

# FE 268 WIRE DRAG

Diagram No. 1212-3

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT

Type of Survey .. Wire Drag ..  
Field No. .... R/H-20-14-83/84 ..  
Registry No. ... FE-268WD ..

### LOCALITY

State ..... New York ..  
General Locality .. Long Island Sound ..  
Sublocality ..... SW of Long Sand Shoal ..

19 83/84

CHIEF OF PARTY  
LCDR D.D. Winter & LCDR R.K. Norris

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DATE ..... May 15, 1989 ..

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**FE 268  
WIRE DRAG**

GP

Chlo

13212

13211

PS 13809

12372

13205 appd 2-10-9304

12354

13003

13004

12300

v/c

## HYDROGRAPHIC TITLE SHEET

FE-268WD ✓

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.

R/H 20-14-83/84 ✓

State NEW YORK ✓General locality LONG ISLAND SOUND ✓SW of Long Sand Shoal ✓Locality ~~NORTHVILLE CORRIDOR-OFFSHORE~~ LONGITUDE ~~072-09-00W TO 072-19-00W~~ ✓Scale 1:20,000 ✓Date of survey 7 Oct. 83 - 23 Oct. 84 ✓Instructions dated 17 June 1983 & April 12, 1984 ✓ Project No. OPR-B660-RU/HE-83/84 ✓Vessel NOAA SHIPS RUDE(9040) & HECK(9140) ✓Chief of party LCDR Robert K. Norris  $\frac{1}{2}$  LCDR D.D. Winter ✓Surveyed by LCDR Robert K. Norris, LT N.G. Millett, LT E.M. Clark, LT(JG) T.G. Callahan ✓Sonargrams  $\frac{1}{2}$  Soundings taken by echo sounder, hand lead, pole Klein S/N's 088&223 Raytheon DE-719B S/N 6212, 5799, ✓Graphic record scaled by T.G.C., G.L.A., E.M.C. ✓ & 5497 DSF6000N S/N A-116N, B051N  $\frac{1}{2}$  wire drag ✓Graphic record checked by R.K.N., N.G.M., E.M.C., T.G.C., W.J.A. ✓Protracted by N/A Automated plot by N/AVerification by Limited & Modified Evaluation  $\frac{1}{2}$  Analysis Group, Hydrographic Surveys Branch, AMCEstimated Soundings in fathoms feet at MLW MLLW ~~Corrected for predicted tides~~REMARKS: All times recorded in UTC.AWOIS/SURF CMM 5/25/89

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\* = Data removed from the Descriptive Report and filed with the field records.

DESCRIPTIVE REPORT TO ACCOMPANY ✓  
Wire Drag HYDROGRAPHIC SURVEY ✓  
N- FE268WD (FIELD NO. R/H 20-14-83/84) ✓  
SCALE 1:20,000 ✓  
1983/84 ✓

NOAA SHIPS RUDE AND HECK ✓  
LCDR D.D. Winter & LCDR ROBERT K. NORRIS, COMDG. ✓

#### A. Project Authority

This project was conducted during a two year period in accordance with Hydrographic Project Instructions OPR-B660-RU/HE-84 and OPR-B660-RU/HE-83, for the Southern New England Coast. The 1984 instructions are dated April 12, 1984, with two amendments to these instructions, change No.1 dated May 21, 1984, and change No.2 dated Nov.30, 1984. The 1984 instructions supersede the previous instructions issued for OPR-B660-RU/HE-83, dated 17 June 1983, with two changes to those instructions, dated 22 July and 8 December, 1983. The purpose of this project is to provide wire drag and sonar clearance of the Northville Industries Corporation oil tanker route; to provide clearance depths over selected wreck sites, and to verify or disprove certain reported submerged wrecks along the south coast of New England. ✓

#### B. Characteristics and Limits of Survey

This survey covers that area of the one mile wide oil tanker route from longitude 072-09-00W to 072-19-00W, which includes corridor point 6. This survey junctions with R/H 20-13-83/84 at longitude 072-19-00W to the west and with R/H 20-15-83/84 at longitude 072-09-00W to the east. The survey work consisted of an initial side scan sonar investigation with 100-percent coverage of the bottom. Wire drag operations were then conducted to provide clearance over a suspected wreck and boulder fields within the limits of the corridor discovered during the initial sonar operations. ✓

#### C. Survey Vessels

The NOAA Ships Rude (vesno 9040) and Heck (vesno 9140) were the only two vessels used in this survey. Both ships were utilized for the side scan sonar coverage and for the wire drag operations. ✓

#### D. Hydrographic Sheets (Field Sheets)

The hydrographic sheets used in this survey were made of mylar and were constructed with the Digital PDP 11/34 computer S/N AG22645 and the Houston Instruments roll-bed plotter S/N 8731-8 aboard the ship RUDE. ✓

The field sheets were plotted at a scale of 1:20,000 and were used aboard each vessel to hand plot the vessels' position while on line. A smooth sheet was also plotted aboard the ship using the same equipment described above. This smooth sheet was used to machine plot the vessel's position during sonar ✓

operations, to hand plot a floating aid to navigation and any targets or large contacts, to delineate the limits of boulder fields and sand wave areas, and to illustrate the area covered by side scan sonar operations. The drag strip data was plotted at a scale of 1:20,000 as overlays to be used in conjunction with the smooth sheet. All field records are being sent to the Atlantic Marine Center for verification and smooth plotting. See sheets 1 of 2 and 2 of 2 included in this report.

### E. Equipment and Techniques

All side scan sonar coverage was accomplished with the Klein systems provided by AMC. These systems consisted of a Model 521 recorder, a 100 KHz towfish, a K-Wing depressor, and a towcable. The Model 521 recorder used aboard the Heck, serial number 223, had initial and maximum gain control with numerical settings. This allowed for the annotating of the sonargram with a value for the initial and maximum gain settings at the start of the day and annotating any change in settings that occurred during the day. The recorder aboard the Rude, serial number 088, did not have numerical settings on the gain control knobs. The sonargrams from this recorder were only annotated with the relative changes that were made to the gain settings during the day's operations.

The recorder 088 also did not have as many paper take-up rollers as did recorder 223. This caused the sonargram record produced by recorder 088 to contain numerous paper pull stretch marks. These stretch marks appeared as diagonal traces from the outer edge of the paper towards the center, as the paper came off the helix drum. All the sonargrams from this recorder were annotated as to this fact to avoid confusing these stretch marks with sand waves.

The ship wire drag work was performed using standard wire drag equipment and techniques. The drags were tested from the ships' Sisu launches.

Del Norte rates obtained on fixes were recorded with Eaton Model 7000+ serial printers during this survey. These printers worked fairly well considering the fact that they were not designed to be operated in a marine environment. The printers would often print out a line of meaningless characters or rates from the previous fix before the current fix was recorded. The printer records were annotated such that these meaningless characters and extraneous rates were lined out leaving the correct fix rates clearly displayed.

In accordance with the 1983 Project Instructions Change No. 2, a method was developed and utilized running nine equally spaced tracklines along the length of the corridor at the 200m range scale. This method provided complete, at least 100-percent, and adequate coverage of the corridor.

A Raytheon model DE-719B echo sounder was operated and annotated concurrently during all 1983 side scan sonar and wire drag operations. Unit S/N 6212 was operated aboard the HECK and unit S/N 5799 was operated aboard the RUDE during JD's 280-293 and S/N 5497 was used on the RUDE during JD 308. The echo sounder recordings were reviewed daily to ensure that no large objects located directly under the sonar towfish may have been

undetected. A DSF 6000N echo sounder was operated aboard both towing vessels during 1984 wire drag operations. Unit S/N B051N was used aboard the RUDE and unit S/N A116N was used aboard the HECK.

Although it is not anticipated that these sounding records will be used for charting purposes, the settlement and squat data for the Rude and Heck, obtained in Norfolk Harbor on 25 January 1983, is included in this report. No velocity corrections or settlement and squat determinations were actually conducted within or during this project. The draft of the transducers on both vessels is 7.0 ft.

#### F. Control Stations

*Not Verified*

Three electronic control stations were used for this section of the survey. Control for JD (1983) 280 was accomplished using SAYBROOK LIGHTHOUSE(1861), latitude 41-16-16.894N, longitude 072-20-37.013W, elevation 21.6m as Station 01 and NEW LONDON HARBOR LIGHTHOUSE(1835), latitude 41-18-59.489N, longitude 072-05-24.855W, elevation 27.1m as Station 02. The signal from NEW LONDON HARBOR LIGHTHOUSE was blocked by land path at longitude 072-15-48W in the corridor and therefore use of this station was discontinued after JD 280. Station 02 was re-established at NEW LONDON LEDGE LIGHTHOUSE(1932), latitude 41-18-20.795N, longitude 072-04-40.516W, elevation 17.7m and maintained at this position for the remainder of the survey. SAYBROOK LIGHTHOUSE was maintained as Station 01 throughout the entire survey. All stations are of Third-order, Class I control accuracy or better. The station positions are based on the North American Datum of 1927.

#### G. Calibration and Position Control

*Not Verified*

Vessel positioning for all work was accomplished with the Del Norte 520 series electronic positioning equipment operated at a frequency of 9400 MHz in the range-range mode. A listing of DMU and master units used by the vessels during this survey are listed by Julian Day in Appendix A. During 1983 operations, the remote unit installed at Station 01 was code 76, serial number 3004. Remote unit 74, serial number 3003, was installed at both Station 02 sites.

During 1984 operations, remote 78, S/N 2986, was installed at station 01 and remote 74, S/N 3003, was installed at station 02 during operations conducted on JD 179. All succeeding operations conducted during 1984 were with remote 84, S/N 3003, at station 01 and remote 86, S/N 3004, at station 02.

Seven baseline calibrations were performed during this survey. All baseline calibrations were conducted in accordance with AMC OPORDER 79. Baseline calibration distances were determined by the HP 3800A electronic distance measuring instrument, serial number 0987A00157. The following is a list of the baseline calibrations, as measured by the HP 3800A:

27 August, 1983	Belle Terre Beach to Port Jefferson W. Jetty Lt.	2601.1m	
30 October, 1983	Pier 4S, NUSC, New London, CT to S. Groton Jetty	2312.0m	
15 November, 1983	Pier 4S, NUSC, New London, CT to S. Groton Jetty.	2312.3m	
16 June, 1984	Belle Terre Beach to Port Jefferson W. Jetty Lt.	2601.1m	✓
21 July, 1984	Newport Naval Pier 2 to Gould Is., S.E. Pier	1933.2m	
28 September, 1984	Newport Naval Pier 2 to Gould Is., S.E. Pier	1933.2m	
29 October, 1984	Pier 4S, NUSC, New London, CT to S. Groton Jetty.	2312.3m	

Daily calibrations were conducted in the vicinity of the entrance to New London Harbor using three point sextant fixes with check angles. The daily systems checks or calibration correctors were computed using a HP 9815 computer S/N 1825A02388 and the Hydro Calibration Package program. These daily correctors and baseline calibration data are contained in Appendix A.

All daily calibration correctors were within accuracy tolerances for a survey of this scale. Units DMU S/N 145 and master S/N 3033 failed prior to the closing baseline calibration conducted on 29 October 1984. Therefore, only the open baseline calibration data conducted on 28 September, 1984 should be applied to the raw position data on JD's (1984) 291, 292 and 297, during final smooth plotting. All other raw position data should be corrected using the opening and closing baseline calibration data indicated above. See Appendix A for baseline calibration data.

H. Dates of Survey

This survey was begun on 7 October, 1983 and was completed on 23 October, 1984.

I. Reduction and Processing of Data

Data collected during ship drag operations was manually entered in the wire drag volumes while on line. The position data was also entered in the Digital PDP 11/34 computer while on line. The programs used were the R/H Double Precision Wire Drag programs. The drag strips were then smooth plotted with the Houston Instruments roll-bed plotter. Effective depths from the reduced data were then drawn on the drag strip in colored pencil. Test data was applied to the drags in a manner which

differs slightly from the Wire-Drag Manual. This method has been used aboard the drag boats for the past several years and is a more conservative method. If the amount of lift increased during a drag when uprights remained unchanged, this decreased drag depth was applied back to a time halfway between the time of the earlier test with less lift and time of the later test with the greater lift. ✓

Predicted tide correctors were then applied to the drag depths obtained. The predicted tide data applied to the 1983 wire drag section of this survey was obtained from correctors based on latitude 41-10-00N, longitude 072-26-00W. These are correctors for AWOIS item #1813, which was close to but not contained in the limits of the survey area. These correctors were used because correctors for the immediate work area were not provided with the 1983 Project Instructions for this survey. The 1984 wire drag data was reduced for predicted tides based on correctors for Corridor Point 6. The application of smooth tide data to the wire drag work may result in an appreciable difference between the final clearing depths and those determined using predicted tides. ✓ 1813

The changes in effective depth that occurred during a drag were applied at the exact time of change. Fix interval for the drag work was five minutes, therefore some changes in effective depth occurred between fixes. When this occurred the time was interpolated and drawn in appropriately. ✓

All side scan sonar data was initially recorded in NOAA Form 77-44, Sounding Volumes. All header data, position numbers, time, and position control data were recorded in the appropriate columns in the volumes. The remarks column was used to record all line information, vessel rpms, length of towcable, vessel heading, and any other unusual or noteworthy remarks. ✓

Vessel position data from the side scan sonar work was entered in the Digital PDP 11/34 computer with a modified version of the R/H Double Precision Wire-Drag program. Rates for just one vessel were entered in this program and a single vessel position plot was generated with the Houston Instruments roll-bed plotter. All side scan sonar work for this survey was plotted in this manner. ✓

Side scan sonar coverage was computed and listed on the Side Scan Sonar Coverage Abstract. The required 100-percent side scan coverage was obtained throughout the entire corridor. ✓

The sonargrams from the side scan sonar work were examined while on line and then again at the end of the day. All notable contacts were flagged during each examination. These flagged contacts were then logged in the Side Scan Sonar Target Abstract for the field sheet. The Target Abstract was then completed and the contacts were plotted on the smooth field sheet containing the vessel position plots. The Side Scan Sonar Target Lists were then compiled from the Target Abstracts and from the contact plots. The Del Norte rates of the contact positions were determined using a grid and arc overlay. These rates were then used to determine the latitude and longitude of the contact with the HP 9815 computer and the Geodetic Package program. ✓

The towcable length indicated in the sounding volumes and on all sonargrams is actually the length of towcable from the waterline to the towfish. During the plotting of contacts on the ✓

smooth sheet, the towfish layback was computed by adding the length of towcable from the waterline to the towfish plus the antenna to waterline distance (17.98m). However, since a K-Wing depressor was used, the stern to towfish distance is a slope distance rather than the horizontal distance used. This will result in slight position errors of the contacts plotted on the smooth sheet. ✓

#### J. Junctions and Splits

The side scan sonar coverage junctioned with contemporary survey R/H 20-13-83/84 to the west and with contemporary survey R/H 20-15-83/84 to the east. There is adequate overlap of sonar coverage with both of these surveys. No junctions were made during processing. ✓

#### K. Comparison with Prior Surveys

The survey area is covered by prior surveys H-9181(1970) and by H-9212(1971). All three boulder fields delineated by a dashed line on field sheet R/H 20-14-83/84<sup>(FE-268W)</sup> are depicted as shoal areas on the prior surveys. The boulder field centered about latitude 41-11-18N, longitude 072-18-15W on the field sheet contains a shoalest depth, according to survey H-9181, of 89 feet at latitude 41-11-17N, longitude 072-18-12W. This boulder field and associated depths compare favorably with the prior survey. Concur ✓

AW015  
#7360

The shoal area centered about the 127 foot sounding at latitude 41-14-10N, longitude 072-09-03W on survey H-9212 compares well with the boulder field drawn on field sheet R/H 20-14-83/84<sup>(FE-268W)</sup> centered about the same point. Concur ✓ Another shoal area, indicated on H-9212 and centered about the 117 foot sounding at latitude 41-14-00N, longitude 072-10-20W, is also well represented by the boulder field drawn on the field sheet and centered about the same point. Concur ✓

FBrock

AW015  
#7358

#7359

A sand wave area was delineated on the western edge of the field sheet with a sand wave symbol, "  ", at latitude 41-11-35N, longitude 072-18-24W. This area contains sand waves ranging in heights from 3 to 20 feet but none of the peaks have least depths of less than 100 feet. The prior survey H-9181 does not give any indication of the presence of these sand waves. ✓

A suspected wreck was located during survey operations at latitude 41-13-46.1N, longitude 072-10-10.3W and is not indicated on the prior survey. The investigation of this suspected wreck is fully discussed in Section R of this report. See the Addendum. ✓

#### L. Comparison with the Charts

*See also the Addendum.*

The charts that covered the work area were NOS charts 12354, 26th Ed., Feb 4/84; 13209, 17th Ed., Sept 22/84; and 13212, 29th Ed., Jan. 1/83. ✓

The boulder field centered about latitude 41-11-18N, longitude 072-18-15W is indicated by a 90 foot sounding at latitude 41-11-12N, longitude 072-18-12W on charts 12354, 13209, and 13212. This boulder field should be represented by the 89 foot sounding at latitude 41-11-17N, longitude 072-18-12W from prior survey H-9181. It is recommended that an 89 foot sounding ✓

AW015  
#7360

be applied to the above charts at latitude 41-11-17N, longitude 072-18-12W and that the 90 foot sounding, latitude 41-11-12N, longitude 072-18-12W, be removed from the above listed charts. *Concur*

The boulder fields centered about the 117 foot and 127 foot soundings, mentioned above in Section K, are represented as shoal areas on charts 13209 and 13212 by depth contour lines and the appropriate soundings. These areas are represented on chart 12354 as 117 foot and 127 foot soundings, respectively.

The sand wave area mentioned in Section K, latitude 41-11-35N, longitude 072-18-24W, is not represented on any of the charts covering the survey area.

The suspected wreck that was located during survey operations at latitude 41-13-46.1N, longitude 072-10-10.3W, is not indicated on the charts covering the survey area. The investigation of this suspected wreck is fully discussed in Section R of this report. *See the Addendum*

One floating aid to navigation is contained within the limits of this field sheet. This buoy, Plum Island Lighted Whistle Buoy "PI" was positioned using Del Norte and is accurately charted.

Although there is no shoreline within the limits of R/H 20-14-83/84<sup>(FE-268WD)</sup>, all presently charted landmarks in the vicinity of this section of the corridor were visually verified from offshore and are suitable for charting. No other landmarks were observed which would be suitable for navigation from the survey area.

#### M. Adequacy of Survey

This survey is considered to be complete and adequate for clearing the Northville Industries Oil Tanker Route as required by the Project Instructions. In addition, the recommendations in Section L and R of this report are complete and adequate for charting.

All areas within this section of the proposed tanker route were cleared by sonar or wire drag techniques to a minimum effective depth of 74 feet. There are no items within this survey that would represent a hazard to deep draft tanker traffic. *Concur*  
*Has not been verified.*

#### N. Incomplete Items

The boulder field centered about latitude 041-14-10N, longitude 072-09-03W, was cleared in one direction from SW to NE to a depth of 76 feet on JD (1984) 297, Strip 1. An attempt was made to clear this area in the opposite direction from NE to SW on JD (1984) 292, Strip 1. This wire drag was very difficult to plan and complete as a result of numerous lobster pots in this area and the swift currents that were encountered.

During the drag on JD 292, a 4+ ft. lift was encountered at 1831 UTC between buoys 1 and 2. Ordinarily, this test would void the entire drag from the prior test on this same section of the drag to the time of the next acceptable test on this section. However, the Command recommends a different approach to resolving this drag based on the following factors. The launch was attempting to clear a lobster pot ahead of the drag during this test, resulting in some confusion as to whether to set the tester

at 80 or at 78 ft., as instructed. Since 80 ft. was erroneously set, the Command is confident that the pole was struck on the upper half, resulting in the wire riding up the pole a short distance before the pole was kicked out of the way, resulting in a false indication of extra lift. This was confirmed at 1837 UTC when the tester was reset at 78 ft., resulting in 2.0 ft. of lift, 4.0 ft. effective. As indicated above, the lift in this section of the drag was most likely attributable to a fouled lobster pot. Even with this approximate 4 ft. lift, since the ground wire was set at 80 ft., the tide reducer at zero, the Command is still confident that this section of the corridor was cleared to a 70 ft. effective depth, as required by the Project Instructions. ✓

The Command recommends that sections N-2 be voided between 1733 UTC, fix 37, and 1837 UTC, fix 51. This recommendation is based on the above discussion, the testing program data indicating that all other sections of the drag were stable, and that this is an area clearance drag rather than an item investigation. Had the test data indicated that the entire drag was in an unsteady state, a repeat of this drag would have been conducted. Since there is doubt as to the cause or exact amount of abnormal lift in section 1-2, the best approach is to void sections N-2 and to retain the remaining sections of this drag for which there is accurate and satisfactory lift data. Further review of the contact target heights from the sonar records indicates that target 2 is the object in this boulder field with the least clearance depth of 115.8 ft.. Using these conservative estimates, it would not be cost effective or productive use of equipment to repeat this entire drag, given the apparent depth of water, the steady state of sections 2-F of this drag, and the lobster pots located in this area. ✓

A decision on this recommendation is required prior to the commencement of 1985 field operations on this project! Contact the field unit if any additional information is desired to resolve this drag. ✓

#### O. Hangs and Groundings

There were no hangs or groundings encountered during this survey. ✓

#### P. Currents and Winds

Tidal currents were closely monitored during the course of this survey. Ship drag operations had to be run with the predominate current flow to result in satisfactory lift data. Side scan sonar operations were also conducted with the predominate current flow to maintain proper towfish depth. Comparisons were made with the Tidal Current Tables, 1983/84, Atlantic Coast of North America for station 2676. In general, the times and strengths of maximum flood and ebb and times of slack water at the surface agreed with the predicted times and strengths under normal conditions. ✓

Q. Personnel

The officers participating in this survey were LCDR Donald D. Winter, LCDR Robert K. Norris, LT Neal G. Millett, LT Edward M. Clark, LT Joseph C. Talbott, and LTJG Thomas G. Callahan. ✓

R. General Notes

*The Wire Drag data has not been processed.*  
The contact suspected to be a wreck, sonar contacts 13,31, and 37 at latitude 041-13-46.1 N, longitude 072-10-10.3 W and the boulder field centered about latitude 041-14-00 N, longitude 072-10-20 W, was cleared in opposite directions to an effective depth of 75 ft. on JD's (1984) 292 and 297. This boulder field was cleared after position 51 on JD 292 and will not be affected by the 4+ ft. lift test data for this drag, see Section N. ✓

The boulder field centered about latitude 041-11-18 N, longitude 072-18-15 W, has been cleared in opposite directions to an effective depth of 77 ft.. This area was completed during the wire drags conducted on JD's (1984) 179 and 291. ✓

Finally, based on the discussions in Section N of this report, it is recommended that the boulder field centered about latitude 041-14-10 N, longitude 072-09-03 W, be considered complete and cleared in opposite directions to 76 ft. This area was cleared on JD's (1984) 292 and 297. ✓

The following are charting recommendations :

1. Chart a non-dangerous wreck symbol, PA, at latitude 41-13-46.1N, longitude 072-10-10.3W, cleared by wire drag to an effective depth of 75 feet. This wreck should be charted as position approximate since it was only located by sonar methods. ✓  
*Do not concur - see the Addendum*

AWOIS  
# 7357

2. Chart "Blds" symbols at latitude 41-14-05N, longitude 072-09-00W and latitude 41-14-27N, longitude 072-08-52W. ✓ These symbols delineate the boulder field centered about the 127 foot sounding at latitude 41-14-10N, longitude 072-09-03W. ✓ It is recommended that this boulder field be considered cleared to an effective depth of 76 ft., see section N. *Wire drag not processed.*

AWOIS  
# 7358

3. Chart a "Blds" symbol at latitude 41-14-01N, longitude 072-10-18W. ✓ This symbol delineates the boulder field centered about the 117 foot sounding at latitude 41-14-00N, longitude 072-10-20W. ✓ This boulder field has been cleared to an effective depth of 75 feet. *Wire drag not processed.*

AWOIS  
# 7359

4. Remove the 90 foot sounding at latitude 41-11-12N, longitude 072-18-12W and add the 89 foot sounding at latitude 41-11-17N, longitude 072-18-12W. ✓ Chart the boulder field centered about this 89 foot sounding by a "Blds" symbol at latitude 41-11-18N, longitude 072-18-15W. ✓ Addition of the 89 foot sounding was based on prior survey H-9181. This area has been cleared in opposite directions to an effective depth of 77 ft.. *Wire drag not processed.*

AWOIS  
# 7360

5. Chart a sand wave symbol "  " at latitude 41-11-35N, longitude 072-18-24W. This deliniates the sand wave area centered about this same position. *Concur*

Six lines of side scan sonar coverage did not insonify the maximum range possible due to dark side scan records. These lines were run again with supplemental lines so as to to insonify the maximum range. The following is a listing, by position numbers, of the original lines run and the supplemental lines.

Original Line	Supplemental Line
54-89	160-203
90-105	204-214
589-626	673-705, 752-756
106-139	707-751
140-146	757-762
01-05	757-762

Two split lines were run to insure complete side scan sonar coverage of the survey area. These lines were, by position number, 147-151 and 152-159.

See the Coast Pilot Report and Loran-C comparisons for OPR-B660-RU/HE-83/84, Horizontal Control Report for OPR-B660-RU/HE-84, and the Descriptive Report for OPR-B660-RU/HE-82 for additional information on this survey.

Both side scan sonar systems have been overhauled during the 1983-1984 winter inport period. However, it is recommended that neither system be operated at the 400 meter range scale. In actual operations at the 400 meter range scale, sufficient detail is lost due to paper distortion and compression of the graphic record such that only extremely large objects are observed. This might allow wrecks, contacts, and hazards to navigation, which would be observed at a shorter range scale, to remain undetected and unobserved at the 400 meter range scale. Additionally, with the 10 degree beam depression and the 40 degree vertical beam width, the towfish must be at least 40 meters off the bottom in order to achieve an effective scanning range of 400 meters. Therefore, even with a properly operating unit, the 400 meter range scale should not be attempted in depths less than 130 feet.

The format of this report is a composite of the Descriptive Report formats contained in the Wire Drag and Hydrographic Manuals. This format is the optimum composite of the pertinent sections of the two reports and is more applicable to the surveys currently being conducted by the Rude and Heck.

Respectfully submitted,



Neal G. Millett, LT, NOAA

APPROVAL SHEET  
R/H 20-14-83/84

Field operations contributing to the accomplishment of this survey were conducted under my supervision with frequent personal checks of progress and adequacy. This report and field sheet have been closely reviewed and are considered complete and adequate for charting. ✓

*Robert K. Norris*

Robert K. Norris  
LCDR, NOAA  
Commanding Officer  
NOAA Ships RUDE & HECK

**C. HORIZONTAL CONTROL**

C. HORIZONTAL CONTROL

No new stations were established for this survey. See Appendix D., Signal List for a complete listing of all stations used on this survey.

**D. SIGNAL LIST**

OPR- B660-Rw/He-83

R/H 20-14-83

Not Verified

Saybrook Lthse. (1861)

ID NBR 15  
LAT 411616.894  
LON 722037.013  
ELEV'N 21.60 M

FILE 15

~~Libby's Chimney~~

~~ID NBR 16  
LAT 411523.512  
LON 722832.760~~

~~FILE 16~~

New London Harbor  
Lthse. (1835)

ID NBR 17  
LAT 411859.489  
LON 720524.855  
ELEV'N 27.10 M

FILE 17

New London Ledge  
Lthse. (1932)

ID NBR 18  
LAT 411820.795  
LON 720440.316  
ELEV'N 17.70 M

FILE 18

~~Seaside Sanitarium~~

~~Elev. Tank (1932)~~

~~ID NBR 19  
LAT 411813.034  
LON 720757.667~~

~~FILE 19~~

Bartlett Reef Lt. (1954)

ID NBR 20  
LAT 411627.924  
LON 720815.740

FILE 20

Seaflower Reef Lt. (1954)

ID NBR 21  
LAT 411745.245  
LON 720201.462

FILE 21

Not Verified

~~WESTBROOK CONG.  
CHURCH SPIRE (1934)~~

~~ID NBR 27  
LAT 411718.860  
LON 722788.610  
FILE 27~~

~~NORTH DUMPLING~~

~~LIGHT HOUSE (1874)~~

~~ID NBR 26  
LAT 411715.932  
LON 720111.084  
FILE 26~~

~~BRENTON REEF LIGHT  
(1962)~~

~~ID NBR 31  
LAT 412535.071  
LON 712831.978  
FILE 31~~

~~WESTBROOK TANK  
(1934)~~

~~ID NBR 28  
LAT 411654.610  
LON 722816.481  
FILE 28~~

**RACE ROCK  
LIGHT HOUSE (1882)**

**ID NBR 27  
LAT 411436.152  
LON 720251.414  
FILE 27**

~~BEAVERTAIL  
LIGHTHOUSE (1869)~~

~~ID NBR 32  
LAT 412657.348  
LON 712859.693  
FILE 32~~

~~BLOCK IS NORTH  
LIGHTHOUSE (1874)~~

~~ID NBR 28  
LAT 411339.881  
LON 713434.864  
ELEV N 40.97 M  
17.68  
FILE 28~~

~~TOWER (1972)  
(Mr. Prospect)~~

~~ID NBR 33  
LAT 411528.647  
LON 720035.158  
ELEV N 49.88 M  
FILE 33~~

~~WATCH HILL  
LIGHTHOUSE (1873)~~

~~ID NBR 24  
LAT 411313.646  
LON 715132.552  
ELEV N 18.68 M  
FILE 24~~

~~POINT JUDITH TANK  
(1940)~~

~~ID NBR 29  
LAT 412023.534  
LON 712981.461  
FILE 29~~

~~POINT JUDITH  
LIGHTHOUSE (1839)~~

~~ID NBR 25  
LAT 412139.323  
LON 712854.826  
ELEV N 19.81 M  
FILE 25~~

~~HAZARD TOWER (1912)~~

~~ID NBR 36  
LAT 412455.281  
LON 712726.972  
FILE 36~~

PROJECT:

OPR-8660-RUJHE-84

Not Verified

CHALS/STATIONS

~~TOWER (1972)~~

~~ID NBR 1  
LAT 411538.647  
LON 720835.153  
ELEV'N 49.00 M  
FILE 1~~

~~WATCH HILL LTHSE.  
(1873)~~

~~ID NBR 2  
LAT 411813.646  
LON 715132.552  
ELEV'N 18.50 M  
FILE 2~~

~~BARTLETT REEF LT.  
(1954)~~

~~ID NBR 3  
LAT 411627.924  
LON 720815.740  
FILE 3~~

~~NEW LONDON HARBOR  
LIGHTHOUSE (1835)~~

~~ID NBR 4  
LAT 411859.489  
LON 720524.855~~

~~NEW LONDON LEDGE  
LIGHTHOUSE (1932)~~

~~ID NBR 5  
LAT 411820.795  
LON 720440.516  
ELEV'N 17.70 M  
FILE 5~~

~~SEAFLOWER REEF LT.  
(1954)~~

~~ID NBR 6  
LAT 411745.245  
LON 720201.462  
FILE 6~~

~~NORTH DUMPLING  
LTHSE. (1874)~~

~~ID NBR 7  
LAT 411715.932  
LON 720111.884  
FILE 7~~

~~LATIMER REEF LTHSE.  
(1886)~~

~~ID NBR 8  
LAT 411815.871  
LON 715501.684  
FILE 8~~

~~RACE ROCK LTHSE.~~

~~(1882)~~

~~ID NBR 9  
LAT 411436.153  
LON 720251.414  
FILE 9~~

~~LITTLE GULL ISLAND  
LTHSE. (1874)~~

~~ID NBR 10  
LAT 411222.673  
LON 720626.278  
FILE 10~~

~~FISHERS IS. CG  
CUPOLA (1934)~~

~~ID NBR 11  
LAT 411658.787  
LON 715641.848  
FILE 11~~

~~SAYBROOK LTHSE.  
(1861)~~

~~ID NBR 12  
LAT 411616.894  
LON 722037.013  
ELEV'N 21.60 M  
FILE 12~~

APPENDIX E.

PNEUMO DEPTH GAGE CALIBRATIONS - NEGATIVE REPORT

APPENDIX F.  
DIVING REPORT - NEGATIVE REPORT

APPENDIX H.  
LOCAL NOTICE TO MARINERS REPORT - NEGATIVE REPORT

APPENDIX J.

DANGER TO NAVIGATION REPORT - NEGATIVE REPORT

APPENDIX M.

SIDE SCAN SONAR COVERAGE ABSTRACT - TARGET ABSTRACT - TARGET LIST

## Sonar Coverage Abstract

DPR-B660-Ru/He-83

Item No. R/H 20-14-83

Search Track Number	Range Scale (m)	Minimum Towfish Height (m)	Minimum Effective Scanning Range (m)	Search Track Number	Range Scale (m)	Minimum Towfish Height (m)	Minimum Effective Scanning Range (m)	Maximum Track Spacing (m)	Coverage Analysis
714-707	200m	18m	178	153-159	200m	19m	188m	150m	100%
159-153		19	188	500-506		21	200	180	
714-732		33	200	506-519		21	200	250	
731-751		27	200	637-627		19	188	290	
627-637		19	188	520-530		21	200	260	
519-500		21	200	530-551		21	200	260	
A-104 551-546		36	200	756-752		28	200	310	
546-520		21	200	678-705		16	158	300	
705-677		16	158	588-557		17	168	325	
621-626		27	200	557-532		28	200	300	
623-626	200m	27	200	754-756	200m	60	200	75	100%

## Sonar Coverage Abstract

OPR - B660-Ru/He-83

Tideg. No. RIH 20-14-83

Search Track Number	Range Scale (m)	Minimum Towfish Height (m)	Minimum Effective Scanning Range (m)	Search Track Number	Range Scale (m)	Minimum Towfish Height (m)	Minimum Effective Scanning Range (m)	Maximum Track Spacing (m)	Coverage Analysis
672-664	200m	27m	200m	203-187	200m	21m	200m	300m	100%
664-660		27	200	78-73		32	200	300	
660-639		21	200	182-161		20	200	250	
78-73		32	200	187-182		19	188	140	
203-161		21	200	20-53		26	200	325	
20-30		27	200	204-214		27	200	240	
30-46		27	200	19-05		26	200	330	
46-53		26	200	757-762		30	200	275	
204-214		24	200	751-732		27	200	210	
19-17		33	200	116-119		30	200	225	
17-08		26	200	729-717		35	200	340	
08-05		28	200	129-132		27	200	300	
775-762	↓	30	200	714-707	↓	18	178	250	
128-132	200m	27	200	718-713	200m	18	178	100	

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SIDE SCAN TARGET ABSTRACT

DATE \_\_\_\_\_

OPR- B660-Ru/Hc-83

ITEM # \_\_\_\_\_

J.D. \_\_\_\_\_

RH 20-14-83

SHIP \_\_\_\_\_

TARGET NUMBER	J.D. TIME UCT	FIX #	COMPUTED RATES	TOW SPEED	LENGTH OF TOW (M)	REDUCED DEPTH (FT)	CHARTED DEPTH (FT)	HEIGHT OF FISH R1 (M)	R2 (M)	R3 (M)	R4 (M)	HEIGHT OF TARGET (M/FT)	RANGE OF TARGET (M)	WIDTH OF TARGET (M/FT)	TOWFISH LAYBACK (M)
1	280	500	R <sub>1</sub> 18490 R <sub>2</sub> 2800	4 KTS	30.5	264.5	272	70.0	146.5	147.5	152.5	2.3	129.9	1.1	51.8
2	280	502-503	R <sub>1</sub> 16725 R <sub>2</sub> 10000	4	30.5	115.8	127	38.0	71.0	72.0	77.0	3.4	62.0	1.1	51.8
3	280	502-503	R <sub>1</sub> 16450 R <sub>2</sub> 10120	4	30.5	166.1	175	39.0	145.5	146.0	157.0	2.7	140.9	0.5	51.8
4	280	505-506	R <sub>1</sub> 15100 R <sub>2</sub> 11230	4	30.5	113.1	117	24.5	95.5	96.5	101.5	1.2	92.6	1.0	51.8
5	280	505-506		4	30.5		117		Position Plot - Boulder Field Limits						51.8
6	292	545	R <sub>1</sub> 14875 R <sub>2</sub> 11350	4	38.1	111.1	117	30.0	92.0	93.0	99.0	1.8	87.6	1.0	59.4
7	292	545-546		4	38.1		117		Position Plot - Boulder Field						59.4
8	293	653-654	R <sub>1</sub> 17730 R <sub>2</sub> 10080	4	38.1	198.8	207	52.5	68.0	69.0	72.5	2.5	46.1	1.5	59.4
9	293	582	R <sub>1</sub> 14250 R <sub>2</sub> 12700	4	38.1	149.6	163	38.5	132.0	135.0	151.0	4.1	127.4	3.1	59.4
10	293	558		4	38.1		95		Position Plot - Boulder Field						59.4
11	293	592	R <sub>1</sub> 9730 R <sub>2</sub> 22935	4	30.5		90		Position Plot - Boulder Field						51.8
12	293	596-597	R <sub>1</sub> 9840 R <sub>2</sub> 21250	4	30.5	126.8	137	27.0	84.0	87.0*		—	80.8	3.1	51.8
13	293	620	R <sub>1</sub> 15315 R <sub>2</sub> 11455	4	38.1	145.7	177	27.5	34.5	36.0	50.0	7.7	28.2	1.8	59.4
14	293	54-55	R <sub>1</sub> 17460 R <sub>2</sub> 8620	4	30.5	190.0	211	53.0	82.5	87.0	99.0	6.4	68.1	5.4	51.8
15	293	55-56	R <sub>1</sub> 17120 R <sub>2</sub> 8940	4	30.5	141.8	148	31.0	83.0	85.0	90.5	1.9	77.7	2.1	51.8

\* Item Dragged

\* No shadow observed on sonogram. No height computation.

SIDE SCAN TARGET ABSTRACT

DATE \_\_\_\_\_

OPR- B660-RullHe-83

ITEM # \_\_\_\_\_

J.D. \_\_\_\_\_

RH 20-14-83

SHIP \_\_\_\_\_

TARGET NUMBER	J.D. TIME UCT	FIX #	COMPUTED RATES	TOW SPEED	LENGTH OF TOW (M)	REDUCED DEPTH (FT)	CHARTED DEPTH (FT)	HEIGHT OF FISH R1 (M)	R2 (M)	R3 (M)	R4 (M)	HEIGHT OF TARGET (M/FT)	RANGE OF TARGET (M)	WIDTH OF TARGET (M/FT)	TOWFISH LAYBACK (M)
16	293	57-58		4 kts	30.5			Position Plot - Boulder Field							51.8
17	293	132-133		4	30.5			Position Plot - Boulder Field Limits							51.8
18	293	136		4	30.5			Position Plot - Boulder Field Limits							51.8
19	293	144-145	R <sub>1</sub> 16950 R <sub>2</sub> 9505	4	30.5	157.8	168	37.5	69.0	71.5	78.0	3.1	59.8	2.9	51.8
20	293	145		4	30.5			Position Plot - Boulder Field Limits							51.8
21	293	154		4	30.5			Position Plot - Boulder Field Limits							51.8
22	293	157-158	R <sub>1</sub> 16630 R <sub>2</sub> 10030	4	30.5	167.8	175	29.0	45.5	48.0	52.0	2.2	36.8	3.0	51.8
23	293	157-158	L <sub>1</sub> 16775 L <sub>2</sub> 9825	4	30.5	131.8	137	26.5	91.0	93.0	99.0	1.6	87.5	2.1	51.8
24	308	160-161	R <sub>1</sub> 17460 R <sub>2</sub> 8620	4	30.5		211	48.0	97.5	99.5	128.0	10.7	90.1	2.2	51.8
25	308	161-162	R <sub>1</sub> 17075 R <sub>2</sub> 8775	4	30.5	141.4	148	30.0	75.0	78.0	83.5	2.0	69.6	3.2	51.8
26	308	162-163	R <sub>1</sub> 16200 R <sub>2</sub> 9480	4	30.5	120.8	127	37.0	109.5	111.0	117.0	1.9	103.7	1.6	51.8
27	308	200-201	R <sub>1</sub> 9380 R <sub>2</sub> 23230	4	30.5		148	30.0	69.0	75.0	*	—	62.1	6.6	51.8
28	299	640-641		4	38.1		122	Position Plot - Boulder Field Limits							59.4
29	299	642-643	R <sub>1</sub> 15950 R <sub>2</sub> 9555	4	38.1		122	Position Plot - Boulder Field Limits							59.4
30	299	673-674	R <sub>1</sub> 17730 R <sub>2</sub> 10080	4	38.1		207	53.5	111.0	112.5	150.0	2.7	131.5	1.6	59.4

\*No shadow observed on sonogram. No height computation.

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## SIDE SCAN TARGET ABSTRACT

Page 3 of 3

DATE \_\_\_\_\_

OPR- B660-Ruffe-83

ITEM # \_\_\_\_\_

J.D. \_\_\_\_\_

R/H 20-14-83

SHIP \_\_\_\_\_

TARGET NUMBER	J.D. TIME UCT	FIX #	COMPUTED RATES	TOW SPEED	LENGTH OF TOW (M)	REDUCED DEPTH (FT)	CHARTED DEPTH (FT)	HEIGHT OF FISH R1 (M)	R2 (M)	R3 (M)	R4 (M)	HEIGHT OF TARGET (M/FT)	RANGE OF TARGET (M)	WIDTH OF TARGET (M/FT)	TOWFISH LAYBACK (M)
31	299	678- 679	R <sub>1</sub> 15315 R <sub>2</sub> 11435	4 kts	38.1	145.4	171	29.0	66.0	70.0	96.0	7.8	62.5	4.2	59.4
32	299	682	R <sub>1</sub> 14025 R <sub>2</sub> 12450	4	38.1	157.1	163	39.0	83.5	84.0	88.0	1.8	74.7	0.6	59.4
33	308	707- 710	R <sub>1</sub> 16575 R <sub>2</sub> 9820	4	30.5	116.8	127	27.0	72.0	74.5	84.0	3.1	67.9	2.6	51.8
34	308	713- 714	R <sub>1</sub> 14960 R <sub>2</sub> 11100	4	30.5	125.1	133	36.0	131.0	131.5	141.0	2.4	126.6	0.5	51.8
35	308	713- 714	R <sub>1</sub> 14920 R <sub>2</sub> 11002	4	30.5	128.1	133	33.0	40.5	41.5	43.5	1.5	25.5	1.6	51.8
36	308	713- 714		4	30.5		117	Position Plot - Boulder Field Limits							51.8
37	308	752	R <sub>1</sub> 15315 R <sub>2</sub> 11435	4	30.5	147.4	171	41.0	96.0	99.0	120.0	7.2	89.8	3.2	51.8
38	308	757- 758		4	30.5			Position Plot - Boulder Field Limit							51.8
39	308	757- 760	R <sub>1</sub> 16368 R <sub>2</sub> 7815	4	30.5		147	Position Plot - Boulder Field Peak							51.8
40	308	760- 761	R <sub>1</sub> 16500 R <sub>2</sub> 9675	4	30.5	157.7	162	33.5	71.5	74.0	77.0	1.3	63.8	2.8	51.8
41	308	760- 761	R <sub>1</sub> 16950 R <sub>2</sub> 9575	4	30.5	156.8	168	39.0	81.0	84.0	92.0	3.4	72.7	3.3	57.8
42	292	49- 50	R <sub>1</sub> 16275 R <sub>2</sub> 9730	4	30.5	136.8	145	26.0	57.5	60.0	66.5	2.5	52.5	2.7	51.8
43	292	49- 50	R <sub>1</sub> 16200 R <sub>2</sub> 9660	4	30.5	121.1	129	25.5	75.0	76.0	84.0	2.4	71.4	1.0	51.8
44	292	521- 522		4			90	Position Plot - Boulder Field Limits							59.4
45	293	585- 588		4			90	Position Plot - Boulder Field Limits							51.8
46	299	702- 703		4			90	Position Plot - Boulder Field Limits							59.4

OPR-B660-RU-HE-83

SHEET R/H 20-14-83

## SIDE SCAN SONAR TARGET LIST

TARGET NUMBER	CHARTED DEPTH (FT)	LEAST	HEIGHT OF TARGET (FT)	WIDTH OF TARGET (FT)	POSITION	FURTHER INVESTIGATION			REMARKS
		REDUCED DEPTH (FT)				TYPE	DATE	RESULTS	
1	272	264.5	7.5	3.6	⊙ 041-14-10.1 λ 072-07-40.8	None			Height of Target not 10% of Bottom Depth
2	127	115.8	11.2	3.6	⊙ 041-14-03.0 λ 072-09-00.9	None			To be investigated during 1984 Field Season
3	175	166.1	8.9	1.6	⊙ 041-14-04.8 λ 072-09-12.5	Wire Drag	JD 305-01	Cleared to 71' W→E	
4	117	113.1	3.9	3.3	⊙ 041-13-52.4 λ 072-10-14.9	Wire Drag	JD 305-01	Cleared to 70' W→E	
6	117	111.1	5.9	3.3	⊙ 041-14-00.0 λ 072-10-24.4	Wire Drag	JD 305-01	Cleared to 70' W→E	
8, 30	207	198.8	8.2	4.9	⊙ 041-13-41.0 λ 072-09-24.1	None			Height of Target not 10% of Bottom Depth
9	163	149.6	13.4	10.2	⊙ 041-13-29.8 λ 072-11-06.4	None			To be investigated during 1984 Field Season
11, 44 45, 46	90	POSITION	PLOT	BOULDER FIELD	⊙ 041-11-20.7 λ 072-18-13.3	None			To be investigated during 1984 Field Season
12	137	126.8	—	10.2	⊙ 041-11-41.4 λ 072-17-04.1	None			Height of Target not 10% of Bottom Depth
13, 31, 37	171	145.7	25.3	5.9	⊙ 041-13-46.1 λ 072-10-10.3	Wire Drag	JD 305-01	Cleared to 70' W→E	
14, 24	211	190.0	21.0	17.7	⊙ 041-14-35.3 λ 072-08-19.2	None			To be investigated during 1984 Field Season
15	148	141.8	6.2	6.9	⊙ 041-14-31.3 λ 072-09-35.1	None			To be investigated during 1984 Field Season
19, 41	168	157.8	10.2	9.5	⊙ 041-14-15.2 λ 072-08-47.1	Wire Drag	JD 305-01	Cleared to 71' W→E	Close to edge of area effectively cleared
22	175	167.8	7.2	9.8	⊙ 041-14-04.0 λ 072-09-04.8	Wire Drag	JD 305-01	Cleared to 71' W→E	
23	137	131.8	5.2	6.9	⊙ 041-14-07.9 λ 072-08-57.1	Wire Drag	JD 305-01	Cleared to 71' W→E	On edge of area effectively cleared
25	148	141.4	6.6	10.5	⊙ 041-14-30.3 λ 072-08-37.3	None			To be investigated during 1984 Field Season
26	127	120.8	6.2	5.2	⊙ 041-14-33.6 λ 072-09-14.8	None			To be investigated during 1984 Field Season

OPR- B660-RU/HE-83  
 SHEET R/H 20-14-83

SIDE SCAN SONAR TARGET LIST

LEAST

TARGET NUMBER	CHARTED DEPTH (FT)	REDUCED DEPTH (FT)	HEIGHT OF TARGET (FT)	WIDTH OF TARGET (FT)	POSITION	FURTHER INVESTIGATION			REMARKS
						TYPE	DATE	RESULTS	
27	148	—	—	21.6	Q 041-11-55.7 λ 072-18-58.0	None			Height of Target not 10% of Bottom Depth
29	127	POSITION	Plot -	Boulder Field	Q 041-14-37.3 λ 072-09-24.7	None			Height of Target not 10% of Bottom Depth
32	103	157.1	5.9	2.0	Q 041-13-44.0 λ 072-11-09.7	None			Height of Target not 10% of Bottom Depth
33	127	116.8	10.2	8.5	Q 041-14-12.4 λ 072-09-04.4	Wire Drag	JD 305-01	Cleared to 71' W-E	
34	133	125.1	7.9	1.6	Q 041-14-06.6 λ 072-10-18.1	Wire Drag	JD 305-01	Cleared to 70' W-E	
35	133	128.1	4.9	5.2	Q 041-14-11.2 λ 072-10-18.2	None			Height of Target not 10% of Bottom Depth
39	141	Position Plot - Boulder Field Peak			Q 041-14-17.4 λ 072-09-12.0	None			To be investigated during 1984 Field Season
40	162	157.7	4.3	9.2	Q 041-14-19.2 λ 072-09-05.6	None			Height of Target not 10% of Bottom Depth
42	145	136.8	8.2	8.9	Q 041-14-22.6 λ 072-09-14.5	None			Height of Target not 10% of Bottom Depth
43	129	121.1	7.9	3.3	Q 041-14-27.0 λ 072-09-16.6	None			Height of Target not 10% of Bottom Depth
5,7,10,17,21		Position Plot - Boulder Field Limits				None			To be investigated during 1984 Field Season
16,18,20,28,29,38		Position Plot - Boulder Field Limits				None			To be investigated during 1984 Field Season

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04/14/89

HYDROGRAPHIC SURVEY STATISTICS  
REGISTRY NUMBER: FE-268WD

NUMBER OF CONTROL STATIONS	13
NUMBER OF POSITIONS	26
NUMBER OF SOUNDINGS	23

	TIME-HOURS	DATE COMPLETED
* PREPROCESSING EXAMINATION	0	/ /
VERIFICATION OF FIELD DATA	61	03/17/89
QUALITY CONTROL CHECKS	0	
EVALUATION AND ANALYSIS	15	04/14/89
FINAL INSPECTION	3	04/12/89
TOTAL TIME	79	
MARINE CENTER APPROVAL		04/14/89

\* Preverification time is not considered as part of total survey time.

REFERENCE NO.

MOA23-48-89

LETTER TRANSMITTING DATA

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

- ORDINARY MAIL                       AIR MAIL
- REGISTERED MAIL                       EXPRESS
- GBL (Give number) \_\_\_\_\_

TO:

Chief, Data Control Branch, N/CG243    7  
 Room 151, WSC-1  
 Hydrographic Surveys Branch  
 National Ocean Service  
 Rockville, MD 20852

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DATE FORWARDED

24 April 1989

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two (2)

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.

FE-268 (R/H-20-14-83/84)  
OPR-B660, NEW YORK, LONG ISLAND SOUND

Pkg. 1: (Box)

- ✦ Accordion Folder containing Original Field Records (Electronic Rate Printouts, Position Data Listings, and Echograms) for the following (1983) Year Days: 280, 292, 293, 299, 305, & 308 and the Field Smooth Sheet (Track, Side Scan Sonar Coverage, and Side Scan Sonar Contact Plot).
- ✦ Accordion Folder containing Original Field Records (Electronic Rate Printouts, Wire Drag Data Listings, Echograms, Tender Tester Records, and Lift Abstracts) for the following (1984) Year Days: 179, 291, 292, & 297.
- ✦ Envelope containing Field Wire Drag Strips for (1984) Year Days: 179, 291, 292, 297, and (1983) Year Day: 305.
- ✦ Envelope containing Smooth Tides.

DO NOT DISCARD ANY OF THIS DATA.

Page #1 of 2.

FROM: (Signature)

*Maurice B. Hickson, III*  
 Maurice B. Hickson, III

RECEIVED THE ABOVE  
(Name, Division, Date)

*D. S. Clark*  
*May 15, 1989*

Return receipted copy to:

Chief, Hydrographic Surveys Branch,    7  
 N/MOA23  
 Atlantic Marine Center  
 439 W. York Street  
 Norfolk, VA 23510-1114

L

REFERENCE NO.

MOA23-48-89

LETTER TRANSMITTING DATA

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

- ORDINARY MAIL                       AIR MAIL
- REGISTERED MAIL                       EXPRESS
- GBL (Give number) \_\_\_\_\_

TO:

Chief, Data Control Branch, N/CG243    7  
 Room 151, WSC-1  
 Hydrographic Surveys Branch  
 National Ocean Service  
 Rockville, MD 20852

L

DATE FORWARDED

24 April 1989

NUMBER OF PACKAGES  
two (2)

**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.

FE-268 (R/H-20-14-83/84)  
OPR-B660, NEW YORK, LONG ISLAND SOUND

Pkg. 1: (Box) - continued

- ✓ Envelope containing Miscellaneous Data removed from the Original Descriptive Report.
- ✓ Envelope containing Side Scan Sonargrams for (1983) Year Days: 280, 292, 293, 299, & 308.
- ✓ Sounding Volumes
- ✓ Wire Drag Volumes.

Pkg. 2: (Envelope)

- ✓ Original Descriptive Report containing two (2) Smooth Sheets and two (2) accompanying Contact Number Overlays.

DO NOT DISCARD ANY OF THIS DATA.

Page #2 of 2.

FROM: (Signature)

*Maurice B. Hickson III*

Maurice B. Hickson, III

RECEIVED THE ABOVE  
(Name, Division, Date)

Return receipted copy to:

Chief, Hydrographic Surveys Branch,    7  
 N/MOA23  
 Atlantic Marine Center  
 439 W. York Street  
 Norfolk, VA 23510-1114

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ADDENDUM TO ACCOMPANY SURVEY FE-268WD

1. INTRODUCTION

a. In accordance with the memorandum from CDR Russell C. Arnold, Chief, Hydrographic Surveys Branch, N/CG24, dated December 27, 1988, a modified approach to marine center processing of this survey was undertaken. Processing was limited to the following:

1) The verification of the field determined least depths on the significant side scan sonar contacts from analysis of the side scan sonar records.

2) The identification of significant contacts and their location from a cursory examination of the side scan sonar field records.

3) Charting recommendations based upon findings from the limited survey processing and a comparison with the latest largest scale chart of the area and AWOIS or Presurvey Review listings.

4) The wire drag accomplished by this survey was not processed. No hangs or groundings occurred during this survey and the area clearance data are considered to be of little charting value.

2. CHARTING RECOMMENDATIONS FOR CHART 12354, 28th ED., OCT. 4, 1986

Twenty-three (23) least depths are plotted on the smooth sheets for this survey. These soundings are estimated depths on rocks or obstructions made by scaling heights off the bottom from side scan sonar records. Bottom depths were obtained from prior surveys H-9181 (1970) and H-9212 (1971). These two prior surveys are the source of all charted hydrography within the common area. Where contacts do not fall directly on a prior sounding, the bottom depth was determined by interpolating between the surrounding prior soundings. Contact positions were determined by computing offsets from the vessels' tracks. None of the contacts plotted represent a hazard to surface navigation. The shoalest computed least depth is 122 feet. These soundings are suitable for charting only as reported soundings. These soundings may be used to supplement prior hydrography within the common area if considered appropriate. All plotted contacts except contact #12 were interpreted as rocks (boulders).

Contact #12 in Latitude 41°11'41.4"N, Longitude 72°17'04.1"W did not appear to be a rock, a wreck, or a man-made obstruction. Rather it appears to be a small mound-like bottom structure rising approximately 6½ feet off

AWOIS  
#7961

the bottom. This contact is considered nondangerous (computed least depth of 131 feet) and is plotted as an obstruction. See Sheet #2 of 2. ✓

Contact #13 in Latitude 41°13'46.1"N, Longitude 72°10'10.3"W was interpreted as a wreck by the hydrographer. This contact lies on the crest of a ridge that is covered by large boulders. During processing the records were examined and this contact was interpreted as a boulder (rock). Whether it is a boulder or a wreck is of little importance since its computed least depth is 135 feet. See Sheet #1 of 2. ✓

Answers  
#7357

There are no charted wrecks, rocks, or obstructions within the common area. The present survey did determine the limits of boulder fields and sand wave areas within the area surveyed and are plotted on the smooth sheets. These limits with the appropriate notes are recommended to be charted.

### 3. RECOMMENDATIONS FOR ADDITIONAL WORK

No additional field work is recommended within the common area of the present survey. Additional field work is recommended in the areas surrounding this survey if it is considered appropriate to chart the extent of the boulder fields and the sand wave areas.

Verification and  
Recommendations by,

Checked by,

Maurice B. Hickson, III  
Maurice B. Hickson, III  
Cartographer  
Evaluation & Analysis Group

R. D. Sanocki  
R. D. Sanocki  
Chief, Hydrographic  
Survey Processing Section

INSPECTION REPORT  
FE-268WD

The completed wire drag survey has been examined with regards to presentation of survey results. The survey complies with National Ocean Survey requirements except as noted in the Addendum to the Descriptive Report. This survey is not to be considered a basic hydrographic survey and is not approved as such. Only the data that has been verified, smooth plotted, and addressed in the Addendum to the Descriptive Report is approved for charting.

Inspected



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William A. Wert, LCDR, NOAA  
Chief, Hydrographic Surveys Branch

Approved: April 14, 1989



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Ray E. Moses, RADM, NOAA  
Director, Atlantic Marine Center

72° 11'

72° 10'

72° 09'

72° 08'

41° 15'

41° 15'

(A) Depths on these rocks were estimated by scaling heights off the bottom from side scan sonar records. Positions were determined by computing offsets from the vessel's track.

41° 14'

41° 14'

41° 13'

41° 13'

72° 11'

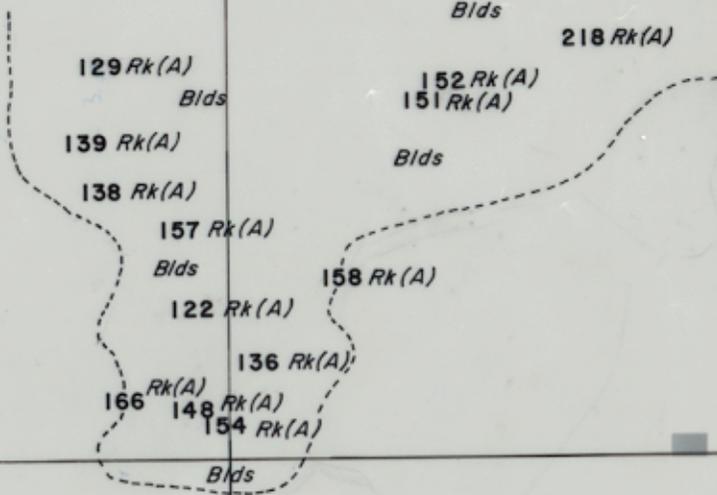
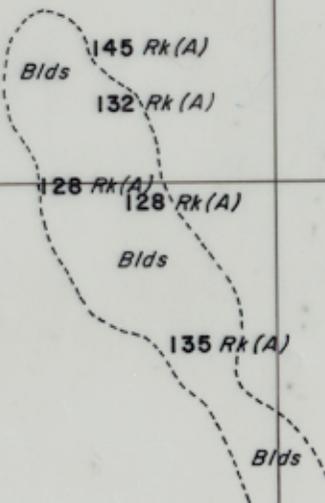
72° 10'

72° 09'

72° 08'

170 Rk(A)

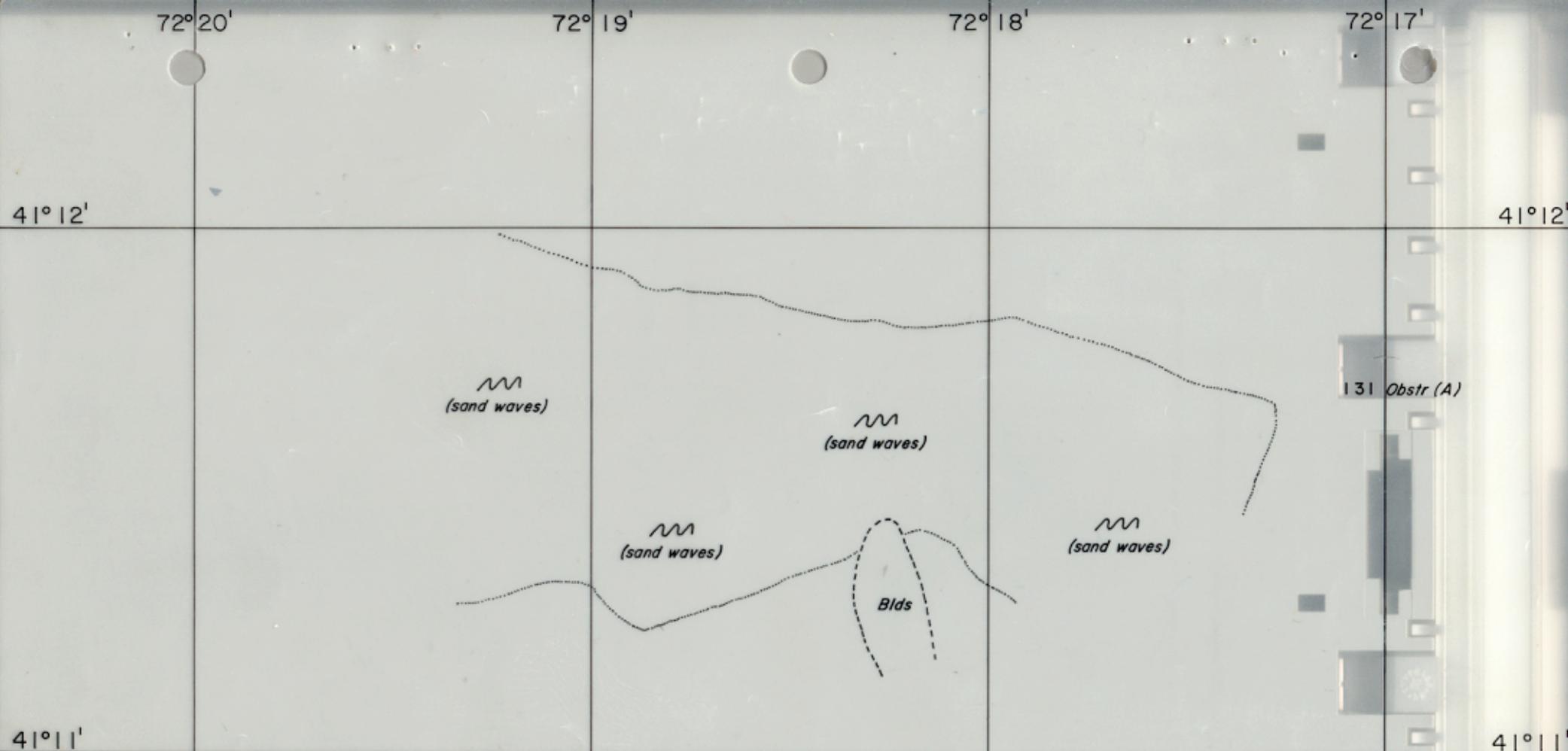
157 Rk(A)



267 Rk(A)

209 Rk(A)

FE-268WD  
NEW YORK  
LONG ISLAND SOUND  
SW OF LONG SAND SHOAL  
7 OCT 1983 TO 23 OCT 1984  
SCALE = 1:20,000  
N A 1927 DATUM  
SOUNDINGS IN FEET AT MLW  
SHEET 1 OF 2



41° 12'

41° 12'

41° 11'

41° 11'

(A) The depth on this obstruction was estimated by scaling the height off the bottom from side scan sonar records. The position was determined by computing the offset from the vessel's track.

FE-268WD  
 NEW YORK  
 LONG ISLAND SOUND  
 SW OF LONG SAND SHOAL  
 7 OCT 1983 TO 23 OCT 1984  
 SCALE = 1:20,000  
 N A 1927 DATUM  
 SOUNDING IN FEET AT MLW  
 SHEET 2 OF 2

72° 20'

72° 19'

72° 18'

72° 17'

72° 11'

72° 10'

72° 09'

72° 08'

41° 15'

41° 15'

41° 14'

41° 14'

41° 13'

41° 13'

72° 11'

72° 10'

72° 09'

72° 08'

29  
26  
43  
42  
39  
40  
35  
33  
25  
19  
25  
15  
14  
3  
22  
2

35  
34

32

13

8

FE-268WD  
CONTACT NUMBER OVERLAY  
TO ACCOMPANY SHEET 1 OF 2

72° 20'

72° 19'

72° 18'

72° 17'

41° 12'

41° 12'

41° 11'

41° 11'

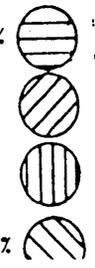
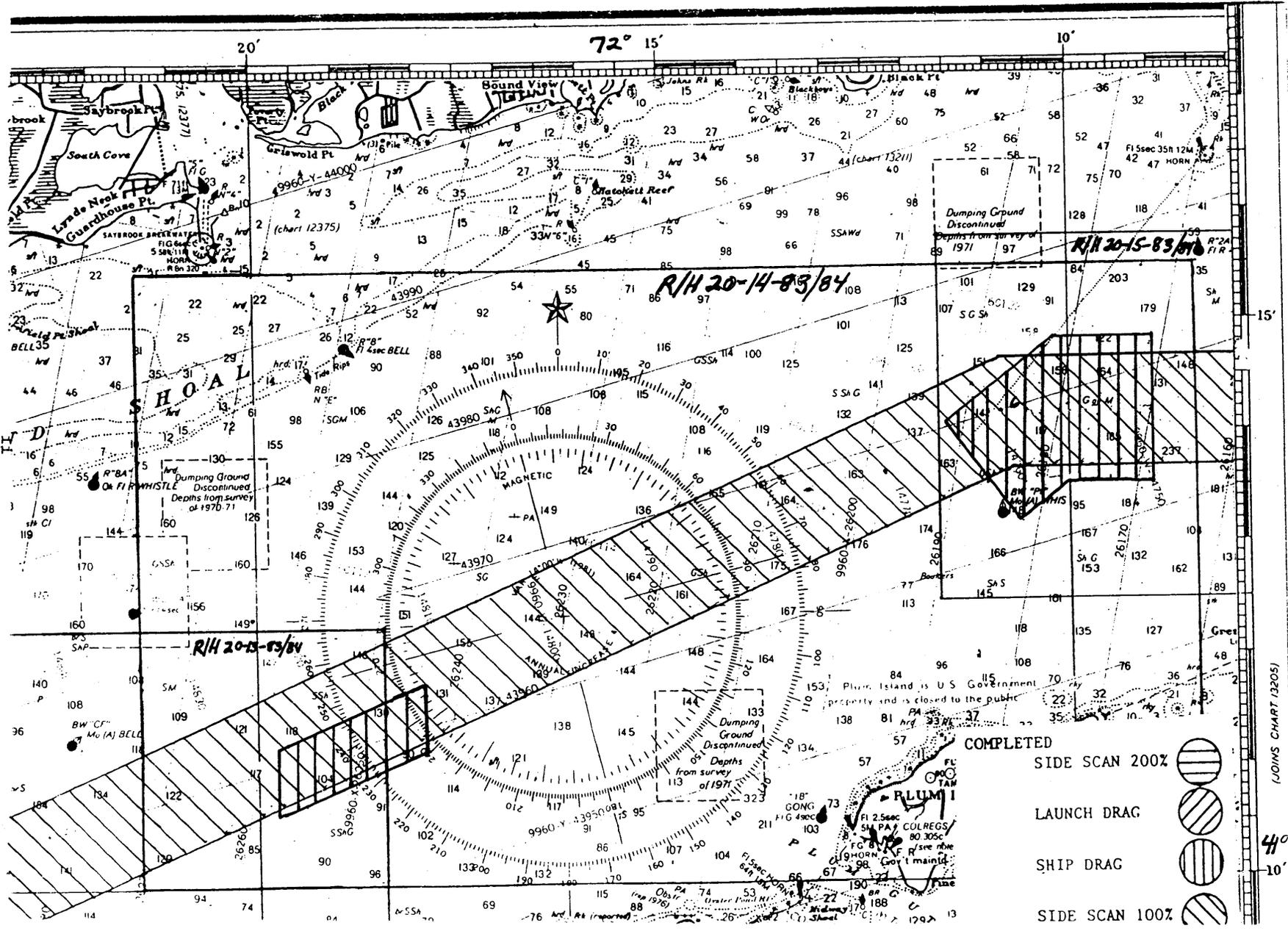
72° 20'

72° 19'

72° 18'

72° 17'

FE-268WD  
CONTACT NUMBER OVERLAY  
TO ACCOMPANY SHEET 2 OF 2

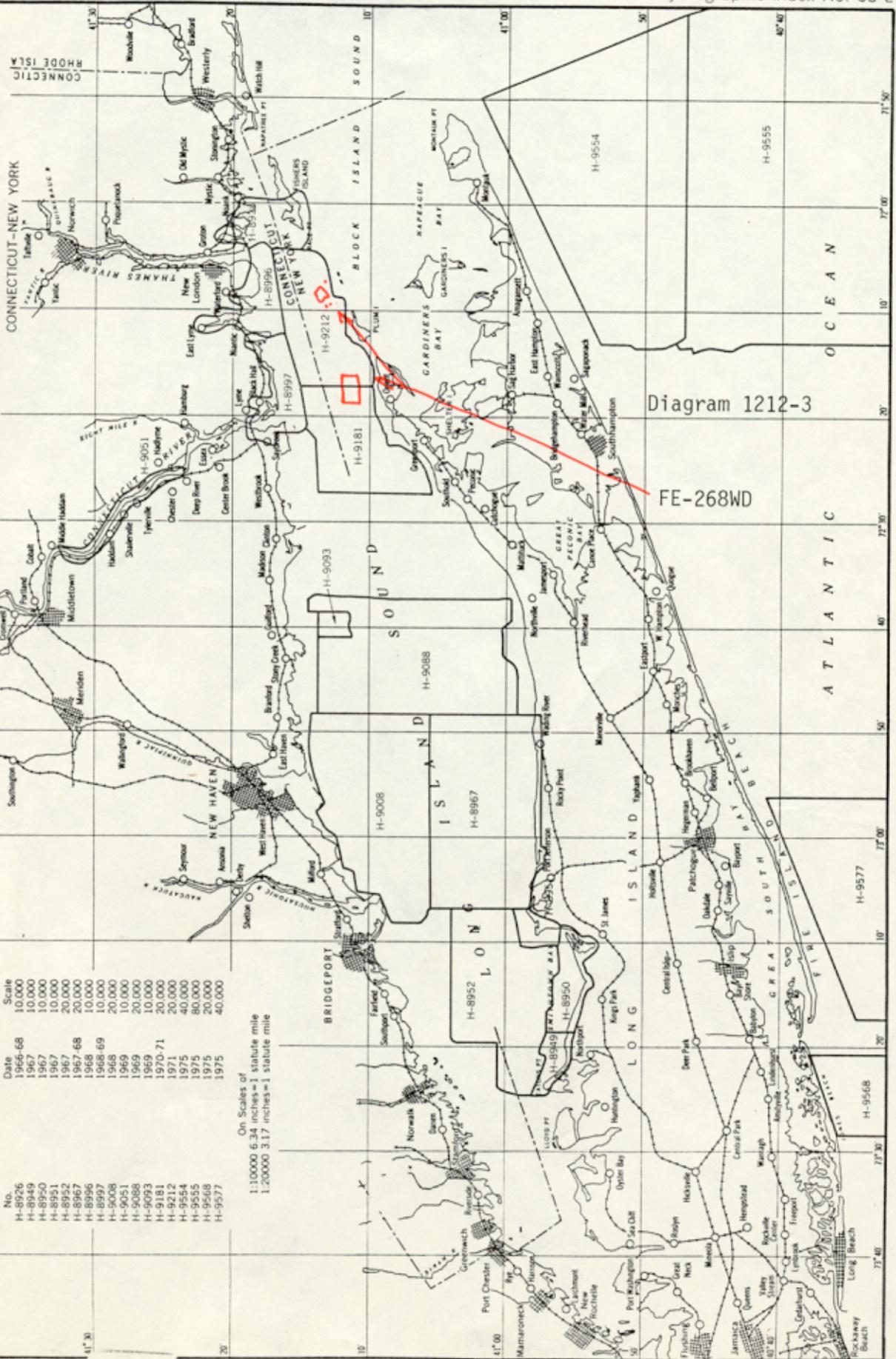


40°  
10'

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

Hydrographic Index No. 63 L

INDEX  
HYDROGRAPHIC SURVEYS  
Complete through August 1978  
1967-1975  
LONG ISLAND SOUND AND VICINITY



HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-8926	1965-68	10,000
H-8943	1967	10,000
H-8950	1967	10,000
H-8951	1967	10,000
H-8952	1967	20,000
H-8967	1967-68	20,000
H-8996	1968	10,000
H-8997	1968-69	10,000
H-9008	1968	20,000
H-9051	1969	10,000
H-9088	1969	20,000
H-9093	1969	10,000
H-9181	1970-71	20,000
H-9212	1971	20,000
H-9554	1975	40,000
H-9555	1975	80,000
H-9568	1975	20,000
H-9577	1975	40,000

On Scales of  
1:10000 6.34 inches=1 statute mile  
1:20000 3.17 inches=1 statute mile

