H10788

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic/Side Scan Sonar

Field No. RU-10-5-97

Registry No. H10788

LOCALITY

State Rhode Island

General Locality Block Island Sound

Locality 2 NM South of Point Judith

1997

CHIEF OF PARTY
LCDR D. A. Cole

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTER NO. H-10788
HYDROGRAPHIC TITLE SHEET		
INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.		FIELD NO. RU-10-5-97

State Rhode Island

General locality Block Island Sound

Locality 2 NM South ~~and West~~ of Point Judith, RI

Scale 1:10,000 Date of survey 05 October - 05 November 1997

Instructions dated 29 September 1997 Project No. OPR-B902-RU-97

Vessel NOAA Ship RUDE, EDP 9040

Chief of party Lieutenant Commander David A. Cole, NOAA

Surveyed by LCDR DA Cole; LTs JM Klay, JG Evjen, JL Riley

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

Graphic record scaled by Officers (listed above,) ST MT Lathrop

Graphic record checked by Officers (listed above,) MTL

Protracted by _____ Automated plot by HP DESIGNJET 750C SCOTTEA (AHB)

Verification by ATLANTIC HYDROGRAPHIC BRANCH (FIELD)

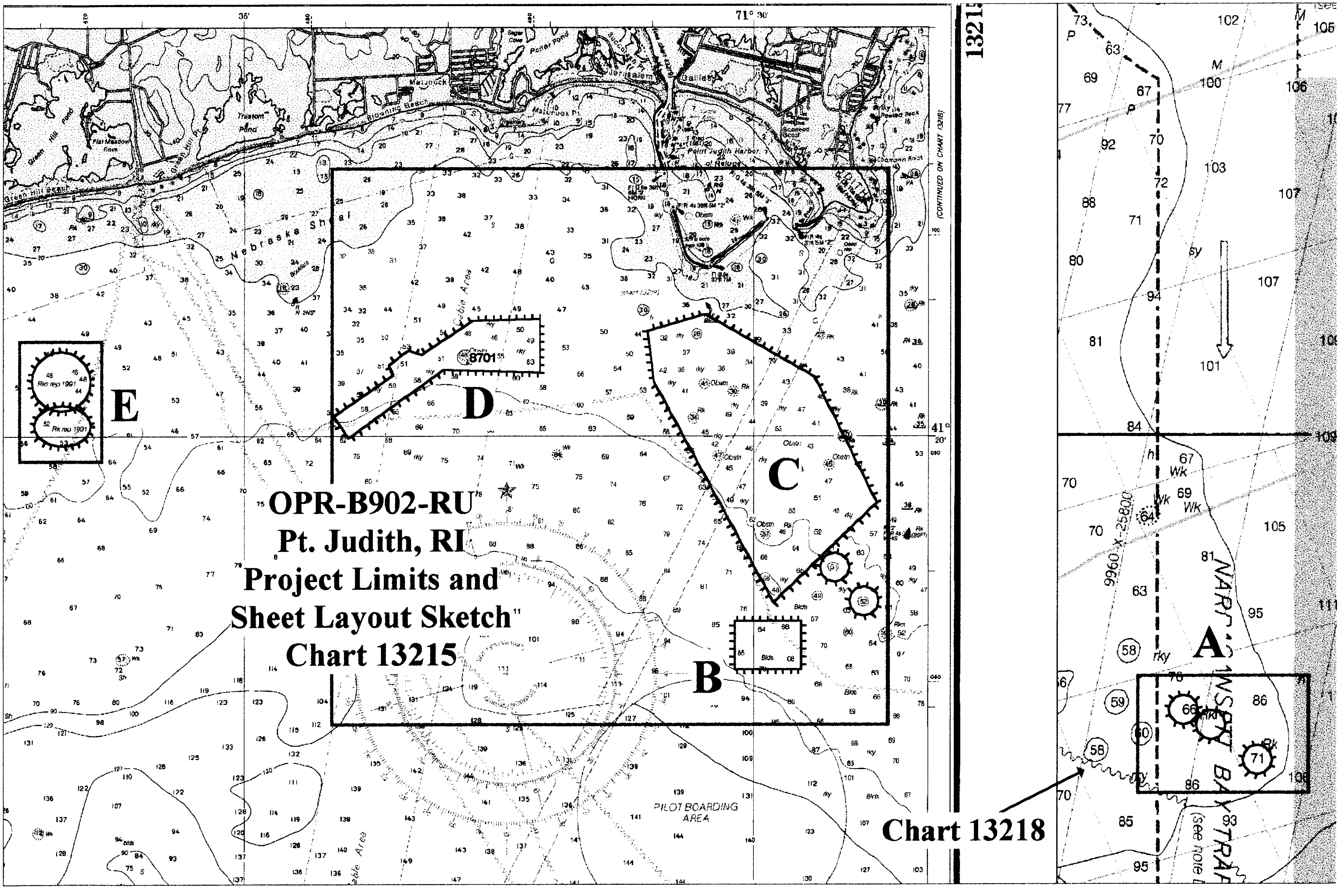
Soundings in (~~fathoms~~, feet, or ~~meters~~ at ~~MLW or~~ MLLW) meters at MLLW

REMARKS:

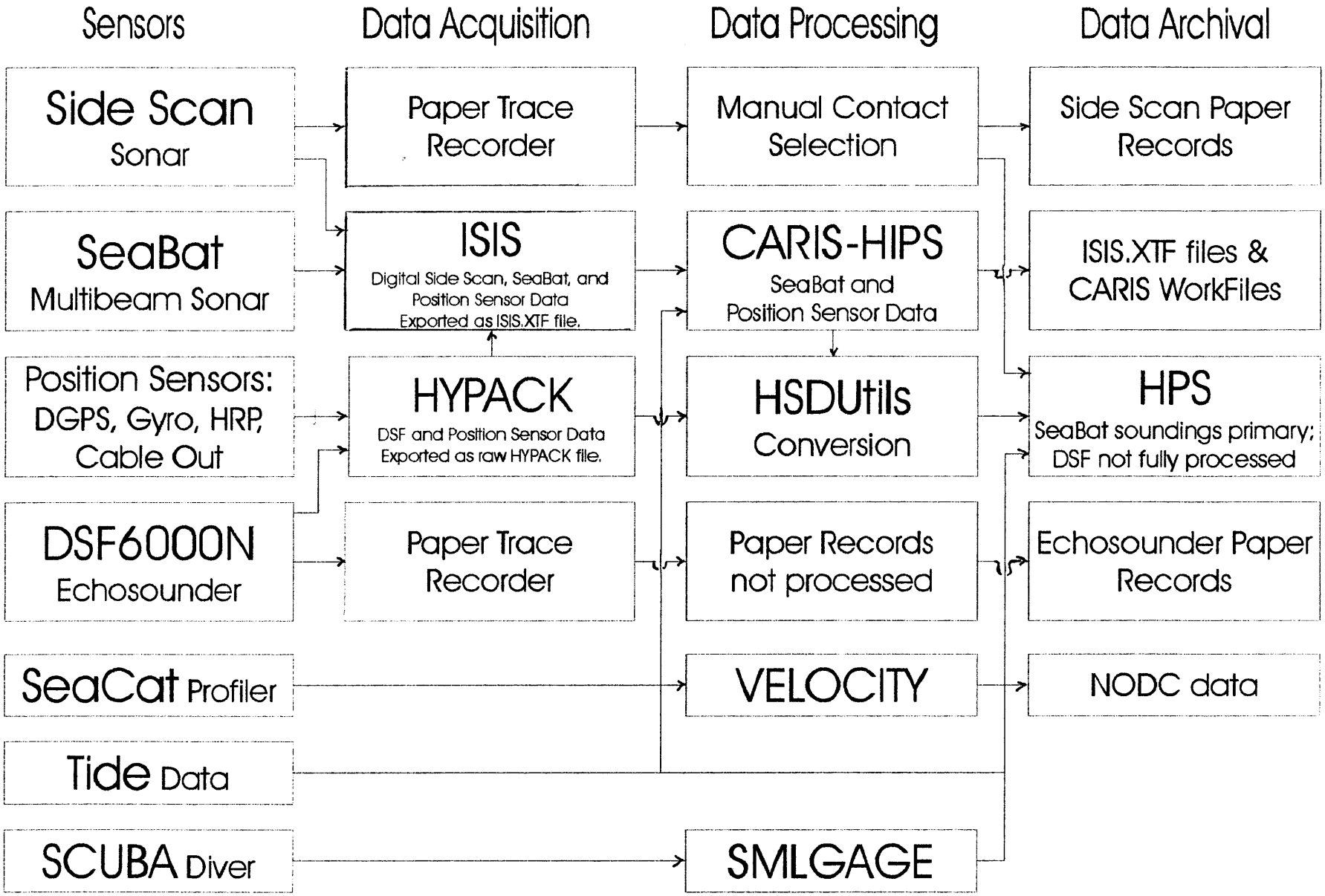
All times recorded in UTC.

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

AWOIS / SURF 6/15/97 mcR


OPR-B902-RU
Pt. Judith, RI
Project Limits and
Sheet Layout Sketch
Chart 13215
Chart 13218
A
B
C
D
E
8701
PILOT BOARDING AREA
Nebraska Shoal
Point Judith Harbor of Refuge
(CONTINUED ON CHART 13216)
71° 30'
41° 20'
Rks rep 1991
Rk rep 1991
13215

NOAA Ship RUDE: July - December 1997 Data Flowchart



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A. PROJECT

A.1 This survey was conducted in accordance with Hydrographic Project Instructions OPR-B902-RU, Point Judith, RI.

A.2 The original instructions are dated September 29, 1997.

A.3 There are no amendments to the instructions.

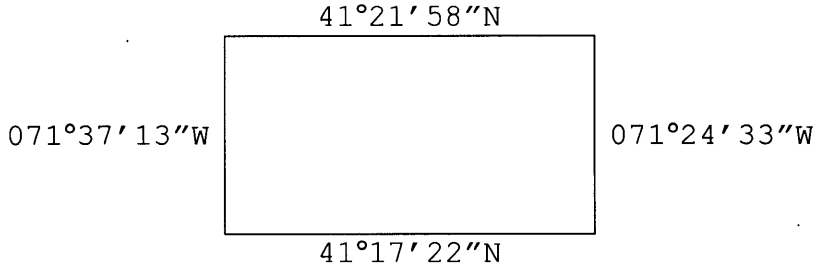
A.4 This survey is designated registry number H-10788.

A.5 This survey responds to requests from the Northeast Pilots Association for updated charts in the Rhode Island Sound area. The project area is traversed by tankers, barges, freighters, cruise-liners, Navy vessels, fishing boats and ferries. The average draft of large vessels is between 32 and 38 feet, with maximum drafts of 40 feet. The area was last surveyed by NOAA Ship RUDE in 1990-91.

B. AREA SURVEYED

B.1 Survey H-10788 covers an offshore area two miles southwest of Point Judith, RI.

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



B.3 Data acquisition for survey H-10788 began on October 5, 1997 (DN 278) and ended on November 5, 1997 (DN 309).

C. SURVEY VESSELS

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

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

D. AUTOMATED DATA ACQUISITION AND PROCESSING

SEE ALSO THE EVALUATION REPORT.

D.1 The following programs were used to acquire and process the multibeam and vertical beam sounding data:

Program	Version	Date	Program	Version	Date
CARIS-HIPS	4.2.7	01/17/97	HYPACK	6.4B	04/17/97
" HDCS	4.2.7	05/09/97	ISIS	2.35	03/25/97
" HDCSMERG	4.2.7	05/09/97	HSDUTILS	3.51	05/28/97
" HIPSCVRT	4.2.7	03/18/97	HPS	None	04/14/97
" VCFEDIT	4.2.7	03/17/97	MapInfo	4.00	11/15/95
" SWATHEDIT	4.2.7	01/17/97	HPS-MI	--	05/06/97

D.2 The following programs were used to acquire and process sound velocity data:

Program	Version	Date	Program	Version	Date
CAT	3.00	02/26/97	SEACON	3.3M	11/27/89
VELOCITY	3.00	02/26/97			

D.3 The following programs were used for data quality assurance:

Program	Version	Date	Program	Version	Date
MapInfo	4.00	11/15/95	SHIPDIM	2.1	04/17/95
HPS-MI	--	05/06/97	MONITOR	3.0	03/13/95

E. SIDE SCAN SONAR EQUIPMENT

No traditional side scan sonar data were acquired for this survey. SeaBat side scan sonar data were recorded digitally using the Triton ISIS software and archived in the Extended Triton Format (*.XTF) files.

F. SOUNDING EQUIPMENT

F.1 Single-frequency (455 kHz) multibeam data were acquired with a Reson SeaBat 9003 (SN 10496-447020) shallow-water sonar system. The 9003's combined transmit and receive beams yield forty (40) soundings per ping, each formed from a 3° crosstrack x 1.5° alongtrack bottom footprint. During multibeam data processing, the outermost two beams on each side of the swath (beam numbers 1, 2, 39, and 40) were not processed, reducing the effective swath width to 108° (3° x 36 beams). Proper overlap between multibeam sonar coverage lines was verified using a conservative swath width assumption of 100°.

Dual-frequency (24 and 100 kHz) vertical beam echo sounding data were acquired with a Raytheon DSF-6000N Digital Survey Echosounder (SN A107).

F.2 No diver investigations were performed for this survey.

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

F.4 SeaBat 9003 (455 kHz) multibeam data were continuously recorded during data acquisition and served as the primary source for hydrographic digital soundings.

SeaBat depth data were monitored using ISIS during acquisition and processed using CARIS-HIPS multibeam data cleaning programs. Digital multibeam depth profiles were visually reviewed and fliers were identified and manually flagged as "rejected"; no SeaBat quality flags were used to automatically "reject" data. Vessel navigation data from DGPS and attitude data from heave, pitch, roll, and gyro sensors were displayed and manually cleaned (see Sections G and I). After hydrographer review and cleaning, the depth, navigation, and attitude data were merged with sound velocity, tide, and vessel configuration data to compute the true depth and position of each sonar beam footprint. All of the processed data were excessed by selecting shoal soundings at a nominal density of 3 meters x 3 meters. These excessed field sheet soundings were examined in CARIS Workfile Processing. Finally, the CARIS Workfile Processing soundings were shoal-bias excessed at 15 meters x 15 meters and transferred into HPS (using HSDUtils) and MapInfo databases. ***Note that excessing was accomplished using predicted tide values. Shoal soundings selected through CARIS may be incorrect due to anomalous predicted tides. Large differences between predicted and verified tides may justify reapplication of tides to the entire CARIS-HIPS dataset to ensure correct selection of least depths for transfer to HPS.***

Both high (100 kHz) and low (24 kHz) frequency vertical beam DSF data were recorded during data acquisition. DSF echograms were monitored on-line. Anomalous DSF echogram traces were immediately cross-referenced to the ISIS multibeam acquisition display online.

No manual edits were made to the DSF data. Vertical correctors were applied to only the raw DSF digital soundings (see Section G); the corrected high frequency (100 kHz) DSF soundings were compared to the SeaBat soundings (see Section K). The archived HPS fixes of DSF soundings do not represent the entire character of the seafloor because shoal bias inserts were not selected.

G. CORRECTIONS TO SOUNDINGS

G.1a Sound velocity and refraction correctors were computed from conductivity, temperature, and depth measurements acquired with a SeaBird SBE19 SEACAT Profiler (S/N 196723-1251). Data quality assurance tests using the CAT program were performed for each cast. The profiler is calibrated at the beginning and end of each field season. See Separate IV* for data records. The following velocity casts were used for this survey:

Cast #	Day Number	Cast #	Day Number
1	278	13	295
2	279	14	296
3	280	15	296
4	281	16	297
5	281	17	302
6	282	18	302
7	287	19	303
8	288	20	303
9	288	21	304
10	289	22	304
11	292	23	309
12	294		

Sound velocity and refraction effects were applied to the SeaBat data in HIPS (incorporating the Nautical Charting Development Lab REFRACT algorithm). Sound velocity correctors for the vertical beam soundings were computed using VELOCITY and applied to the DSF data using HPS.

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

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

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

G.1e Heave, pitch, and roll data were acquired with a TSS Model 335B Motion Sensor (s/n 542). A preseason checkout of the sensor was successfully conducted in accordance with the

* FILED WITH THE ORIGINAL FIELD DATA.

TSS-335B Operating Manual. Heave, pitch, and roll data were applied to SeaBat multibeam data. Heave data were applied to DSF vertical beam data.

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

Multibeam heave, pitch, roll, and heading sensor data were adjusted using biases as determined during a patch test completed on April 02, 1997. See the CARIS-HIPS Vessel Configuration File in Separate IV for data records. FILED WITH THE ORIGINAL FIELD DATA.

G.2 No unusual or unique methods or instruments were used to correct sounding data.

G.3 The diver least depth gage was not used for this survey.

G.4 No significant systematic errors were detected. The DSF transducer position offset was not applied (see section I.6e)

G.5 Tide zoning for this survey is consistent with the Project Instructions. Four tide zones were identified for this project as defined below:

Tide Zone	Applied to	Time Correction	Range Ratio
1A	Cell A	0 mins	X0.85
2	Cell B, C	+18 mins	X0.88
3	Cell D	+18 mins	X0.80
3A	Cell E	+24 mins	X0.75

Zone correctors were applied to the predicted tides at Newport (Station 845-2660). Predicted tides were computed in CARIS-HIPS and HPS and applied to SeaBat and DSF data.

G.6 The vertical reference surface for this survey is Mean Lower Low Water (MLLW). Tide data were acquired at Newport, Point Judith (Station 845-5083), and Weekapaug, RI (Station 845-8022) by N/OES231. Verified tides were unavailable during field processing. A request for verified tides was mailed on November 7, 1997. These data will replace the predicted tide data during verification by N/CS33. APPROVED TIDES + ZONES WERE APPLIED DURING OFFICE PROCESSING

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

H. CONTROL STATIONS

SEE ALSO THE EVALUATION REPORT.

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

I. HYDROGRAPHIC POSITION CONTROL

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

SITE A (Primary):	Montauk, NY	(293 kHz, 100 bps)
SITE B (Check):	Chatham, MA	(325 kHz, 200 bps)

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

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

System A (Primary System, port antenna mount):
Ashtech GPS Sensor, s/n 700417B1083, Firmware 1E89D-P
Magnavox DGPS Receiver MX50R, s/n 078

System B (Check System, starboard antenna mount):
Ashtech GPS Sensor, s/n 700417B1003, Firmware 1E89D-P
Magnavox DGPS Receiver MX50R, s/n 160

Hardware System A was used exclusively for this survey.

I.4 The GPS Horizontal Dilution of Precision (HDOP) was recorded during survey operations and manually checked via the Detailed Data Abstract in HPS. The calculated maximum allowable HDOP value of 3.3 was rarely exceeded.

Anomalous position data were either manually smoothed or flagged "rejected", depending on the extent of the affected data. Instantaneous vessel speed was checked with a 2.5 knot speed jump detector in CARIS-HIPS to aid in the manual cleaning of multibeam navigation data.

DGPS performance checks were conducted using program SHIPDIM. Two 12-hour monitors of the DGPS beacons (listed in Section I.1) were conducted using program MONITOR. See Separate III for data records. FILED W/THE ORIGINAL FIELD DATA

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

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

I.6b There were no positioning equipment malfunctions.

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

I.6d No significant systematic errors were detected.

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

J. SHORELINE

No shoreline is contained within the survey boundaries.

K. CROSSLINES

K.1 A total of 13.34 nm of crosslines was acquired for this survey, 6.0% of the mainscheme coverage.

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

K.3 No significant differences at crossings were detected.

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

L. JUNCTIONS
SEE ALSO THE EVALUATION REPORT.

This survey does not junction with any contemporary surveys.

M. COMPARISON WITH PRIOR SURVEYS
SEE ALSO THE EVALUATION REPORT.

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

N. ITEM INVESTIGATION REPORTS

AWOIS No. 8701 DANGEROUS 48' OBSTN
LAT: 41-20-35.57N
LON: 71-33-50.94W

INVESTIGATION CONDUCTED:

- 100% SeaBat multibeam sonar coverage

INVESTIGATION RESULTS:

No large features were found. A number of 50 foot depths were found, with surrounding depths of 51 to 55 feet.

Least Depths	Fix #	(m) Depth	(ft)	Latitude(N)	Longitude(W)
SeaBat	45759	15.24	50	41°20'34.203"	71°32'50.594"

CHARTING RECOMMENDATION:

Chart representative depths from this survey. The blue tint and charted 48 foot obstruction should be removed. CONCUR

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

DELETE (48) OBSTN

O. COMPARISON WITH THE CHART See also the Evaluation Report.

O.1 Four charts are affected by this survey:

Chart 13205
32nd Ed. 7 October 1995
Scale: 1:80,000

Chart 13215
15th Ed. 12 April 1997
Scale: 1:40,000

Chart 13218
32nd Ed. 25 October 1997
Scale: 1:80,000

Chart 13219
10th Ed. 27 April 1996
Scale: 1:15,000

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

O.3a The overall agreement between charted soundings and survey depths is excellent, with average differences of about one foot.

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

P. ADEQUACY OF SURVEY See also the Evaluation Report

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

Q. AIDS TO NAVIGATION

Q.1 No detached positions were acquired during this survey.

Q.2 There were no submarine or overhead pipelines, cables, tunnels, bridges, or ferry routes found in the survey area.

R. STATISTICS

R.1a	Number of Positions	33897
R.1b	Lineal Nautical Miles of Sounding Lines	254.9
R.2a	Square Nautical Miles of Hydrography	3.9
R.2b	Days of Production	17
R.2c	Detached Positions	0
R.2d	Bottom Samples	0
R.2e	Tide Stations	2
R.2g	Velocity Casts	23
R.2j	SeaBat Item Investigations	0

S. MISCELLANEOUS See also the Evaluation Report.

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

S.2 No bottom samples were conducted for this survey.

T. RECOMMENDATIONS

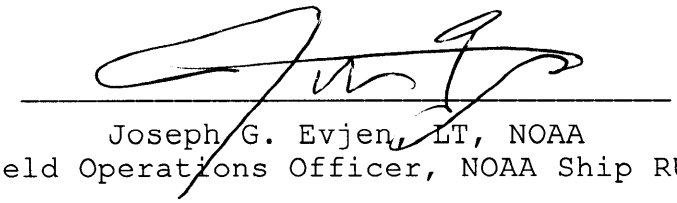
T.1 No additional fieldwork is required. Hydrographer review of the multibeam selected soundings reveals that many depths supersede those estimated from side scan contacts. The hydrographer believes that this survey, when compared to the 1990-91 side scan survey, demonstrates that full coverage multibeam data without side scan can be fully adequate to identify all least depths for charting purposes.

U. REFERRAL TO REPORTS

None.

This report and the accompanying field sheets are respectfully submitted.

Mark T. Lathrop
Survey Technician, NOAA Ship RUDE



Joseph G. Evjen, LT, NOAA
Field Operations Officer, NOAA Ship RUDE

APPENDIX III

LIST OF HORIZONTAL CONTROL STATIONS

Differential GPS was employed for all positioning.
No horizontal control stations were used.

CHATHAM, MA

Status:	On-air
RBn Antenna Location:	41 40.3N, 069 57.0W
REFSTA Ant Location (A):	41 40.27164N, 069 57.00270W
REFSTA Ant Location (B):	41 40.26596N, 069 56.98455W
REFSTA RTCM SC-104 ID(A):	004
REFSTA RTCM SC-104 ID(B):	005
REFSTA FIRMWARE VERSION:	RC00-1C19
Broadcast Site ID:	802
Transmission Frequency:	325 KHZ
Transmission Rate:	200 BPS
Signal Strength:	100uV at 95 NM

Outages: **Off-air 1810Z 04Jan98 to 2027Z 04Jan98.**

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CHEBOYGAN, MI

Status:	On-air
RBn Antenna Location:	45 39.2N, 084 27.9W
REFSTA Ant Location (A):	45 39.20910N, 084 27.93836W
REFSTA Ant Location (B):	45 39.22135N, 084 27.95027W
REFSTA RTCM SC-104 ID(A):	112
REFSTA RTCM SC-104 ID(B):	113
REFSTA FIRMWARE VERSION:	RC00-1C19
Broadcast Site ID:	836
Transmission Frequency:	292 KHZ
Transmission Rate:	200 BPS

Transmission Rate: 100 BPS

Signal Strength: 75uV at 170 NM

Outages: Off-air for scheduled maintenance from 1400Z to 2000Z 13Jan98.

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MONTAUK POINT, NY

Status: On-air

RBn Antenna Location: 41 04.0N, 071 51.6W

REFSTA Ant Location (A): 41 04.02606N, 071 51.62665W

REFSTA Ant Location (B): 41 04.03471N, 071 51.64100W

REFSTA RTCM SC-104 ID(A): 006

REFSTA RTCM SC-104 ID(B): 007

REFSTA FIRMWARE VERSION: RC00-1C19

Broadcast Site ID: 803

Transmission Frequency: 293 KHZ

Transmission Rate: 100 BPS

Signal Strength: 75uv at 130 NM

Outages: Reduced power 1600Z 05Jan98 to 2051Z 05Jan98.

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NEEBISH ISLAND, MI

Status: On-air

RBn Antenna Location: 46 19.3N, 084 09.0W

REFSTA Ant Location (A): 46 19.28167N, 084 09.04047W

REFSTA Ant Location (B): 46 19.27751N, 084 09.02455W

REFSTA RTCM SC-104 ID(A): 110

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

December 18, 1997

Captain Bruce Fisher
Northeast Marine Pilots, Incorporated
243 Spring Street
Newport, Rhode Island 02840

Dear Captain Fisher:

I have enclosed a preliminary sounding plot for the hydrographic survey conducted in the vicinity of Point Judith during October 1997. We are currently finalizing our processing and field report for this survey. Soundings were reduced to Mean Lower Low Water using predicted tides. No new items were noted as dangers to navigation.

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

Commanding Officer
NOAA Ship RUDE
439 West York Street
Norfolk, Virginia 23510-1145
(757) 441-6386

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

Sincerely,

David A. Cole

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

cc: Chief, Atlantic Hydrographic Branch
Attachment

September 3, 1997

Commander, First Coast Guard District
Local Notice to Mariners
408 Atlantic Avenue
Boston, MA 02110-3350

Dear Sir:

NOAA Ship RUDE will be conducting hydrographic survey operations in the vicinity of Point Judith, RI from October through November, 1997.

Please insert the following advance project notice in the Local Notice to Mariners:

"RI - South of Point Judith - The NOAA Ship RUDE will be conducting hydrographic survey operations in an area 3.5 NM south to 4.0 NM southwest of Point Judith from October through November, 1997. The purpose of the survey is to update the existing nautical charts of the region. RUDE is a 90 ft, white-hulled vessel which often makes unpredictable maneuvers during survey operations. RUDE monitors VHF channels 13 and 16."

Any information or comments concerning nautical charts in the area are greatly appreciated and can be forwarded to RUDE via the following address:

Commanding Officer
NOAA Ship RUDE
439 West York Street
Norfolk, VA 23510-1145

Additional information may be found on the RUDE web site at:

www.pmc.noaa.gov/ru/

Thank you for your attention to this matter.

Sincerely,

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

13009 27th ed., 08/17/96 LAST LNM 31/97 NAD 83 — 38/97
(TEMP)GULF OF MAINE AND GEORGE'S BANK
Add Cape Poge Temporary Light, Fl 6s in (PA) — (CGD01) 41°25'12.0"N 070°27'05.0"W
Delete Cape Poge Light — 41°25'10.0"N 070°27'08.3"W

'0 30th ed., 10/26/96 LAST LNM 31/97 NAD 83 — 38/97
1P)GEORGE'S BANK AND NANTUCKET SHOALS
Add Cape Poge Temporary Light, Fl 6s in (PA) — (CGD01) 41°25'12.0"N 070°27'05.0"W
Delete Cape Poge Light — 41°25'10.0"N 070°27'08.3"W

13233 15th ed., 10/19/96 LAST LNM 33/97 NAD 83 — 38/97
(TEMP)MARTHA'S VINEYARD
Add Cape Poge Temporary Light, Fl 6s in (PA) — (CGD01) 41°25'12.0"N 070°27'05.0"W
Delete Cape Poge Light — 41°25'10.0"N 070°27'08.3"W

13237 36th ed., 07/13/96 LAST LNM 33/97 NAD 83 — 38/97
(TEMP)NANTUCKET SOUND AND APPROACHES
Add Cape Poge Temporary Light, Fl 6s in (PA) — (CGD01) 41°25'12.0"N 070°27'05.0"W
Delete Cape Poge Light — 41°25'10.0"N 070°27'08.3"W

13238 13th ed., 06/27/92 LAST LNM 27/95 NAD 83 — 38/97
(TEMP)MA-MARTHA'S VINEYARD EASTERN PART
Add Cape Poge Temporary Light, Fl 6s in (PA) — (CGD01) 41°25'12.0"N 070°27'05.0"W
Delete Cape Poge Light — 41°25'10.0"N 070°27'08.3"W

13278 23rd ed., 06/10/95 LAST LNM 16/97 NAD 83 — 38/97
PORTSMOUTH TO CAPE ANN
Change Depth to 24 ft — (NOAA RUDE) 43°03'45.4"N 070°35'58.8"W

13283 16th ed., 12/23/95 LAST LNM 31/97 NAD 83 — 38/97
PORTSMOUTH HARBOR CAPE NEDDICK HARBOR TO ISLES OF SHOALS
Change Depth to 24 ft — (NOAA RUDE) 43°03'45.4"N 070°35'58.8"W

13286 28th ed., 04/20/96 LAST LNM 32/97 NAD 83 — 38/97
CAPE ELIZABETH TO PORTSMOUTH
Change Depth to 24 ft — (NOAA RUDE) 43°03'45.4"N 070°35'58.8"W

V ADVANCE NOTICES

This section contains advance notice of approved projects or upcoming temporary changes such as dredging, Mariners are advised to use caution while transitting these areas.

- LAKE CHAMPLAIN - *Crown Point Bridge* - The tug BENJAMIN ELLIOT and crane barge will be operating on the channel side of the bridge piers installing fenders. The hours of operation will be 7:00 am - 5:00 pm. The crane barge will be displaying "restricted in ability to maneuver" dayshapes and will be monitoring channel 13. Mariners are advised to use caution and pass at no wake speed.
LNM 38/97 (CGD1)

NY - ERIE CANAL - ALPLAUS CREEK - Boaters are advised that navigation between Erie Canal Lock 7 and Lock 8 will be delayed for short periods of time during races on 20 - 22 September, 1997, from 8:00 am - 7:00 pm. All commercial vessels shóuld notify canal operations at (508) 471-5016 prior to entering the area so they may be cleared for passage through the area.
LNM 38/97 (CGD1)

RI - POINT JUDITH - Hydrographic surveys will be conducted in an area 3.5 NM south to 4.0 NM southwest of Point Judith from 1 October - 24 November, 1997. The purpose of this survey is to update existing nautical charts of the region. Information or comments are appreciated and can be sent to: Commander Officer, NOAA Ship RUDE, 439 West York St., Norfolk, VA. 23510-1145.
Chart(s)13219 LNM 38/97 (CGD1)

VI PROPOSED CHANGES

This section contains notice of non approved, proposed projects open for comment. SPECIAL NOTE: Mariners are requested to respond in writing to: Commander, First Coast Guard District (oan), 408 Atlantic Avenue, Boston, MA 02110-3350, unless otherwise noted.

PROPOSED WATERWAY PROJECTS OPEN FOR PUBLIC COMMENT

WATERWAY	Closing	Docket No.	Ref. LNM

NONE THIS WEEK

VII GENERAL

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

FOR STANDARD MILITARY AND GENERAL SAFETY ZONES IN EFFECT SEE THE MONTHLY EDITION LNM 34/97

MA - OFF/SHORE - The U.S. Navy advises of daily firing exercises from 6:30 am to 7:00 pm, 15 - 21 September, 1997, in an area bounded by the following: 41°02.5N, 70°42W; to 41°07N, 70°22W; to 41°05N, 70°10W ; 41°00N, 69°55W; to 40°48N, 69°36W; to 40°30N, 69°36W; to 40°30N, 70°42W, thence to beginning
(s): 13003, 13006, 13200 LNM 38/97 (CGD1)

APPENDIX VII

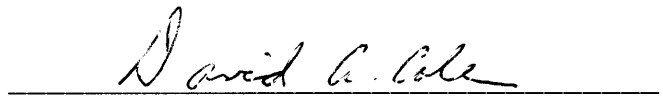
APPROVAL SHEET

LETTER OF APPROVAL

REGISTRY NO. H-10788

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

This survey was completed with 100% multibeam coverage and is more than adequate to supersede all prior surveys in common areas. The survey is considered complete and adequate for nautical charting.



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

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: May 11, 1998

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-B902-RU
HYDROGRAPHIC SHEET: H-10788

LOCALITY: Point Judith, Rhode Island Sound

TIME PERIOD: October 5 - November 5, 1997

TIDE STATION USED: 845-5083 Point Judith, RI
Lat. 41° 21.8'N Lon. 71° 29.4'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.969 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: BIS1, BIS2, BIS3, BIS4, RIS1, RIS2 & RIS6.
Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (Meters), relative to MLLW and on Greenwich Mean Time.

CHIEF, OPERATIONAL ANALYSIS BRANCH

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10788

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 13205, 13215, 13218, 13219	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	K U.S. LIGHT LIST	
BLOCK ISLAND SOUND	X		X							1
NEBRASKA SHOAL	X		X							2
POINT JUDITH (title)	X		X							3
RHODE ISLAND (title)	X		X							4
										5
										6
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										25

Approved:

Dennis J. Romeduno

APR 3 1998

NOAA FORM 76-155 SUPERSEDES C&GS 197

05/27/99

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H10788

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	33897
NUMBER OF SOUNDINGS	33897

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	98	04/15/98
VERIFICATION OF FIELD DATA	606.50	08/18/98
EVALUATION AND ANALYSIS	232.50	
FINAL INSPECTION	25	05/03/99
COMPILATION	113	05/27/99
TOTAL TIME	1075	

ATLANTIC HYDROGRAPHIC BRANCH APPROVAL 05/07/99

NOAA FORM 61-29 (12-71)

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

REFERENCE NO.

N/CS33-43-99

LETTER TRANSMITTING DATA

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

☐ ORDINARY MAIL ☐ AIR MAIL

☐ REGISTERED MAIL ☒ EXPRESS

☐ GBL *(Give number)* _____

TO:

NOAA/National Ocean Service
Chief, Data Control Group, N/CS3x1
SSMC3, Station 6815
1315 East-West Highway
Silver Spring, MD 20910-3282

DATE FORWARDED

June 1, 1999

NUMBER OF PACKAGES

1 Box, 1 Tube

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

H10788

Rhode Island, Block Island Sound, South of Point Judith

1 Box Containing:

1 **Original Descriptive Report for H10788**
4 HISTORY OF CARTOGRAPHIC WORK for H10788 for charts 13219, 13215, 13218 and 13205

1 Tube Containing:

1 **Original Smooth Sheet for H10788**
1 Paper Composite plot of survey H10788 for chart 13219
1 Paper Composite plot of survey H10788 for chart 13215
1 Paper Composite plot of survey H10788 for chart 13218
1 Paper Composite plot of survey H10788 for chart 13205
1 Mylar H-Drawing of H10788 for chart 13219
1 Mylar H-Drawing of H10788 for chart 13215
1 Mylar H-Drawing of H10788 for chart 13218
1 Mylar H-Drawing of H10788 for chart 13205

FROM: *(Signature)* R. H. Whitfield

Richard H. Whitfield

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

Atlantic Hydrographic Branch N/CS331
439 W. York Street
Norfolk, VA 23510-1114

☆U.S.GPO:1983-0-664-006/1192

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10788 (1997)

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System (HPS)
MicroStation 95, version 5.05
SiteWorks, version 2.01
NADCON, version 2.10
I/RAS B, version 5.01

The smooth sheet was plotted using a Hewlett Packard DesignJet 2500CP plotter.

H. CONTROL STATIONS

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). The smooth sheet has been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27 datum, move the projection lines 0.369 seconds (11.40 meters or 1.14 mm at the scale of the survey) north in latitude and 1.798 seconds (41.82 meters or 4.18 mm at the scale of the survey) east in longitude.

L. JUNCTIONS

The present survey does not junction with any contemporary surveys.

Present survey depths are in harmony with the charted hydrography.

M. COMPARISON WITH PRIOR SURVEYS

A comparison of prior surveys was not done during office processing. This is in accordance with section 4. of the memorandum titled *Changes to Hydrographic Survey Processing*, dated May 24, 1995. This also applies to 100% Side Scan coverage with 100% Multibeam coverage.

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

O. **COMPARISON WITH CHARTS** 13205 (32nd Edition, Oct. 07/95)
13215 (16th Edition, Sep. 12/98)
13218 (32nd Edition, Oct. 25/97)
13219 (10th Edition, Apr. 27/96)

Hydrography

The charted hydrography originates with prior surveys. All rocks and obstructions within the common area of the present survey originate with these prior surveys as estimated depths on side scan sonar contacts. Agreement between the charted depths and present survey soundings is adequate with average differences of plus or minus 1 foot. The following should be noted:

1. The following four charted rocks have estimated depths and are shown only on NOS chart 13219. The area has been adequately developed by the present survey. Present survey soundings are generally 1 to 6 feet deeper in the immediate area of the rocks. The notations *rky* are presently also charted in the vicinity.

Feature	Latitude(N)	Longitude(W)
53 *Rk*	41°20'32.01"	71°32'10.83"
49 *Rk*	41°20'41.62"	71°32'10.46"
52 *Rk*	41°20'39.40"	71°32'30.07"
46 *Rk*	41°20'43.26"	71°32'32.10"

It is recommended that these rocks be deleted from the chart and the area charted with present survey depths. It is also recommended that the notations *rky* be retained as charted.

2. Two charted rocks, reported in 1991, with depths of 44 feet and 46 feet in Latitude 41°20'20.10"N, Longitude 71°36'38.35"W and Latitude 41°20'28.94"N, Longitude 71°36'38.48"W respectively have been adequately developed by the present survey. It is recommended that the two rocks be revised to a dangerous rock with a depth of 44 feet (44 *Rk*) in Latitude 41°20'20.02"N, Longitude 71°36'38.40"W and a dangerous rock with a depth of 47 feet (47 *Rk*) in Latitude 41°20'31.64"N, Longitude 71°36'37.26"W as shown on the present survey. It is also recommended that the notation Rks rep (1991) be deleted from the chart.

3. A charted rock with a depth of 52 feet and the notation Rk rep (1991) in Latitude 41°20'05.85"N, Longitude 71°36'56.20"W was developed by the hydrographer. A rock with a depth of 52 feet was acquired in Latitude 41°20'05.89"N, Longitude 71°36'56.25"W. It is recommended that the charted

52 *Rk* be revised to a 52 *Rk* with a danger curve. It is also recommended that the notation Rk rep (1991) be deleted.

4. Two charted rocks, with depths of 51 feet and 52 feet in Latitude 41°19'01.70"N, Longitude 71°29'12.55"W and Latitude 41°18'46.79"N, Longitude 71°28'55.24"W respectively have been adequately developed by the present survey. Present survey depths in the immediate vicinity are 4 to 5 feet deeper. It is recommended that the rocks be deleted and depths from the present survey be charted. It is also recommended that the notation rky in the immediate be retained.

5. Two charted rocks, with depths of 48 feet and 58 feet in Latitude 41°18'51.76"N, Longitude 71°29'46.15"W and Latitude 41°18'57.77"N, Longitude 71°29'52.29"W respectively have been adequately developed by the present survey. Present survey depths for these items are 63 and 62 feet. It is recommended that the rocks be deleted and depths from the present survey be charted. It is also recommended that the notation rky in the immediate vicinity be retained.

6. A charted rock with a depth of 66 feet in Latitude 41°17'58.59"N, Longitude 71°25'46.82"W was developed by the hydrographer. A rock with a depth of 74 feet (74 *Rk*) was acquired in Latitude 41°17'58.76"N, Longitude 71°25'43.99"W. It is recommended that the charted 66 *Rk* be revised to a 74 *Rk* as shown on the present survey.

7. A charted rock with a depth of 71 feet in Latitude 41°17'36.40"N, Longitude 71°25'03.51"W was developed by the hydrographer. A rock with a depth of 80 feet was acquired in Latitude 41°17'36.90"N, Longitude 71°25'01.93"W. It is recommended the charted 71 *Rk* be revised to an 80 *Rk* as shown on the present survey.

8. A charted rock with a depth of 46 feet in Latitude 41°19'17.05"N, Longitude 71°29'42.91"W was developed by the hydrographer. A rock with a depth of 53 feet was acquired in Latitude 41°19'17.44"N, Longitude 71°29'43.08"W. It is recommended the charted 46 *Rk* be revised to a dangerous 53 *Rk* as shown on the present survey.

9. The charted rock with a depth of 44 feet in Latitude 41°18'32.50"N, Longitude 71°28'42.83"W originates with prior survey H10378 from an echo sounder depth. A pneumatic depth gauge (PDG) depth of 51 feet was also acquired at the time of the prior survey. The PDG depth of 51 feet is in agreement with the present survey depth of 51 feet on a rock in Latitude 41°18'32.42"N, Longitude 71°28'42.67"W. It is recommended the

charted 44 *Rk* be revised to a dangerous 51 *Rk* as shown on the present survey.

10. A charted dangerous obstruction with a depth of 49 feet in Latitude 41°19'17.0"N, Longitude 71°29'03.1"W is not considered disproved by the present survey. It is recommended that the dangerous obstruction with a depth of 49 feet be retained as charted.

11. A charted dangerous rock with a depth of 34 feet in Latitude 41°20'07.84"N, Longitude 71°30'35.06"W originates with prior survey H10424 from an echo sounder depth. A pneumatic depth gauge (PDG) depth of 43 feet was also acquired at the time of the prior survey. The PDG depth of 43 feet is in good agreement with the present survey depth of 41 feet on a rock in Latitude 41°20'07.84"N, Longitude 71°30'35.08"W. It is recommended the charted dangerous 34 *Rk* be revised to a dangerous 41 *Rk* as shown on the present survey.

12. A charted rock with a depth of 35 feet in Latitude 41°20'28.92"N, Longitude 71°30'42.38"W was developed by the hydrographer. A rock with a depth of 34 feet was acquired in Latitude 41°20'28.96"N, Longitude 71°30'42.68"W. It is recommended the charted 35 *Rk* be revised to a dangerous 34 *Rk* as shown on the present survey.

13. A charted rock with a depth of 51 feet in Latitude 41°20'31.08"N, Longitude 71°33'25.88"W was developed by the hydrographer. Present survey soundings are 50 to 54 feet. It is recommended that the 51 *Rk* be deleted and representative depths from the present survey be charted.

14. A charted dangerous obstruction with a depth of 57 feet in Latitude 41°19'16.3"N, Longitude 71°29'53.0"W was developed by the hydrographer. An obstruction with a depth of 53 feet was acquired in Latitude 41°19'15.94"N, Longitude 71°29'53.02"W. It is recommended the charted dangerous 57 *Obstn* be revised to a dangerous 53 *Obstn* as shown on the present survey.

15. A charted dangerous obstruction with a depth of 47 feet in Latitude 41°19'51.3"N, Longitude 71°30'20.9"W was developed by the hydrographer. Present survey depths of 45 to 46 feet are within the immediate vicinity. It is recommended that the dangerous 47 *Obstn* be deleted and representative depths from the present survey be charted

16. A charted dangerous obstruction with a depth of 47 feet in Latitude 41°19'52.6"N, Longitude 71°29'40.7"W was developed by the hydrographer. An obstruction with a depth of

47 feet was acquired in Latitude 41°19'52.17"N, Longitude 71°29'40.51"W. It is recommended the charted dangerous 47 *Obstn* be revised to the position located by the present survey.

17. A charted dangerous obstruction with a depth of 41 feet in Latitude 41°20'23.3"N, Longitude 71°30'29.3"W was developed by the hydrographer. An obstruction with a depth of 38 feet was acquired in Latitude 41°20'24.76"N, Longitude 71°30'29.24"W. It is recommended the charted dangerous 41 *Obstn* be revised to a dangerous 38 *Obstn* as shown on the present survey.

18. A charted dangerous rock with a depth of 30 feet in Latitude 41°20'19.8"N, Longitude 71°30'12.1"W was developed by the hydrographer. A rock with a depth of 29 feet was acquired in Latitude 41°20'18.87"N, Longitude 71°30'11.45"W. It is recommended the charted dangerous 30 *Rk* be revised to a dangerous 29 *Rk* as shown on the present survey. It is also recommended that the 30-ft depth curve around the rock on the latest edition of charts 13205 and 13218 be revised to a danger curve.

19. A charted dangerous rock with a depth of 45 feet in Latitude 41°19'26.33"N, Longitude 71°29'10.01"W was developed by the hydrographer. A rock with a depth of 50 feet was acquired in Latitude 41°19'25.93"N, Longitude 71°29'12.92"W. It is recommended the charted dangerous 45 *Rk* be revised to a dangerous 50 *Rk* as shown on the present survey.

20. A charted dangerous rock with a depth of 26 feet in Latitude 41°20'45.0"N, Longitude 71°30'34.0"W was developed by the hydrographer. A rock with a depth of 27 feet was acquired in Latitude 41°20'44.88"N, Longitude 71°30'32.43"W. It is recommended the charted dangerous 26 *Rk* be revised to a dangerous 27 *Rk* as shown on the present survey. It is also recommended that the 30-ft depth curve around the rock on the latest edition of chart 13218 be revised to a danger curve.

21. A charted dangerous rock with a depth of 32 feet in Latitude 41°20'42.73"N, Longitude 71°30'52.11"W was developed by the hydrographer. A rock with a depth of 34 feet was acquired in Latitude 41°20'42.74"N, Longitude 71°30'52.63"W. It is recommended the charted dangerous 32 *Rk* be revised to a dangerous 34 *Rk* as shown on the present survey.

22. A charted rock, with a depth of 38 feet in Latitude 41°20'34.75"N, Longitude 71°30'50.62"W has been adequately developed by the present survey. Present survey depths in the immediate vicinity are 34 feet. It is recommended that the

rock be deleted from chart and present survey depths be charted. It should be noted that the 38 Rk is shown only on chart 13219.

23. A charted rock, with a depth of 34 feet in Latitude 41°20'31.98"N, Longitude 71°30'02.34"W has been adequately developed by the present survey. Present survey depths of 36 feet have been acquired on this rock. Present survey depths in the immediate vicinity are 35 feet. It is recommended that the rock be deleted from chart and present survey depths be charted. It is also recommended that the notation *rky* be retained.

24. A charted rock with a depth of 36 feet in Latitude 41°20'40.99"N, Longitude 71°30'26.17"W was developed by the hydrographer. A rock with a depth of 35 feet (35 *Rk*) was acquired in Latitude 41°20'41.59"N, Longitude 71°30'26.01"W. It is recommended that the charted 36 *Rk* be revised to a dangerous 35 *Rk* as shown on the present survey. The 36 *Rk* is shown on chart 13219 only.

25. A charted rock with a depth of 58 feet in Latitude 41°20'15.0"N, Longitude 71°33'50.0"W was developed by the hydrographer. Present survey soundings are 58 to 60 feet. It is recommended that the 58 *Rk* be deleted and representative depths from the present survey be charted.

26. A charted rock with a depth of 43 feet in Latitude 41°19'45.0"N, Longitude 71°29'32.0"W was developed by the hydrographer. Present survey soundings are 48 to 51 feet in the immediate vicinity. It is recommended that the 43 *Rk* be deleted and representative depths from the present survey be charted.

27. A charted rock with a depth of 64 feet in Latitude 41°18'35.0"N, Longitude 71°29'53.0"W was developed by the hydrographer. A depth of 65 feet was acquired in Latitude 41°18'34.34"N, Longitude 71°29'54.36"W. It is recommended that the charted 64 *Rk* be revised to a 65 Rk.

The present survey is adequate to supersede the charted hydrography in the common area, except as noted in this report.

P. ADEQUACY OF SURVEY

This is an adequate hydrographic survey and should supersede all prior surveys within the common area with the exception of those items noted above.

S. MISCELLANEOUS

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

It should be noted that there are numerous compilation disparities within the common overlapping area of latest editions of NOS charts 13205 and 13218. Some of these differences have been rectified within the common area of the charts and the present survey.

The following NOS charts were used for compilation of the present survey:

13205 (34th Ed., Sep 12/98)
13215 (16th Ed., Sep 12/98)
13218 (36th Ed., Nov 07/98)
13219 (11th Ed., Sep 12/98)

Marilyn Schlüter

Marilyn B. Schlüter
Cartographic Technician
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H10788

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Date: 5/7/99

Richard H. Whitfield
Cartographer
Atlantic Hydrographic Branch

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

Date: 5/7/99

Andrew L. Beaver, LCDR, NOAA
Chief, Atlantic Hydrographic Branch

****

Final Approval:

Approved: Samuel P. De Bow Date: 7/2/99

Samuel P. De Bow, Jr.
Commander, NOAA
Chief, Hydrographic Surveys Division

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H10788

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
13219	5/6/99	L. H. Whitfield	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
13215	5/14/99	L. H. Whitfield	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. THRU 13219
13218	5/20/99	L. H. Whitfield	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. THRU 13215
13205	5/24/99	L. H. Whitfield	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. THRU 13215
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED