

FE345

SIDE SCAN

Diagram No. 1211-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey ... Side Scan Sonar
Field No. HE-10-3-90
Registry No. FE-345SS

LOCALITY

State Rhode Island--New York
General Locality .. Long Island, Fishers Island
& Block Island Sounds
Sublocality New London to Weekapaug Point

1990

CHIEF OF PARTY
LCDR S.R. Iwamoto

LIBRARY & ARCHIVES

DATE June 10, 1992

PRODS

13212
13213
13215
13205
12300
12372A
12354
13214

CP-2

HYDROGRAPHIC TITLE SHEET

FE-345SS ✓

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.

HE-10-3-90 ✓

State Rhode Island -- New York ✓General locality Long Island, Fishers Island, and Block Island Sounds ✓Locality New London to Weekapaug Point ✓Scale 1:10,000 ✓Date of survey 03MAY90 - 05JUN90 ✓Instructions dated February 22, 1990 ✓Project No. OPR-B660 ✓Vessel HECK S-591 (EDPN 9140) ✓Chief of party LCDR Stanley R. Iwamoto, NOAA ✓Surveyed by D.W. Moeller, L.D. Weiner, D.S. Wilkes, W.R. Morris ✓Soundings taken by echo sounder, ~~hand lead, and~~ DSF 6000N, and ^{Pneumatic Depth Gauge} Pneumofathometer ✓Graphic record scaled by Ship's Personnel ✓Graphic record checked by D.W. Moeller, L.D. Weiner, D.S. Wilkes, W.R. Morris ✓Protracted by N/A ✓Automated plot by HDAPS ^(Field) / ^(Office - AMC) XYNETICS 1201 ✓Verification by Atlantic Hydrographic Section Personnel ✓Soundings in ~~fathoms~~ METERS ~~feet~~ at ~~XXXXXX~~ MLLW ✓REMARKS: All times UTC. ✓All data are submitted to N/CG 244 Atlantic Hydrographic section. ✓AWOIS and SURF check
7/7/92 MCRNotes in the Descriptive Report in red were made during
office processing.RWW 6/3/28/94

DESCRIPTIVE REPORT TO ACCOMPANY
SURVEY FE-345SS ✓
FIELD NUMBER HE-10-3-90 ✓
RHODE ISLAND - - NEW YORK ✓
LONG ISLAND, BLOCK ISLAND AND FISHERS ISLAND SOUNDS ✓
NEW LONDON TO WEEKAPAUG PT ✓
Scale 1:10000 ✓
NOAA SHIP HECK S-591 ✓
LCDR Stanley R. Iwamoto, CMDG ✓

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions OPR-B660-HE, Southern New England Coast, dated February 22, 1990, Change #1 dated March 15, 1990. ✓

The purpose of this project is to investigate and provide accurate information about reported wrecks and obstructions and provide updated sounding data for the construction of new charts. ✓

B. AREA SURVEYED

This survey consists of 11 AWOIS items which are located in Fishers Island, Long Island, and Block Island Sounds from New London, CT to Weekapaug Pt., Rhode Island. Survey operations began on May 3, 1990, and were completed on June 5, 1990. ✓

C. SURVEY VESSELS

All hydrographic data were collected by the NOAA Ship HECK (EDPN 9140). No unusual vessel configurations were used. ✓

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data acquisition and ^{field} processing were accomplished utilizing the HDAPS system hardware and the latest version of the NAVITRONIC NAVISOFT 300 software provided to the ship by N/CG24. The versions and dates of the system software surveyed with were:

<u>Name</u>	<u>Date</u>	<u>Function</u>
SYSTEM-BA5	22 FEB 1990	BASIC Operating System
SURVEY 2.45	22 FEB 1990	Pre Survey & Survey Files
POSTSUR 4.13	19 MAR 1990	Post Survey Processing
FILESYS 1.50	19 MAR 1990	File Management
CONPLOT 1.02	19 MAR 1990	Plot Routine

E. SONAR EQUIPMENT

The HECK is equipped with an EG&G model 260 slant corrected Side Scan Sonar recorder (S/N 0011443) and a model 272 dual frequency towfish (S/N 0011591). ✓

The beamwidth and downangle are not adjustable on this side scan unit. The 25 through 200 meter range and 100 kHz frequency settings were used. For the 100-200 meter range scales, 190 meter line spacing was used, for 75 meter range scale and for 50 meter range scale 90 meter line spacing was used. ✓

Confidence checks were obtained online when the fish past^{sed} linear bottom features, such as sand waves and trawl marks, which showed continuity of return to the extreme ends of coverage. ✓

The required 2mm, at scale of survey, sonagram overlap was not obtained due to the 190 meter line spacing used. However, the position quality obtained on the disprovals of 1858 & 7473 meets 1:5000 specifications and therefor 10 meters of overlap is sufficient. Additionally, by running parallel lines the wide beam of the echosounder is employed in the area of overlap. 200% side scan coverage was not completed when items were located prior to the completion of coverage, however, in areas containing features that were deemed worthy of additional development, the initial 100% coverage was completed. ✓

See also section 4 of the Evaluator Report

At times the towfish would "loose" the bottom. This was probably due to thermoclines, cavitation by the ships screws, and/or particulate matter in the water column. ✓

Contacts that showed shadow or noteworthy return were computed using the contact utility and were placed in the contact table. Those items deemed significant as defined by the project instructions were investigated. Smooth swath plots were produced to verify coverage and cross-reference contacts. ✓

F. SOUNDING EQUIPMENT

F1. Raytheon DSF 6000N Echosounder

Raytheon DSF-6000N echosounder (S/N A107) was the only echosounder used during this survey. No problems were encountered with this unit. Both low and high frequency depths were digitized, but only high frequency depths were plotted. ✓

F2. ~~Leadline and Pneumofathometer~~ Pneumatic Depth Gauge

depth gauge All diver determined least depths were measured with a ~~pneumo~~ *pneumatic* fathometer. The HECK is equipped with two precision depth gauges, a 0-70 fsw depth gauge, and a 0-140 fsw depth gauge. The HECK's pneumofathometer is built according to Hydrographic Guideline No. 55. Both gauges were most recently calibrated on January 18, 1990. System checks are performed periodically to ensure that the ~~pneumofathometer~~ *pneumatic depth gauge* is still within tolerance. ✓

G. CORRECTIONS TO ECHOSOUNDINGS

G1. Velocity Correctors

The following table shows the dates and locations that velocity correction data were obtained by making direct readings of sound velocity using the ODOM Digibar sound velocimeter (S/N 168):

<u>DATE</u>	<u>LOCATION</u>
04/24/90 (DOY 114)	41° 15' 23"N ; 72° 05' 25"W
05/10/90 (DOY 130)	41° 14' 00"N ; 72° 04' 00"W

The velocity cast data were reduced and velocity corrections calculated using program VELOCITY. The computed velocity correctors were then applied online to echosounder depths (both high and low frequency) by entering the correction data into the HDAPS sound velocity table.

On DOY 071, instrument error was computed by conducting a dual leadline comparison of echosounder and leadline depths. Digital depths agreed with leadline depths within 0.17 meters and 0.020 meter on the average.

G2. Vessel Draft Corrector

A static draft of 2.10 meters was applied online to all echosoundings by entering this value of 2.1 meters into the HDAPS offset table.

G3. Settlement and Squat Correctors

Settlement and squat correctors for the HECK were determined on March 10, 1989 (DOY 69), at Craney Island fuel pier in Norfolk, Virginia using the level rod method.

Settlement and squat values were applied online to hydrographic soundings by entering the observed values into the HDAPS offset table.

No significant weight changes were made to the HECK since the previous settlement and squat computations HECK did not redetermine these correctors this field season.

G4. Heave, Roll, Pitch Sensor and Correctors

Heave is measured by a Datawell B.V. (S/N 19110-C) heave, roll, and pitch sensor (HIPPY) located midship near the transducer. The sensor gathers online data which is applied to the soundings in near real time. All data acquired in the echosounder mode have been corrected by applying HIPPY correctors.

G5. Tide Corrections

The tidal datum for this field examination was Mean Lower Low Water. The tide station at New London was the reference station for the survey. No tide stations were established by the HECK in support of this survey. ✓

All hydrographic depths have been corrected for predicted tides using the zoning correctors specified in the project instructions. Tidal correctors were applied online by entering the appropriate values into an HDAPS predicted tide table. ✓

HECK personnel used zero correctors for the AWOIS item 7277 (DOY 123), the proper zone correctors should have been Zone X. Zone X was also used for item 7521. Zone II was used for items 1858, 7472, and 7475. Item 2627 was direct and all other items used Zone III. *Approved tides and zoning correctors were applied during office processing.* ✓

H. CONTROL STATIONS

The horizontal datum for this project is the North American Datum of 1983 (NAD 83). All stations used were existing control recovered by HECK personnel. All coordinates were taken from NGS Geodetic Control Data. No new stations were established, however, two eccentrics (Montauk Point Lighthouse Ecc and Watch Hill Lighthouse Ecc) were computed using approved methods. A list of the horizontal control stations and the control work associated with calculating the eccentrics can be found in Appendix III, LIST OF HORIZONTAL CONTROL STATIONS. ✓

I. HYDROGRAPHIC POSITION CONTROL

Vessel survey navigation was accomplished using multiple LOPs, utilizing Motorola MINI-RANGER Falcon 484 system shore stations. Control station positions were entered into the HDAPS Control Station Tables. (See APPENDIX III, LIST OF HORIZONTAL CONTROL STATIONS). The appropriate MINI-RANGER codes were attached to the station number on this table. Each time the survey navigation configuration was altered, the control station and C-0 tables were modified to reflected the correct MINI-RANGER code placement/Baseline Corrector values. ✓

The following control equipment was used during this survey: ✓

RPU	S/N - H-0375
RT	S/N - 2921

A baseline calibration was performed for this field examination. The baseline calibration was performed on February 21, 1990 (DOY 052). ✓

No significant position control problems were encountered during this survey. ✓

System checks were conducted daily in accordance with the Field Procedures Manual, and are included in the data printout for each days data. ✓

The hydrographer must specify each of three interactive parameters which "tune" the positioning algorithm. The following parameters were entered into the Offset Table: ✓

- 1) acceleration limit 0.2 meters second⁻²
- 2) angle limit 0.3 degrees second⁻¹
- 3) crabbing limit 0.4 degrees

All survey offsets were applied on-line using the HDAPS Offset Table. ✓

At no time during this project did the maximum residual consistently exceed 0.5 mm at the survey scale (5 meters) nor did the 95% confidence ECR consistently exceeded 1.5 mm at the survey scale (15 meters). All data not meeting the requirements was either smoothed or rejected. ✓

J. SHORELINE

Not applicable as per project instructions. ✓

K. CROSSLINES

Not applicable as per project instructions. ✓

L. JUNCTIONS

Not applicable as per project instructions. ✓

M. COMPARISON WITH PRIOR SURVEYS

Comparison to prior surveys for items investigated appear in section N of this report. ✓

N. COMPARISON WITH THE CHART

One Danger to Navigation, was located outside the survey area, when HECK was assigned to search for a downed aircraft 2.5 NM south of Fire Island, N.Y. (Copy appended). ✓

Specific item investigations were conducted and are detailed as follows: ✓

N.1 INVESTIGATION REPORT FOR AWOIS ITEM 1850 (Sheet 1 of 10)

13215
13205
12300

FIELD SHEET: HE-10-3-90G

AWOIS ITEM DESCRIPTION: Reported to be a 252 ft paddlewheel steamer named "LARCHMONT" which sank in 140 ft of water 3.5 NM SE of Watch Hill, R.I. This item was originally reported thru C&GS survey 1918. It was later investigated by local diver Henry Keatts and now appears in his book "New England Legacy Of Shipwrecks". The remaining wreckage was reported as scattered with two massive paddlewheels extending up 70 feet from the bottom.

AREA OF INVESTIGATION:

State: Rhode Island
City: Watch Hill
Locality: 3.5 SE of Watch Hill
Latitude: 41°16'06.00"N
Longitude: 071°49'18.00"W

CHART COMPARISON: Due to limited amount of sounding data collected, no comparisons were made.

SURVEY PROCEDURES:

Positioning: Falcon MINI-RANGER
Side Scan Sonar Search: DOY 137
Diver Investigation: None
Echosounder Investigation: DOY 137

This item was investigated using the 50 and 100 meter range scale side scan sonar. All side scan sonar data is shown on the various copies of HE-10-3-90G.

RESULTS: During the first 100% coverage of this survey the item was located. The wreck appears to have deteriorated and the paddlewheels broken apart. The ~~least~~ depth investigation was conducted using echosounder. The ~~least~~ depth from the echosounder development matched the computed height from the sonargram. Due to the depth of this wreck no diver investigation was conducted.

RECOMMENDATIONS: Revise charted wreck to a Sunken Wreck not Dangerous to Surface Navigation, in position 41°15'58.9"N 071°49'16.5"W with a corrected ^{echosounder} ~~least~~ depth of ^{29.7} 30.1M (99ft). Concur.

N.2 INVESTIGATION REPORT FOR AWOIS ITEM 1858

(Sheet 2 of 10)

13212
7/2/11

FIELD SHEET: HE-10-3-90 H

AWOIS ITEM DESCRIPTION: This item was reported as a 36 ft cabin cruiser which burned and sank just outside the entrance to New London Harbor.

AREA OF INVESTIGATION:

State: Connecticut
City: New London
Locality: Entrance to New London Harbor
Latitude: 41°17'24.00"N
Longitude: 072°04'42.00"W

13217
13213

✓
+

PRIOR SURVEYS: This item originates from LNM 48/70 and was investigated on two separate occasions since. S-B928-R/H-78 produced negative SS results. S-B610-RU/HE-80 also could not locate the wreck however recommended charting the danger as existence doubtful.

CHART COMPARISON:

Comparisons were made between survey soundings and the following charts:

CHART No.	TITLE	SCALE	ED.No.	DATE
13205	Block Island Snd and App.	1:80K	29th	AUG 89
13212	Appr. to New London Hbr	1:20K	31st	NOV 89
12372SC	Watch Hill to NH Harbor	1:40K	24th	JUL 88

Comparison between the smooth depth plot and prior surveys (H-8996, H-9951WD) showed the soundings gathered during this survey to be consistently deeper by one to four feet. The positions of four buoys which lie in the search area were determined and found to be accurately charted.

SURVEY PROCEDURES:

Positioning: Falcon MINI-RANGER
Side Scan Sonar Search: DOY 149,150,151
Diver Investigation: None
Echosounder Investigation: DOY: 151

The item was investigated using 100 meter range scale. Echosounder development was conducted on each significant contact located during the search.

RESULTS: Eight contacts were located during the first 100% side scan coverage, five of the contacts were deemed insignificant due to the relationship of their computed heights to the depths in the area. The other three contacts appeared to be significant and were investigated using echosounder. The 200 % coverage of this area showed no indications of AWOIS item 1858. Additionally, the limits of items 3179 and 3180 of survey FE-343SS (HE-10-1-90) fell within the 200% coverage of this area and further verifies their disproval. Sonagram and echosounder data of this area indicate a very rough bottom with rocks and ridges in various places, the shoalest of which are provided. All ~~least~~ depths and positions were determined by echosounder development. } *Concurr.*

RECOMMENDATIONS: Due to the extensive survey work done on this area in the past 13 years and the negative results of this survey, HECK recommends deletion of this item. Use survey soundings to supplement charted soundings. *Do not concur - See sections 4, 6, and 7.a. of the Evaluation Report.*

N.3 INVESTIGATION REPORT FOR AWOIS ITEM 2627

FIELD SHEET: HE-10-3-90E

(Sheet 3 of 10)

13215
13205
12300

AWOIS ITEM DESCRIPTION: The tug HERCULES reported sunk in 95 ft of water approximately 2 NM south of Weekapaug Point.

AREA OF INVESTIGATION:

State: Rhode Island
City: Weekapaug
Locality: 2.4 NM south of Weekapaug Pt.
Latitude: 41°17'12.00"N
Longitude: 071°46'12.00"W

CHART COMPARISON: Charts used for comparison purposes:

CHART No.	TITLE	SCALE	ED.No.	DATE
13205	Block Island Snd and Appr.	1:80K	29th	AUG 89
13215	Block Island Sound	1:40K	11th	SEPT 86

Chart comparison with soundings gathered during this survey showed good agreement with random differences of less than two feet in magnitude.

SURVEY PROCEDURES:

Positioning: Falcon MINI-RANGER
Side Scan Sonar Search: DOY 141, 142
Diver Investigation: None
Echosounder Investigation: DOY 142

The item was located using side scan sonar and a ~~least~~ depth and position determined by echosounder development.

RESULTS: The item was located in position 41°17'16.14"N 071°46'14.78"W with an ^{echosounder} ~~least~~ depth of 26.1M (86ft). The sonagram data indicates the wreck rises 1.6 M off the bottom.

See section 4.c. of the Evaluation Report.

RECOMMENDATIONS: Revise the charts to show Sunken Wreck, not dangerous to surface navigation at the surveyed position and ~~least~~ depth. *Concur.*

N.4 INVESTIGATION REPORT FOR AWOIS ITEM 7277 (Sheet 4 of 10)

FIELD SHEET: HE-10-3-90A

13214
13205
12300

13214 ✓

AWOIS ITEM DESCRIPTION: This item is reported as the wreck MARISE, a 60 ft two masted schooner which sank in 71 ft of water. This wreck was originally detected by the Coast Guard doing routine search with SSS. It was later identified by a local diver to be a shipwreck extending 19 ft above the bottom. Later investigations showed it only 8 ft off the bottom with only the bow remaining.

AREA OF INVESTIGATION:

State: Connecticut
City: Stonington
Locality: Fishers Island Sound
Latitude: 41°17'58.05"N
Longitude: 071°59'14.09"W

PRIOR SURVEYS:

No comparisons were made due to the limited amount of data collected.

CHART COMPARISON:

No comparisons were made due to the limited amount of data collected.

SURVEY PROCEDURES:

Positioning: Falcon MINI-RANGER
Side Scan Sonar Search: DOY 123, 128
Diver Investigation: DOY 128
Echosounder Investigation: DOY 123, 128

The item was located using side scan sonar and a least depth and position determined by divers.

RESULTS: The item was located near its reported position by side scan and echosounder development. A least depth and position were determined by use of divers. ^{Survey} ~~Two~~ other significant contacts were found during the survey and appear to be rocks, ~~on the sonargram~~. Least depths on these ~~two~~ contacts are from echosounder development.

RECOMMENDATIONS: Revise item 7277 to a sunken wreck with a corrected least depth of 19.3M (60⁺ ft) at position 41°17'55.³⁶"N 071°59'11.93"W. Concur.

N.5 INVESTIGATION REPORT FOR AWOIS ITEM 7472 (Sheet 5 of 10) NB ✓

FIELD SHEET: HE-10-3-90F

AWOIS ITEM DESCRIPTION: This item is reported as "the Pipe Wreck" which was identified by local authority Tim Coleman. It first appeared in LNM 52/75.

Additional obstructions were found by side scan sonar during this investigation. These obstructions are recommended to be charted in accordance with the results of this survey.

AREA OF INVESTIGATION:

13215
13205
12300

State: Rhode Island
City: Weekapaug
Locality: 2.5 NM south of Weekapaug Point
Latitude: 41°16'52.00"N
Longitude: 071°43'42.00"W

PRIOR SURVEYS:

CHART COMPARISON: Charts used for comparison purposes:

CHART No.	TITLE	SCALE	ED.No.	DATE
13205	Block Island Snd and Appr	1:80K	29th	AUG 89
13215	Block Island Sound	1:40K	11th	SEP 86

SURVEY PROCEDURES:

Positioning: Falcon MINI-RANGER
Side Scan Sonar Search: DOY 142
Diver Investigation: None
Echosounder Investigation: DOY 142

RESULTS: The item was located near the LORAN-C position given in the AWOIS item listing using side scan. Echosounder development was conducted and a ~~least~~ depth and position were determined.

RECOMMENDATIONS: Item 7472 was not previously charted. Add a sunken wreck, not dangerous to surface navigation with a corrected ^{echosounder} ~~least~~ depth of 32M (10³⁵ft), at position 41°16'53.4"N 071°43'44.10"W. *Concur.*

see section 4.c. of the Evaluation Report.

N.6 INVESTIGATION REPORT FOR AWOIS ITEM 7473

FIELD SHEET: HE-10-3-90C

(Sheet 6 of 10) 13214

AWOIS ITEM DESCRIPTION: Reported wreck of a barge which was one of three being towed and went down when it hit a rock. Some of the cargo and a portion of the rigging was salvaged. Reports of remains of the wreck rise 3 feet off the bottom in a rocky area.
AREA OF INVESTIGATION:

State: Rhode Island
City: Watch Hill
Locality: .5 NM east of Watch Hill
Latitude: 41°18'00.00"N
Longitude: 072°08'54.00"W

This item has been disassigned to this project and all present survey work on this item is for information only.

13212 ✓
*

CHART COMPARISON: Charts used for comparison purposes:

CHART NO.	TITLE	SCALE	ED. NO.	DATE
13205	Block Island Snd and Appr	1:80K	29th	AUG 89
13214	Fishers Island Sound	1:20K	23rd	FEB 90
13215	Block Island Sound	1:40K	11th	SEP 86
12372SC	Watch Hill to NH Harbor	1:40K	24th	APR 88

Comparison of survey and charted soundings showed good agreement with random differences of less than two feet.

SURVEY PROCEDURES:

Positioning: LORAN-C Rates and Falcon
 MINI-RANGER
 Side Scan Sonar Search: DOY 137
 Diver Investigation: None
 Echosounder Investigation: None

RESULTS: The AWOIS instructions were to investigate this item around LORAN-C rates rather than geographic position. The item was not located despite 200% side scan sonar coverage of the area. Some areas of rock outcrops were found along the northwest edge however, the majority of the bottom was featureless.

↑
*

~~Do not concur. This item has not been adequately investigated (see entry for the Echosounder report). It is recommended that the wreck be retained as presently charted. Additional field work is recommended to verify or disprove this item.~~

RECOMMENDATIONS: The wreck may exist, however, what remains of it after [prior salvage and years of decay does not present a hazard to mariners and as such does not warrant charting. The present charted soundings adequately depict this area.

↑
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N.7 INVESTIGATION REPORT FOR AWOIS ITEMS 7475

~~Do not concur - see previous remarks~~

FIELD SHEET: HE-10-3-90E

(Sheet 3 of 10) 13215
13205
12300

AWOIS ITEM DESCRIPTION: This item was reported as the "WINCH WRECK" with LORAN-C rates taken from chart 13205.

AREA OF INVESTIGATION:

State: Rhode Island
 City: Weekapaug
 Locality: 1.7 NM South of Weekapaug
 Latitude: 41°17'43.0"N
 Longitude: 071°45'35.0"W

CHART COMPARISON: Insufficient data was collected on this item to make an adequate chart comparison.

SURVEY PROCEDURES:

Positioning: Falcon MINI-RANGER
 Side Scan Sonar Search: DOY 141, 142
 Diver Investigation: None
 Echosounder Investigation: DOY 142

RESULTS: This AWOIS item was not previously charted. The results of this survey place item 7475 at position $41^{\circ}17'46.1''N$ $071^{\circ}45'37.2''W$ with a corrected ~~least~~ depth of 25.5M (83ft). Due to the depth of water and the fact the wreck only comes off the bottom .9M (2.8ft) the ~~least~~ depth was determined by echosounder instead of divers.

RECOMMENDATIONS: HECK recommends the wreck be added to the charts at the surveyed position as a Sunken Wreck, Not Dangerous to Surface Navigation with an ~~least~~ depth of 25.5M. *Concur*

N.8 INVESTIGATION REPORT FOR AWOIS ITEMS 7476

FIELD SHEET: HE-10-3-90D

(Sheet 7 of 10)

13214 ✓
13215 ✓
13205 ✓
12300 ✓

AWOIS ITEM DESCRIPTION: Identified as the "STORM PETREL", a 100ft schooner that sank in 1930. Parts have been snagged by commercial fisherman and has primarily deteriorated and settled. The wreck was described by a local diver as only showing a winch and some timbers, none of which protrude more than 3 feet above the bottom.

AREA OF INVESTIGATION:

State: Rhode Island
City: Watch Hill
Locality: 3.4 NM South of Watch Hill Light
Latitude: $41^{\circ}14'53.00''N$
Longitude: $071^{\circ}51'54.00''W$

CHART COMPARISON: Charts used for comparison purposes:

CHART No.	TITLE	SCALE	ED.No.	DATE
13205	Block Island Snd and Appr	1:80K	29th	AUG 89
13214	Fisher's Island Sound	1:20K	23rd	FEB 90
13215	Block Island Sound	1:40K	11th	SEP 86

Comparison of survey to charted soundings showed good agreement with random differences of less than two feet.

SURVEY PROCEDURES:

Positioning: Falcon MINI-RANGER
Side Scan Sonar Search: DOY 136, 137
Diver Investigation: None
Echosounder Investigation: None

RESULTS: The review of the sonargram showed only a few small rock fields. None of these contacts were significant. The search area of this survey was determined using the reported LORAN-C rates rather than the geographic position in the AWOIS listing which accounts for the distance between the segment line and the survey area. The item 7476 was not found.

Do not concur. This item has not been adequately investigated (see section 4. of the Evaluation Report). It is recommended that this wreck be retained as presently charted. Additional field work is recommended to verify or disprove this item.

RECOMMENDATIONS: It appears that the wreck has broken and scattered over the past fifty years and can no longer be detected using present survey equipment. Phone conversations with Mr. Tim Coleman, reports only a winch and scattered debris are visible. Based on these facts and that the surrounding water depth is in excess of 100 feet, HECK recommends not charting item 7476.

13214 ✓

N9. INVESTIGATION REPORT FOR AWOIS ITEMS 7479

FIELD SHEET: HE-10-3-90D

(Sheet 8 of 10) 13214 ✓
13215 ✓
13205 ✓
12300 ✓

AWOIS ITEM DESCRIPTION: Item 7479 is a wreck identified as "Hooter Barge" with LORAN-C rates for chart 13205.

AREA OF INVESTIGATION:

State: Rhode Island
City: Watch Hill
Locality: 2.7 NM south of Watch Hill Light
Latitude: 41°15'36.00"N
Longitude: 071°51'00.00"W

CHART COMPARISON: Charts used for comparison purposes:

CHART No.	TITLE	SCALE	ED.No.	DATE
13205	Block Island Snd and Appr	1:80K	29th	AUG 89
13214	Fishers Island Sound	1:20K	23rd	FEB 90
13215	Block Island Sound	1:40K	11th	SEP 86

Comparison of survey to charted soundings showed good agreement with differences of less than three feet.

SURVEY PROCEDURES:

Positioning: Falcon MINI-RANGER
Side Scan Sonar Search: DOY 136
Diver Investigation: None
Echosounder Investigation: DOY 136

RESULTS: AWOIS item 7479 was located near its reported position using side scan. Echosounder development was conducted to determine the item's ~~least~~ depth and position.

RECOMMENDATIONS: ^{See section 4.c. of the Evaluation Report.} Add a Submerged Wreck, Not Dangerous to Surface Navigation with an ^{echosounder} ~~least~~ depth of 28.7 M (94 ft) and a position of 41°15'39.⁷"N 071°51'01.²"W. Concur

N.10 INVESTIGATION REPORT FOR AWOIS ITEMS 7521

FIELD SHEET: HE-10-3-90B

(Sheet 9 of 10) 13214 ✓

AWOIS ITEM DESCRIPTION: This item was described as a barge and crane which sank in 1985 in Fishers Island Sound. The barge is 40' x 20' and separated from the crane. The crane is said to be located a short distance to the west of these bearings.

AREA OF INVESTIGATION:

State: New York
 City: Fisher's Island Sound
 Locality: 0.9 NM North of Brooks Point
 Latitude: 41°17'55.00"N
 Longitude: 071°57'55.00"W

13214 ✓
 13205 ✓
 12300 ✓

CHART COMPARISON: Charts used for comparison purposes:

CHART No.	TITLE	SCALE	ED.No.	DATE
13205	Block Island Sound and Appr	1:80K	29th	AUG 89
13214	Fisher's Island Sound	1:40K	24th	APR 88
12372SC	Watch Hill To NH Harbor	1:40K	24th	Jul 88

Comparison of survey to charted soundings showed good agreement with the survey depths consistently one to two feet deeper than the charted soundings.

SURVEY PROCEDURES:

Positioning: Falcon MINI-RANGER
 Side Scan Sonar Search: DOY 124
 Diver Investigation: none
 Echosounder Investigation: DOY 124

RESULTS: The survey indicated this item to be located near the charted position. The position and ~~least~~ depth of item 7521 was determined through echosounder development.

RECOMMENDATIONS: Revise this item to a Dangerous Wreck in position 41°17'53.6"N 071°58'07.4"W, with an ^{echosounder} ~~least~~ depth of 16.8 ~~18.2M~~ (59 ft) NOTE: Sonargram from DOY 155 are submitted with this project as supplement to item 7521. It was gathered during an equipment demonstration for local newspaper reporters. *Additional obstructions were found by side scan sonar during this investigation. These obstructions are recommended to be charted in accordance with the results of this survey. (See sheet 9 of 10).* *See section 4.c. of the Evaluation Report.* *Concur.*

N.11 INVESTIGATION REPORT FOR AWOIS ITEM 7777

SHEET: HE-10-3-90 I

(Sheet 10 of 10) 13214 ✓
 11a) 2) ✓

AWOIS ITEM DESCRIPTION: Item 7777 was originally reported by a broadcast notice to mariners as a 23 foot white hulled vessel with black trim sinking one mile West of Watch Hill.

AREA OF INVESTIGATION:

State: Rhode Island
 City: Watch Hill
 Locality: Napatree Point Ledge
 Latitude: 41°18'00"N
 Longitude: 071°53'00"W

CHART COMPARISON: Charts used for comparison purposes:

13214 ✓
13205 ✓

CHART NO.	TITLE	SCALE	ED.	DATE
13205	Block Island Sound and Appr	1:80K	29th	AUG 89
13214	Fisher's Island Sound	1:20K	23rd	FEB 90
12372SC	Watch Hill to NH Harbor	1:40K	24th	APR 88

Comparison of survey to charted soundings showed good agreement with random differences of one to two feet.

SURVEY PROCEDURES:

Positioning: Falcon MINI-RANGER
 Side Scan Sonar Search: DOY 152 , 156
 Diver Investigation: None
 Echosounder Investigation: DOY 156

RESULTS: Item 7777 was not located despite 200% side scan sonar coverage of the area. This area was surveyed using 50, 75, and 100m range scale. Two contacts were found and investigated but were determined to be insignificant. Due to the shallow water depth on the northern border of this area a small portion was not surveyed. *See the Evaluation Report, sections 4, 6, & 7.*

RECOMMENDATIONS: The strong currents in this area make it highly probable that this vessel could have settled well away from the site of the sinking. None of it lies within the survey area. Delete this item from the chart. *Do not concur. This investigation is not complete. See the Evaluation Report, sections 4, 6, & 7.*

O. ADEQUACY OF SURVEY

All items addressed in this survey are resolved. *Do not concur. See the Evaluation Report.*

P. AIDS TO NAVIGATION

Four buoys were found during this survey and all were found to be charted accurately and fulfill their intended purpose.

Q. STATISTICS

ITEM	for... NOAA Ship HECK	AMOUNT
1. Total No. of Positions		539 Fixes
2. Lineal NM of Soundings		13 NM
3. Square NM Hydrography		N/A NM ²
4. Days of Production		33 Days
5. Linear NM of SSS		50.1 NM
6. Tide Stations Established		None
7. Current Stations Established		None
8. Velocity Casts Performed		1 Casts
9. Magnetic Stations Established		None
10. Detached Positions		9
11. Bottom Samples		None

R. MISCELLANEOUS

R1. ANOMALOUS TIDAL OR CURRENT CONDITIONS

No anomalies in either tide or current, other than mentioned in the individual ITEM INVESTIGATIONS, were noted. ✓

R2. BOTTOM SAMPLE SUBMISSIONS

No bottom samples taken. ✓

S. RECOMMENDATIONS

None other than those mentioned. ✓

T. REFERRAL TO REPORTS

Report Submitted Separately Sent	Date	

1. Coast Pilot for New York, Long Island north shore from Montauk Point to Sands Point. Sent to N/MOA23	16 JUN 89	✓
2. Coast Pilot for Connecticut/New York north shore Long Island Sound from New London to Throgs Neck. Sent to N/MOA23	23 JUN 89	✓
3. Electronic Control Data Report Sent to N/MOA23	16 MAR 90	✓

DESCRIPTIVE REPORT APPENDICES

- I. DANGER TO NAVIGATION REPORTS
- II.* NON-FLOATING AIDS AND LANDMARKS FOR CHARTS (*Blank*)
- III. LIST OF HORIZONTAL CONTROL STATIONS
- IV.* GEOGRAPHIC NAMES
- V. * TIDES AND WATER LEVELS
- VI.* SUPPLEMENTAL CORRESPONDENCE (*Blank*)
- VII. APPROVAL SHEET

* = Data removed from the original Descriptive Report and filed with the Separates.

SEPARATES TO BE INCLUDED WITH SURVEY DATA

- I. HYDROGRAPHIC SHEETS AND PARAMETERS
- II. BOTTOM SAMPLES
- III. HORIZONTAL POSITION CONTROL AND CORRECTIONS TO POSITION DATA
- IV. SOUNDING EQUIPMENT CALIBRATIONS AND CORRECTIONS
- V. SIDE SCAN SONAR DATA
- VI. ITEM INVESTIGATION DATA

APPENDIX I

DANGER TO NAVIGATION REPORTS



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship HECK S-591
439 W. York Street
Norfolk, VA 23510-1114

Commander, First Coast Guard District
Aids to Navigation Office
408 Atlantic Avenue
Boston, MA 02110-2209

18 June 1990

Dear Sir,

NA ✓

The following uncharted submerged wreck was discovered during a search operation using side scan sonar off the southern coast of Fire Island, N.Y. and is considered to be a hazard to navigation.

REPORT

Ship: NOAA Ship Heck
Date: 24 May 1990
Location: 2.5 nm south of Fire Island, N.Y.
Position: 40-37.08N / 073-05.06W
Object Discovered: Uncharted Shipwreck
Project Number: OPR-B660-90-HE

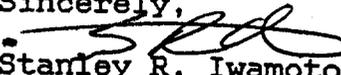
Description: Shipwreck was determined to be 45.1 ft long and 5.2 ft high. The depth of water above the wreck was determined to be 50 ft at predicted MLLW.

Affected nautical charts:

Chart Number	Edition No.	Date	Horizontal Datum	Loran-C Rates
12353	*15th	APR 84	NAD 27	W-15180.8 X-26572.8 Y-43738.4 Z-59962.6

Any questions concerning this report can be directed to the NOAA Ship Heck at the above address, or the NOAA Atlantic Marine Center at (804) 441-6264.

Sincerely,


Stanley R. Iwamoto
Commanding Officer
NOAA Ship Heck

* Note: A more recent edition of chart 12353 was current at the time of this survey. (The 16th Edition, Aug. 5, 1989)



APPENDIX III

LIST OF HORIZONTAL CONTROL STATIONS

LIST OF HORIZONTAL CONTROL STATIONS

<u>NUMBER</u>	<u>NAME</u>	<u>POSITION</u>
273	BARTLETT REEF LIGHT, 1954	41° 16' 28.28 ⁶ 582" 72° 08' 14.02100"
279	RACE ROCK LIGHTHOUSE, 1882 (Race Rock Light)	41 14' 36.50927" 72 02' 49.68067"
282	SEAFLOWER ^{REEF} LIGHT, 1954	41° 17' 45.59504" 72° 01' 59.72749"
283	NOANK LIGHT, 1934 (NOANK LIGHT 5)	41° 18' 58.70 ⁷ 694" 71° 59' 13.87537"
285	STONINGTON LIGHT, 1934 (Stonington Breakwater Light, 5)	41 19' 30.41016" 71 54' 47.31260" 3
287	WATCH HILL LTHS ECC, 1990 (field position)	41 18' 14.00 ⁷ 655" 71 51' 30.79871" 7
288	MONTAUK PT LTHS ECC, 1990 (field position)	41 04' 15.4 ⁸⁰ 881" 71 51' 25.37883" 9



CONTROL STATIONS

No	Type	Latitude	Longitude	H	Cart.	Freq	Vel	Code	MM/DD/YY
	F	040:58:37.199	073:07:06.820	23	250	0.0	0.0		03/05/90
120	F	041:03:35.728	073:06:04.589	18	250	0.0	0.0		03/05/90
129	F	041:09:07.149	073:06:11.967	0	250	0.0	0.0		03/05/90
132	F	041:13:15.782	072:56:31.793	10	250	0.0	0.0		03/05/90
135	F	041:13:16.669	072:48:19.166	9	250	0.0	0.0		03/05/90
145	F	040:57:12.610	072:55:48.313	0	250	0.0	0.0		03/05/90
151	F	040:57:38.729	072:49:36.719	0	250	0.0	0.0		03/05/90
154	F	040:57:46.999	072:45:40.369	0	250	0.0	0.0		03/05/90
157	F	040:58:23.667	072:42:11.060	0	250	0.0	0.0		03/05/90
160	F	041:12:43.054	072:39:12.943	0	250	0.0	0.0		03/26/90
163	F	041:14:36.680	072:30:29.169	0	250	0.0	0.0		03/26/90
172	F	041:00:55.696	072:33:39.791	0	250	0.0	0.0		03/05/90
175	F	041:08:19.847	072:21:09.425	0	250	0.0	0.0		03/05/90
128	F	041:09:38.607	073:05:34.903	8	250	0.0	0.0		03/05/90
130	F	041:14:03.959	072:54:43.542	18	250	0.0	0.0		03/05/90
255	F	041:05:06.497	072:26:44.047	0	250	0.0	0.0		03/05/90
279	F	041:14:36.509	072:02:49.680	0	250	0.0	0.0	6	04/13/90
276	F	041:12:23.078	072:06:24.616	28	250	0.0	0.0		04/09/90
273	F	041:16:28.286	072:08:14.021	11	250	0.0	0.0		06/01/90
165	F	041:15:22.633	072:29:06.621	0	250	0.0	0.0		03/26/90
166	F	041:15:47.536	072:20:33.912	18	250	0.0	0.0	4	03/26/90
133	F	041:14:45.631	072:51:28.221	4	250	0.0	0.0		03/05/90
168	F	041:09:48.501	072:13:25.080	20	250	0.0	0.0		04/09/90
282	F	041:17:45.595	072:01:59.727	7	250	0.0	0.0	0	04/24/90
283	F	041:18:58.707	071:59:13.875	0	250	0.0	0.0		05/02/90
285	F	041:19:30.410	071:54:47.313	9	250	0.0	0.0	3	06/01/90
287	F	041:18:14.006	071:51:30.799	0	250	0.0	0.0	2	05/16/90
288	F	041:04:15.490	071:51:25.379	51	250	0.0	0.0	5	05/15/90

Montauk Point Lighthouse

Station No 288
Code 5 - s/nC2075

Magnetic Bearing 040

Height 168 FT

OFFSET 180 degrees
 3.3 meters



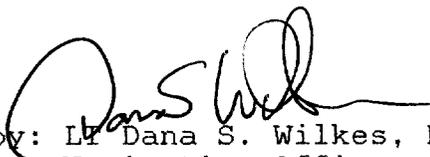
STATION ... "FROM"	DIRECT COMPUTATIONS AZIMUTHS/DISTANCE	GRS80 STATION ... "TO"
WATCH HILL LIGHTHOUSE	-DIRECT-	WATCH HILL LH ECC
LAT 041-18-14.00655 N	FWD 210-00-00.00000	LAT 041-18-13.93525 N
LDN 071-51-30.79871 W	BCK 029-59-59.96397	LDN 071-51-30.85330 W
	DST 2.5400	

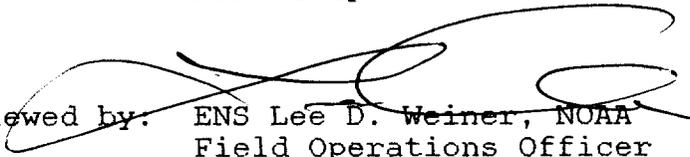
REPEAT THIS COMPUTATION

(Y/N)? -

APPENDIX VII

APPROVAL SHEET

Submitted by:  Lt Dana S. Wilkes, NOAA
Navigation Officer
NOAA Ship HECK

Reviewed by:  ENS Lee D. Weiner, NOAA
Field Operations Officer
NOAA Ship HECK

Field operations contributing to the accomplishment of this survey were conducted under my direct supervision with frequent personal checks of progress and data quality. This report, field sheets, and data records have been closely reviewed and are complete and adequate for charting.


Stanley R. Iwamoto, LCDR, NOAA
Commanding Officer
NOAA Ship HECK

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: August 27, 1990

MARINE CENTER: Atlantic

OPR: B660-HE-90

HYDROGRAPHIC SHEET: FE-345SS

LOCALITY: New London, CT. to Weekapaug Point, R.I.

TIME PERIOD: May 3 - June 5, 1990

TIDE STATION USED: 846-1490 New London, CT.

PLANE OF REFERENCE (MEAN LOWER LOW WATER): = 3.34 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 2.8 ft.

REMARKS: RECOMMENDED ZONING

HE-10-3-90H, and AWOIS item 1858 - West of 72 01.0'W, east of 72 08.0'W, and north of a line between points 72 08.0'W/41 12.0'N and 72 03.0'W/41 14.6'N apply times direct and a X0.97 range ratio to all heights.

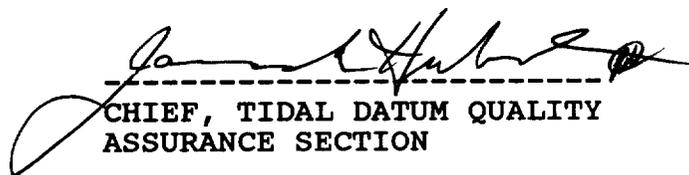
AWOIS items 7277, 7521 - West of 71 55.5'W and east of 72 01.0'W apply a -0 hr 15 min time correction and a X0.91 range ratio to all heights.

OPR: B660-HE-90

HYDROGRAPHIC SHEET: FE-345SS

HE-3-90C, HE-3-90D, HE-3-90E, HE-3-90G, and AWOIS items 1850, 2627, 7473, 7475, 7476, 7479, and 7777 - West of 71 44.5'W and east of 71 54.0'W inside Block Island Sound, apply a -0 hr 45 min time correction and a X1.01 range ratio to all heights.

HE-3-90F and AWOIS item 7472 - apply a -0 hr 45 min time correction and a X1.01 range ratio to all heights.



CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

GEOGRAPHIC NAMES

FE-345SS

Name on Survey	<div style="display: flex; justify-content: space-between;"> A ON CHART NO. 13205 13212 13214 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 </div>											
	BLOCK ISLAND SOUND (Title)	X										
CONNECTICUT	X											2
FISHERS ISLAND SOUND (Title)	X											3
LONG ISLAND SOUND (Title)	X											4
NEW LONDON (Title)	X											5
NEW YORK (Title)	X											6
RHODE ISLAND (Title)	X											7
WEEKAPAUG POINT (Title)	X											8
												9
												10
												11
												12
												13
												14
												15
												16
												17
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												19
												20
												21
												22
												23
												24
												25

Approved:

Charles E. Harrington
Geographer - 0106245

SEP 26 1991

06/04/92

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: FE-345SS

NUMBER OF CONTROL STATIONS	7
NUMBER OF POSITIONS	427
NUMBER OF SOUNDINGS	2255

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	64	09/26/90
VERIFICATION OF FIELD DATA	146	06/18/91
ELECTRONIC DATA PROCESSING	69	
QUALITY CONTROL CHECKS	121	
EVALUATION AND ANALYSIS	134	05/04/92
FINAL INSPECTION	14	03/12/92
TOTAL TIME	548	
ATLANTIC HYDROGRAPHIC SECTION APPROVAL		05/06/92

N/CG244-42-92

LETTER TRANSMITTING DATA

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

- ORDINARY MAIL AIR MAIL
 REGISTERED MAIL EXPRESS
 GBL (Give number) _____

TO:

NOAA/NATIONAL OCEAN SERVICE
Chief, Data Control Section, N/CG243
Bldg. WSC-2, Room 151
6015 Executive Blvd.
Rockville, MD 20852

DATE FORWARDED

5 June 1992

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-345SS (HE-10-3-90)
OPR-B660, LONG ISLAND, FISHERS ISLAND, AND BLOCK ISLAND SOUNDS
NEW LONDON TO WEEKAPAUG POINT

- Pkg. 1: (Envelope)
1 Original Descriptive Report containing ten (10) smooth sheets and four (4) field swath plots.
- Pkg. 2: (Box)
15 Envelopes containing raw field data (echograms, sonargrams, and printouts) for Year Days 123, 124, 128, 136, 137, 141, 142, 149, 150, 151, 155, and 156.
1 Notebook containing data removed from the Descriptive Report and the Separates to accompany the Descriptive Report.
1 Envelope containing sounding corrector data (TRA, Velocity, and Smooth Tides).
1 Cahier of Final Printouts.
1 Envelope containing 22 overlays to accompany the smooth sheets.
1 Envelope containing Horizontal Control Data.

FROM: (Signature)

Maurice B. Hickson III

Maurice B. Hickson, III

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

Chief, Atlantic Hydrographic Section,
N/CG244
Atlantic Marine Center
439 West York Street
Norfolk, VA 23510-1114

**COAST AND GEODETIC SURVEY
ATLANTIC HYDROGRAPHIC SECTION
EVALUATION REPORT**

SURVEY NO.: FE-345SS

FIELD NO.: HE-10-3-90

Rhode Island--New York, Long Island, Fishers Island, and Block Island Sounds, New London to Weekapaug Point

SURVEYED: May 3, through June 5, 1990.

SCALE: 1:10,000

PROJECT NO.: OPR-B660-HE-90

SOUNDINGS: EG&G Model 260 Side Scan Sonar, Pneumatic Depth Gauge, and RAYTHEON DSF 6000N Fathometer

CONTROL: MOTOROLA Falcon 484 Mini-Ranger (Range/Range)

Chief of Party.....S. R. Iwamoto

Surveyed by.....D. W. Moeller
.....L. D. Weiner
.....D. S. Wilkes
.....W. R. Morris

Automated Plots by.....XYNETICS 1201 Plotter (AHS)

1. INTRODUCTION

a. This is primarily a side scan sonar survey. A RAYTHEON DSF-6000N fathometer was operated concurrently with the side scan sonar. Fathometer developments were conducted to search for items found on the sonargrams. The fathometer data was used in positioning the items and in determining the significance and in some cases the depths of the items. For the assigned items not found, proof of coverage is provided. The hydrography acquired by this survey is considered suitable for charting.

b. Ten page size smooth plots with accompanying overlays were generated during office processing. These plots are considered the final plots or smooth sheets for this survey. The accompanying overlays are filed with the field records. The field swath plots are included in this report for items claiming disapproval by sonar coverage.

c. Corrections and notes made by the evaluator to the Descriptive Report are in red ink.

2. CONTROL AND SHORELINE

a. Control is adequately discussed in Section H., I. and Appendix III. of the Descriptive Report.

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the North American Datum of 1983 (NAD83) and the North American Datum of 1927 (NAD27).

To place the smooth plots on the NAD27 move the projection lines 0.358 seconds (11.04 meters or 0.55mm at the scale of 1:20,000, or 1.10mm at the scale of 1:10,000) north in latitude, or 1.741 seconds (40.52 meters or 2.02mm at the scale of 1:20,000, and 4.05mm at the a scale of 1:10,000) east in longitude.

b. There is no shoreline within the limits of the smooth plots for this survey.

3. HYDROGRAPHY

a. Crosslines were not required for this field examination; however, where crossings occur in the areas investigated, there is adequate agreement.

b. In the investigations where sufficient soundings were acquired to support curves, standard depth curves were drawn in their entirety. Supplemental depth curves were added in areas where the bottom topography is not adequately depicted by the standard depth curves.

c. The development of the bottom configuration and investigation of features and least depths is considered adequate except:

1) In the vicinity of Latitude 41°18'00"N, Longitude 71°53'15"W, Napatree Point Ledge (see Sheet 10 of 10).

2) In the vicinity of Latitude 41°18'00"N, Longitude 72°05'45"W (see Sheet 2 of 10).

3) On two features which appear to be rock outcroppings in Latitude 41°17'02"N, Longitude 72°04'25"W and Latitude 41°17'26"N, Longitude 72°04'47"W.

These features are recommended for additional investigations.

4. CONDITION OF SURVEY

The smooth plots and accompanying overlays, survey records, and reports adequately conform to the requirements of the HYDROGRAPHIC MANUAL and the SIDE SCAN SONAR MANUAL. The only deficiencies noted in this report are those which impact charting recommendations or affect the accuracy, adequacy, or interpretation of this survey. These deficiencies are noted as follows:

a. Some of the sonargrams for this survey are of good quality and others are of poor quality. Overall, the sonargrams for this survey are not of the quality desired, particularly for item disprovals. The poor sonargrams show the insonified area in a blurred or blotched manner. In many cases the center portion of the sonargrams are "washed out". The bottom profile portion of many of the sonargrams show a poor trace and the bottom tracking was not able to track the bottom much of the time. These factors, thermoclines, other water column conditions, towfish degradations, and recorder problems may have obscured significant contacts. Significant targets could be misinterpreted as insignificant contacts.

b. For proof of coverage, either swath plots or coverage abstracts are required (see section 3.1.3. of the SIDE SCAN SONAR MANUAL). Sonar Coverage Plots (automated swath plots) were provided and Side Scan Sonar Coverage Abstracts were not provided. The swath plots do show side scan sonar effective width but the only factor considered to limit effective coverage in these automated plots is the towfish height above the bottom. Other factors such as thermoclines, other water column conditions, towfish degradations, and recorder problems are not considered in the effective side scan sonar coverage in the computer swath plot. These factors individually or collectively may significantly limit the effective coverage of the side scan sonar. Thus, significant targets may escape detection.

c. In several cases in this survey, the hydrographer claimed to have obtained a least depth on an item by echo sounder. In order to claim a least depth by fathometer, strict adherence to section 7.2.2. of the FIELD PROCEDURES MANUAL FOR HYDROGRAPHIC SURVEYING is required. None of the claimed least depths by fathometer on items found by this survey appear to meet this criteria and thus are only considered as echo soundings rather than least depths.

d. Assigned AWOIS Items #1858, #7473, #7476, and #7777 are items which were not found by this survey. AWOIS Item #7473 has been disassigned to this project and the work accomplished on this item by this survey is for information only. The hydrographer claimed disproval on these items using side scan sonar coverage. None of these items are considered disproved as the result of this survey. The investigation of AWOIS Item #1858 did not achieve the required overlap over a significant portion of the area and some very small areas at the edge of the required search area were not covered. For AWOIS Items #7473, #7476, and #7777, significant portions of the assigned areas were not covered and the overlap requirements were not met.

e. Napatree Point Ledge Lighted Bell Buoy "6" is within the area surveyed in the investigation of AWOIS Item #7777. This aid to navigation was referenced by the hydrographer in the field records but was never positioned. From the present survey information it seems unlikely that this buoy is in its charted position. If this buoy is indeed off station, a dangerous condition may exist and corrective action is necessary.

5. JUNCTIONS

There are no junctional requirements for this survey.

6. COMPARISON WITH PRIOR SURVEYS

a. Hydrographic Surveys

H-9212	(1971)	1:20,000
H-8996	(1968)	1:10,000
H-8926	(1966-68)	1:10,000
H-8908	(1962-66)	1:10,000
H-8708	(1966)	1:10,000
H-8616	(1961)	1:10,000
H-6443	(1939)	1:40,000

1) Prior survey H-9212 (1971) is common to approximately one-third of the area of AWOIS Item #1858. Differences between present and prior hydrography are as much as ± 3 feet. The present survey found obstructions which were not evident on the prior survey. These differences are not considered significant considering the irregular nature of the bottom within the common area and the time difference between the surveys. See Sheet 2 of 10.

2) Prior survey H-8996 (1968) is common to most of the area of AWOIS Item #1858. Differences between present and prior hydrography range up to ± 2 feet. The present survey

found rocks and obstructions which were not evident on the prior survey and in the vicinity of Latitude 41°17'N, Longitude 72°05'W where the bottom is irregular with steep relief. One sounding was brought forward from the prior survey to supplement the present survey. See Sheet 2 of 10.

3) Prior survey H-8926 (1966-68) is common to approximately two-thirds of the area of AWOIS Item #7277. Present and prior hydrography are in reasonable agreement considering the irregular nature of the bottom within the common area. The numerous obstructions noted on the smooth plot attest to the irregular nature of the bottom. The three "Obstr (A)" and the four "Obstr" noted on the smooth sheet appear rock-like on the sonargrams, but were labeled as obstructions due to the lack of field investigation and identification. The prior survey showed no indication of the wreck (the "MARISE") found by this investigation. See Sheet 4 of 10.

4) Prior survey H-8908 (1962-66) is common to approximately two-thirds of the area of AWOIS Item #7277 and all of the investigation of AWOIS Item #7521. The present and prior hydrography within the common areas of both items compares very well with differences being generally within ± 2 feet. The wreck (AWOIS Item #7277 area of investigation), rocks (AWOIS Item #7521 area of investigation), and obstructions found by the present survey were not evident on the prior survey. See Sheets 4 of 10 and 9 of 10.

5) Prior survey H-8708 (1966) is common to all of the area of AWOIS Items #7473 and #7777. The following should be noted:

a) The present and prior hydrography within the area of AWOIS Item #7473 compare very well with differences being only ± 2 feet. The present survey found a 36-foot (11^0 m) shoal in the vicinity of Latitude 41°18'04"N, Longitude 71°51'00"W where the prior survey shows depths of 35 feet (10^7 m) on this prior. Present hydrography within this area has not been smooth plotted and is considered reconnaissance hydrography and is not recommended to be charted. The comparisons made are to demonstrate the relative stability of this area. See sheet 6 of 10.

b) Differences between present and prior hydrography in the area of AWOIS Item #7777 are generally ± 3 feet or less which is good considering the irregular nature of the bottom in this area. Two soundings from this prior survey

were brought forward to the present survey. See Sheet 10 of 10.

6) Prior survey H-8616 (1961) is common to the investigations of AWOIS Items #2627 and #7475. The present and prior hydrography within the common areas compare very well with differences being within ± 2 feet. The wrecks found by the present survey were not evident on the prior survey. See Sheet 3 of 10.

7) Prior survey H-6443 (1939) is common to the investigations of AWOIS Items #1850, #2627, #7472, #7475, #7476, and #7479. The following should be noted:

a) Hydrography from this prior survey is not coincidental to any of the present hydrography of the investigations of AWOIS Items #1850 and #7472. This is due to the wide line spacing of this prior survey and the limited hydrography of the present survey. Present hydrography, except the wreck sounding of AWOIS Item #7472, does compare well with the depths on the adjacent lines of the prior survey within the common area of this investigation. See Sheets 1 of 10 and 5 of 10.

b) The present and prior hydrography within the area of AWOIS Item #7476 compare very well with differences being generally within ± 2 feet. See Sheet 7 of 10.

c) Within the common area of the investigation of AWOIS Item #7479, present and prior hydrography agree very well. The extent of the comparison is limited due to the small area investigated by the present survey and the wide line spacing and small scale of the prior survey. See Sheet 8 of 10.

With the exceptions noted, the present survey is adequate to supersede the above prior hydrographic surveys within the common areas.

b. Wire Drag Surveys

H-9951WD (1980) 1:10,000
 H-4043WD (1918) 1:20,000
 H-4042WD (1918-19) 1:50,000
 H-4008WD (1917-18) 1:20,000
H-4008aWD (1917-18) 1:20,000

1) Survey H-9951WD (1980) is common to approximately three-fourths of the area of investigation of AWOIS Item #1858. Other than AWOIS Items #3179 and #3180, which have

been adequately addressed in survey FE-343SS (1990), no conflicts exist between prior effective depths and present hydrography within the common area. See Sheet 2 of 10.

2) Survey H-4043WD (1918) is common to approximately one-half of AWOIS Item #7473 investigation and only a very small portion of the area investigated for AWOIS Item #7777. No prior hangs or groundings are common to the present survey areas of investigations. No conflicts exist between prior effective depths and present soundings from the AWOIS Item #7777 investigation. Two soundings from the AWOIS Item #7473 investigation are in conflict with the prior effective depths. These conflicts are not considered significant because of the age of the prior survey and the nature of the bottom in this area. See Sheets 6 of 10 and 10 of 10.

3) Survey H-4042WD (1918-19) is common to the entire investigation of AWOIS Item #1850 and is the source of this item. This item originated on this prior survey as a 74-foot grounding. The present survey found this wreck approximately 170 meters south-southwest of its prior position with an fathometer depth of 97 feet. It is recommended that this wreck be charted in accordance with the results of the present survey (see section N.1. of the Descriptive Report). This prior survey is also common to the investigations of AWOIS Items #2627, #7472, #7475, #7476, and #7479. No prior survey hangs or groundings are within these areas. No conflicts exist between present hydrography and prior effective clearance depths within the common areas. See Sheets 1, 3, 5, 7, and 8 of 10.

4) Survey H-4008WD (1917-18) is common to the majority of the area of investigation of AWOIS Item #1858. One hang or grounding on this prior survey is common to the present survey but was not considered in the comparison since it was removed from the chart by Chart Letter 388 of 1927 (CL 388/27). Three present soundings are in conflict (by 1-2 feet) with prior survey effective depths. These conflicts are not considered significant and are attributed to the age differences between the present and the prior survey and a more accurate and sophisticated present survey. See Sheet 2 of 10.

5) Survey H-4008aWD (1917-18) is common to the AWOIS Item #7277 investigation and part of the AWOIS Item #7521 investigation. No hangs or groundings on this prior survey are within the common areas. The only copy of this prior survey available during processing was a copy of the smooth sheet. The A & D sheet was not available. The areas shown on this prior survey smooth sheet as being covered are shown with

numbers which are not the effective depths obtained, and the effective depths obtained cannot be determined from the smooth sheet. It has not been determined whether any conflicts exist between present hydrography and prior effective depths; however, if any conflicts do exist, they should not be considered significant due to the passage of many years between the surveys and a far more sophisticated and accurate present survey. See Sheets 4 of 10 and 9 of 10.

7. COMPARISON WITH CHARTS 13205 (29th Edition, Aug. 5, 1989)
13212 (31st Edition, Nov. 11, 1989)
13214 (23rd Edition, Feb. 3, 1990)
13215 (12th Edition, Sep. 13, 1986)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys and from sources not readily available. The previously addressed prior surveys require no further consideration.

There are a few soundings within the assigned areas of investigations for which the source has not been identified. Most of these soundings are in the vicinity of the New London Harbor Channel and most likely are from U.S. Army Corps of Engineers surveys. This charted hydrography is within ± 3 feet of the present hydrography within the common area.

The items investigated by this survey are adequately discussed and appropriate charting recommendations are made in section L. of the Descriptive Report. Issues addressed in section 4. of this report impact these discussions and recommendations.

The present survey is adequate to supersede the prior and charted data within the common areas of the items investigated except as noted in section N. of the Descriptive Report, section 6. of this report, and as follows:

1) AWOIS Item #1858 is described as a 36-foot fiberglass pleasure craft that burned (apparently to the waterline) and sank. The bottom in the area of this item investigation is rocky or has rock outcroppings. A burned fiberglass target lying in an area of rock outcroppings has the lowest probability of detection of all targets (see the Relative Detection Table in Appendix A. of the SIDE SCAN SONAR MANUAL) and is considered practically impossible to disprove. The field unit recommended that AWOIS Item #1858 be deleted from the chart because of the inability to locate or disprove this item by this investigation and two previous

investigations. For the assigned search area, the present survey lacked the sufficient overlap and coverage required for disapproval and additional obstructions and rocks were found which were not investigated and identified. A closer examination of the side scan sonar records and findings within a new search area of 750 meters radius about the AWOIS item was accomplished at the direction of N/CG244. The findings of this examination are as follows:

An estimated depth on an obstruction and fathometer depths on two rocks are within the 750 meter radius search area. One additional estimated depth on an obstruction lies 45 meters outside the new search radius. These features were not investigated by the field and their identifications/designations were made solely on fathogram and/or sonargram interpretation.

The present survey line spacing is 190 meters. The maximum line spacing allowable is presently defined by the formula presented in section 7.3.2. of the FIELD PROCEDURES MANUAL FOR HYDROGRAPHIC SURVEYING. Using the maximum ECR (15 meters) stated by the hydrographer in section I. of the Descriptive Report, the maximum line spacing is 170 meters. Thus, throughout the area, sufficient overlap was not attained. This lack of overlap coupled with the lack of coverage in the center of the sonargrams (along and adjacent to the search tracks) indicate areas where little or no coverage exists and a significant target could easily escape detection.

Two areas, one at 180 meters and one at 770 meters from the AWOIS position, were interpreted from the sonargrams as rock outcroppings. Both areas of outcroppings fall between sounding lines. These areas do not appear to have a significant height from sonargram analysis and thus were not inserted as contacts. However, it is often difficult to accurately determine the heights of large and irregular features from sonargram analysis. Therefore these features are recommended for further echosounder development to determine their least depths. These rock outcroppings were found in Latitude 41°17'02"N, Longitude 72°04'25"W and Latitude 41°17'26"N, Longitude 72°04'47"W. These features are not smooth plotted. See also section 3.c.3. of this report.

The sonargrams common to the 750 meter search area were examined for adequacy. The sonargrams covering positions 2179-2183, 2186-2191, 2200-2204, 2265-2267, 2271-2274, 2288-2289, 2295-2300, and 2302-2306 appear adequate. The sonargrams covering positions 2213-2216 and 2279-2283 are considered marginal and not of the quality desired for disapproval of hazards to navigation. The sonargrams covering

positions 2170-2177, 2185-2186, 2206-2210, 2285-2288, 2294-2295, 2306-2307, and 2312-2317 are not considered adequate to disprove the item being sought due to significant surface/water column noise, bottom tracking problems, the center section of the sonargrams being "washed out", and poor definition. As an illustration, Target #5 (2273.07S) was found on line 2271-2274 and was later fathometer developed and found by positions 2325-2330. This target should have appeared on line 2206-2210 at approximately 38 meters to port but was not apparent on the sonargram.

On some of the fathograms covering the 750 meter radius search area, an irregular bottom is evident and several spikes are present. These spikes were inserted or disregarded based on fathogram analysis since the sonargrams did not achieve the required overlap and due to the loss of coverage under and adjacent to the towfish. These spikes were not investigated by either fathometer, side scan sonar, or divers.

The combination of the three investigations on this AWOIS item (S-B928-R/H-78, H-9951WD/80, and the present survey) is not sufficient for disproof but does indicate that this wreck is most likely of less significance and less hazardous than the bottom features within this area. In reviewing the findings of all three investigations, it is recommended that this wreck be retained as presently charted. Additional field work to locate or disprove this wreck is NOT recommended due to the very low probability of detection. During this investigation several significant rocks and obstructions were identified by side scan sonar or by fathometer. These rocks and obstructions are smooth plotted and it is recommended that they be charted in accordance with the results of this survey. It is recommended that, at an opportune time, the identities of these features be confirmed and accurate least depths obtained. See Sheet 2 of 10.

2) AWOIS Item #7777 was not found by this survey and the investigation is considered incomplete and inadequate. Numerous contacts were identified during office processing and are smooth plotted. Most of these contacts were evaluated as rocks but one contact has wreck-like characteristics and is considered a wreck. This contact, in Latitude 41°17'54.52"N, Longitude 71°53'02.42"W, may be AWOIS Item #7777. However, it cannot be considered to be the item since it was not investigated and identified and the assigned search area was not adequately surveyed. It is recommended that these contacts be charted in accordance with the results of this survey. AWOIS Item #7777 is not considered disproved and should be retained as presently charted. Additional field work is recommended to completely reinvestigate AWOIS Item

#7777 and to identify and obtain a least depth on the wreck-like contact found by the present survey. Additional hydrography is also recommended to develop the area in the vicinity of Napatree Point Ledge where two soundings from the prior survey had to be brought forward. See Sheet 10 of 10.

b. Controlling Depths

This survey touches the southern end of the New London Harbor Channel. The charted project depth is noted as 40 feet (12² m) but numerous soundings shoaler than 40 feet (12² m) are charted in this channel. The present survey found a 39-foot (12⁰ m) depth at the southern end of this channel in Latitude 41°17'40.10"N, Longitude 72°04'43.19"W.

c. Aids to Navigation

The hydrographer located four (4) floating aids to navigation. These four floating aids are common to the AWOIS Item #1858 area of investigation (Sheet 2 of 10) and are smooth plotted. These aids appear adequate to serve their intended purpose. See also section 4.d. of this report.

8. COMPLIANCE WITH INSTRUCTIONS

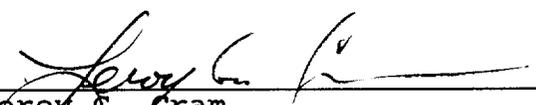
This survey adequately complies with the Project Instructions except as noted in sections 3. and 4. of this report.

9. ADDITIONAL FIELD WORK

This is an adequate side scan sonar survey except as noted previously in this report. Additional field work is recommended as noted in sections 3.c. and 7. of this report and section N. of the Descriptive Report.


 Frank L. Saunders
 Cartographic Technician
 Verification of Field Data


 Maurice B. Hickson, III
 Cartographer
 Evaluation and Analysis


 Leroy G. Cram
 Supervisory Cartographic Technician
 Verification Check

APPROVAL SHEET
FE-345SS

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 disproof of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts of the survey have been made. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Robert G. Roberson Date: 6 May 1992
Robert G. Roberson
Chief, Evaluation and Analysis Team
Atlantic Hydrographic Section

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.

Christopher B. Lawrence Date: 6 May 1992
Christopher B. Lawrence, CDR, NOAA
Chief, Atlantic Hydrographic Section

Final Approval:

Approved: J. Austin Yeager Date: 3/25/94
J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic
Survey

71° 49' 30"

71° 49' 00"

41° 16' 30"

71° 48' 30"

38

29⁷WK "LARCHMONT"

36

35

41° 16' 00"

71° 49' 00"

NAD 27

XYNETICS 1201

/LGC 05/14/91

41° 15' 30"

41° 15' 30"

FE-345 SS

RHODE ISLAND -- NEW YORK
LONG ISLAND, FISHERS ISLAND AND
BLOCK ISLAND SOUNDS
NEW LONDON TO WEEKAPAUG POINT
DATE OF SURVEY: 17 MAY 1990
SCALE: 1:10,000
SOUNDINGS IN METERS AT MLLW
HORIZONTAL DATUM: NAD 1983
SHEET 1 OF 10
AWOIS ITEM NUMBER 1850

72°06'00"

72°05'30"

72°05'00"

72°04'30"

72°04'00"

72°03'30"

+ BUOY "SL"

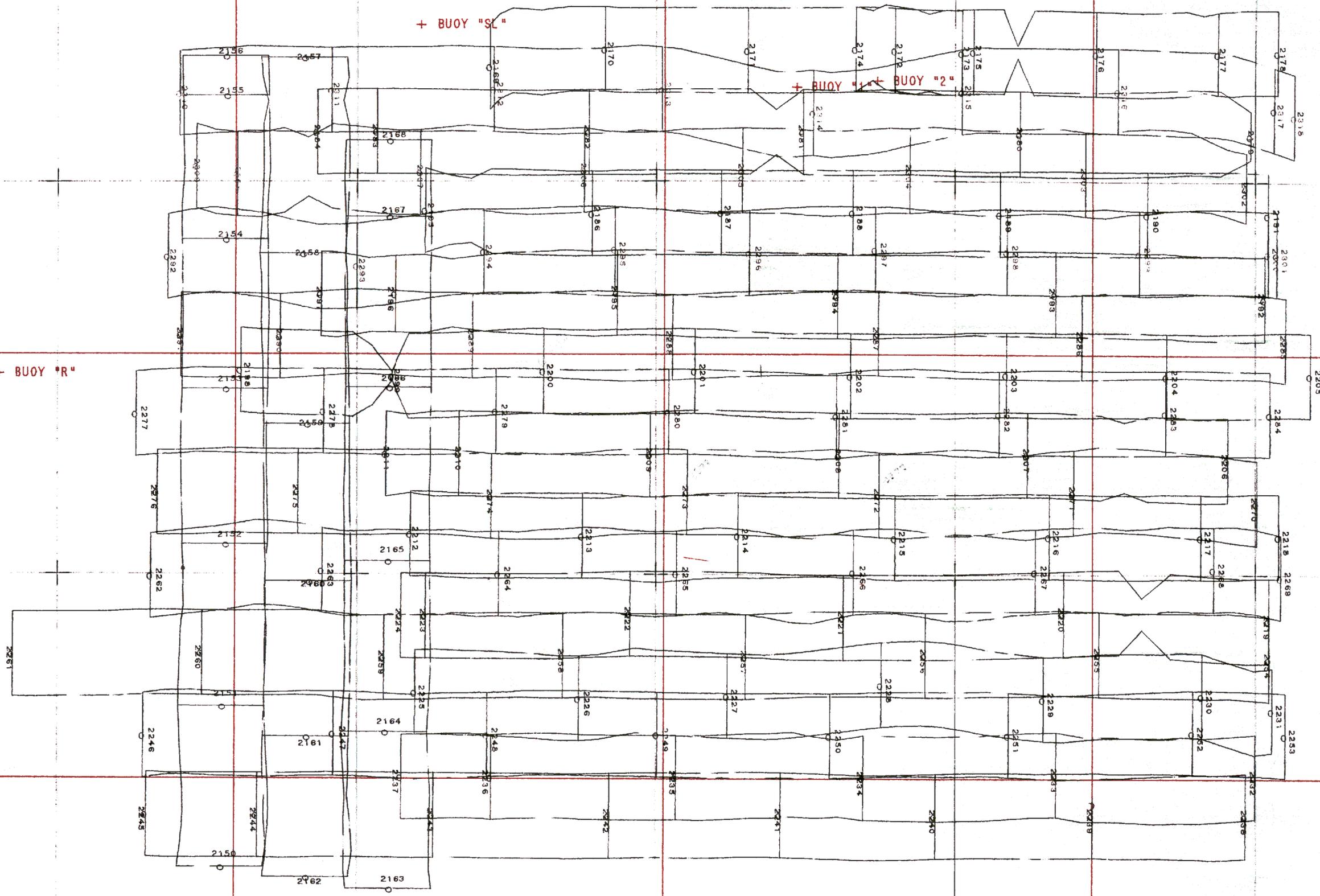
+ BUOY "1" + BUOY "2"

+ BUOY "R"

41°17'30"

41°17'00"

41°16'30"



FE-345SS
 FIELD SWATH PLOT TO ACCOMPANY
 SHEET 2 OF 10
 SCALE = 1:10,000

71° 46' 30"

71° 46' 00"

71° 45' 30"

41° 18' 00"

25²
25⁸

25³ Wk "WINCH WRECK"

27⁴

28

28

28⁶

29²

41° 17' 30"

28⁵ 28⁴ 26¹ Wk 27⁹ 27⁸
"HERCULES"

71° 45' 30"

NAD 27

XYNETICS 1201

LGC 05/16/91

41° 17' 00"

41° 17' 00"

FE-345 SS

RHODE ISLAND -- NEW YORK

LONG ISLAND, FISHERS ISLAND AND

BLOCK ISLAND SOUNDS

NEW LONDON TO WEEKAPAUG POINT

DATE OF SURVEY: MAY 21 & 22, 1990

SCALE: 1:10,000

SOUNDINGS IN METERS AT MLLW

HORIZONTAL DATUM: NAD 1983

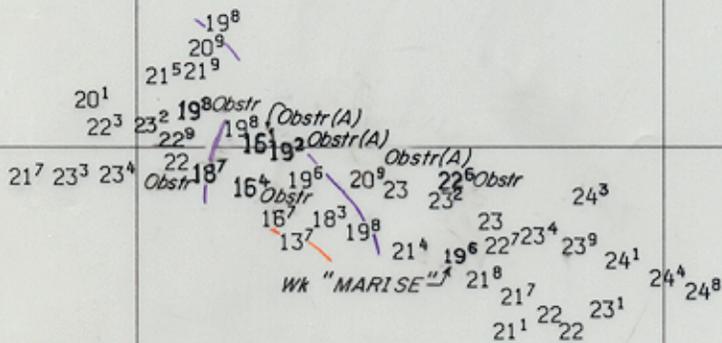
SHEET 3 OF 10

AWOIS ITEM NUMBERS 2627 AND 7475

71° 59' 30"

71° 59' 00"

71° 58' 30"
41° 18' 30"



41° 18' 00"

13212

50%

71° 58' 30"

41° 17' 30"

NAD 27

41° 17' 30"

XYNETICS 1201
Loc. 05/17/91

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

FE-345 SS
RHODE ISLAND -- NEW YORK
LONG ISLAND, FISHERS ISLAND AND
BLOCK ISLAND SOUNDS
NEW LONDON TO WEEKAUG POINT
DATE OF SURVEY: MAY 3 AND 8, 1991
SCALE: 1:10,000
SOUNDINGS IN METERS AT MLLW
HORIZONTAL DATUM: NAD 1983
SHEET 4 OF 10
AWOIS ITEM NUMBER 7277

71° 44' 00"

71° 43' 30"

71° 43' 00"
41° 17' 30"

41° 17' 00"

35
32 Wk "THE PIPE WRECK"
34

71° 43' 30"

NA ✓

NAD 27

41° 16' 30"

41° 16' 30"

XYNETICS 1201
/ LGC 05/17/91

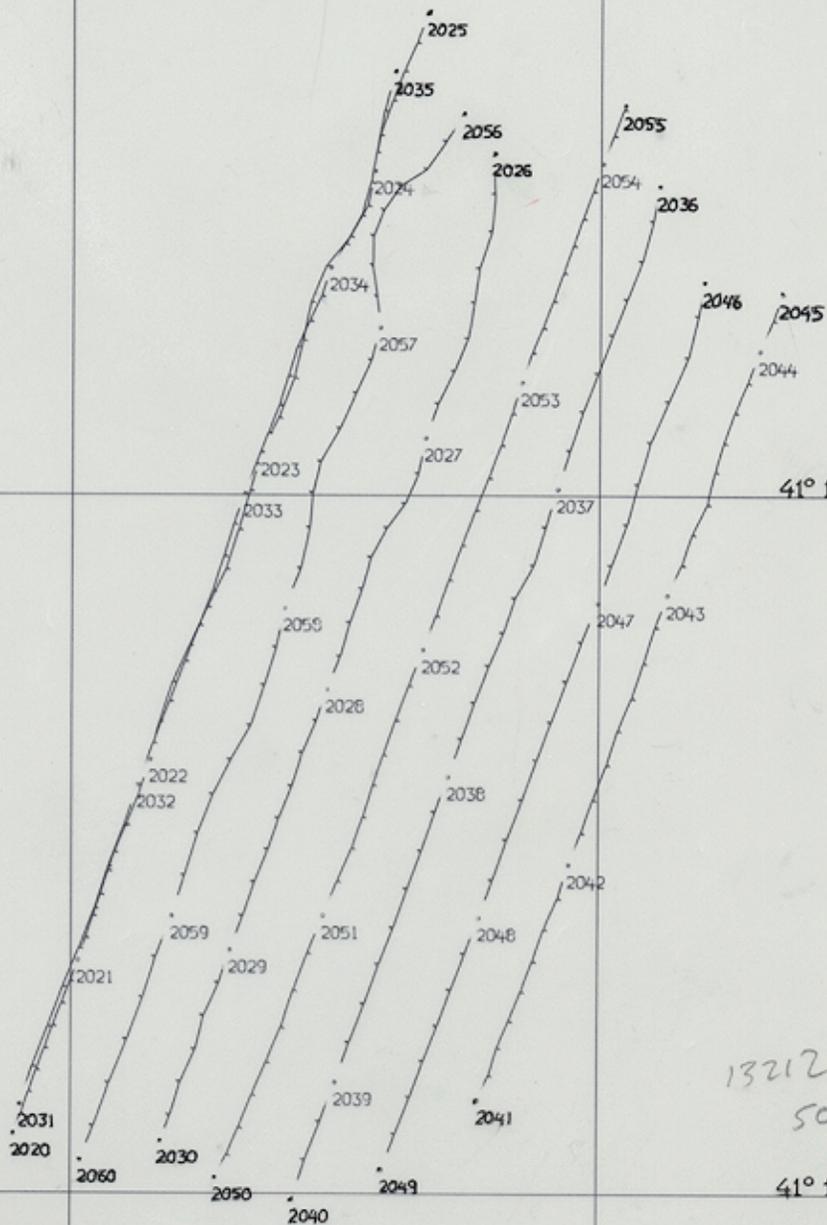
FE-345 SS
RHODE ISLAND -- NEW YORK
LONG ISLAND, FISHERS ISLAND AND
BLOCK ISLAND SOUNDS
NEW LONDON TO WEEKAPAUG POINT
DATE OF SURVEY: 22 MAY 1990
SCALE: 1:10,000
SOUNDINGS IN METERS AT MLLW
HORIZONTAL DATUM: NAD 1983
SHEET 5 OF 10
AWOIS ITEM NUMBER 7472

71° 52' 00"

71° 51' 30"

71° 51' 00"

NAD 27
 XYNETICS 1201
 F.L.S. 9/26/90
 41° 18' 30"
 41° 18' 30"
 71° 51' 00"



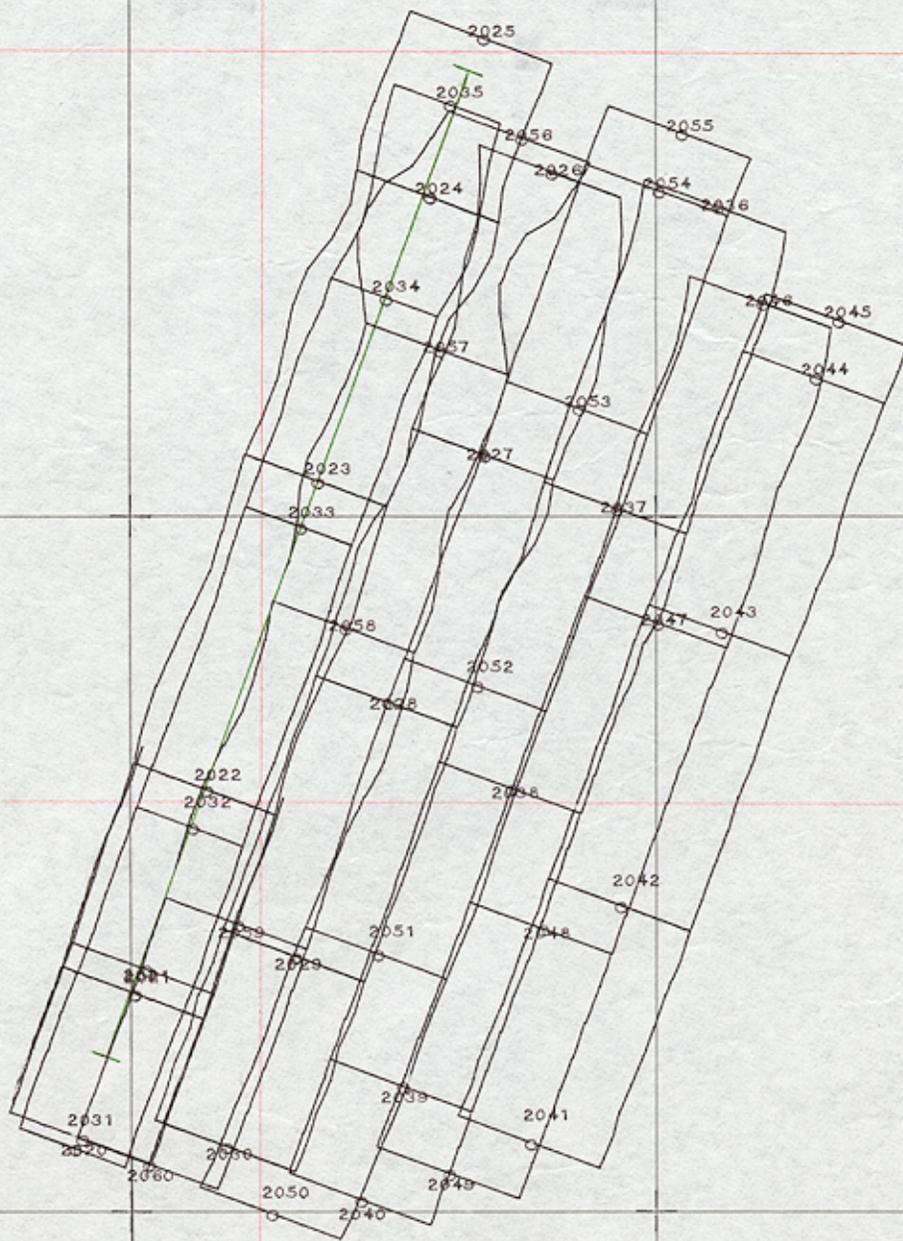
FE-345 SS
 RHODE ISLAND-- NEW YORK
 LONG ISLAND, FISHERS ISLAND AND BLOCK ISLAND SOUNDS
 NEW LONDON TO WEEKAPAUG POINT
 MAY 17, 1990
 SCALE 1:10,000
 HORIZONTAL DATUM : NAD 1983
 SHEET 6 OF 10
 AWOIS NUMBER 7473

71° 51' 30"

71° 51' 00"

71° 50' 30"

41° 18' 30"



41° 18' 00"

41° 17' 30"

FE-345 SS
FIELD SWATH PLOT TO ACCOMPANY
SHEET 6 OF 10
SCALE = 1:10,000

13612 ✓
50

71° 53' 30"

71° 53' 00"

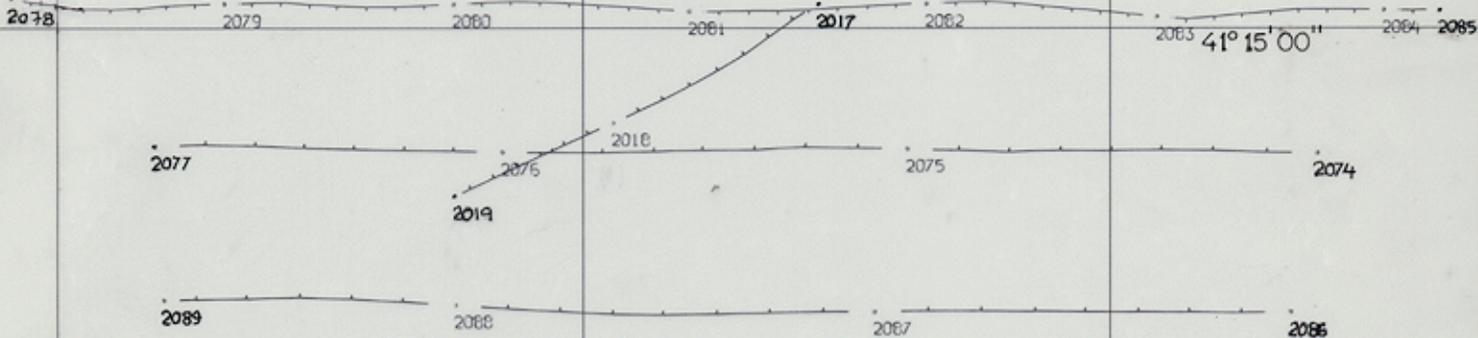
71° 52' 30"

NAD 27
XYNETICS 1201
FLS 9/26/90

41° 15' 30"

41° 15' 30"

71° 52' 30"



FE-345 SS
 RHODE ISLAND-- NEW YORK
 LONG ISLAND, FISHERS ISLAND AND BLOCK ISLAND SOUNDS
 NEW LONDON TO WEEKAPAUG POINT
 MAY 16-17, 1990
 SCALE 1:10,000
 HORIZONTAL DATUM : NAD 1983
 SHEET 7 OF 10
 AWOIS NUMBER 7476

13214 ✓
50

41° 14' 30"

71° 53' 00"

71° 52' 30"

71° 52' 00"

41:15:30

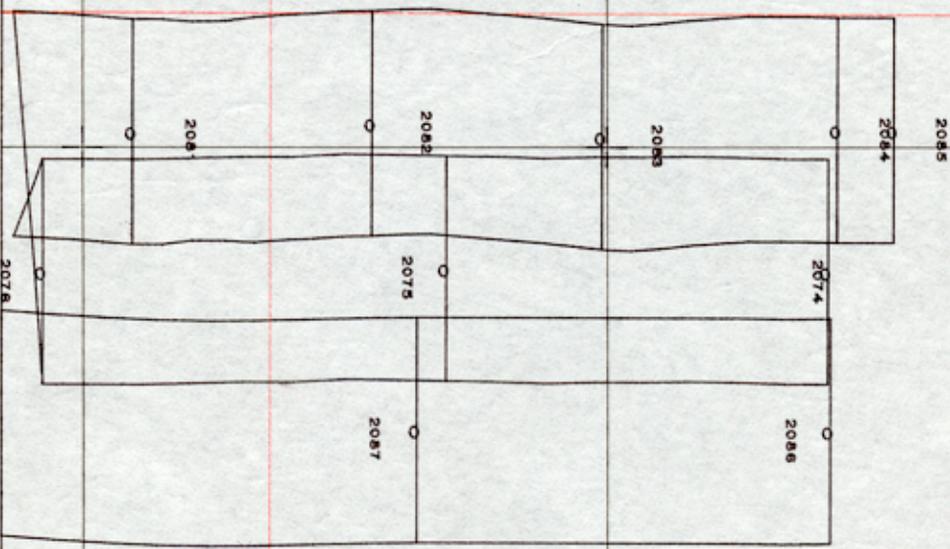
41°15'30"

41:15:00

41°15'00"

41:14:30

41°14'30"



Aws
7476

FE-345SS
FIELD SWATH PLOT TO ACCOMPANY
SHEET 7 OF 10
SCALE = 1:10,000

13214 ✓
50

71° 51' 30"

71° 51' 00"

71° 50' 30"

41° 16' 00"

35 3535 35 287 3535
Wk "HOOTER BARGE"

41° 15' 30"

FE-345 SS
RHODE ISLAND -- NEW YORK
LONG ISLAND, FISHERS ISLAND AND
BLOCK ISLAND SOUNDS
NEW LONDON TO WEEKAPAUG POINT
DATE OF SURVEY: 16 MAY 1990
SCALE: 1:10,000
SOUNDINGS IN METERS AT MLLW
HORIZONTAL DATUM: NAD 1983
SHEET 8 OF 10
AWOIS ITEM NUMBER 7479

13214 ✓
50

71° 50' 30"
NAD 27
XYNETICS 1201
/LGC 05/17/91
41° 15' 00"
41° 15' 00"

71° 59' 00"

71° 58' 30"

71° 58' 00"

41° 18' 30"

41° 18' 00"

22² Obstr (A) Obstr (A)
 24¹ RK 25² 21¹ 24² RK 24⁷ 23¹ 22⁷ 22²
 23⁷ Obstr (A)
 25⁵ 24⁴ 22⁵ 22⁵ Obstr (A) 23⁶ 23⁴ 22⁵
 Obstr (A) 23⁴ 23¹
 21³ 21² 21³ 22⁵ 22⁸ 23⁶
 16⁸ WK 21¹ 21¹ 19¹ Obstr (A)
 21¹ 21⁴ 21⁷ 21⁶

13214
50

71° 58' 00"

NAD 27

41° 17' 30"

41° 17' 30"

XYNETICS 1201

LGC 05/20/91

FE-345SS
 RHODE ISLAND -- NEW YORK
 LONG ISLAND, FISHERS ISLAND AND
 BLOCK ISLAND SOUNDS
 NEW LONDON TO WEEKAPAUG POINT
 DATE OF SURVEY: 4 MAY, 4 JUNE 1990
 SCALE: 1:10,000
 SOUNDINGS IN METERS AT MLLW
 HORIZONTAL DATUM: NAD 1983
 SHEET 9 OF 10
 AWOIS ITEM NUMBER 7521

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

71° 53' 30"

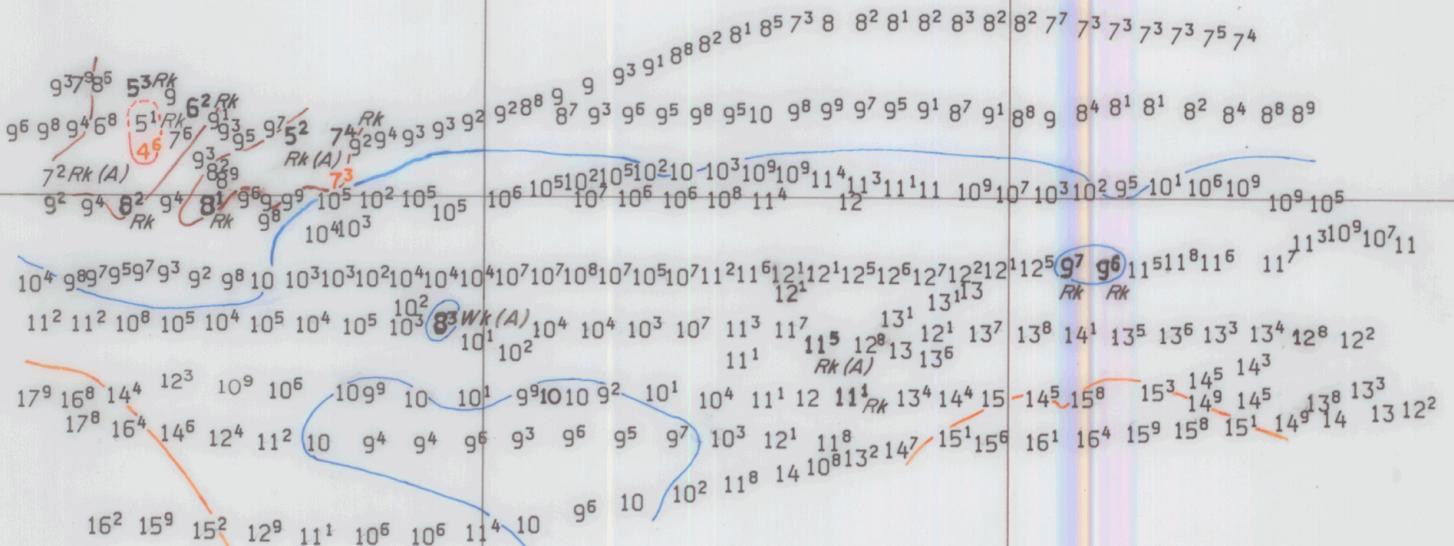
71° 53' 00"

71° 52' 30"

71° 52' 00"

41° 18' 30"

Detached soundings in orange from H-8708 (1961-66)



FE-345 SS
 RHODE ISLAND -- NEW YORK
 LONG ISLAND, FISHERS ISLAND AND
 BLOCK ISLAND SOUNDS
 NEW LONDON TO WEEKAUG POINT
 DATE OF SURVEY: 5 JUNE 1991
 SCALE: 1:10,000
 SOUNDINGS IN METERS AT MLLW
 HORIZONTAL DATUM: NAD 1983
 SHEET 10 OF 10
 AWOIS ITEM NUMBER 7777

71° 52' 30"
 41° 17' 30"
 13214 ✓
 50

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

71° 54' 00"

71° 53' 30"

71° 53' 00"

71° 52' 30"

71° 52' 00"

41° 18' 30"

41° 18' 00"

41° 17' 30"



FE 345SS
 FIELD SWATH PLOT TO ACCOMPANY
 SHEET 10 OF 10
 SCALE = 1:10,000

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

Hydrographic Index No. 63 L

