swath plot clearly showed the lack of overlap between adjoining swaths. Holiday coverage was run to fill in these gaps, and all side scan coverage was ultimately checked with edited swath plots to ensure proper overlap between adjoining lines.

d. There were no degraded data returns acquired during this survey.

e. The towfish was deployed exclusively from the stern.

E.5 Investigations of significant side scan sonar contacts were conducted using both the echo sounder and the SEABAT to acquire data. The use of two sounding instruments allowed an efficient means of conducting developments, as the SEABAT imagery enabled the identification of a contact even if it was not directly beneath the echo sounder. The next line could then be chosen accordingly.

Since the accuracy of the SEABAT unit was verified in previous field seasons through rigorous echosounder/SEABAT comparisons, a greater reliance was placed upon the unit during this survey. If the imagery showed that a contact had been fully ensonified by the SEABAT, the investigation would typically be called complete without a lengthy echosounder development. The data for these investigations are summarized in Section N and in the Development Abstract in Separate VI of this report.

E.6 The edited swath plot was used to identify holidays in side scan sonar coverage. All side scan contacts with an HDAPS-computed height of one meter or greater were deemed significant and subsequently investigated.

F. SOUNDING EQUIPMENT

F.1 All hydrographic soundings were acquired using a Raytheon Model 6000N Digital Survey Echosounder (DSF-6000N). As authorized by the Project Instructions, the Reson SEABAT 9001 shallow-water multibeam sonar system was used to obtain precise

least depths over significant contacts discovered during routine side scan sonar operations.
The Reson SEABAT 9001 produces sixty 1.5 degree beams per swath, yielding an included swath angle of 90 degrees and a swath width which is approximately twice the surrounding water depth. The system operates at a frequency of 455 kHz. It updates at a rate of 13 times per second in 25 meters of water, thus acquiring 780 soundings per second.

Prior to beginning SEABAT data acquisition on this survey, the RUDE SEABAT-specific offset table/file was updated to define the physical relationship between the various components that comprise the system, including the SEABAT transducer head, TSS motion sensor, and GPS antenna. In addition, this offset file contains heave, roll, and pitch biases determined during a "Patch Test" conducted in Raritan Bay, NY on April 12, 1996. A copy of the SEABAT offset table is contained in *Separate III.

During post-processing using the **XTFRUDE** program developed by NCRDL HTP, the software attaches a position to each of the SEABAT data records. The various heading, motion, and sound velocity refraction correctors are then applied to the SEABAT slant range values to create a data record for each individual SEABAT beam (60 data records for each SEABAT swath). The 60 records contain computed positions and depths, cross track distances, and beam quality codes. After the expanded file is created, the data are viewed graphically in three different perspectives to check the consistency of the sounding data.

Once the sounding data have been reviewed, the **XTFRUDE** software selects a subset of the approximately 14,000 minimum depths contained within the total data set being processed. A file containing the 15 least depths found within that subset is then generated, annotated with file and processing information, and the RUDE.PRN and SEABAT offset tables. The single least depth for each SEABAT investigation was obtained from this file and converted into HDAPS scaled DP format.

A summary of all SEABAT investigations conducted for this survey is contained in the Development Abstract in *Separate VI. Final positions can be found in the DP Remarks listing in *Separate VI. Copies of all 15 least depth listings and any associated 3-D graphic images are included in *Separate VI.

F.2 During dive investigations, least depths were measured with a MOD III diver gauge (s/n 68336) supplied by the Electronic Engineering Division at the Atlantic Marine Center.

* DATA FILED WITH ORIGINAL FIELD RECORDS

F.3 There were no faults in sounding equipment which affected the accuracy or quality of the data.

F.4 Both high (100 kHz) and low (24 kHz) frequency sounding data were recorded during data acquisition. Only high frequency soundings were plotted.

G. CORRECTIONS TO SOUNDINGS

G.1 a. Sound Velocity Correctors

The velocity of sound through water was measured using a Sea-Bird SBE 19 Seacat Profiler (s/n 1251) calibrated January 12, 1996. Velocity casts were conducted weekly without exception. Seacat Data Quality Assurance Tests were conducted after each respective velocity cast to ensure that the unit was operating within tolerance.

All sound velocity data were processed using program **VELOCITY**. Computed velocity correctors were entered into the HDAPS sound velocity table and re-applied during post-processing to both high and low frequency soundings. SEABAT sound velocity and refraction correctors were generated through the **REFRACT** subroutine and applied during post-processing.

The following velocity casts supplied correctors for this survey:

Cast Number	DN	HDAPS Table	Applied to Days
1	095	1	095-097
2	099	2	099-100
5	106	5	106-~~114~~ 111
7	119	7	113 ~~119~~-122
9	126	9	126-129
11	134	11	134-135
13	140	13	140-142
16	152	16	152

DIRECT

G.1 b. Leadline Comparison

A dual leadline comparison with the DSF-6000N was conducted during this project on:

DN 142 at 40°31.05'N and 073°51.27'W (41 ft depths)

The greatest variation between leadline and DSF soundings was 0.44 meters, and averaged .185 meters. Considering the ship's motion and the wire angle (approximately 5°) in the leadline from the current, this was a good agreement value and provided an adequate check that the echo sounder was functioning properly. Data from these comparisons can be found in*Separate IV.

Both leadlines were traditional leadlines made of cotton tiller with a stainless steel cable core. Refer to*Separate IV for data records on leadline correction values.

G.1 c. Static Draft

During the ship's winter 1994 dry-dock period, an exact vertical measurement was taken from the DSF transducer to a fixed point on the bridge wing. After the ship was re-floated, the point's height above the waterline was measured. The ship's static draft was calculated to be exactly 2.12 meters (7.0 feet). Refer to*Separate IV for data records. Measurements taken on May 14, 1996 confirmed the accuracy of this draft value. This draft corrector was applied to all sounding data through the HDAPS offset table.

G.1 d. Dynamic Draft (Settlement and Squat Correctors)

Settlement and squat correctors for the RUDE were determined on the Elizabeth River, Norfolk, VA on March 13, 1996. An observer, stationed with a level on a pier, measured changes in relative height by sighting to a staff held at the longitudinal position of the ship's transducer. The ship steamed directly toward and then away from the observer. The values obtained from the toward and away runs were averaged and applied to soundings through the HDAPS Offset Table #1. Refer to*Separate IV for data records.

G.1 e. Heave, Roll, and Pitch Correctors

Heave, roll, and pitch data were acquired by a **TSS Model 335B Motion Sensor** (s/n 542). Heave corrections were applied to HYPACK soundings during the HYPACK-to-HDAPS conversion. Heave, roll and pitch correctors were applied to all SEABAT soundings during post-processing. Refer to*Separate IV for data records.

* DATA FILED WITH ORIGINAL FIELD RECORDS

G.1 f. Tide Correctors

The tidal datum for this project is Mean Lower Low Water. The operating tide station at Sandy Hook, NJ (853-1680) served as both control for datum determination and as the reference station for predicted tides. Data for predicted tides were provided on floppy disk before the start of the project. These data were obtained from Table 2 of the East Coast of North and South America Tide Predictions and applied to the digital tide data using HDAPS software. Tidal correctors were applied in post-processing using HDAPS predicted tide tables numbers.

One set of time and height correctors was supplied for this sheet. A -30 minute time difference and a x0.94 range ratio were applied to the predicted tides at Sandy Hook.

A request for smooth tides was mailed on October 23, 1996.
APPROVED TIDES AND ZONING HAVE BEEN APPLIED DURING OFFICE PROCESSING
The RUDE employed no unusual or unique methods or instruments to correct echo soundings.

All sounding correctors were applied to both the narrow (100 kHz) and wide (24 kHz) DSF-6000N beams. Zoning for this project is consistent with the Project Instructions.

H. CONTROL STATIONS -SEE ALSO EVALUATION REPORT

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

I. HYDROGRAPHIC POSITION CONTROL

I.1 This survey was conducted exclusively using the Global Positioning System (GPS) corrected by the U.S. Coast Guard Differential GPS reference station network. Differential correctors were supplied from the USCG radiobeacon transmitter at Sandy Hook, NJ, precluding the need for shore-based horizontal control stations.

I.2 Accuracy requirements were met as specified by the Hydrographic Manual and Field Procedures Manual (FPM). The Horizontal Dilution of Precision (HDOP) and Expected Position Error (EPE) specified by the FPM were monitored during on-line data acquisition. If the positioning degraded beyond the acceptable limits while on-line, the data were either smoothed or rejected, depending on the extent of the affected data.

I.3 Differential GPS Equipment:

Unit A	Unit B
Ashtech GPS Sensor	Ashtech GPS Sensor
s/n 700417B1083	s/n 700417B1003
Firmware Version 1E89D-P	Firmware Version 1E89D-P
Magnavox MX50R	Magnavox MX50R
DGPS Receiver s/n 078	DGPS Receiver s/n 160
	Changed out 5/5 s/n 080

Correctors were received from the Montauk, NY, and Sandy Hook, NJ radiobeacons for the entire survey.

I.4 Daily performance checks were conducted using the Shipboard Data Integrity Monitor program (**"SHIPDIM"**, Version 2.1), according to section 3.4.5 of the FPM. See SHIPDIM PERFORMANCE CHECKS in *Separate III for daily system checks. The program **MONITOR** was run for more than 12 hours at Yankee Pier, Governors Island, NY, receiving the Sandy Hook, NJ beacon. The resulting scatter plot and histograms are included in ~~section~~ *SEPARATE III.

I.5 The application of calibration data to the raw positioning data was not required, since DGPS was the primary positioning system.

I.6 a. There were no unusual methods used to operate or calibrate electronic positioning equipment.

b. There were no equipment malfunctions.

c. DGPS reception from the Sandy Hook, NJ beacon was good for the entire survey operation.

d. The maximum allowed HDOP value of 3.74 was exceeded occasionally when GPS flyers occurred. This was generally at the beginning or end of a line, and the data was rejected.

e. Antenna positions were corrected for offset and layback, and referenced to the position of the DSF-6000N echo sounder transducer. These correctors are located in HDAPS Offset Table #1, and were applied during post-processing. A copy of Offset Table #1 is contained in *Separate III.

f. Offset and layback distances for the A-frame (tow point) are located in HDAPS Offset Table #1 and were applied during post-processing. These offsets, along with the cable length, towfish height, and depth of water, were used by the HDAPS system to compute the position of the towfish.

* DATA FILES WITH ORIGINAL FIELD SHEETS

J. SHORELINE

No shoreline is contained within the boundaries of this survey.

K. CROSSLINES

A combined total of 29.8 nautical miles of crosslines was acquired for this survey, representing 9.8% of the 303.8 nautical miles of the first 100% side scan mainscheme coverage.

An excessed plot of mainscheme soundings, superimposed with crosslines, was used to conduct mainscheme-to-crossline comparisons. Soundings at intersections were compared to all other soundings within a 5 mm (50 meter) radius. Based on this procedure, agreement between mainscheme and crossline soundings was found to be excellent. The majority of compared soundings fell within one foot of each other, with only an occasional difference of two feet noted.

L. JUNCTIONS

See also the Evaluation Report

L.1 H-10668 junctions with one contemporary survey. H-10683, a 1:10,000 survey completed in 1996, junctions the southern edge.

L.2 The overall agreement of all junctions was excellent: the average difference in soundings was less than 0.5 m (2 ft).

M. COMPARISON WITH PRIOR SURVEYS

See also the Evaluation Report

A comparison with prior surveys will be performed by the Atlantic Hydrographic Branch as part of the office verification process.

N. ITEM INVESTIGATION REPORTS

AWOIS No. 1641

Item Description: Unknown

Source: NM 2/44

AWOIS Position: 40°29'37.38"N, 073°52'14.48"W

Required Investigation: None

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): N/A - Mainscheme

Position Numbers: Mainscheme

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 160 meters, and hydro splits at a line spacing of 80 meters. No significant contacts were logged within a 200 meter radius. See AWOIS items 4440, 4441, 4442, and 4444 for investigations of USS *Turner* wreckage.

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. Data from this survey should be used to supersede all prior surveys.

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COMPILATION NOTES

AWOIS No. 1649

Item Description: Wreck (*Mistletoe*)

Source: CL46/30, H6463/39WD

AWOIS Position: 40°32'12.38"N, 073°51'10.48"W

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN 128

Position Numbers: 28623 - 28636

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 120 meters, hydro splits at a line spacing of 60 meters, and seven SEABAT investigations. Nothing resembling a 152ft wreck was observed on the side scan sonar records. The AWOIS item was located in an area of numerous contacts close to the charted fish haven. The shoalest contact in the area was logged as 11153.3S. This contact was investigated as development # 28 and was found to be a 8.~~4~~5 m (27~~8~~28 ft) sounding, HDAPS DP 848, approximately 480 meters southeast of the given position. The item appeared to rise off the bottom 3 m (10 ft).

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
SEABAT	8.~~4~~5	~~27~~28	848	40°32'03.385"	073°50"53.942"

Charting Recommendation

Hydrographer recommends charting the ~~27~~28 foot least depth, surrounded by a danger curve and annotated as a wreck (Wreck) in the position tabulated above.

****

COMPILATION NOTES

Delete 29 wk

ADD 28 wk

AWOIS No. 4298

Item Description: Obstruction cleared by Wire Drag

Source: FE215/76WD (FE1/76WD)

AWOIS Position: 40°30'01.58"N, 073°53'02.08"W

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN 127

Position Numbers: 28106-28117, 28118-28135

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 120 meters, hydro splits at a line spacing of 60 meters, and two SEABAT developments. Two significant contacts were detected in the immediate area. The closest logged contact was 16695.8P, located approximately 50 meters south. This contact was investigated as development # 81 and was revealed to be a 12.1 m (39 ft) sounding, HDAPS DP 800. A logged contact, 4188.4S, was found 200 meters east. This contact was investigated as development # 82 and revealed to be an 11.8 m (38 ft) sounding, HDAPS fix 28128+1. The item appeared to rise off the bottom approximately 1.0 m (3 ft).

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
SEABAT	12.1	39	800	40°30'00.649"	073°53'02.342"
Echo Sounder	11.87	38	28128+1	40°30'02.204"	073°52'54.449"

Charting Recommendation

Hydrographer recommends charting the 38 foot least depth, surrounded by a danger curve and annotated as an obstruction (Obstn) in the position tabulated above, and that the charted wire drag symbol with clearance of 36 feet surrounded by a danger curve and annotated as an obstruction in position 40°30'01.58"N and 073°53'02.08"W be removed.

Concur

****

COMPILATION NOTES

Revise 36 Obstn to 38 Obstn

AWOIS No. 4299

Item Description: Obstruction cleared by Wire Drag

Source: FE215/76WD (FE1/76WD)

AWOIS Position: ~~40°30'03.38"N, 073°47'18.88"~~ 40° 29' 33" 73° 47' 20.4

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN 127

Position Numbers: 28236-28248

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 160 meters, hydro splits at a line spacing of 80 meters, and one development with echo sounder and SEABAT lines at 5-meter line spacing (Development #87). SEABAT investigation found a 23.2 m (76 ft) sounding, HDAPS DP 810. Side scan sonar shows a manmade object approximately 6 meters square, with a smaller portion 3 meters across rising off the bottom about 1.9 meters (6 ft).

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
SEABAT	23.2	76	810	40°29'29.802"	073°47'19.308"

Charting Recommendation

Hydrographer recommends charting the 76 foot least depth, surrounded by a danger curve and annotated as an obstruction (Obstn) in the position tabulated above. ******NOTE**** See attached correspondence with HSD on AWOIS Listing discrepancy.** Concur

****

COMPILATION NOTES

Revise 75 Obstn to 76 Obstn

To: Stephen Verry@HYDRO@NCG24,John Humphrey@HYDRO@NCG24
Cc:
Bcc:
From: Samuel P Debow@AMC RU@noaa
Subject: AWOIS 4299
Date: Monday, January 27, 1997 12:32:59 EST
Attach:
Certify: Y
Forwarded by:

We are in the final stages of data submission for H-10668 (F-sheet) from NY. I have a question on the description of AWOIS 4299. The AWOIS "listed" position is different than the charted position of the item. The difference is in latitude (by 1/2 nm EXACTLY), both have the same longitude. Which one is right??? If the position of the item was changed to the verifier's position and charted as such, why does the AWOIS item still have the old position? We were required to do a 200 m search around the position. Which one?

I am assuming that the presently charted position is the correct position and that the AWOIS "listed" position is wrong. Please respond via E-mail for inclusion in the survey records.

Thanks,
Sam

To: Samuel P Debow@AMC RU@noaa
Cc:
Bcc:
From: Stephen Verry@HYDRO@NCG24
Subject: AWOIS NO. 4299 (FE215/76WD)
Date: Tuesday, January 28, 1997 12:26:03 EST
Attach:
Certify: N
Forwarded by:

Sam,

The correct position for AWOIS No. 4299 is the charted position, ie. latitude 40/29/33.0N, longitude 73/47/20.4W. The Area & Depth sheet from FE215/76WD shows this clearly. Verifier's Report contains the incorrect G.P. I will add wording to the AWOIS entry explaining the discrepancy between the two positions. The search RUDE performed around the charted obstruction was appropriate even though the AWOIS G.P. placed the search radius .5NM due north. Please contact me if there are any further questions or comments regarding this item.

Steve V.

AWOIS No. 4300

Item Description: Obstruction cleared by Wire Drag

Source: FE215/76WD (FE1/76WD)

AWOIS Position: 40°30'17.18"N, 073°49'12.88"W

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN 127

Position Numbers: 28196-28207

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 160 meters, hydro splits at a line spacing of 80 meters, and one SEABAT investigation. One significant contact was detected in the immediate area. The closest logged contact was 5198.5P, located approximately 30 meters northeast. This contact was investigated as development # 78 and was found to be a 15.9 m (52 ft) sounding, HDAPS fix 28205+1

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
Echo Sounder	~~15.9~~ 16.1	~~52~~ 53	28205+1	40°30'17.~~969"~~ 920	073°49'12.~~249"~~ .105

Charting Recommendation

Hydrographer recommends charting the ~~52~~ 53 foot least depth, surrounded by a danger curve and annotated as an obstruction (Obstn) in the position tabulated above, and that the charted wire drag symbol with clearance of 49 feet surrounded by a danger curve and annotated as an obstruction in position 40°30'17.18"N and 073°49'12.88"W be removed. Approved

****

COMPILATION NOTES

REVISE 49 Obstn TO 53 Obstn

AWOIS No. 4439

Item Description: Obstruction cleared by Wire Drag

Source: FE215/76WD (FE1/76WD)

AWOIS Position: 40°29'18.38"N, 073°52'16.48"W

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN N/A

Position Numbers: mainscheme only

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 130 meters, and hydro splits at a line spacing of 30 meters. No significant contacts were logged within the AWOIS search radius.

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. The charted wire drag symbol with clearance of 47 feet surrounded by a danger curve and annotated as an obstruction in position 40°29'18.38"N and 073°52'16.48"W should be removed.

Concur

****

COMPILATION NOTES

Delete 47 obstn

AWOIS No. 4440

Item Description: Wreck cleared by Wire Drag

Source: FE215/76WD (FE1/76WD)

AWOIS Position: 40°29'34.58"N, 073°52'38.68"W

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN N/A

Position Numbers: mainscheme only

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 130 meters, and hydro splits at a line spacing of 30 meters. No significant contacts were logged within the AWOIS search radius. Side scan sonar shows an area of scattered debris or rocky areas with no height above the bottom.

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. The charted wire drag symbol with clearance of 44 feet surrounded by a danger curve and annotated as a Wreck in position 40°29'34.58"N, and 073°52'38.68"W should be removed.

**********Concur

COMPILATION NOTES

Delete 44

WK

AWOIS No. 4441

Item Description: Wreck cleared by Wire Drag

Source: FE215/76WD (FE1/76WD)

AWOIS Position: 40°29'45.98"N, 073°52'13.48"W

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN N/A

Position Numbers: mainscheme only

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 130 meters, and hydro splits at a line spacing of 30 meters. No significant contacts were logged within the AWOIS search radius.

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. The charted wire drag symbol with clearance of 41 feet surrounded by a danger curve and annotated as a Wreck in position 40°29'45.98"N, and 073°52'13.48"W should be removed.

**********Concur

COMPILATION NOTES

Delete (41) OK

AWOIS No. 4442

Item Description: Wreck cleared by Wire Drag

Source: FE215/76WD (FE1/76WD)

AWOIS Position: 40°29'45.98"N073°52'23.08"W

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN 127

Position Numbers: 28136-28153

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 130 meters, hydro splits at a line spacing of 30 meters, and two SEABAT investigation. Side Scan Sonar showed an area of scattered debris which generally does not rise above the sea floor. Two significant contacts were investigated. Contact 15873.1P was investigated as development # 83 and was found to be a 13.1 m (43 ft) sounding. The contact rose approximately 1.5 m (5 ft) above the bottom.

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
SEABAT	13.1	43	802	40°29'45.179"	073°52'23.027"

Charting Recommendation

Hydrographer recommends charting the 43 foot least depth, surrounded by a danger curve and annotated as an obstruction (Obstn) in the position tabulated above, and that the charted wire drag symbol with clearance of 40 feet surrounded by a danger curve and annotated as a wreck in position 40°~~30'17.18"~~ 29'45.98"N and 073°~~49'12.88~~ 52'23.08"W be removed. Cancel

****

COMPILATION NOTES

Delete (40) ICK ADD (43) WK ~~Obstn~~ SJV 6/18/98

AWOIS No. 4443

Item Description: Obstruction cleared by Wire Drag

Source: FE215/76WD (FE1/76WD)

AWOIS Position: 40°29'47.18"N, 073°51'46.48"W

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN N/A

Position Numbers: mainscheme only

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 130 meters, and hydro splits at a line spacing of 30 meters. Side Scan Sonar showed an area of scattered debris with insignificant height above the sea floor.

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. The charted wire drag symbol with clearance of 48 feet surrounded by a danger curve and annotated as an Obstruction in position 40°29'47.18"N, and 073°51'46.48"W should be removed.

Concur

****

COMPILATION NOTES

Delete 48 Obstn

AWOIS No. 4444

Item Description: Obstruction cleared by Wire Drag

Source: FE215/76WD (FE1/76WD)

AWOIS Position: 40°30′05.78″N073°52′11.68″W

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN N/A

Position Numbers: mainscheme only

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 130 meters, and hydro splits at a line spacing of 30 meters. Side Scan Sonar showed an area of scattered debris with insignificant height above the sea floor.

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey* The charted wire drag symbol with clearance of 41 feet surrounded by a danger curve and annotated as an Obstruction in position 40°30′05.78″N, and 073°52′11.68″W should be removed. ** Concur w/ clarification

(margin: * Do not concur)

****

COMPILATION NOTES

Revise 41 Obstn to 40 Obstn

@ 40° 30′ 10.782 73° 52′ 07.329

AWOIS No. 9724

Item Description: PA Wreck dangerous to surface navigation

Source: LNM44/89

AWOIS Position: 40°31'30.00"N 073°53'30.00"W

Required Investigation: Full, 200% SSS, 500m radius

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN 141

Position Numbers: 29456-29458

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 130 meters, hydro splits at a line spacing of 30 meters, and two SEABAT investigations. Two significant contacts were detected within or near the search radius. Neither contact fit the AWOIS description. The closest logged contact was 24035.3P, located approximately 400 meters northwest. This contact was investigated as development # 136 and was revealed to be a 9.5 m (31 ft) sounding, HDAPS DP 942.

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
SEABAT	9.5 3	31 32	942	40°31'40.051"	073°53'41.106"

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. The charted position approximate (PA) wreck symbol, dangerous to surface navigation, in position 40°31'30.00"N, and 073°53'30.00"W should be removed.

Concur

****

COMPILATION NOTES

Delete ~~PA~~ PA

AWOIS No. 9725

Item Description: Obstruction

Source: CL1582/67, NM49/67

AWOIS Position: 40°32'30.00"N 073°50'30.00"W

Required Investigation: Information

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): N/A

Position Numbers: N/A

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar, hydro splits, and numerous SEABAT investigations. Copious significant contacts were detected on the sonargrams south of the southern limit of the fish haven. The contact plot shows well over a hundred contacts concentrated in the area. A detailed development (position #'s 24486-24497) and diver investigation on April 29, 1996 (DN 120) by De Bow and Thacker in the vicinity of AWOIS 1649 confirmed the existence of piles of rock, rubble, and precast concrete structures as listed in the AWOIS 9725 description. The large amount of debris made it impossible for divers to determine which structure had the least depth. Consequently, SEABAT developments were run to determine the least depths in the area.

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. It is also the recommendation of the Hydrographer that the southern boundary of the fish haven be extended to correspond with the numerous contacts developed during this survey.

****

COMPILATION NOTES

Not AWOIS

Item Description: Obstruction

Source: Side Scan Sonar Contact 22676.0P

AWOIS Position: N/A

Required Investigation: N/A

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN 128

Position Numbers: 28403-28423

Positioned Determined by: DGPS

Investigation Summary: The contact was initially discovered during mainscheme side scan sonar lines and developed with echo sounder and SEABAT lines run at a 5-meter line spacing (Developments #6). SEABAT investigations found a 9.5 m (31 ft) sounding, HDAPS DP 826. On both the echo sounder and SEABAT developments the object appears to be rising approximately 1.9 m (6 ft) above the bottom.

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
SEABAT	9.5	31	826	40°31'49.147"	073°51'33.022"

Charting Recommendation

Hydrographer recommends charting the 31 foot least depths, surrounded by a danger curve and annotated as an obstruction (Obstn) in the position tabulated above.

Concur

****

COMPILATION NOTES

Chart ADD 31' Obstn

Not AWOIS

Item Description: Obstruction

Source: Side Scan Sonar Contact 23268.3P

AWOIS Position: N/A

Required Investigation: N/A

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN 128

Position Numbers: 28568-28588

Positioned Determined by: DGPS

Investigation Summary: The contacts were initially discovered as during mainscheme side scan sonar lines and developed with echo sounder and SEABAT lines run at a 5-meter line spacing (Development 24). SEABAT investigation found a 9.6 m (31 ft) sounding, HDAPS DP 821. On both the echo sounder and SEABAT developments the object appears to be rising approximately 1.8 m (6 ft) above the bottom.

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
SEABAT	9.5	31	821	40°32'01.242"	073°52'07.635"

Charting Recommendation

Hydrographer recommends charting the 31 foot least depth, surrounded by a danger curve and annotated as an obstruction (Obstn) in the position tabulated above. Concur

****

COMPILATION NOTES

ADD 31' Obstn

Not AWOIS

Item Description: Obstruction

Source: Side Scan Sonar Contact 15173.9S

AWOIS Position: N/A

Required Investigation: N/A

Charts Affected: 12326, 12300

Investigation

Date (s)/DN (s): DN 127

Position Numbers: 28236-28248

Positioned Determined by: DGPS

Investigation Summary: The contacts were initially discovered during mainscheme side scan sonar lines and developed with echo sounder and SEABAT lines run at a 5-meter line spacing (Development #87). SEABAT investigation found a 23.2 m (76 ft) sounding, HDAPS DP 810. On both the echo sounder and SEABAT developments the object appears to be rising approximately 1.9 m (6 ft) above the bottom. Side scan sonar shows a manmade object approximately 6 meters square, of which a smaller portion 3 meters across rises off the bottom. This object appears to be that described in AWOIS 4299, and charted at this position. Another lower unidentifiable manmade object is shown in side scan records 35 m north, and was development # 86.

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
SEABAT	23.21	76	810	40°29'29.802"	073°47'19.308"

Charting Recommendation

Hydrographer recommends charting the 76 foot least depth, surrounded by a danger curve and annotated as an obstruction (Obstn) in the position tabulated above. Do Not Chart *

****

COMPILATION NOTES

* ITEM SAME AS AWOIS 4299, Do Not Chart

O. COMPARISON WITH THE CHART

See also DTE Evaluation Report

O.1 Five charts are affected by this survey:

Chart 12300
"Approaches to New York, Nantucket Shoals to Five Fathom Bank"
36th Ed. 7 October 1995
Scale: 1:80,000

Chart 12326
"Fire Island Light to Sea Girt"
43rd Ed. 18 November 1995
Scale: 1:80,000

Chart 12327
"New York Harbor"
88th Ed. 5 August 1995
Scale: 1:40,000

CHART 12350
JAMAICA BAY
55th ED., JUNE 24, 1995
SCALE 1:20,000

Chart 13003
"Cape Sable to Cape Hatteras"
41st Ed. 22 July 1995
Scale: 1:80,000

Chart 13006
"West Quoddy Head to New York"
28th Ed. 5 March 1994
Scale: 1:80,000

O.2 No Danger to Navigation reports were submitted for this survey.

O.3 Comparison of Soundings

a. The overall correlation between charted soundings and survey depths is excellent, with average differences of approximately one foot in flat and slightly sloping areas and no more than two to three feet in areas with irregular bottoms. Soundings that differed significantly are discussed in Section N. Correct

b. No deepening trends were found in the survey area. Some shoaler soundings were found in the northern part of the sheet, where fish haven debris was found extending more than a half mile south of the fish haven boundary. This area was littered with concrete pillars and rebar, as found on the sonar records and reported by ship's divers. It is the recommendation of the Hydrographer that the southern boundary of the fish haven be extended to correspond with the numerous contacts and developments conducted during this survey.

Correct

c. There are four hydrographic features of special note not previously addressed in prior sections which were not assigned as AWOIS items.

Charted Feature: 29 foot Obstruction (Awois 7516 Completed FE 312ss/1988)

Charted Position: 40°30'12.6" N, 073°53'56.0" W

Investigation Summary: Investigated using 200% side scan sonar. one significant contact (4613.9P) resembling a small rubble pile in surrounding depths of 34 feet was detected close to the feature. Since the contact height was less than 1 meter it was not further investigated.

Charting Recommendation

Since the field unit had no prior information on the item the Hydrographer recommends retaining the charted 29 foot Obstruction, surrounded by the danger curve, in position 40°30'12.6" N, 073°53'56.0" W.

****

COMPILATION NOTES

Retain 29 Obstn

Charted Feature: 36 foot Obstructions (Awois 7509 completed 12 31 88 / 1988)

Charted Position: 40°29'26.2" N, 073°54'15.8" W

Investigation Summary: Investigated using 200% side scan sonar and developed with SEABAT. One significant contact (2328.3P) with a contact height of 1.4 meters resembling a manmade object was developed.

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
SEABAT	11.0	36	808	40°29'31.113"	073°54'18.537"

Charting Recommendation

Hydrographer recommends charting the 36 foot least depth, surrounded by a danger curve and annotated as an obstruction (Obstn) in the position tabulated above. Concur w/ classification

****

COMPILATION NOTES

Delete 39 36 obstns ADD 36 obstn (chart 12337)

Revise 36 obstns to 36 obstn (chart 12326)

Charted Feature: 41 foot Wreck

Charted Position: 40°30′16.9″ N, 073°50′34.1″ W

Investigation Summary: Investigated using 200% side scan sonar. two significant contacts (5409.1P and 17534.8S) resembling manmade objects in surrounding depths of 50 feet were detected close to the feature. Since the contact heights were less than 1 meter (0.6 m and 0.5 m respectively) they were not further investigated.

Charting Recommendation

Since the field unit had no prior information on the item the Hydrographer recommends retaining the charted 41 foot Wreck, surrounded by the danger curve, in position 40°30′16.9″ N, 073°50′34.1″ W.

Do not concur

****

COMPILATION NOTES

SEE EVALUATION REPORT SECTION O.3.c

Delete 41 Wk

(Dwg 7147 ACS 11/ES24/1980 EE Completed)

Charted Feature: 51 foot Obstruction

Charted Position: 40°29′19.3″ N, 073°51′18.0″ W

Investigation Summary: Investigated using 200% side scan sonar. One significant contact (14091.3P) resembling a manmade object in surrounding depths of 57 feet, with little or no height, was detected close to the feature. Since the contact height was less than 1 meter it was not further investigated.

<u>Charting Recommendation</u>

Since the field unit had no prior information on the item the Hydrographer recommends retaining the charted 51 foot Obstruction, surrounded by the danger curve, in position 40°29′19.3″ N, 073°51′18.0″ W.

Concur

****

<u>COMPILATION NOTES</u>

(Areas 4397 NOS H10224/1986 Completed)

Retain (51) Obstn

P. ADEQUACY OF SURVEY

See also the Evaluation Report

This survey is complete and fully adequate to supersede any and all prior survey data in common areas, except as noted in Section O.

Q. AIDS TO NAVIGATION

No floating or non-floating aids to navigation exist within the limits of this survey.

R. STATISTICS

R.1 a.	Number of Positions	29226
b.	Lineal Nautical Miles of Sounding Lines	771
	Nautical Miles of Survey With the Use of Side Scan Sonar	606
	Nautical Miles of Survey Without the Use of Side Scan Sonar	165
R.2 a.	Square Nautical Miles of Hydrography per 100% of Coverage	24.1
b.	Days of Production	24
c.	Detached Positions	2
d.	Bottom Samples	60
e.	Tide Stations	1
g.	Velocity Casts	8
j.	SEABAT Item Investigations	192

S. MISCELLANEOUS

See also the Evaluation Report

S.1 a. No evidence of shoaling was found during this survey.

b. No evidence of anomalous tides or tidal current conditions was found during this survey.

S.2 Sixty bottom samples were obtained during this survey. As directed by the Project Instructions, all bottom samples were inspected and recorded, but none were submitted to the Smithsonian Institution.

T. RECOMMENDATIONS

SEE ALSO DAE EVALUATION REPORT

T.1 No additional field work is required.

T.2 The hydrographer is aware of no construction or dredging that will affect results of this survey.

T.3 No further investigation of the survey area is recommended.

U. REFERRAL TO REPORTS

Title	Transmittal Information
Landmarks and Nonfloating Aids to Navigation Report, New York Harbor	Atlantic Hydrographic Branch N/CG244 Atlantic Marine Center Transmittal RU-101-96 Dated 1 October 1996

This report and the accompanying field sheets are respectfully submitted.

Jonathan M. Klay, LT, NOAA
Field Operations Officer
NOAA Ship RUDE

APPENDIX III

LIST OF HORIZONTAL CONTROL STATIONS

No horizontal control stations were needed for this survey since Differential GPS was employed exclusively for all positioning control. The geographic positions for the Differential GPS radio beacons used during this survey are as follows:

Sandy Hook, NJ	40°28'17.3412"N 074°00'41.7426"W
Montauk Point, NY	41°04'02.0814"N 071°51'38.4588"W

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship RUDE S-590
439 W. York Street
Norfolk, VA 23510-1114

May 15, 1997

Meomorandum For: Commander Nicholas Perugini, NOAA
Chief, Atlantic Hydrographic Branch

From: Commander Samuel De Bow, NOAA
Commanding Officer, NOAA Ship RUDE

Subject: Additional Field Work on H-10668

On May 13, 1997 (DN 133) RUDE conducted SEABAT 9003 developments on the 11 echosounder depths requiring further development from H-10668 (Attached). For the record, nothing was observed during data acquisition which could support the anomalous soundings. Many of the spikes were probably fish and should never have been inserted.

A data package and transmittal letter will be forwarded as soon as possible.

May 21, 1997

Memorandum for: Commander Nicholas Perugini, NOAA
Chief, Atlantic Hydrographic Branch

Memorandum from: LT Jonathan M. Klay, Executive Officer
NOAA Ship RUDE

Subject: H-10668 field work

Additional echosounder soundings sent to RUDE were developed using both dual-beam and multibeam sonar systems. Positions of the original soundings were made into a target file for HYPACK, and one to three lines were ran over each item. Aside from some returns from fish, no soundings above the flat bottom were found.
Plots of the multibeam swath coverage are included. These were plotted from MapInfo, using tools originally designed for the SEABAT 9001. With the wider (60° vs. 90°) swath width of the 9003, they are very conservative. SEABAT multibeam was collected and archived. An operator monitored 2- and 3-dimensional displays of SEABAT output while on-line to check for shoal soundings.

advised to use caution while transitting these areas.

SUMMARY OF DREDGING / CONSTRUCTION OPERATIONS STILL IN EFFECT

The following is a listing of marine construction and dredging projects still in effect in the First District. All mariners are advised to use caution in these areas. The LNM REF column refers to the LNM in which the article first appears and where detailed information may be obtained. The dates listed for completion are tentative. An asterisk in the left margin marks new information.

LOCATION	SUBJECT	COMPLETION DATE	LNM REF
NY/East River/Roosevelt Island	Construction	05/01/96	51/95
ME/Cape Neddick Harbor/York Harbor Channel	Dredging	06/01/96	11/96
ME/York Harbor	Dredging	06/01/96	10/96
NY/Montauk Harbor	Construction	06/25/96	40/95
NY/East River/Wallabout Bay	Dredging	07/15/96	07/96
MA/Nantucket Sound/Hyannis Inner Harbor	Dredging	11/15/96	43/95
MA/Acushnet River/New Bedford	Dredging	10/02/98	42/95

MA – OFF/SHORE – The U.S. Navy advises of daily firing exercises from 6:00 am to 7:00 pm in an area bounded by the following: 41 02.5N, 70 42W; to 41 07N, 70 22W; to 41 05N, 70 10W; 41 00N, 69 55W; to 40 48N, 69 36W; to 40 30N, 69 36W; to 40 30N, 70 42W, thence to beginning. Chart(s): 13003, 13006, 13200 LNM 16/96 (CGD1)

NY – JONES INLET – The following uncharted aids to navigation are watching properly
Jones Inlet Lighted Buoy 2 (LLNR 30910)
Jones Inlet Buoy 3 (LLNR 30920)
Jones Inlet Lighted Buoy 4 (LLNR 30925)
Chart(s): 12352 LNM 12/96 (CGD1)

MA – OFF/SHORE – STELLWAGEN BANK NATIONAL MARINE SANCTUARY – The National Ocean Service, U.S. Geological Survey, and Canadian Hydrographic Service will be conducting bathymetric surveys in the central and northern parts of Stellwagen Bank National Marine Sanctuary and the southern part of Jeffreys Ledge during April, 1996. The survey will be conducted by the CHS ship FREDERICK G. CREED. This vessel will operate out of Gloucester, MA from 5:00 AM to 8:00 PM daily. Straight navigation tracklines are required, therefore,.mariners are requested to proceed with caution while transitting this area. Chart(s): 13003, 13006, 13009 LNM 16/96 (CGD1)

MA – OFF/SHORE – GEORGE'S BANK – The Coast Guard has received a report of a possible submerged buoy in position approximate 40°58.0'N, 67°19.1'W. This buoy would be a 5 foot in diameter yellow lighted buoy, flashing every 4 seconds. The buoy is marked USC. Please contact the nearest Coast Guard unit with any sightings. Mariners are requested to proceed with caution while transitting this area. Chart(s): 13003, 13006, 13009 LNM 16/96 (CGD1)

ME – SACO RIVER – A submerged buoy hull is located in the vicinty of Saco River Buoy 8 (LLNR 8010). A follow up general article will be run when the submerged buoy hull has been recovered. Chart(s) 13287 LNM 16/96 (CGD1)

MA – PROVINCETOWN HARBOR – 13 FOOT CHANNEL – Obstructions, mooring, possibly active and derelict, wire and cable are believed to exist within the channel limits and above the design depth of the subject project. Mariners are advised to reduce vessel speed in the area and proceed with caution. Further notices will be issued when additional information is available.
Chart(s):13249 LNM 16/96 (CGD1)

ME – FORE RIVER – PORTLAND – Dredging operations are currently taking place. Dredging barges and equipment will be present Monday – Friday, 6:45 –5:00., starting on or about 1 April 1996 and continuing for approximately two years. Mariners are requested to provide one to two hour advance notice with a 30 minute confirmation to allow the contractor to remove construction barges and equipment from the main channel, please call the Cianbro Construction office at (207) 828–8366, the Tug "FANNY J" at (207) 233–1454 or by radio on channel 13. Mariners are requested to exercise caution while transiting the area. Chart(s): 13292 LNM 16/96 (CGD1)

NY – JONES INLET – Construction will take place on or about 1 April 1996 and continue for approximately two years. A work boat will be present Monday – Friday, 7:00 – 4:00. During the project the jetty will be stripped of it's stone work, and mariners may experience unusual tidal influences and wave actions not experienced previously. There may be times when the existing jetty will be below the waterline. Construction workers will be working at the waters edge, and mariners should adjust their speed accordingly. Public access to the jetty during the construction is prohibited. Mariners are requested to proceed with caution. For further information contact Stan Mickalosi at (212) 264–9030. Chart(s) 12352 LNM 16/96 (CGD1)

NH – SEACOAST – ISLE OF SHOALS – The University of New Hampshire will be conducting an aquaculture experiment from 1 April to 31 August 1996 in (PA) 42°52.08'N, 070°37.27'W. The experiment will be marked by one or more large black spar buoys and one or more lighted yellow buoys. Mariners are advised to stay well clear of this area due to the possibilty of under water obstructions to a distance of 700 ft. Chart(s): 13278 LNM 16/96 (CGD1)

NY – LOWER BAY – The NOAA Ship RUDE will be conducting hydrographic surveys in the Lower Bay and its approaches from March – July 1996 The purpose of these surveys is to update the existing nautical charts of the region. The survey area extends northward from Raritan Bay Channel Lighted Buoy 1 (LLNR 36110) 5.0 nautical miles southeast of Sandy Hook to the Verrazano–Narrows Bridge, and as far west as the Raritan Bay West Reach. RUDE is a 90 ft white–hulled vessel with a blue NOAA logo on the bow. During operations the ship tows a side scan sonar approximately 30 yards astern, and displays the "Restricted in Ability to Maneuver" lighting configuration at night. Mariners are requested to give RUDE a wide berth as the ship often makes erratic maneuvers during survey operations. The vessel monitors channels 13 and 16. Chart(s): 12401, 12402 LNM 16/96 (CGD1)

NJ – UPPER NEW YORK HARBOR –Construction will take place at the Liberrty Landing Marina located in the Morris Canal Tidewater Basin along the northern edge of Liberty State Park. Work will begin 13 April 1996 and continue until the end of May. Hours of operation will be Monday – Friday 8:00 AM – 6:00 PM. There will be a barge with a crane on site. For further information please contact Bruce Boyle, construction manager at (201) 985–8000.Chart(s): 12334 LNM 16/96 (CGD1)

ME – UPPER KENNEBEC RIVER – All floating aids in the area shall be considered unreliable for navigation due to the breakup of ice. The Coast Guard plans to work these aids the third week in May.Chart(s): 13286 LNM 16/96 (CGD1)

NY – HUDSON RIVER – Construction will take place on the 112th Bridge 29 April 1996 – October 1996. Hours of operation will be Monday – Saturday 6:00 AM – 6:00 PM, possibly until 10:00 PM. The vessel MAME FAYE will be there as well as miscellaneous other tugs. There also will be

APPENDIX VII

APPROVAL SHEET

LETTER OF APPROVAL

REGISTRY NO. H-10668

Field operations contributing to the accomplishment of this Navigable Area survey were conducted under my direct supervision with frequent personal checks of progress and adequacy. All field sheets and reports were reviewed in their entirety and all supporting records were checked as well.

This survey was completed with 200% side scan sonar coverage and is more than adequate to supersede ALL prior surveys in common areas. The survey is considered complete and adequate for nautical charting.

Samuel P. De Bow

Samuel P. De Bow, CDR, NOAA
Commanding Officer
NOAA Ship RUDE

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: December 13, 1996

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-C399-RU

HYDROGRAPHIC SHEET: H-10668

LOCALITY: New York, Approaches to New York Harbor, 5.0 Nautical Miles Southeast of Rockaway Point

TIME PERIOD: April 4 - May 21, 1996

TIDE STATION USED: 853-1680 Sandy Hook, N.J.
Lat. 40° 28.0'N Lon. 74° 00.6'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.481 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: zone# SH1
Refer to attachments for zoning information

Note: Times are tabulated in Greenwich Mean Time.

CHIEF, TIDAL ANALYSIS BRANCH

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER: H-10668

Name on Survey	A On chart no. 12326, 12300, 13006	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	
NEW YORK (title)	X		X							1
NEW YORK HARBOR (title)	X									2
NORTH ATLANTIC OCEAN	X		X							3
ROCKAWAY POINT (title)	X		X							4
										5
										6
										7
										8
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										18
										19
				Approved:						20
										21
				Curtis C. Loy						22
				Chief Geographer						23
				MAY 28 1997						24
										25

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/CS33-54-98

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 Highway
Silver Spring, MD 20910-3282

DATE FORWARDED

June 16, 1998

NUMBER OF PACKAGES

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.

H10668

New York, North Atlantic Ocean
5 NM SE of Rockaway Point

Tube containing:

1 Mylar Smooth Sheet

1 Mylar H-Drawing for NOS Chart 12326
1 Mylar H-Drawing for NOS Chart 12327
1 Mylar H-Drawing for NOS Chart 12350

1 Paper Composite plot for NOS Chart 12326
1 Paper Composite plot for NOS Chart 12327
1 Paper Composite plot for NOS Chart 12350

1 Descriptive Report
3 Drawing History Forms #76-71 for NOS Charts 12326, 12327, 12350

FROM: *(Signature)*

Maxine Fetterly

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

Atlantic Hydrographic Branch
439 W. York Street
Norfolk, VA 23510-1114

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

*U.S.GPO:1983-0-664-006/1192

This form was electronically produced by ELite Federal Forms' Forms Manager

06/16/98

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H10668

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	29226
NUMBER OF SOUNDINGS	29226

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	65	04/27/97
VERIFICATION OF FIELD DATA	94.50	06/04/98
EVALUATION AND ANALYSIS	24	
FINAL INSPECTION	16	03/23/98
COMPILATION	132.50	06/15/98
TOTAL TIME	332	

ATLANTIC HYDROGRAPHIC BRANCH APPROVAL 05/22/98

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10668 (1996)

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)
NADCON, version 2.10
MicroStation 95, version 5.05
SITEWORKS, version 02.01
I/RAS B, version 5.01

The smooth sheet was plotted using an Hewlett Packard DesignJet 350C plotter.

H. CONTROL STATIONS

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 North American Datum of 1983 (NAD 83) and the North American Datum of 1927 (NAD 27).

To place the survey on the NAD 27 datum, move the projection lines 0.383 seconds (11.815 meters or 1.18 mm at the scale of the survey) north in latitude and 1.516 seconds (35.682 meters or 3.57 mm at the scale of the survey) east in longitude.

L. JUNCTIONS

H10683 (1996) 1:10,000 to the south

A standard junction was effected between the present survey and H10683 (1996). Depths are in excellent agreement.

There are no contemporary surveys to the north, east or

west. Present survey depths are in harmony with the charted hydrography in these areas.

M. COMPARISON WITH PRIOR SURVEYS

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

O. COMPARISON WITH CHARTS 12326 (43rd Edition, Nov 18/95)
12327 (88th Edition, Aug 5/95)
12350 (55th Edition, June 24/95)

HYDROGRAPHY

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

O.3.c. Comparison of Soundings

1. Automated Wreck and Obstruction Information System (AWOIS) Item #7942, a charted wreck with a depth of 41 feet (12^{5} m), in Latitude 40°30'16.9"N and Longitude 73°50'34.1"W, originates with H10224 (1986-88). The charted wreck was investigated by the field unit during survey operations with negative results. It is recommended that this feature be removed from the chart.

2. The following uncharted obstructions were located by the field unit:

ft/m	Latitude (N)	Longitude (W)
31/9^{4}	40°32'12.28"	73°51'22.58"
33/10^{1}	40°31'50.73"	73°50'05.78"
35/10^{8}	40°31'26.65"	73°50'54.67"
42/12^{8}	40°30'38.27"	73°50'37.93"

43/13[3]	40°30'32.47"	73°51'03.82"
62/19[1]	40°29'58.06"	73°48'07.58"

It is recommended that the above obstructions be charted as shown on present survey.

3. The following uncharted obstructions were located by the field unit:

ft/m	Latitude (N)	Longitude (W)
31/9[6]	40°32'09.99"	73°50'40.83"
31/9[5]	40°32'11.99"	73°50'35.97"
31/9[6]	40°32'12.79"	73°50'34.56"

Due to the scale of the chart 12326, it is recommended that the 31 foot obstruction in Latitude 40°32'11.99"N and Longitude 73°50'35.97"W, be charted with a danger curve.

4. The following uncharted obstructions were located by the field unit:

ft/m	Latitude (N)	Longitude (W)
30/9[2]	40°31'57.86"	73°51'00.76"
28/8[6]	40°31'55.09"	73°50'54.75"
28/8[7]	40°31'54.62"	73°50'51.05"

Due to the scale of the chart 12326, it is recommended that the 28 foot obstruction in Latitude 40°31'55.09"N and Longitude 73°50'54.75"W, be charted with a danger curve.

5. The following uncharted obstructions were located by the field unit and are located within the boundaries of the charted Fish Haven:

ft/m	Latitude (N)	Longitude (W)
29/9[0]	40°32'14.80"	73°50'08.16"
30/9[1]	40°32'15.10"	73°50'02.18"

No change in charting status is recommended.

6. A charted Dump Site, in Latitude 40°32'00"N, Longitude 73°54'00"W, covers a small area in the northwest corner of the survey area. Soundings in the common area should reflect the present survey.

The present survey is adequate to supersede the charted hydrography.

CONTROLLING DEPTHS

There are no conflicts between the present survey depths and the charted tabulation for Ambrose Channel.

P. ADEQUACY OF SURVEY

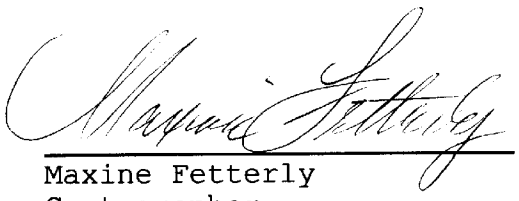
This is an adequate hydrographic/side scan sonar survey. No additional work is recommended.

S. 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 charts were used for compilation of the present survey:

12326 (45th Edition, Jan 10/98)
12327 (92nd Edition, Dec 20/97)
12350 (55th Edition, June 24/95)



Maxine Fetterly
Cartographer
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H10668

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.

Robert R. Hill Date: 3-23-98

Robert R. Hill Jr.
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: 5-22-98

Nicholas E. Perugini,
Commander, NOAA
Chief, Atlantic Hydrographic Branch

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Final Approval:

Approved: Andrew A. Armstrong III Dated: June 30, 1998

Andrew A. Armstrong, III
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. H 10668

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
12326	6/12/98	[illegible]	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
12327	6/9/98	[illegible]	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
12350	6/4/98	[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
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			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.