H10750

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-10-2-97

Registry No.: H10750

LOCALITY

State: New Jersey

General Locality: Approaches to New York

Sublocality: 5 NM East of Sea Bright

19 97

CHIEF OF PARTY
LCDR D. A. Cole

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DATE: JAN 6 1999

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NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTER NO. H-10750
	HYDROGRAPHIC TITLE SHEET	
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-10-2-97

State: New Jersey

General locality: Approaches to New York Harbor

Locality: 5.0 NM East of Sea Bright, ~~NJ~~

Scale: 1:10,000 Date of survey: May 19 - June 17, 1997

Instructions dated: March 04, 1996; February 27, 1997 Project No.: OPR-C399-RU-97

Vessel: NOAA Ship RUDE, S-590, EDP 9040

Chief of party: Lieutenant Commander David A. Cole, NOAA

Surveyed by: CDR SP DeBow; LCDR DA Cole; LTs JM Klay, JG Evjen, JL Riley; ST MT Lathrop

Soundings taken by:(echo sounder,hand lead,pole): Raytheon DSF-6000N echo sounder, SEABAT 9003

Graphic record scaled by: JGE, MTL, LT DW Haines, RL Keane

Graphic record checked by: JMK, JGE, MTL, DWH

Protracted by: _____ Automated plot by: HP DESIGNJET 2500 PLOTTER (AMC)

Verification by: ATLANTIC HYDROGRAPHIC BRANCH PERSONNEL

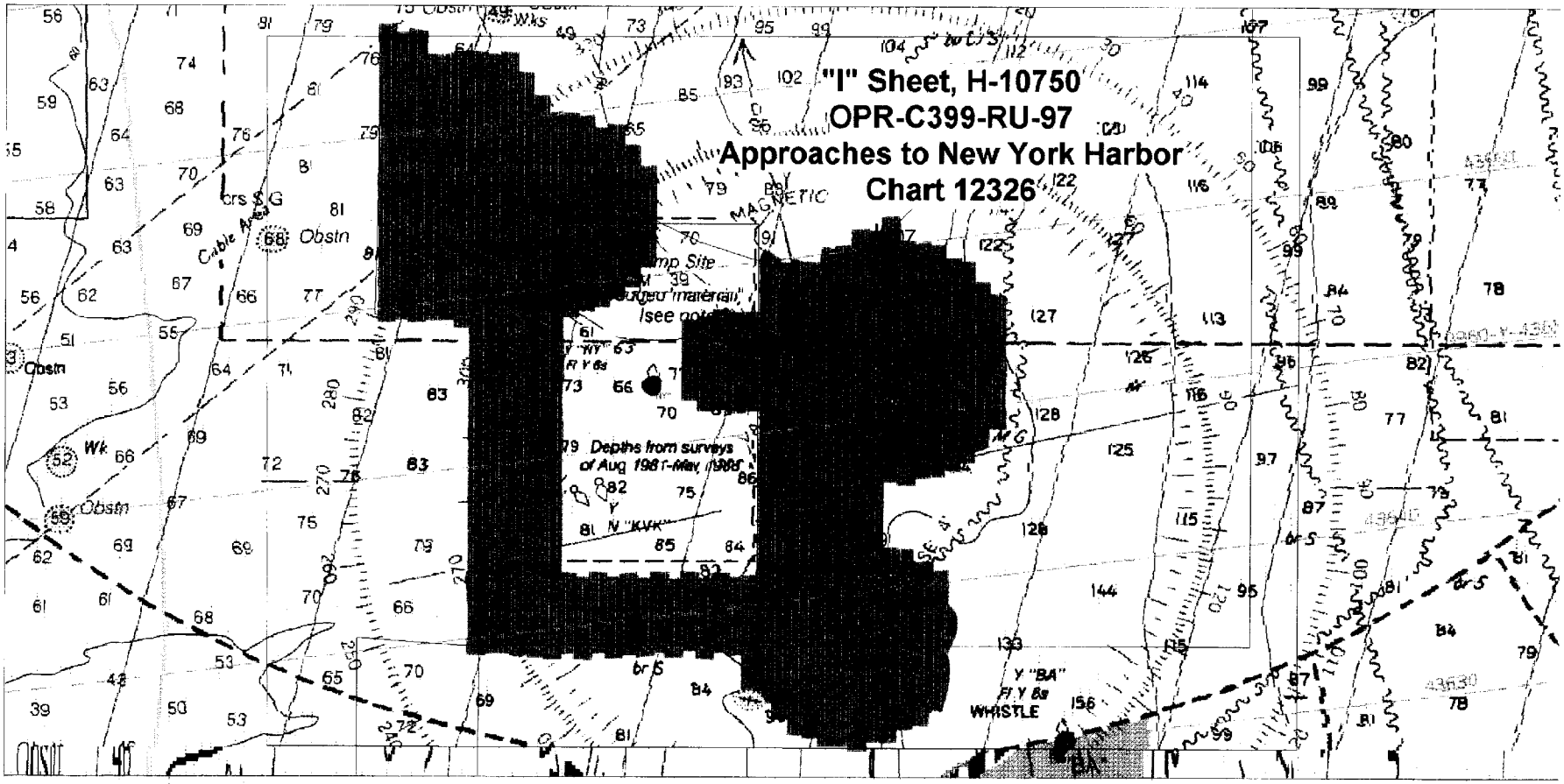
Soundings in (fathoms, feet, or meters at MLW or MLLW): meters at MLLW

REMARKS:

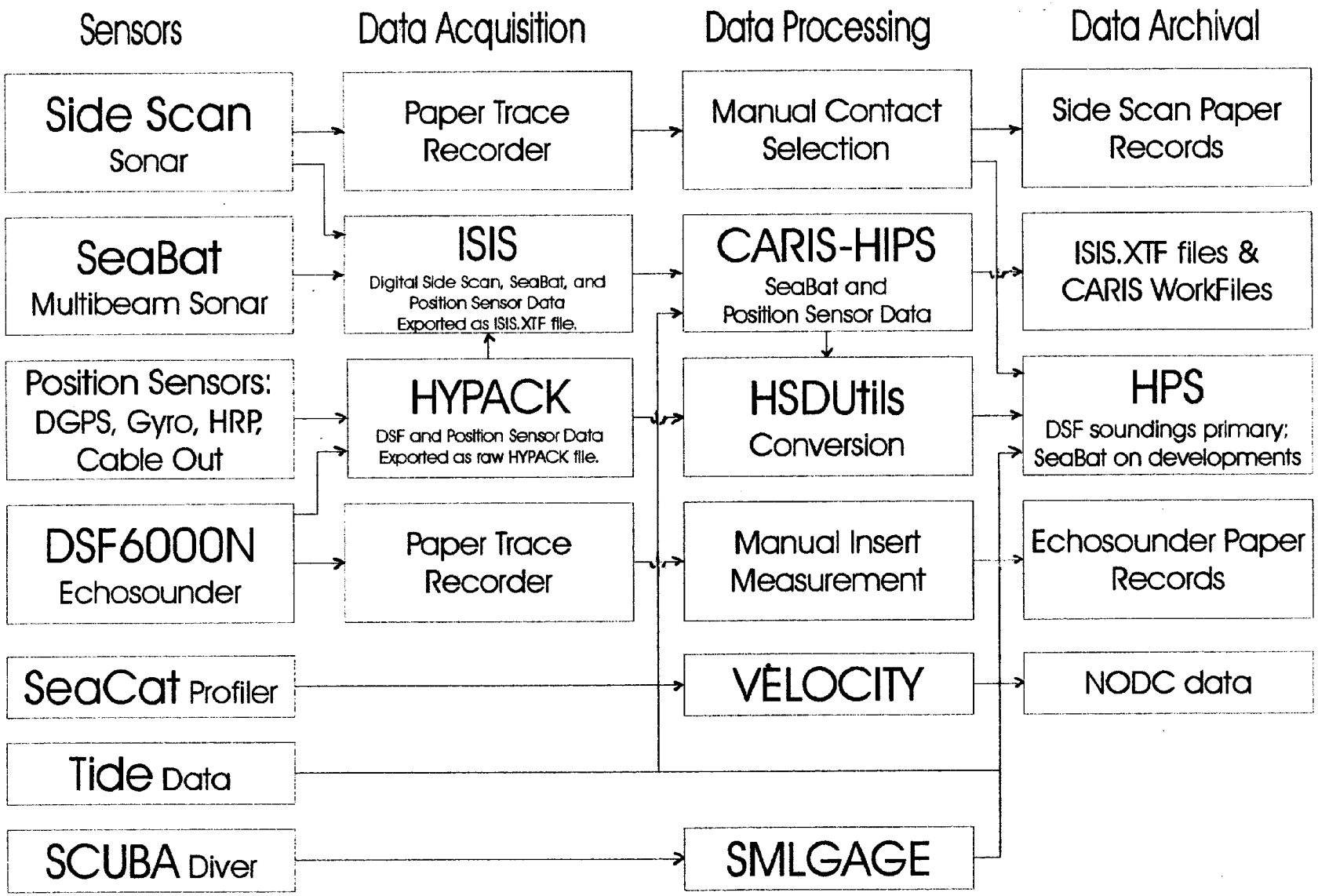
All times recorded in UTC.

NOTES IN RED WERE MADE DURING OFFICE PROCESSING

AWOIS/SMRF ✓ 12/2/98 SJV


"I" Sheet, H-10750
OPR-C399-RU-97
Approaches to New York Harbor
Chart 12326
MAGNETIC
Depths from surveys
of Aug 1987-May 1988
Obstn
Wk
WHISTLE

NOAA Ship RUDE: January - July 1997 Data Flowchart



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APPROVAL SHEET

SEPARATES

A. PROJECT

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

A.2 The original instructions are dated March 04, 1996.

A.3 There has been one amendment to the instructions:
Change #1, dated February 27, 1997.

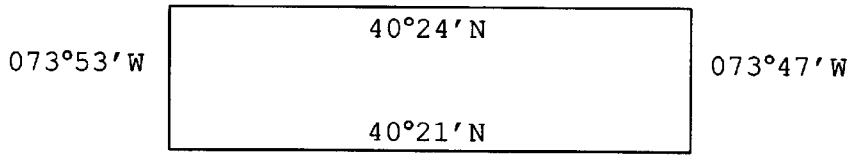
A.4 This survey is designated registry number H-10750.

A.5 This survey responds to requests from the U.S. Coast Guard, Port Authority of New York and New Jersey, and the Sandy Hook Pilots. A large volume of deep draft (42-foot) traffic uses the area. The area was last surveyed by NOAA Ship WHITING in 1988 and United States Army Corps of Engineer (USACE) contractors in 1997.

B. AREA SURVEYED

B.1 The area surveyed is an 8.0 square nm region located 2 nm north-northwest from the north end of the Barnegat to Ambrose traffic lane. The survey area contains two dump sites used by the USACE to dispose of dredge spoil. The rectangular "mud" dump in the center of the sheet was excluded from the survey at the direction of N/CS3 because it is an active dump site.

B.2 The survey is comprised of one sheet with the following approximate boundaries:



B.3 Data acquisition for this survey began on May 19, 1997 (DN 139) and ended on June 17, 1997 (DN 168).

C. SURVEY VESSELS

C.1 All hydrography, side scan, and multibeam investigations were conducted from NOAA Ship RUDE, S-590, EDP# 9040.

C.2 The transducer for the multibeam sonar was deployed on a pivoting arm mounted on the port side, approximately amidships. The arm was rotated into the operating position only during times of data acquisition.

times per second, forming a continuous swath of multibeam coverage along the vessel trackline. The effective swath width is approximately 2.5 times the water depth. For this survey, the outer three beams were not processed, reducing the effective swath width to 102° (3° X 34 beams). Proper overlap between multibeam sonar coverage lines was verified using a conservative swath width assumption of 100°.

SeaBat depth data were monitored using ISIS during acquisition and processed using CARIS-HIPS Data Cleaning Programs. Digital multibeam depth profiles were visually reviewed and fliers were identified and manually flagged as "rejected"; no SeaBat quality flags were used to automatically "reject" data. Vessel navigation data from DGPS and attitude data from heave, pitch, roll, and gyro sensors were similarly displayed and manually cleaned (see Sections G and I.) Navigation data were additionally checked with a 2.5 knot speed jump detector.

After hydrographer review and cleaning, the depth, navigation, and attitude data were merged with sound velocity, tide, and vessel configuration data to compute the true depth and position of each beam footprint. These processed data were excessed by selecting shoal soundings at a nominal density of 3 meters X 3 meters and evaluated by the hydrographer in CARIS Workfile Processing. Finally, the CARIS Workfile soundings were shoal-bias excessed at 15 meters x 15 meters and transferred into HPS (using HSDUTILS) and MapInfo databases.

Note that excessing was accomplished using predicted tide values. Shoal soundings selected through CARIS may be incorrect due to anomalous predicted tides. Large differences between predicted and verified tides may justify reapplication of tides to the entire CARIS-HIPS dataset to ensure correct selection of least depths for transfer to HPS.

G. CORRECTIONS TO SOUNDINGS

G.1a Sound velocity and refraction were computed from conductivity, temperature, and depth measurements acquired with a SeaBird SBE19 SEACAT Profiler (s/n 196723-1251). Data quality assurance tests using the CAT program were performed for each cast. The profiler is calibrated at the beginning and end of each field season.

The following casts were performed for this survey:

Velocity Cast #	DN	Applied to Days
44	139	139, 140, 141
47	148	148
48	149	149
52	161	161, 163
53	161	161
54	162	162
57	168	167, 168

Sound velocity correctors for high and low frequency DSF data were computed using VELOCITY and applied using HPS. Sound velocity and refraction effects were applied to the SeaBat data using CARIS-HIPS, incorporating NOAA's REFRACT algorithm. See Separate IV for data records.*

G.1b A DSF-leadline direct comparison was conducted on June 05, 1997. Leadline and DSF soundings compared satisfactorily. See Separate IV for data records.* SeaBat and DSF soundings also compared satisfactorily.

G.1c Sensor offsets and transducer static drafts were measured during the December 1996 dry-dock period. Sensor offsets were stored in HPS Offset Tables and the CARIS-HIPS Vessel Configuration File for use in data processing. See Separate IV for data records.*

G.1d Transducer dynamic draft was measured on February 20, 1997. Dynamic draft correctors were stored in HPS Offset Tables and the CARIS-HIPS Vessel Configuration File for use in data processing. See Separate IV for data records.*

G.1e Heave, pitch, and roll data were acquired with a TSS Model 335B Motion Sensor (s/n 542). A preseason checkout of the sensor was successfully conducted in accordance with the TSS-335B Operating Manual. Heave data were applied to DSF vertical beam data. Heave, pitch, and roll data were applied to SeaBat multibeam data.

G.1f Vessel heading data were acquired with a Sperry Mark 32 Gyrocompass (s/n 224). Heading data were used to compute the multibeam transducer azimuth and position.

G.1g Multibeam heave, pitch, roll, and heading sensor data were adjusted using biases as determined during a patch test completed on April 02, 1997. See the HIPS Vessel Configuration File in Separate III for data records.*

G.2 No unusual or unique methods or instruments were used to correct echo soundings.

G.3 The vertical reference surface for this survey is Mean Lower Low Water. Tide correctors were developed by applying a -30 minute time correction and a x0.97 range ratio to the verified tides from Sandy Hook, NJ (Station 853-1680). Verified tides were computed in HPS and applied to DSF and SeaBat data.

G.4 The diver least depth gage was not used for this survey.

G.5 No significant systematic errors were detected.

* FILED WITH THE ORIGINAL FIELD RECORDS

In HPS, only tide reapplication processing is permissible on multibeam data. If necessary, all other vertical correctors and horizontal offsets should be reapplied to multibeam data using CARIS software. However, if tide reapplication is necessary, it should be done to the entire CARIS multibeam dataset to ensure the correct least depths are identified for transfer to HPS.

H. CONTROL STATIONS SEE ALSO THE EVALUATION REPORT.

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

I. HYDROGRAPHIC POSITION CONTROL

I.1 Positioning for this survey was obtained from the NAVSTAR Global Positioning System (GPS) augmented with the U.S. Coast Guard Differential GPS (DGPS) service. The following differential beacons were used:

System A (primary): Sandy Hook, NJ, 286 KHz, 200 bps
System B (check): Montauk, NY, 293 KHz, 100 bps

I.2 Accuracy requirements were met as specified by the Hydrographic Manual, sections 1.3 and 3.1, and Field Procedures Manual, section 3.4.

I.3 GPS and differential GPS signals were acquired with the following equipment:

System A (Primary System, Port mount):
Ashtech GPS Sensor, s/n 700417B1083, Firmware Version 1E89D-P
Magnavox DGPS Receiver MX50R, s/n 078
System B (Check System, Starboard mount):
Ashtech GPS Sensor, s/n 700417B1003, Firmware Version 1E89D-P
Magnavox DGPS Receiver MX50R, s/n 160

System A was used exclusively except on day 161, when system B was used due to intermittent service from the primary beacon.

I.4 The GPS Horizontal Dilution of Precision (HDOP) was recorded during data acquisition and manually checked using the Detailed Data Abstract in HPS. The computed maximum allowable HDOP of 3.3 was rarely exceeded. Survey positions were reviewed with on-screen zoomable trackplots using MapInfo.

DGPS performance checks were conducted daily using SHIPDIM. A 12-hour monitor of the DGPS beacons was also performed using SHIPDIM. See Separate III for data records. FILED WITH THE ORIGINAL FIELD RECORDS

I.5 Calibration data are not required for differential GPS.

I.6a There were no unusual methods used to operate the positioning equipment.

I.6b There were no positioning equipment malfunctions.

I.6c There were no unusual atmospheric conditions noted which might have affected data quality.

I.6d No significant systematic errors were detected.

I.6e Offsets for the GPS antennas were applied from the CARIS-HIPS Vessel Configuration File to compute the position of the SeaBat transducer. See Separate III* for data records. **Horizontal positions of the DSF vertical beam echosounding data were not corrected for GPS antenna offsets during field processing.** The horizontal inverse distance between the DSF transducer and the GPS antenna is approximately 2.3 meters.

I.6f Offsets for the A-frame, cable length, course made good, towfish height, and depth of water were applied from HPS Offset and Contact Tables to compute the towfish position.

J. SHORELINE

No shoreline is contained within the survey boundaries.

K. CROSSLINES

K.1 A total of 9.93 nm of crosslines was acquired for this survey, 17.3% of the first 100% mainscheme coverage.

K.2 A mainscheme sounding plot was superimposed with crosslines to conduct DSF sounding comparisons. Crossline soundings were compared to all mainscheme soundings within a 5 mm radius (50 meters). The overall agreement between soundings is excellent, with average differences of about one foot. DSF and SeaBat soundings also compared favorably.

K.3 No significant differences at crossings were detected.

K.4 The DSF mainscheme and crossline data were collected with the same equipment.

* FILED WITH THE ORIGINAL FIELD RECORDS

L. JUNCTIONS

This survey does not junction with any contemporary NOAA surveys. Detailed results from a recent USACE contractor survey of the Mud Dump (located in the center of the survey area) were unavailable for comparison.

M. COMPARISON WITH PRIOR SURVEYS

SEE ALSO THE EVALUATION REPORT.

A comparison with prior surveys will be performed by N/CS33.

N. ITEM INVESTIGATION REPORTS

SEE ALSO THE EVALUATION REPORT

Two assigned AWOIS items and two other significant items were investigated during this survey. Results of these investigations are summarized below:

********** **AWOIS # 9670 - Mud Dump Obstruction** **********

INVESTIGATION CONDUCTED:

- 200% side scan coverage on 500 meter radius search area.
- SeaBat development on 20 significant contacts.

INVESTIGATION RESULTS: SEE ALSO SECTION N.1. OF THE EVALUATION REPORT

Two large spoil mounds and several smaller piles were found. A large portion of this area is in an active dumpsite.

Least Depths	Fix #	(m) Depth	(ft)	Latitude(N)	Longitude(W)
Side Scan	8329.9S	--	--	40°22'58.058"	073°50'01.803"
DSF	9656	13.1	43	40°22'57.915"	073°50'01.172"
SEABAT	76998	13.6	44	40°22'58.968"	073°50'00.623"
DIVER	None.	--	--	---	---

AWOIS 9670

Least Depths	Fix #	(m) Depth	(ft)	Latitude(N)	Longitude(W)
Side Scan	8412.0P	--	--	40°22'50.191"	073°50'32.563"
DSF*	9411	10.1	33	40°22'50.702"	073°50'34.160"
SEABAT	68691	10.4	34	40°22'52.130"	073°50'35.217"
DIVER	None.	--	--	---	---

* **Reported as Danger to Navigation; See Appendix I. The depth was originally reported as 32 feet, based upon predicted tides.** SEE SECTION O.1 OF THE EVALUATION REPORT

CHARTING RECOMMENDATIONS:

Chart representative depths from this survey. The USACE should be contacted to provide final survey data on the existing dumpsite after it is discontinued in late 1997 - Contact Mr. Brian May, USACE, at (212) 264-1853. (See also correspondence in Appendix VI.) APPENDED TO THIS REPORT

********** COMPILATION NOTES **********

AWOIS 9670: DELETE (45) OBSTN

CHART (43) OBSTN

********** **AWOIS # 9701 - Trawler Wk, ED** **********

INVESTIGATION CONDUCTED:

- 200% side scan coverage on 1000 meter radius search area.
- SeaBat development on 37 significant contacts.

INVESTIGATION RESULTS:

The search area is sandy, with occasional spoil piles on both sides of the dump boundary. There is no sign of the wreck, or of any cables in the charted "CABLE AREA".

Least Depths	Fix #	(m) Depth	(ft)	Latitude(N)	Longitude(W)
Side Scan	4230.8S	--	--	40°23'53.315"	073°51'44.493"
DSF	7316	14.4	47	40°23'53.804"	073°51'44.085"
SEABAT*	57448	13.9	45	40°23'53.367"	073°51'44.425"
DIVER	None.	--	--	---	---

*** Reported as Danger to Navigation; See Appendix I.** SEE SECTION O OF THE EVALUATION REPORT.

A few spoil piles inserted from DSF records but not identified as side scan contacts were not developed. Notable among these inserts are the following:

Other Depths	Fix #	(m) Depth	(ft)	Latitude(N)	Longitude(W)
DSF	4223	14.2	46	40°23'42.847"	073°51'45.206"
DSF	7316	14.5	47	40°23'45.723"	073°51'31.804"

SeaBat multibeam data acquired during mainscheme hydrography were not processed. These data cover approximately 50% of the AWOIS circle, including the two shoal DSF inserts noted above. Processing of the mainscheme SeaBat data in the area may be warranted, however, it should be noted that barge dump traffic continued to transit the area after completion of survey operations. A resurvey of the area after discontinuation of the adjacent dump site may be warranted.

CHARTING RECOMMENDATIONS:

Chart representative depths from this survey. The wreck ED symbol should be removed. The CABLE AREA symbol should be investigated for possible removal.

********** COMPILATION NOTES **********

DELETE (+) ED
IN LAT: 40-23-48.39, LON: 73-51-28.48

********** **AWOIS # 1559 - CONTINENT Wk** **********

INVESTIGATION CONDUCTED:

- 200% side scan coverage on 1000 meter radius search area.
- SeaBat development on 4 significant contacts.

INVESTIGATION RESULTS:

The area is flat and sandy. A large wreck was located 700 meters north-northeast from the center of the search area.

Least Depths	Fix #	(m) Depth	(ft)	Latitude(N)	Longitude(W)	
Side Scan	2452.9S	--	--	40°21'43.757"	073°49'04.213"	
DSF	7000	30.1	99	40°21'43.919"	073°49'04.264"	*
SEABAT	45567	30.3	99	40°21'43.728"	073°49'04.332"	
DIVER	None.	--	--	---	---	

CHARTING RECOMMENDATION:

Chart representative depths from this survey. The charted wreck symbol should be moved to the SeaBat position above.

DO NOT CONCUR. SEE ALSO SECTION N.2. OF THE EVALUATION REPORT

********** COMPILATION NOTES **********

DELETE CHARTED +++
* CHART 99. WK

********** **(Not AWOIS) - Cellar Dump** **********

INVESTIGATION CONDUCTED:

- 200% side scan coverage over entire dumpsite.
- 100% SeaBat coverage over entire dumpsite.

INVESTIGATION RESULTS:

The area is a discontinued dumpsite on the eastern edge of the sheet. The area is covered with scoured dredge spoil. No large features were found.

Least Depths	Fix #	(m) Depth	(ft)	Latitude(N)	Longitude(W)
Side Scan	4285.3P	--	--	40°22'41.399"	073°48'54.876"
DSF	6960	26.6	87	40°22'41.331"	073°48'54.617"
SEABAT	40704	26.9	88	40°22'41.373"	073°48'54.541"
DIVER	None.	--	--	---	---

CHARTING RECOMMENDATION:

This portion of the survey was completed with 100% multibeam coverage. The following charted dump notation and symbols should be removed and replaced with representative depths from this survey:

REMOVE: Dashed circle centered at 40°23'N 073°49'W
notation "Dump site (discontinued)"
notation "(cellar dirt) depths from 1883 survey"

ADD: Representative depths from this survey.

Concur in part

********** COMPILATION NOTES **********

DELETE NOTE DUMPSITE (DISCONTINUED) DEPTHS FROM 1983 SURVEY

DELETE DUMPSITE LIMITS SHOWN AS A HALF CIRCLE ON CHART 12326 (45TH ED.)

O. COMPARISON WITH THE CHART SEE ALSO THE EVAL. REPORT.

O.1 Four charts are affected by this survey:

CHART AFFECTED	EDITION	DATE	CHART SCALE
Chart 12300	37 ed	11 Jan 1997	1: 400,000
Chart 12326	44 ed	01 Feb 1997	1: 80,000
Chart 13003	41 ed	22 Jul 1995	1:1,200,000
Chart 13006	29 ed	22 Mar 1997	1: 675,000

O.2 One Danger to Navigation report containing two depth changes was submitted for this survey. See Appendix 1 for a copy of the report. APPENDED TO THIS REPORT

O.3a The overall agreement between charted soundings and survey depths is fair. Most soundings compare within 2 to 3 feet, with occasional differences of about 5 to 6 feet.

O.3b No shoaling or deepening trends were found in the survey area.

P. ADEQUACY OF SURVEY SEE ALSO THE EVALUATION REPORT.

This survey is complete and fully adequate to supersede prior surveys in common areas.

Q. AIDS TO NAVIGATION

Q.1 Detached positions were taken on two floating aids to navigation located in or near the boundaries of this survey.

Q.2 A comparison was made between the detached positions and the largest scale chart of the area. Neither floating aid was found to deviate from its charted position by more than a few meters. Each aid adequately serves the apparent purpose for which it was established.

Q.3 The "BA" buoy was properly identified in the Light List. The privately maintained "mud dump" buoy "NY" was not found in the Light List.

Q.4 There were no submarine or overhead pipelines, cables, tunnels, bridges, or ferry routes found in the survey area. The charted "Cable Area" notations should be investigated for current relevance and possible removal.

R. STATISTICS

R.1a	Number of Positions	47,622
R.1b	Lineal Nautical Miles of Sounding Lines	223.34
R.2a	Square Nautical Miles of Hydrography	6.1
R.2b	Days of Production	10
R.2c	Detached Positions	2
R.2d	Bottom Samples	12
R.2e	Tide Stations	1
R.2g	Velocity Casts	7
R.2j	SeaBat Item Investigations	95

S. MISCELLANEOUS

See also the Evaluation Report

S.1 No evidence of silting, unusual submarine features, anomalous tide or tidal current conditions, or magnetic anomalies were detected during this survey.

S.2 Bottom samples were inspected and recorded but not submitted to the Smithsonian Institution. Bottom samples were not collected north of 40°23′ north latitude, in the "Mine Danger Area" noted on chart 12326. This notation should be investigated for current relevance and possible removal.

S.3 Portions of the survey area are under consideration as a new USACE dumpsite. The active "mud dump" in the center of the sheet is expected to be discontinued in late 1997.

T. RECOMMENDATIONS

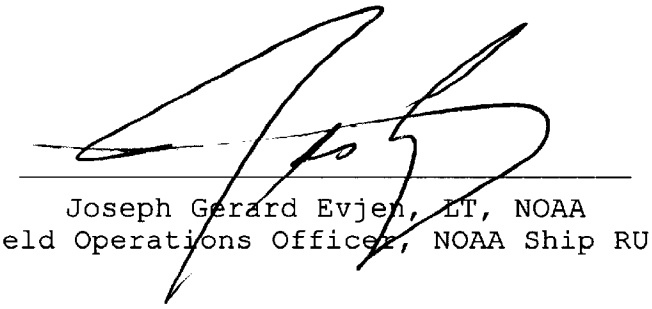
T.1 No additional fieldwork is required. The USACE should be contacted to provide final survey data on the active "mud dump" after it is discontinued.

T.2 As referenced in Section N (AWOIS #9701 description), processing of the mainscheme SeaBat data acquired in the shoal areas within AWOIS circle 9701 may be warranted.

U. REFERRAL TO REPORTS

None.

This report and the accompanying field sheets are respectfully submitted.



Joseph Gerard Evjen, LT, NOAA
Field Operations Officer, NOAA Ship RUDE

APPENDIX I

DANGER TO NAVIGATION REPORTS

Two dangers to navigation were identified for this survey. The Danger to Navigation Report is attached.

FAXED 10/1/97

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
September 30, 1997

Commander
First Coast Guard District
Aids To Navigation Office
408 Atlantic Avenue
Boston, Massachusetts 02110-3350

REPORT OF DANGER TO NAVIGATION

Dear Sir:

The NOAA Ship RUDE has recently completed a hydrographic survey of the approaches to New York Harbor:

Hydrographic Survey Registry No.... H-10750
State..... New Jersey
General Locality..... Approaches to New York Harbor
Sublocality..... 5.0 NM East of Sea Bright, NJ
Project Number..... OPR-C399-RU-97
Surveyed by..... NOAA Ship RUDE

During the course of multibeam sonar operations, two large spoil piles were discovered to have least depths shoaler than the depths currently shown on charts of the area. This new depth information merits immediate publication in the Local Notice to Mariners. The updated depths affect the following charts:

Chart 12300, Approaches to New York Harbor, 37 ed, 11 Jan 1997
Chart 12326, Approaches to New York Harbor, 44 ed, 01 Feb 1997

DEPTH *	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
32 ft	40° 22′ 50.69″ N	073° 50′ 34.17″ W
45 ft	40° 23′ 53.37″ N	073° 51′ 44.42″ W

*** Updated depths are reduced to feet at MLLW using predicted tides and should be viewed as preliminary information, subject to office review.**

Contact either of the following personnel for further information:

Commanding Officer
NOAA Ship RUDE (917) 833-4279
439 West York Street
Norfolk, VA 23510

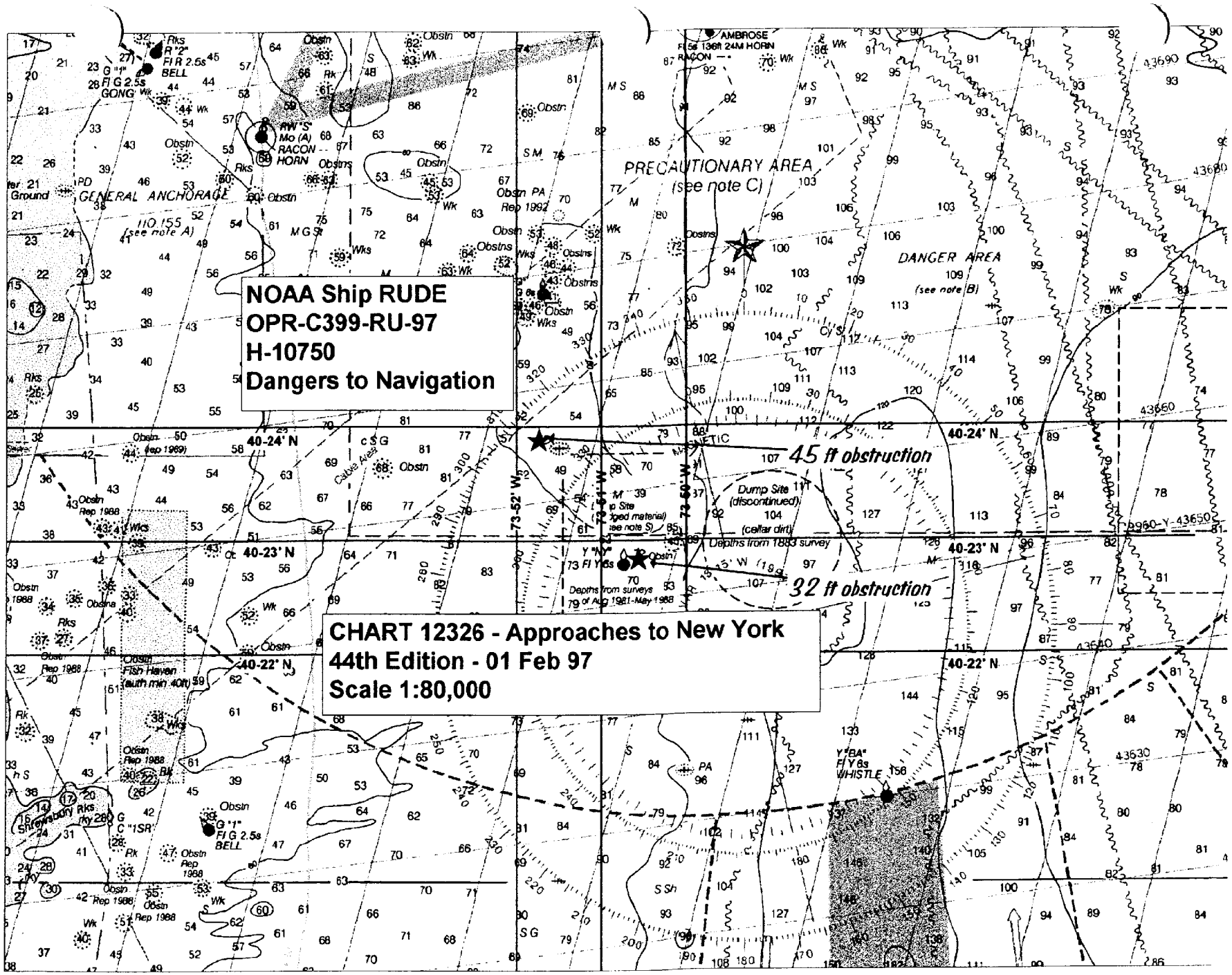
Chief, Atlantic Hydrographic Branch
Atlantic Marine Center (757) 441-6746
439 West York Street
Norfolk, VA 23510

Sincerely,

David A. Cole

David A. Cole, LCDR, NOAA
Commanding Officer, NOAA Ship RUDE

cc: AHB, NIMA


NOAA Ship RUDE
OPR-C399-RU-97
H-10750
Dangers to Navigation
CHART 12326 - Approaches to New York
44th Edition - 01 Feb 97
Scale 1:80,000
45 ft obstruction
32 ft obstruction
PRECAUTIONARY AREA
(see note C)
DANGER AREA
(see note B)
GENERAL ANCHORAGE
(see note A)
Dump Site 111
(discontinued)
(cellar dirt)
Depths from 1883 survey
Depths from surveys of Aug 1981-May 1988
40-24' N
40-23' N
40-22' N
73-52' W
73-51' W
73-50' W
AMBROSE
WHISTLE

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

October 15, 1997

Captain Robert Dean
United New York / Sandy Hook Pilots' Benevolent Association
201 Edgewater Street
Staten Island, New York 10305

Dear Captain Dean:

I have enclosed preliminary sounding plots for the hydrographic surveys conducted in the approaches to New York Harbor during 1997. We are currently finalizing our processing and field reports for these surveys. Soundings on all surveys were reduced to Mean Lower Low Water using predicted tides, except on sheet H-10675, which used verified tides. Twelve items of critical interest were submitted as danger to navigation reports.

Please feel free to contact either myself or Commander Perugini if you have any questions regarding these preliminary sounding plots:

Commanding Officer
NOAA Ship RUDE
439 West York Street
Norfolk, VA 23510-1145
(917) 833-4279

Chief, Atlantic Hydrographic Branch
NOAA Atlantic Marine Center
439 West York Street
Norfolk, VA 23510-1145
(757) 441-6746

Sincerely,

David A. Cole

David A. Cole, LCDR, NOAA
Commanding Officer, NOAA Ship RUDE

cc: CDR Perugini
Attachment

Date: 5/16/97
Sender: John) John.Humphrey@noaa.gov (Humphrey
To: CO Rude
Priority: Normal
Receipt requested
Subject: Mud Dump Site

Author: John) John.Humphrey@noaa.gov (Humphrey at RDC
Date: 5/16/97 4:51:00 PM
Priority: Normal
Receipt Requested
To: CO Rude at RUDE
Subject: Mud Dump Site

Dave: just got off the phone with the USACE New York dredging office. There will be A LOT of dumping on that site in the next two weeks and then will trail off but then after Sept. 1 that site will be closed and will be applied for by the USACE to be disestablished. However thay have just completed an Environmental impact statement on a larger dumpsite 15.7 sq m. that will encompass most if not all of the mud dump site and the charted discontinued site to the east. So these two sites taken together will sit as the hole in the donut for this larger dumping ground.

Also just found out the mud dump site was just surveyed (March 16) under contract by SAIC for the COE. I am making arrangements with the COE to get that data to the chart. Based on this I am changing the requirement to survey only the discontinued spoil area (cellar dirt) site to get it off the chart and not survey the Mud Dump site.

call Monday morning if you have any questions. The POC I spoke with at the COE is pretty knowledgeable and energetic. His name is Brian May, 212-264-1853.

John

RLK

6/3/97 - Sheet 1

Army Corps Greenlights Newark Bay Pit Construction

Completing a major expedited Environmental Impact Statement (EIS) process that began in March 1996, the U.S. Army Corps of Engineers, New York District announced that they have signed a Record of Decision that recommends issuance of a federal permit to the Port Authority of New York and New Jersey to construct the Newark Bay Confined Disposal Facility (NBCDF).

This federal approval achieves a major milestone in the continuing effort to provide environmentally responsible disposal site for dredged muds unsuitable for ocean disposal. The lack of disposal sites for dredged material has imperiled the Port's economic viability.

The NBCDF involves the construction of up to three underwater pits in Newark Bay that will have a combined capacity for 3.1 million cubic yards of tainted dredged material. These pits were recommended by New Jersey Governor Christie Whitman's Dredged Material Management Team and are an integral part of the Army Corps Dredged Material Management Plan announced last October that advances 53 innovative options for the region to consider for disposal of harbor mud that has threatened to clog important channels and shipping berths.

To build the first of three pits, approximately 580,000 cubic yards of material will be removed and disposed of at the [redacted]. This material will be capped with one meter of clean sand. Then, an additional 1.4 million cubic yards of underlying clean new work material will be excavated creating a pit that can then hold 1.5 million cubic yards of tainted dredged material.

Col. Gary Thomas, district engineer for the Corps' New York District said, "This approval marks the end of an accelerated effort to find a short-term solution to take care of the most immediate needs of dredging in the Port. Great cooperation took place between several federal agencies, the state of New Jersey, the Port Authority, as well as environmental groups to get to this point. Now our challenge is to keep this momentum going until we find the long-term solutions that protect the environment and keep the harbor open."

Hvide Announces Major Expansion

Hvide Marine Inc. announced a major expansion of its international operations with the signing of a definitive agreement to acquire the 37-vessel fleet of Gulf Marine and from GMMOS consist of 10 anchor-handling tug/supply vessels, nine anchor-handling tugs, seven crewboats, four offshore supply vessels, three large specialized construction and maintenance vessels, three utility vessels and one accommodation jack up rig.

University. This campaign will provide additional support to help fund exciting new programs. Many thanks to Don Brennan and Gary Jobson for their help and dedication."

According to Radm. Brown, a formal campaign kick-off event is being planned for the school's

talented group of executives running our business units, we have a management team with great depth and experience," Chabraja said.

Prior to joining General Dynamics, Turner spent 25 years with Newport News Shipbuilding Company and six years with Westinghouse Corp.

HAM Marine Gets $24.8 Million Loan Guarantee

The Maritime Administration will provide a $24.8 million loan guarantee to HAM Marine, Inc. (Pascagoula, Miss.), to expand and modernize its shipbuilding facility.

HMI will expand its facility on Greenwood Island, about six miles from the company's existing facility. The site, approximately 100 acres, will be leased from Jackson County, Miss.

The loan guarantee will help finance site work, construction of bulkhead and tie back systems, construction of a launching assembly area, utility work, buildings and some capital equipment. HMI indicated it will finance most of the equipment and outfitting for the shipyard separately.

[illegible]

LATE BREAKING NEWS BRIEFS

Bisso Marine Responds To Higher Water Bisso's Salvage Division completed the removal of four barges which had broken loose and lodged within the OXY-Chem Dock at mile 129 on the lower Mississippi River. Three hundred tons of product had to be off-loaded before the fourth barge could be extracted. Contact Bisso @ tel: (504) 866-6341.

Company Wins Texaco Platform Contract Louis Allis Co. won contracts to build nine Totally Enclosed Air to Air Cooled (TEAAC) induction motors for Texaco's newest offshore oil producing platform. The motors range in size, producing from 450 to 2,500 hp, and will power pump drives at Texaco's Petronius offshore platforms. Contact Louis Allis Co. @ tel: (414) 481-6000.

Hvide Completes Fleet Acquisition Fort Lauderdale-based Hvide Marine completed the acquisition of the 37-vessel fleet of Gulf Marine Maintenance and Offshore Service Co. of Dubai, UAE, for $61 million. The fleet includes 10 anchor-handling tug supply vessels, nine anchor-handling tugs, seven crewboats, four offshore supply vessels, three large specialized construction and maintenance vessels, three utility vessels and one accommodation jack-up rig. Contact Hvide @ tel (954) 523-2200

Crowley Hires Two Tanker [illegible]

VII GENERAL This section contains information of general concern to the mariner. Mariners are advised to use caution while transitting these areas.

!ARY OF DREDGING / CONSTRUCTION OPERATIONS STILL IN EFFECT

owing is a list of construction and dredging projects still in effect. Mariners are advised to use caution while transitting these areas. The L REF column refers to the LNM in which the article first appears and where detailed information may be obtained. The dates listed for completion tentative. An asterisk in the left margin marks new information.

LOCATION	SUBJECT	COMPLETION DATE	LNM REF

MA - OFF/SHORE - The U.S. Navy advises of daily firing exercises from 6:30 am to 7:30 pm, 14 - 20 April 1997, 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°38W; to 40°30N, 69°36W; to 40°30N, 70°42W, thence to beginning. Chart(s): 13003, 13006, 13200 LNM 16/97 (CGD1)

ME _ SOUTH PORTLAND - Installation of submarine cables between the bascule piers of the new Portland - South Portland Bridge began 7 April, 1997 and will contine for about one month. On scene will be a barge with a crane and a clam bucket. Mariners are advised to use caution while transitting the area.
Chart(s) 13292 LNM 16/97 (CGD1)

NY - LOWER BAY - The NOAA Ship RUDE is conducting hydrographic surveys in the Lower Bay and its approaches from April - June 1997 The purpose of the surveys is to update the existing nautical charts of the region. The survey area extends up to 10 nautical miles offshore from Monmouth Beach to Highlands, NJ and in all waters within 5 nautical miles of Sandy Hook. The RUDE is a 90 ft white-hull vessel with a blue NOAA logo on the bow, which will be monitoring channels 13 and 16. During operations the ship tows a side scan sonar approximately 30 yards astern. Mariners are requested to give RUDE a wide berth as the ship often makes erratic maneuvers during survey operations.
Chart(s): 12401, 12324 LNM 16/97 (CGD1)

ENVIROMENTAL STUDY - Surveys are being conducted until 25 May, 1997 within a 20 mile radius of the following position: 39°55N, 70°40. Meters will be set at the following positions: 39°56N, 70°40W. On scene will be the R/V MAURICE EWING. Mariners are advised to use extreme caution while transiting the area as the vessels ability to maneuver will be limited.
LNM 16/97 (CGD1)

NJ - SANDY HOOK TO BARNEGAT INLET - Dredging will be done along the New Jersey Coast adjacent to the Long Branch Area begining 16 April 1997 and continuing for about a year and a half. On scene will be a trailing suction hopper dredge #405 "R.N. WEEKS", which will transport material from the offshore borrow site to a near shore location. The mono buoy #370 will then transport the material to the beach placement location. The work will begin from the Northernly limits and proceed south. The hours of operation will be 24 Hours a day, 7 days a week. Mariners are requested to exercise care and reduce speed when transitting the area.
Chart(s) 12324 LNM 16/97 (CGD1)

NY - EAST ROCKAWAY INLET - The following uncharted aids have been reestablished: East Rockaway Inlet Buoy 4 (LLNR 31525) and East R ay Inlet Lighted Buoy 6 (LLNR 31535).
97 (CGD1)

MA - NANTUCKET SOUND AND APPROACHES - Dredging is being done in Green Pond, Eel Pond and Great Pond until on or about 24 1997. The hours of operation will be Monday - Friday, 7:00 am - 4:00 pm. On scene will be the dredge "COD FISH" and attending tugs, which will be monitoring channels 9, 10 and 16. Mariners are advised to use caution while transitting the area.
Chart(s) 13237 LNM 16/97 (CGD1)

NY - NEW YORK HARBOR - Dredging is being done until appoximately 6 June 1997, in the vicinity of National Dry Dock Channel Buoys 2 - (LLNR 37210 - 37230), which were temporarily discontinued for the dredging. Two red anchor balls are in the place of Buoy 2 and Buoy 4. The wor is being done 24 hours a day. On scene will be the dredge 51, which will be monitoring channel 7. Mariners are advised to use caution while transitting the area.
Chart(s) 12327, 12334, 12335 LNM 16/97 (CGD1)

NY - UPPER BAY - A sunken anchor has been located within Federal Anchorage 21C, Bayridge Anchorage, in position 40°38.38'N, 074°03.10'W. Mariners are advised to avoid anchoring in this area.
Chart(s) 12334 LNM 16/97 (CGD1)

NY - EAST RIVER - A NO WAKE ZONE is requested under the Queensboro/59th Street Bridge for the safety of the workers on a barge doing construction on the bridge. The NO WAKE ZONE will be in effect until 15 November 1997.
Chart(s) 12335 LNM 16/97 (CGD1)

ME - SCARBOROUGH RIVER - The following uncharted aids have been reestablished: Scarborough River Buoy 7 (LLNR 07910) and Scarborough River Buoy 9 (LLNR 07920), and Scarborough River Buoy 10 (LLNR 07925).
LNM 16/97 (CGD1)

BRIDGE SECTION

BRIDGE	TYPE	WATERWAY	MILE	SUBJECT	REF/LNM
Million Dollar	B	Fore River	1.5	Bridge Construction	06-96
Route 1A	SW	Danvers River	0.0	New Bridge Construction	19-96
Craige Br.	B	Charles River	1.0	Bridge Closure	15-97
Main Street	F	Powwow River	0.1	Bridge Construction	07-97
Route 53	F	North River	12.0	Bridge Construction	07-97
Old Providence Rd.	F	Palmer River	0.7	Bridge Replacement	07-97
Route 114	F	Barrington River	0.4	Temp. Bridge Construction	07-97
R ilroad	B	Pequonnock River	0.3	Bridge Replacement	07-97
s Street	B	Pequonnock River	0.4	Marine Information	07-97
laddam	SW	Connecticut River	16.8	Bridge Repairs	09-97
Founders	F	Connecticut River	51.7	Bridge Rehabilitation	07-97
Tomlinson	B	Quinnipiac River	0.0	Marine Information	07-97
Stratford Ave.	B	Yellow Mill Channel	0.3	Horz. Clear. Reduction	11-97
Route 29	F	Champlain Canal	NA	Horz. Clear Reduction	21-96
Route 9	F	Erie Canal	4.3	Bridge Rehabilitation	06-96

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Coast Survey
Silver Spring, Maryland 20910-3282

APR 8 1997

MEMORANDUM FOR: Commander Samuel P. Debow, NOAA
Commanding Officer, NOAA Ship RUDE

FROM: Captain Andrew A. Armstrong, III, NOAA
Chief, Hydrographic Surveys Division

SUBJECT: Multibeam Data Acquisition Interim Guidance - Sound Velocity Profile (SVP) Casts

The following guidelines are provided to ensure quality multibeam data acquisition:

1) RUDE least-depth item investigations using the Seabat 9003 require at least one cast per week. Least depths must fall within ± 30° of nadir in the multibeam swath.

2) Where RUDE is instructed to conduct full-coverage multibeam surveys (e.g. patch tests), at least two SVP casts must be taken each day (i.e. eight hours) of data acquisition. One cast should be taken at day's beginning, and a second cast approximately two hours before day's end.

3) Casts need to be taken to depths of least 95% of the maximum depth expected for the survey area.

4) The Hydrographer must be aware of local effects which can contribute to changes in salinity and temperature in the survey area. The Hydrographer should decrease swath spacing or increase the frequency of casts when data quality becomes suspect due to sound velocity.

Questions regarding this guidance can be directed to LCDR Gerd Glang, HSD Systems Support Branch, 301-713-2705.

APPENDIX VII

APPROVAL SHEET

LETTER OF APPROVAL

REGISTRY NO. H-10750

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 multibeam development coverage and is more than adequate to supersede all prior surveys in common areas. The survey is considered complete and adequate for nautical charting.

David A. Cole

David A. Cole, LCDR, NOAA
Commanding Officer
NOAA Ship RUDE

APPENDIX III

LIST OF HORIZONTAL CONTROL STATIONS

Differential GPS was employed for all positioning. The following differential beacons were used:

SITE A (Primary):	Sandy Hook, NJ	40°28'N, 074°01'W
SITE B (Check):	Montauk, NY	41°04'N, 071°52'W

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: September 25, 1997

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR C399-RU

HYDROGRAPHIC SHEET: H-10750

LOCALITY: Approaches to New York Harbor, N.Y.

TIME PERIOD: May 19, - June 17, 1997

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 m
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.481 m

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: SH1

Refer to attachment(s) for zoning information.

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

CHIEF, TIDAL ANALYSIS BRANCH

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10750

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 12326	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 JERSEY (title)	X		X							1
NEW YORK (title)	X		X							2
NORTH ATLANTIC OCEAN	X		X							3
SEA BRIGHT(title)	X		X							4
										5
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Approved

Chief Cartographer

APR 10 1998

NOAA FORM 76-155 SUPERSEDES C&GS 197

11/06/98

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H10750

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	47622
NUMBER OF SOUNDINGS	47622

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	37	03/18/98
VERIFICATION OF FIELD DATA	61	10/06/98
EVALUATION AND ANALYSIS	13	
FINAL INSPECTION	24	10/09/98
COMPILATION	41	11/05/98
TOTAL TIME	184	

ATLANTIC HYDROGRAPHIC BRANCH APPROVAL 11/05/98

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10750 (1997)

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)
MicroStation 95, version 5.0
SiteWorks, version 2.1
NADCON, version 2.10
I/RAS B, version 5.01

The smooth sheet was plotted using a Hewlett Packard DesignJet 2500CP 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 .392 seconds (12.10 meters or 1.21 mm at the scale of the survey) north in latitude, and 1.518 seconds (35.81 meters or 3.58 mm at the scale of the survey) east in longitude.

M. COMPARISON WITH PRIOR SURVEYS

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

The present survey is adequate to supersede the prior surveys in the common area.

N. ITEM INVESTIGATIONS

1. Automated Wreck and Obstruction Information System (AWOIS) item #9670 is a charted dangerous obstruction with a depth of 45 feet in Latitude 40°22'50.0"N, Longitude 73°50'09.0"W. The item was investigated by the hydrographer. An obstruction with a depth of 43 feet was found in Latitude 40°22'57.91"N, Longitude 73°50'01.17"W. It is recommended that the charted dangerous obstruction with a depth of 45 feet

(45 *Obstn*) be deleted. It is also recommended that an obstruction with a depth of 43 feet (43 *Obstn*) be charted as shown on the present survey.

2. AWOIS item #1559 is a charted sunken wreck in Latitude 40°21'24.39"N, Longitude 73°49'16.47"W. A sunken wreck with a depth of 99 feet was found in Latitude 40°21'43.92"N, Longitude 73°49'04.26"W. It is recommended that the charted sunken wreck symbol be deleted and a sunken wreck with a depth of 99 feet (99 *Wk*) be charted as shown on the present survey.

O. COMPARISON WITH CHART 12326 (44th Edition Feb 01/97)

Hydrography

The charted hydrography originates with prior surveys and needs no further discussion. The hydrographer makes an adequate chart comparison section O. of the Descriptive Report. The following should be noted:

1. A danger to navigation report was submitted by the hydrographer on an uncharted dangerous submerged obstruction with a depth of 32 feet in Latitude 40°22'50.69"N, Longitude 73°50'34.17"W. A depth of 32 feet was computed on the obstruction with predicted tides and is presently charted on the latest edition of chart 12326. During office processing approved tides were applied to the present survey. The obstruction is shown on the present survey as a dangerous submerged obstruction with a revised depth of 33 feet. It is recommended that the charted dangerous submerged obstruction with a depth of 32 feet be revised to a dangerous submerged obstruction with a depth of 33 feet.

2. A danger to navigation report was submitted by the hydrographer on an uncharted obstruction with a depth of 45 feet in Latitude 40°23'53.37"N, Longitude 73°51'44.42"W. A depth of 45 feet was computed on the obstruction with predicted tides and is presently charted on the latest edition of chart 12326. During office processing approved tides were applied to the present survey. The obstruction is shown on the present survey as a dangerous submerged obstruction with a revised depth of 43 feet. Additional depths of 43 feet were found in the immediate area of the obstruction. It is recommended that the charted dangerous submerged obstruction with a depth of 45-ft be revised to a dangerous submerged obstruction with a depth of 43-ft. It is also recommended that the danger curve be revised to include the original obstruction and the additional shoal depths of 43 feet found

in the immediate area of the obstruction.

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

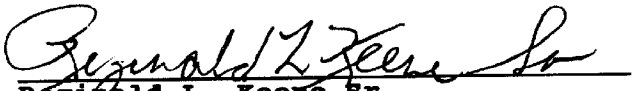
P. ADEQUACY OF SURVEY

This is an adequate hydrographic 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.

National Ocean Service Chart 12326 (45th Ed., Jan 10/98) was used for compilation of the present survey.



Reginald L. Keene Sr.
Cartographic Technician
Verification and Evaluation and Analysis

APPROVAL SHEET
H10750

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.

Richard H. Whitfield Date: 11/5/98
Richard H. Whitfield
Cartographer
Atlantic Hydrographic Branch

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

Andrew L. Beaver Date: 11/5/98
Andrew L. Beaver, LCDR, NOAA
Chief, Atlantic Hydrographic Branch

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Final Approval:

Approved: Andrew A. Armstrong III Date: Dec 22, 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. H10750

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	11/6/98	[signature]	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.
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SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.