

H11995

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey: **Navigable Area**
Registry Number: **H11995**

LOCALITY

State: Rhode Island
General Locality: Rhode Island Sound and Approaches
Sub-locality: 7 NM South of Point Judith

2008

CHIEF OF PARTY
CDR P. Tod Schattgen
NOAA

LIBRARY & ARCHIVES
DATE

HYDROGRAPHIC TITLE SHEET

H11995

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State: **Rhode Island**

General Locality: **Rhode Island Sound and Approaches**

Sub-Locality: **7 NM South of Point Judith**

Scale: **1:10,000** Date of Survey: **08/21/08 to 09/30/08**

Instructions Dated: **06/24/2008** Project Number: **OPR-B307-TJ-08**

Vessel: **NOAA Ship *Thomas Jefferson***

Chief of Party: **CDR P. Tod Schattgen, NOAA**

Surveyed by: ***Thomas Jefferson Personnel***

Soundings by: **Reson 8101, 8125, and 7125 multibeam echosounders.**

Graphic record scaled by: **N/A**

Graphic record checked by: **N/A**

Protracted by: **N/A** Automated Plot: **N/A**

Verification by: ***Atlantic Hydrographic Branch***

Soundings in: **Meters *Feet* at MLLW**

Remarks:

- 1) All Times are in UTC.***
 - 2) This is a Navigable Area Hydrographic Survey.***
 - 3) Projection is UTM Zone 19, North American Datum of 1983.***
- Red, bold, italic comments were made during office verification.***

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Descriptive Report to Accompany Hydrographic Survey H11995

Project OPR-B307-TJ-08
 7 NM South of Point Judith
 Rhode Island Sound and Approaches
 Scale 1:10,000
 August 21st – September 30th 2008
NOAA Ship *Thomas Jefferson*

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-B307-TJ-08*, dated 24 June 2008. The survey area includes the approach to Buzzards Bay.

**Filed with original field records.*

Table A-1: Approximate Survey Area H11995

Northwest Corner	Northeast Corner	Southeast Corner	Southwest Corner
41° 17' 50" N 071° 15' 51" W	41° 20' 06" N 071° 07' 12" W	41° 17' 52" N 071° 05' 58" W	41° 15' 21" N 071° 14' 28" W

Data acquisition was conducted from August 21st to September 30th, 2008.

The purpose for this survey is to provide modern full bottom coverage hydrographic surveys for 67 square nautical miles area, which was designated as a critical area in the Hydrographic Survey Priorities, 2007 edition.

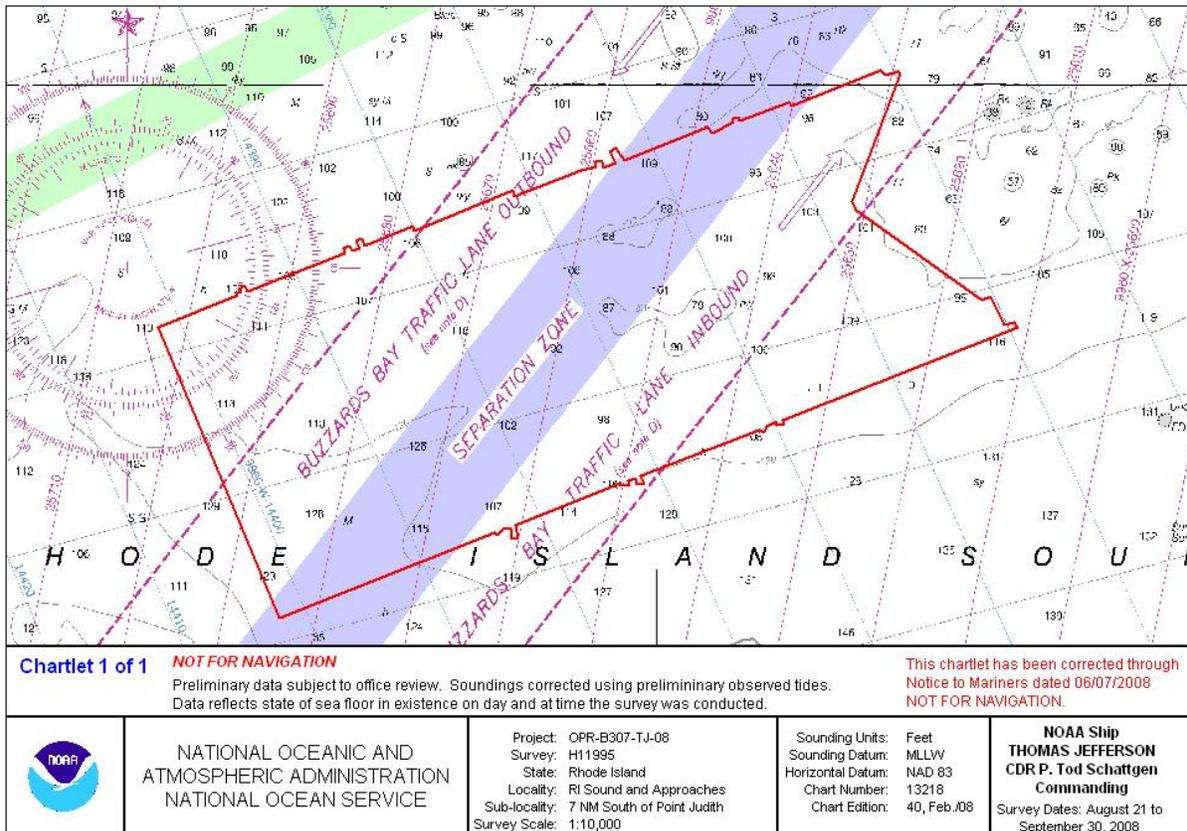
Table A-2: Survey Statistics

NOAA Ship <i>Thomas Jefferson</i> , Sheet C H11995	Lineal Nautical Miles
LNM Multibeam mainscheme only	435.3664
LNM Side Scan Sonar mainscheme only	N/A
LNM Crosslines singlebeam and multibeam combined	26.76
LNM development lines non mainscheme	N/A
LNM shoreline/nearshore investigations	N/A
Number of Bottom Samples	2
Number of items investigated that required additional time/effort in the field beyond the above survey operations	N/A
Total number of square nautical miles	18.22

Table A-3: Dates of Multibeam Data Acquisition in Calendar and Julian Days

Calendar Date	Julian Day
21-August-2008	234
22-August-2008	235
23-August-2008	236
24-August-2008	237
25-August-2008	238
8-September-2008	252
10-September-2008	254
30-September-2008	274

Figure A-1: H11995 Survey Limits



B. DATA ACQUISITION AND PROCESSING

Refer to the addendum to Spring 2008 *Thomas Jefferson* Data Acquisition and Processing Report (DAPR)* for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR* are included in this descriptive report.

**Filed with original field records.*

B 1. EQUIPMENT AND VESSELS

Data were acquired by NOAA Ship *Thomas Jefferson* (S-222), S-222's Hydrographic Survey Launches (HSL) 3101 and HSL 3102. S-222 acquired Multibeam Echosounder (MBES) soundings and sound velocity profiles. All MBES soundings, acquired by the ship, were collected in the single head mode using the port side RESON 7125 transducer. HSL 3101 acquired RESON 8125 MBES soundings and sound velocity profiles. HSL 3102 acquired RESON 8101 MBES soundings, sound velocity profiles and bottom samples. Vessel configurations, equipment operation, and data acquisition and processing were consistent with specifications described in the DAPR*. No other changes were observed.

**Filed with original field records.*

B 2. QUALITY CONTROL

B 2.1 System Certification and Calibration

Refer to S-222's DAPR* and Hydrographic Systems Readiness Report (HSRR)* for a complete description of system integration and initial calibration results for equipment and sensors used for this survey.

**Filed with original field records.*

B.2.2 Sounding Coverage

As per the Letter Instructions*, this survey was conducted using complete multibeam coverage, which was monitored by the creation of a 2 meter BASE surface. A list of all major features is contained in Appendix II**.

**Filed with original field records*

***Appended to this report.*

B.2.3 Crosslines

MBES crosslines, acquired by S-222, totaled 26.76 lineal nautical miles (LNM) which comprised 6 percent of mainscheme hydrography acquired during the course of the survey. These MBES crosslines were used to check for consistency against the main scheme MBES. Standard deviation for crosslines were generally less than 0.20m, well within the IHO Order 1 Error Budget of 0.57m to 0.72m for the water depth.

As per guidance from Atlantic Hydrographic Branch (AHB) (See Appendix V**) an evaluation of the Standard Deviation layer of the BASE surfaces was performed for each field sheet in the survey. The results indicate some systematic artifacts as the cause of poor correlation between outer beams between S-222 and HSLs, but these do not exceed 0.43 meters in any area. Other areas of high standard deviation are caused by bathymetric features or man made obstructions. The results of the evaluation are located in Separates IV*.

* *Filed with original field records*

***Appended to this report*

B 2.4 Junctions and Prior Surveys

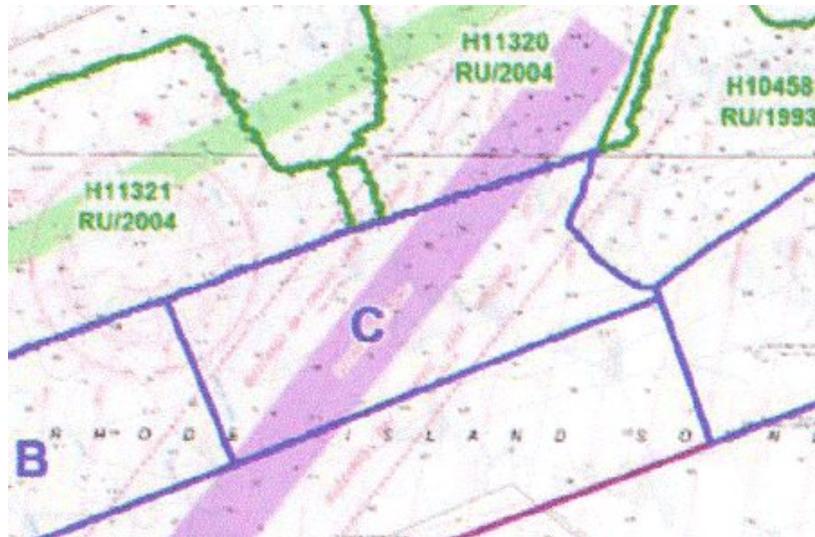
The following contemporary surveys junction with H11995:

Table B-1: Junction Surveys

Registry #	Scale	Date	Field Party	Junction side
H11321	1:10,000	2004	<i>Rude</i>	NW
H11320	1:10,000	2004	<i>Rude</i>	NE
H10458	1:20,000	1993	<i>Rude</i>	E
H11922	1:10,000	2008	<i>Thomas Jefferson</i>	SE
H11996	1:10,000	2008	<i>Thomas Jefferson</i>	W

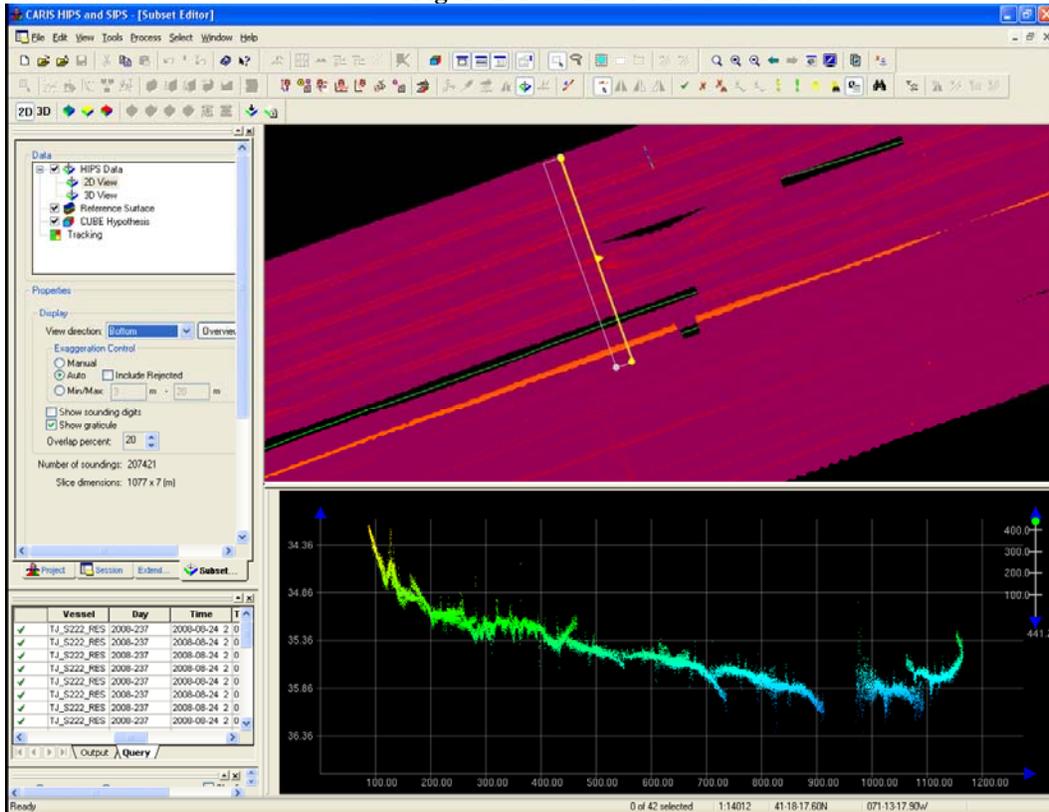
Historical junction surveys provided for comparison are in a format unrecognizable by any of *Thomas Jefferson's* suite of processing software. Surrounding chart soundings and concurrent surveys are considered adequate to provide surrounding comparison data, and are generally within 2 feet of the outer soundings. *Concur.*

Figure B-1: H11995 Junction Surveys



B.2.5 Systematic Errors

Figure B-2: Standard Deviation Error



A standard deviation error was encountered, on day number 238, with data acquired by S-222. The error occurred when two sound velocity profiles were recorded below the transducer. To solve this problem, the two sound velocity profiles in question were deleted, which did not adversely affect the data as multiple casts were performed on day number 238.

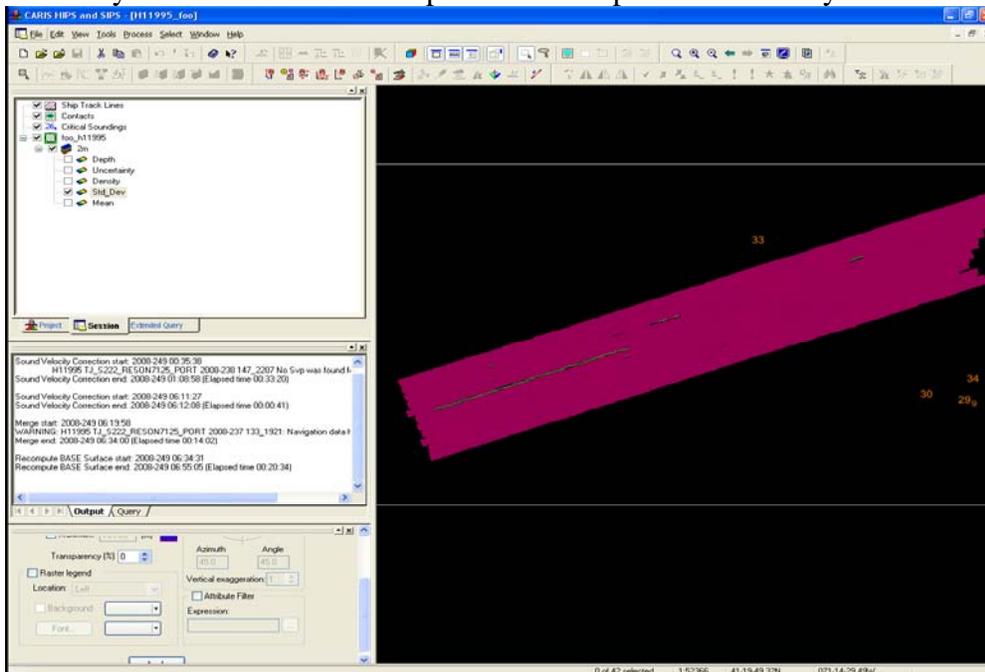


Figure B-3: Corrected Data

Image of data after the two relevant sound velocity profiles from day number 238 were deleted. No visible error in standard deviation shown.

Figure B-4: Data with Heave Artifact

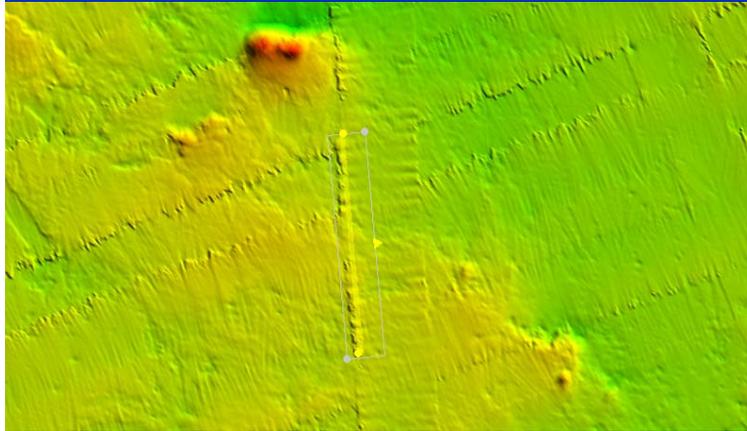
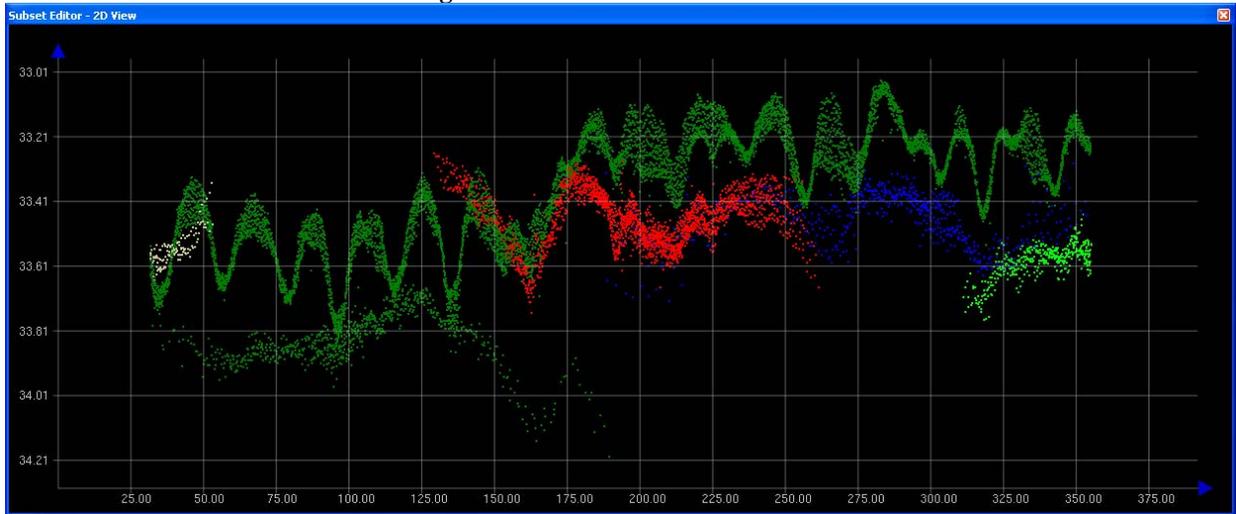


Figure B-5: Heave Artifact shown in Depth layer in Caris

A heave artifact was noted throughout the data in various places (See Figure 5 & 6). The cause is as yet unknown; however, the error is well within the IHO Order 1 error budget for this survey.

On day number 238 there was ship motion related artifact along three lines. Lines 137_1414, 137_1415 and 138_1505 would not accept the heave correction. The heave error was as much as plus or minus 0.6 meters. This error was within 2% of the water depth but greater than the maximum allowable heave error of 0.2 meters stated in section 5.1.3.5 of the HSSD. Re-converting the line and not applying POS true heave correctors fixed the problem. With no true heave applied the heave artifact was less than 0.2 meters which is within the HSSD budget and is in line with the rest of the survey.

B 3. CORRECTIONS TO ECHO SOUNDING

HDCS sounding data were reduced to mean lower-low water (MLLW) using approved (verified) water levels from Newport, RI (8452660) and Menemsha Harbor, MA (8448725), adjusted for tidal constituents and residuals provided by CO-OPS as specified in the Letter Instructions* and illustrated below. **Filed with original field records.*

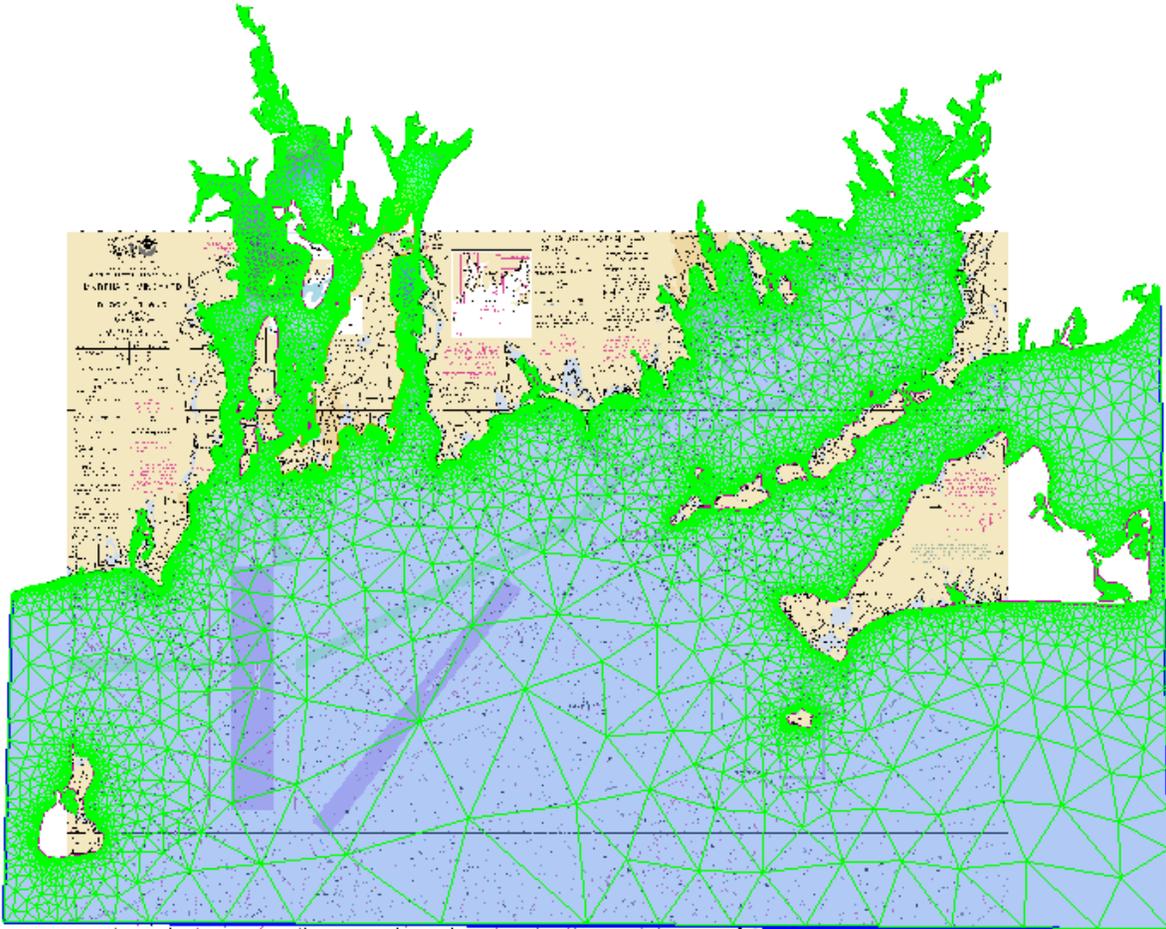


Figure B-6: Final Tide Zoning

All other datum reduction procedures conform to those outlined in the DAPR*.

All methods and instruments used for sound velocity correction were as described in the DAPR*. A table detailing all sound velocity casts is located in Separate II* of this Descriptive Report.

**Filed with original field records*

B 4. DATA PROCESSING

B 4.1 Total Propagated Error

For the 2008 field season, Total Propagated Error (TPE) parameters for sound speed and tides are calculated separately for each project. The project-specific parameters for OPR-B307-TJ-08, Survey H11995 are as follows:

Table B-2: TPE Parameters

Vessel	Tide Values		Sound Speed Values	
	Measured	Zoning	Measured	Surface
3101	0	0	1	0.2
3102	0	0	1	0.2
S222 MVP	0	0	1	0.2
S222 CTD	0	0	1	0.2

Measured Sound Speed values were calculated using the HSTP Sound Speed Estimator program and were consistently below 1 m/s for the project area (see processing logs in Separates I*). TPE values for all MBES data were applied immediately following CARIS Merge.

B 4.2 BASE Surfaces and Mosaics

The following table describes all BASE Surfaces and Mosaics submitted as part of Survey H11995:

Table B-3: Compiled Field Sheets

<i>Name of Fieldsheet</i>	<i>Resolution</i>	<i>Type</i>	<i>Purpose</i>
H11995_E	2.0 meter	CUBE	Coverage and Bathymetry Monitoring
H11995_W	2.0 meter	CUBE	Coverage and Bathymetry Monitoring

This survey was processed using the Combined Uncertainty and Bathymetry Estimator (CUBE) algorithm. IHO Order 1 was selected and the CUBE configuration was set to “Deep” for this entire survey. Refer to the 2008 DAPR*, 2008 Field Procedures Manual, and CARIS HIPS/SIPS 6.1 manual for further discussion.

**Filed with original field records.*

C. VERTICAL AND HORIZONTAL CONTROL

As per FPM section 5.2.3.2.3 guidance (see Appendix V**), a HVCR report was not filed as no horizontal/vertical control stations were established by the field party for survey H11995. A summary of horizontal and vertical control for this survey follows.

****Appended to this report**

C 1.1 Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83), UTM Zone 19N. Differential GPS (DGPS) was the sole method of positioning. Differential corrections from the U.S. Coast Guard beacon at Acushnet, MA (306 kHz) were used during this survey.

No horizontal control stations were established by the field party for this survey.

C 1.2 Vertical Control

The vertical datum for this project is MLLW. The operating National Water Level Observation Network (NWLON) stations at Newport, RI (8452660) and Menemsha Harbor, MA (8448725), served as datum control for H11995. Verified water level data with approved TCARI constituents and residuals were applied to all sounding data on 10/31/2008.

A request for delivery of final approved (verified) water levels for this survey was forwarded to N/OPS1 on October 1st, 2008, in accordance with the FPM and project letter instructions*. Approved (verified) water levels were downloaded from CO-OPS on October 2nd, 2008, and applied with preliminary TCARI zoning which was accepted as final TCARI zoning.

***Filed with original field records.**

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

Survey H11995 was compared with chart 13218 (40th Ed.; February 2008, 1:80,000), chart 12300 (47th Ed.; May 2008, 1:400,000), chart 13006 (34th Ed.; May 2007, 1:675,000), chart 13003 (49th Ed.; April 2007, 1:1,200,000), chart 5161 (13th Ed.; October 2003, 1:1,058,400) and ENC US4MA23M. Chart comparisons were performed in CARIS HIPS.

D.1.1 Chart 13218 Comparison

In general the soundings agree within 2-3 feet. Within shoal areas significant variation exists, both below and above charted depths.

A charted 79' sounding in location 41° 18' 00.58" N, 071° 09' 28.68" W was surveyed by all three platforms and found to have a least depth of 87' at MLLW, corrected with approved tides and final tide zoning. The Hydrographer recommends charting present survey soundings in this location. **Concur.**

A survey depth of 76' was measured in location 41° 17' 52.73" N, 071° 09' 52.33" W, in the vicinity of a charted 87' ~~79'~~. The Hydrographer recommends charting the present survey soundings in this location. *Concur.*

D.1.2 Chart 12300 Comparison

In general the soundings agree within 1/2 fathom of charted depths. A charted 18 fathom sounding in the vicinity of 41° 17' 54" N, 071° 07' 41" W was found to have a least depth of 15.2 fathoms at MLLW, corrected with approved tides and final tide zoning. The Hydrographer recommends charting present survey soundings in this location. *Concur.*

D.1.3 Chart 13006 Comparison

There are no depths on this chart that fall within the survey limits. *Concur.*

D.1.4 Chart 13003 Comparison

There are no depths on this chart that fall within the survey limits. *Concur.*

D.1.5 Chart 5161 Comparison

There are no depths on this chart that fall within the survey limits. *Concur.*

D.1.6 ENC US4MA23M

Depths from Electronic Navigation Chart US4MA23M generally agree with the current survey within 1 meter. The chart was generally shoaler than the survey data. *Concur.*

D.2 Additional Results

D.2.1 Automated Wreck and Obstruction Information Service (AWOIS) Items

There are no AWOIS items located within the modified limits of survey H11995. *Concur.*

D.2.4 Shoreline

There is no shoreline within the sheet limits of survey H11995. *Concur.*

D.2.5 Charted Features

There are no charted features and/ or item investigations within the sheet limits of survey H11995. *Concur.*

D.2.6 Charted Pipelines and Cables

There are no charted pipelines or cables in the survey area. *Concur.*

D.2.7 Bridges, Ferry Routes, and Overhead Cables

There are no ferry routes, bridges, or overhead cable crossings within the limits of survey H11995. *Concur.*

D.3 Dangers to Navigation and Shoals

D 3.1 Dangers to Navigation

No dangers to navigation were found in this survey. *Concur.*

D 3.2 Shoals

No evidence of shoaling significant to navigation was discovered in this survey. *Concur.*

D.4 Aids to Navigation

No charted Aids to Navigation (ATON) were found within the revised limits of H11995. *Concur.*

D.5 Coast Pilot Information

The Hydrographer has no recommendations for changes or addendums to the Coast Pilot.

D.6 Miscellaneous

Bottom Samples

Bottom samples were collected in accordance with NOAA Hydrographic Survey Specifications and Deliverables. Due to time constraints, a total of two bottom samples were acquired during Survey H11995. The list of the bottom samples is contained in Appendix V*. The complete description of all bottom samples acquired during Survey H11995 is contained in the Pydro PSS. **Appended to this report.*

Environmental Conditions and Notes

There were no significant environmental influences to the data.

D.7 Adequacy of Survey

This survey is considered complete and adequate to supersede charted depths within the common area as per requirements specified in the Project Letter Instructions*. **Filed with original field records.*

Summary and Recommendations for Additional Work

There are no further recommendations. *Concur.*

E. APPROVAL

As Lead Hydrographer, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Office of Coast Survey Hydrographic Surveys Division’s *Field Procedures Manual*, and NOS *Hydrographic Surveys Specifications and Deliverables*. Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy.

All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to N/CS33, Atlantic Hydrographic Branch.

Survey H11995 is adequate to supersede charted soundings in their common areas.

Listed below are supplemental reports submitted separately that contain additional information relevant to this survey:

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
Data Acquisition and Processing Report for OPR-B307-TJ-08-Spring addendum	4 Feb 09	N/CS33
Horizontal and Vertical Control Report for OPR-B307-TJ-08	N/A	N/CS33
Tides and Water Levels Package for OPR-B307-TJ-08	N/A	N/OPS1
Coast Pilot Report for OPR-B307-TJ-08	NA	N/CS26

Approved and Forwarded:


 Jasper Schaer
 I have reviewed this document
 2009.02.05 19:42:49 Z

 2009.02.05
 14:39:40 Z

LT Jasper Schaer, NOAA
 Field Operations Officer

CDR P. Tod Schattgen, NOAA
 Commanding Officer

In addition, the following individuals were also responsible for overseeing data acquisition and processing of this survey:


 Jasper Schaer
 I have reviewed this document
 2009.02.05 19:54:27 Z

 Matt Van Hoy
 I am the author of this document
 2009.02.05 19:45:56 Z

ENS Megan A. Nadeau, NOAA
 Junior Officer/ Survey Manager

AST Matthew Van Hoy
 Assistant Survey Technician

Appendix I

Dangers to Navigation

There were no Dangers to Navigation
found while conducting survey H11996

Appendix II

Survey Features Report

H11995 Feature Report

Registry Number: H11995
State: Rhode Island
Locality: Rhode Island Sound and Approaches
Sub-locality: 7 NM South of Point Judith
Project Number: OPR-B307-TJ-08
Survey Dates: 08/21/2008 - 09/10/2008

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13218	40th	02/01/2008	1:80,000 (13218_1)	USCG LNM: 04/14/2009 (04/14/2009) CHS NTM: None (03/27/2009) NGA NTM: 11/15/2003 (04/25/2009)
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13006	34th	05/01/2007	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	49th	04/01/2007	1:1,200,000 (13003_1)	[L]NTM: ?

* Correction(s) - source: last correction applied (last correction reviewed--"cleared date")

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	82ft Rock	Rock	25.07 m	41° 18' 14.9" N	071° 11' 35.8" W	---
1.2	89ft Rock	Rock	27.15 m	41° 18' 12.8" N	071° 13' 19.6" W	---
1.3	92ft Rock	Rock	28.13 m	41° 17' 21.9" N	071° 08' 56.1" W	---
1.4	90ft Rock	Rock	27.61 m	41° 18' 00.7" N	071° 07' 38.7" W	---
1.5	75ft Rock	Rock	22.82 m	41° 17' 52.4" N	071° 10' 32.7" W	---
1.6	83ft Rock	Rock	25.40 m	41° 17' 40.8" N	071° 11' 36.6" W	---
1.7	86ft Rock	Rock	26.35 m	41° 18' 44.5" N	071° 08' 36.7" W	---
1.8	80ft Rock	Rock	24.45 m	41° 19' 30.6" N	071° 07' 57.3" W	---
1.9	75ft Rock	Rock	23.08 m	41° 19' 23.2" N	071° 08' 48.8" W	---

1 - New Features

1.1) 82ft Rock

Survey Summary

Survey Position: 41° 18' 14.9" N, 071° 11' 35.8" W
Least Depth: 25.07 m (= 82.24 ft = 13.707 fm = 13 fm 4.24 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 0.999 m ; **TVU (TPEv)** ± 0.325 m
Timestamp: 2008-254.18:38:22.377 (09/10/2008)
Survey Line: h11995 / tj_3102_reson8101 / 2008-254 / 138_1828
Profile/Beam: 1705/101
Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rock significantly shoaler than surrounding soundings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11995/tj_3102_reson8101/2008-254/138_1828	1705/101	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

82ft (13218_1)

13fm (12300_1, 13006_1, 13003_1)

25m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: SORDAT - 20080930
 SORIND - US,US,nsurf,H1995
 VALSOU - 25.067 m
 WATLEV - 3:always under water/submerged

Office Notes

Chart 82 ft rock.

Feature Images

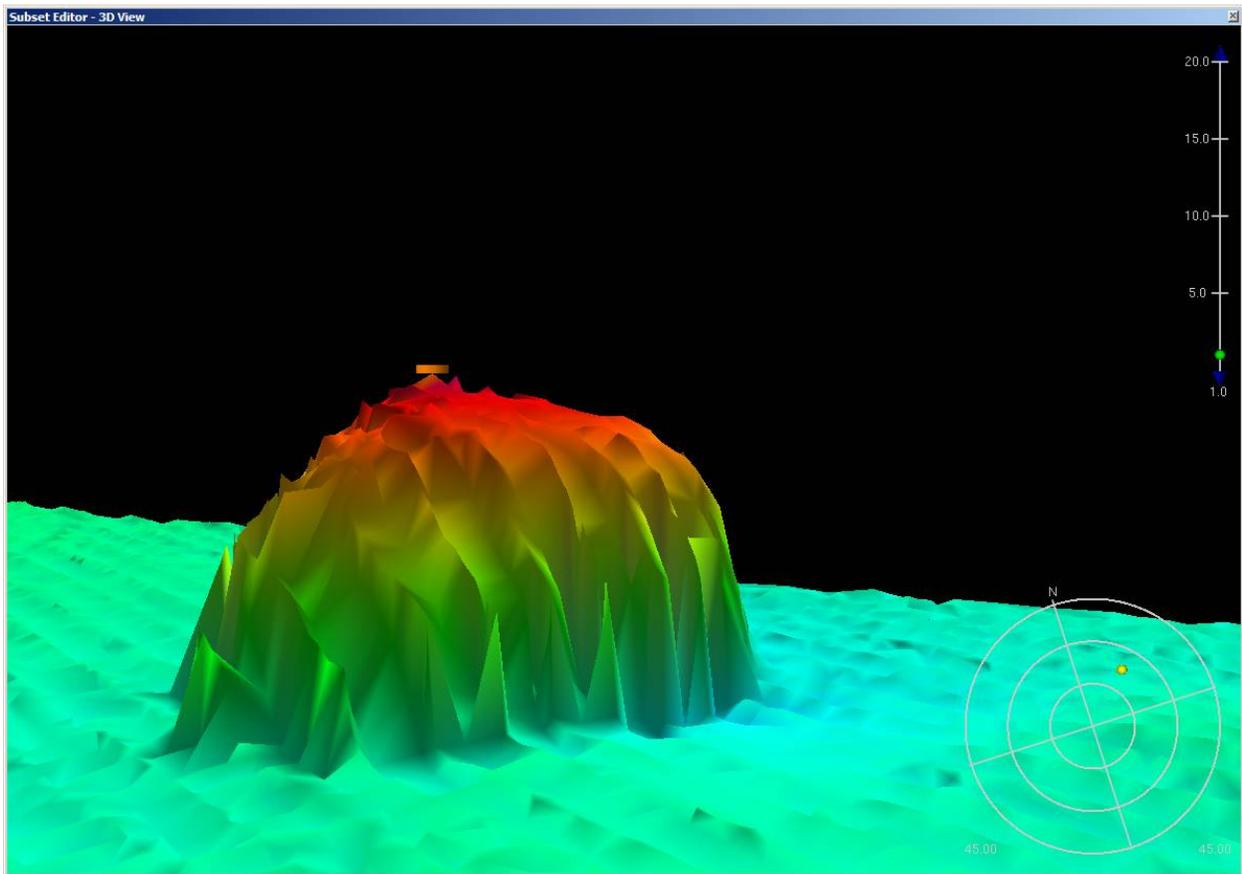


Figure 1.1.1

1.2) 89ft Rock

Survey Summary

Survey Position: 41° 18' 12.8" N, 071° 13' 19.6" W
Least Depth: 27.15 m (= 89.07 ft = 14.845 fm = 14 fm 5.07 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.018 m ; **TVU (TPEv)** ± 0.183 m
Timestamp: 2008-234.15:39:00.244 (08/21/2008)
Survey Line: h11995 / tj_s222_reson7125_port / 2008-234 / 004_1525
Profile/Beam: 7043/22
Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Not Navigationally Significant

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11995/tj_s222_reson7125_port/2008-234/004_1525	7043/22	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

89ft (13218_1)

15fm (12300_1, 13006_1, 13003_1)

27m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: SORDAT - 20080930
 SORIND - US,US,nsurf,H11995
 VALSOU - 27.148 m
 WATLEV - 3:always under water/submerged

Office Notes

Do not concur. 89 ft sounding is significantly shoaler than surrounding charted soundings. Chart 89 ft rock.

Feature Images

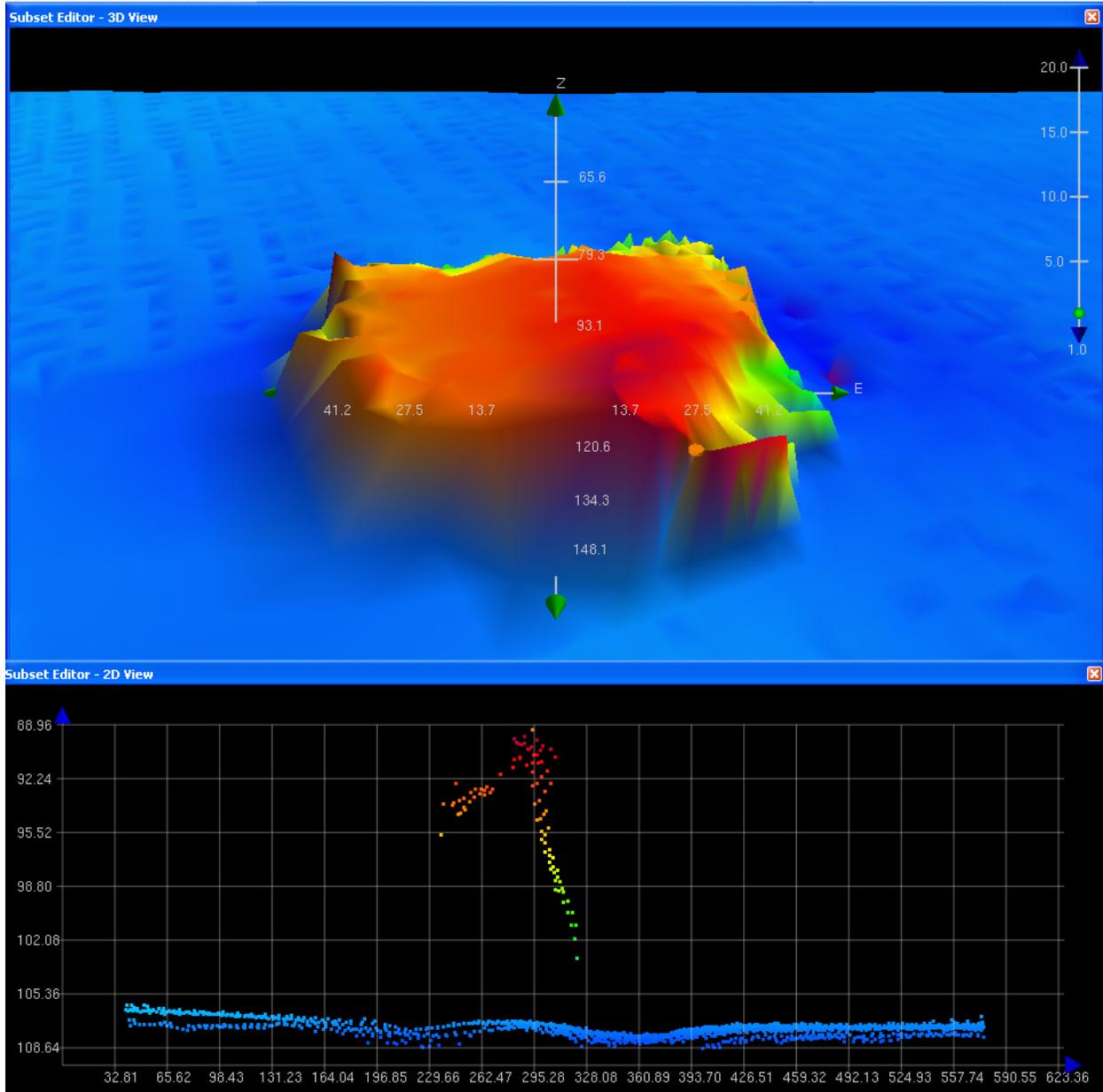


Figure 1.2.1

1.3) 92ft Rock

Survey Summary

Survey Position: 41° 17' 21.9" N, 071° 08' 56.1" W
Least Depth: 28.13 m (= 92.29 ft = 15.382 fm = 15 fm 2.29 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.021 m ; **TVU (TPEv)** ± 0.185 m
Timestamp: 2008-235.15:54:08.860 (08/22/2008)
Survey Line: h11995 / tj_s222_reson7125_port / 2008-235 / 109_1542
Profile/Beam: 5705/14
Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Not Navigationally Significant

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11995/tj_s222_reson7125_port/2008-235/109_1542	5705/14	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

92ft (13218_1)
 15fm (12300_1, 13006_1, 13003_1)
 28m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: SORDAT - 20080930
 SORIND - US,US,nsurf,H11995
 VALSOU - 28.130 m
 WATLEV - 3:always under water/submerged

Office Notes

Do not concur. 92 ft sounding is significantly shoaler than surrounding charted soundings. Chart 92 ft rock.

Feature Images

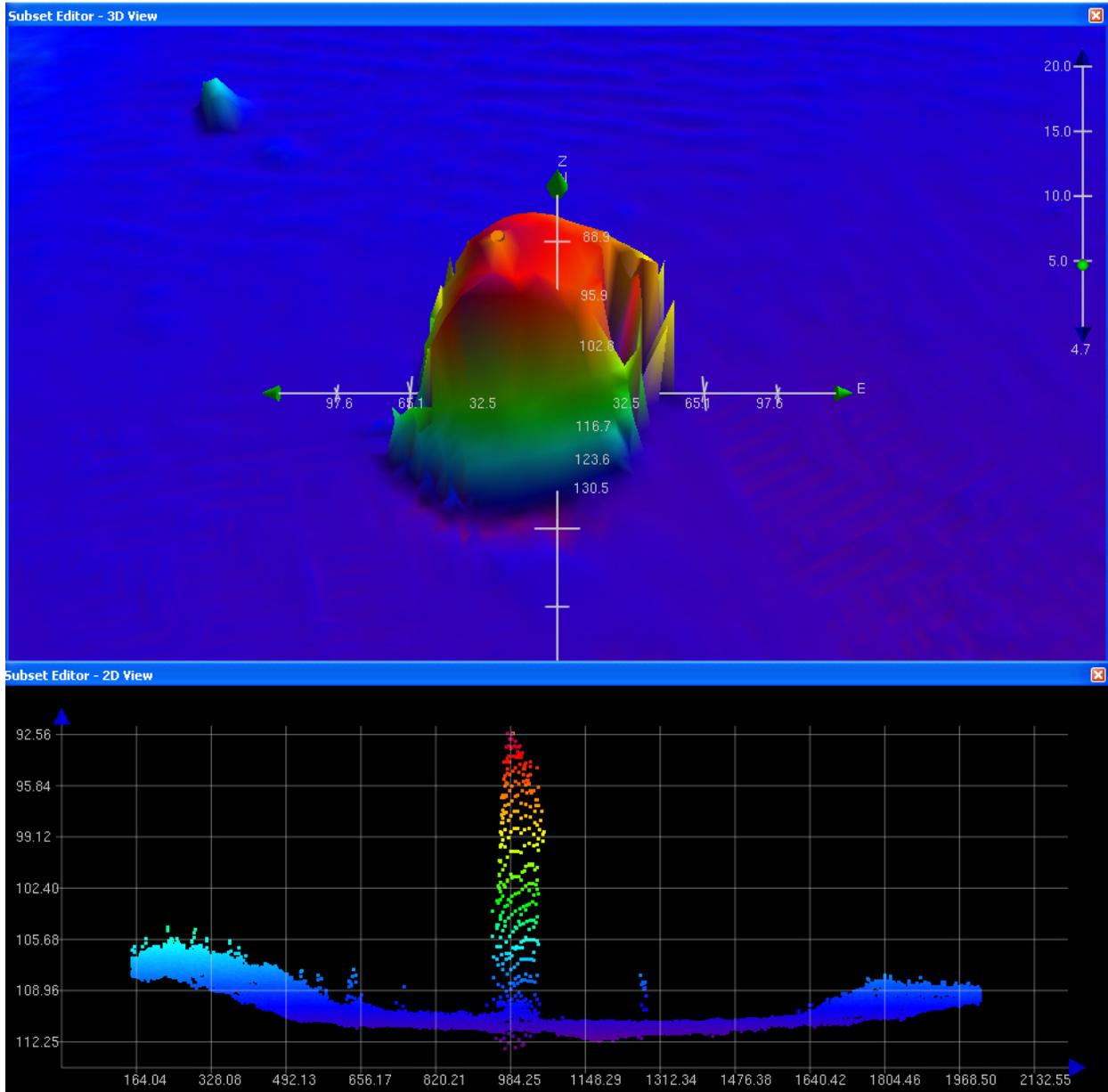


Figure 1.3.1

1.4) 90ft Rock

Survey Summary

Survey Position: 41° 18' 00.7" N, 071° 07' 38.7" W
Least Depth: 27.61 m (= 90.60 ft = 15.100 fm = 15 fm 0.60 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.014 m ; TVU (TPEv) ± 0.195 m
Timestamp: 2008-235.20:17:45.423 (08/22/2008)
Survey Line: h11995 / tj_s222_reson7125_port / 2008-235 / 114_1939
Profile/Beam: 4042/218
Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rock significantly shoaler than surrounding soundings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11995/tj_s222_reson7125_port/2008-235/114_1939	4042/218	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

90ft (13218_1)

15fm (12300_1, 13006_1, 13003_1)

28m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: SORDAT - 20080930
 SORIND - US,US,nsurf,H11995
 VALSOU - 27.614 m
 WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart 90 ft rock.

Feature Images

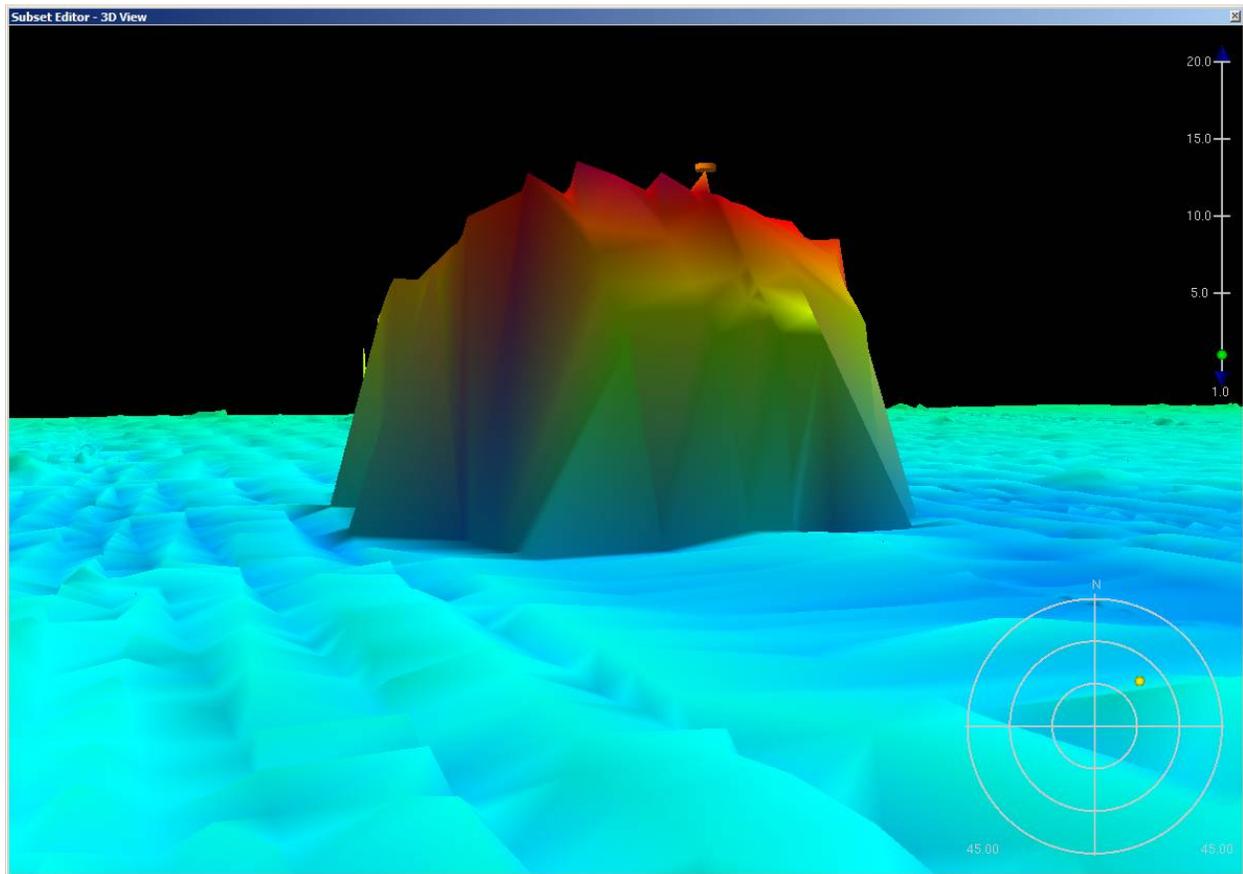


Figure 1.4.1

1.5) 75ft Rock

Survey Summary

Survey Position: 41° 17' 52.4" N, 071° 10' 32.7" W
Least Depth: 22.82 m (= 74.86 ft = 12.476 fm = 12 fm 2.86 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.022 m ; **TVU (TPEv)** ± 0.174 m
Timestamp: 2008-237.15:38:29.894 (08/24/2008)
Survey Line: h11995 / tj_s222_reson7125_port / 2008-237 / 128_1511
Profile/Beam: 13369/256
Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Not Navigationally Significant

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11995/tj_s222_reson7125_port/2008-237/128_1511	13369/256	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

75ft (13218_1)
 12fm (12300_1, 13006_1, 13003_1)
 23m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: SORDAT - 20080930
 SORIND - US,US,nsurf,H11995
 VALSOU - 22.817 m
 WATLEV - 3:always under water/submerged

Office Notes

Do not concur. 75 ft sounding is significantly shoaler than surrounding charted soundings. Chart 75 ft rock.

Feature Images

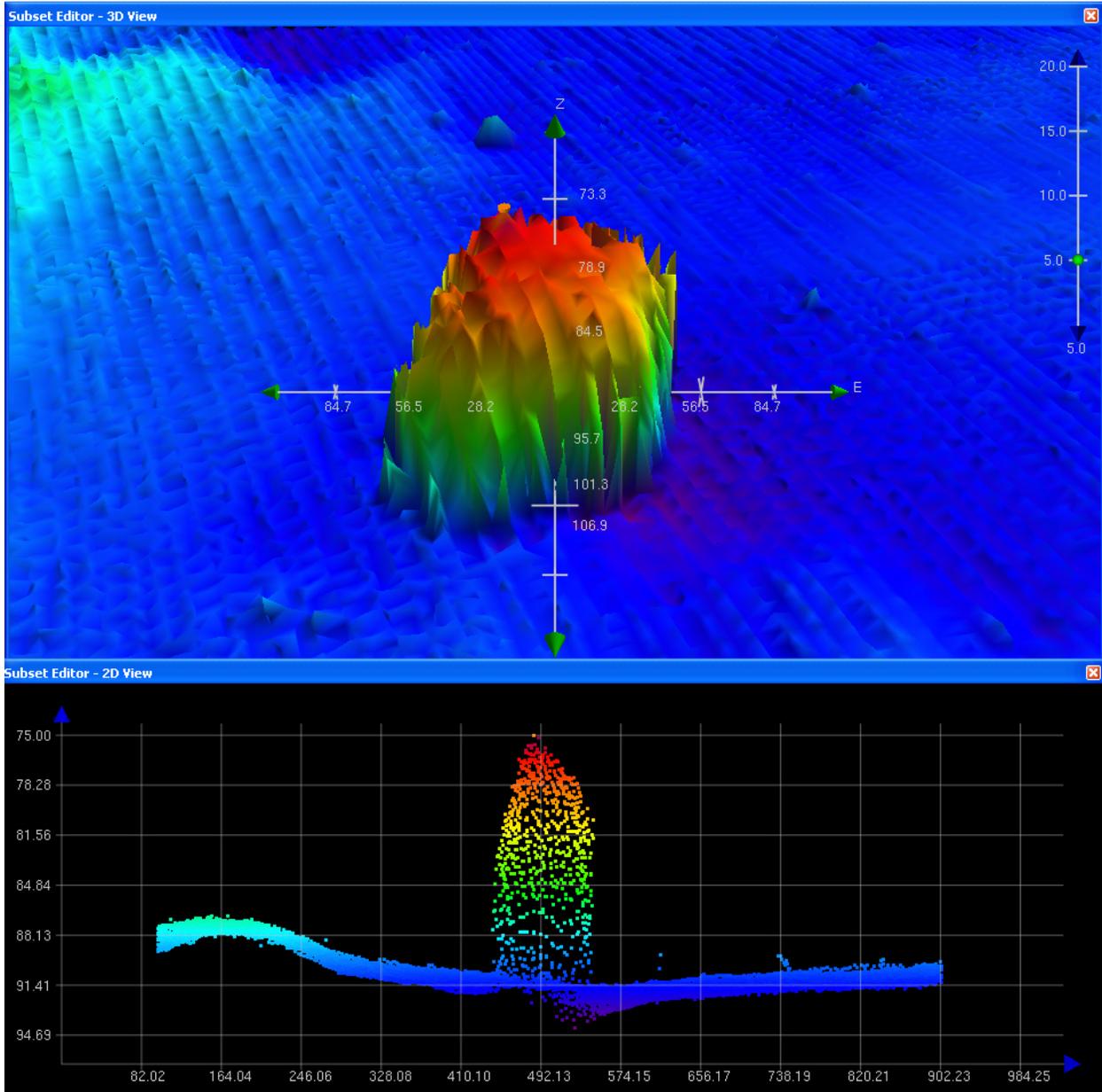


Figure 1.5.1

1.6) 83ft Rock

Survey Summary

Survey Position: 41° 17' 40.8" N, 071° 11' 36.6" W
Least Depth: 25.40 m (= 83.34 ft = 13.890 fm = 13 fm 5.34 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.012 m ; **TVU (TPEv)** ± 0.199 m
Timestamp: 2008-237.17:06:17.311 (08/24/2008)
Survey Line: h11995 / tj_s222_reson7125_port / 2008-237 / 130_1649
Profile/Beam: 6659/212
Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rock significantly shoaler than surrounding soundings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11995/tj_s222_reson7125_port/2008-237/130_1649	6659/212	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

83ft (13218_1)

14fm (12300_1, 13006_1, 13003_1)

25m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: SORDAT - 20080930
 SORIND - US,US,nsurf,H11995
 VALSOU - 25.402 m
 WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart 83 ft rock.

Feature Images

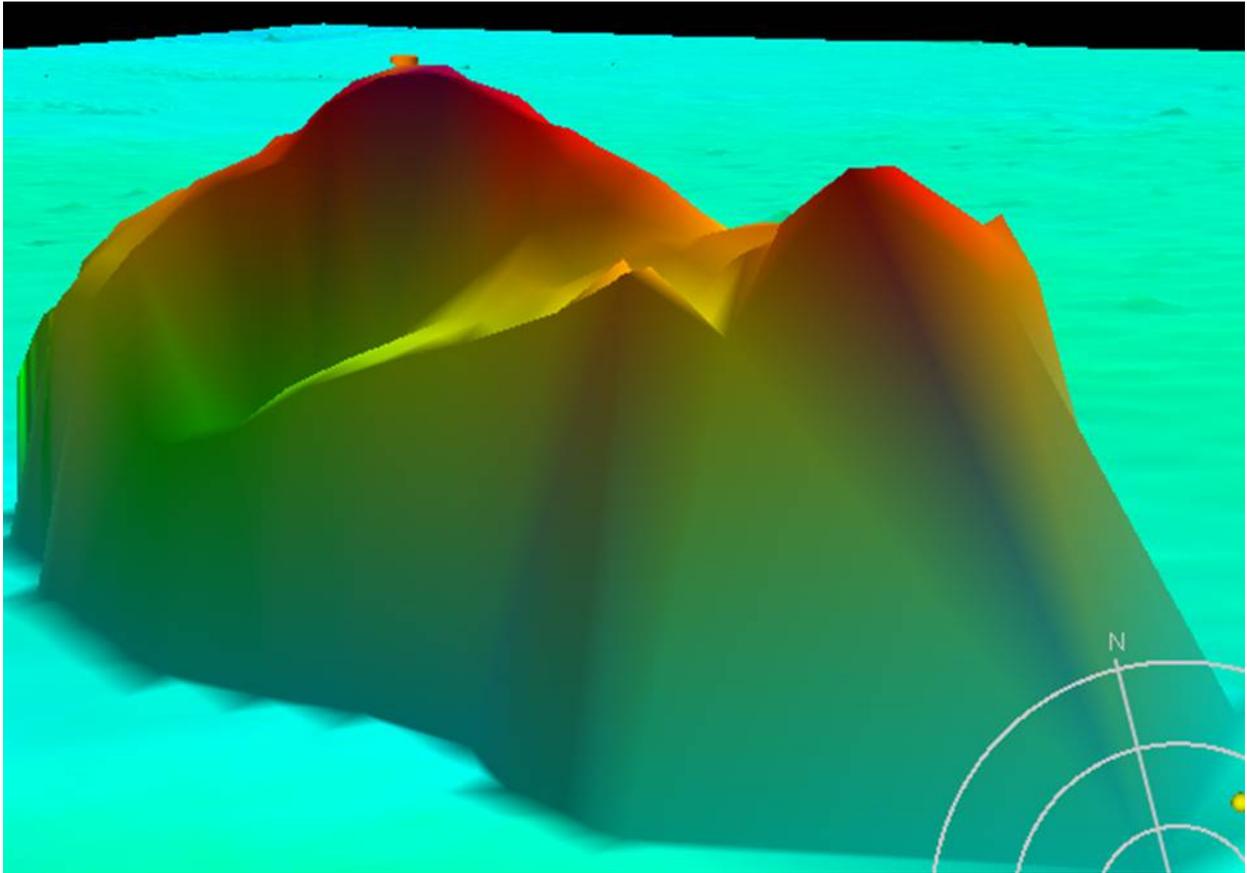


Figure 1.6.1

1.7) 86ft Rock

Survey Summary

Survey Position: 41° 18' 44.5" N, 071° 08' 36.7" W
Least Depth: 26.35 m (= 86.45 ft = 14.409 fm = 14 fm 2.45 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.005 m ; **TVU (TPEv)** ± 0.228 m
Timestamp: 2008-237.19:26:21.327 (08/24/2008)
Survey Line: h11995 / tj_s222_reson7125_port / 2008-237 / 133_1921
Profile/Beam: 2423/176
Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rock significantly shoaler than surrounding soundings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11995/tj_s222_reson7125_port/2008-237/133_1921	2423/176	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

86ft (13218_1)
 14fm (12300_1, 13006_1, 13003_1)
 26m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: SORDAT - 20080930
 SORIND - US,US,nsurf,H11995
 VALSOU - 26.351 m
 WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart 86 ft rock.

Feature Images

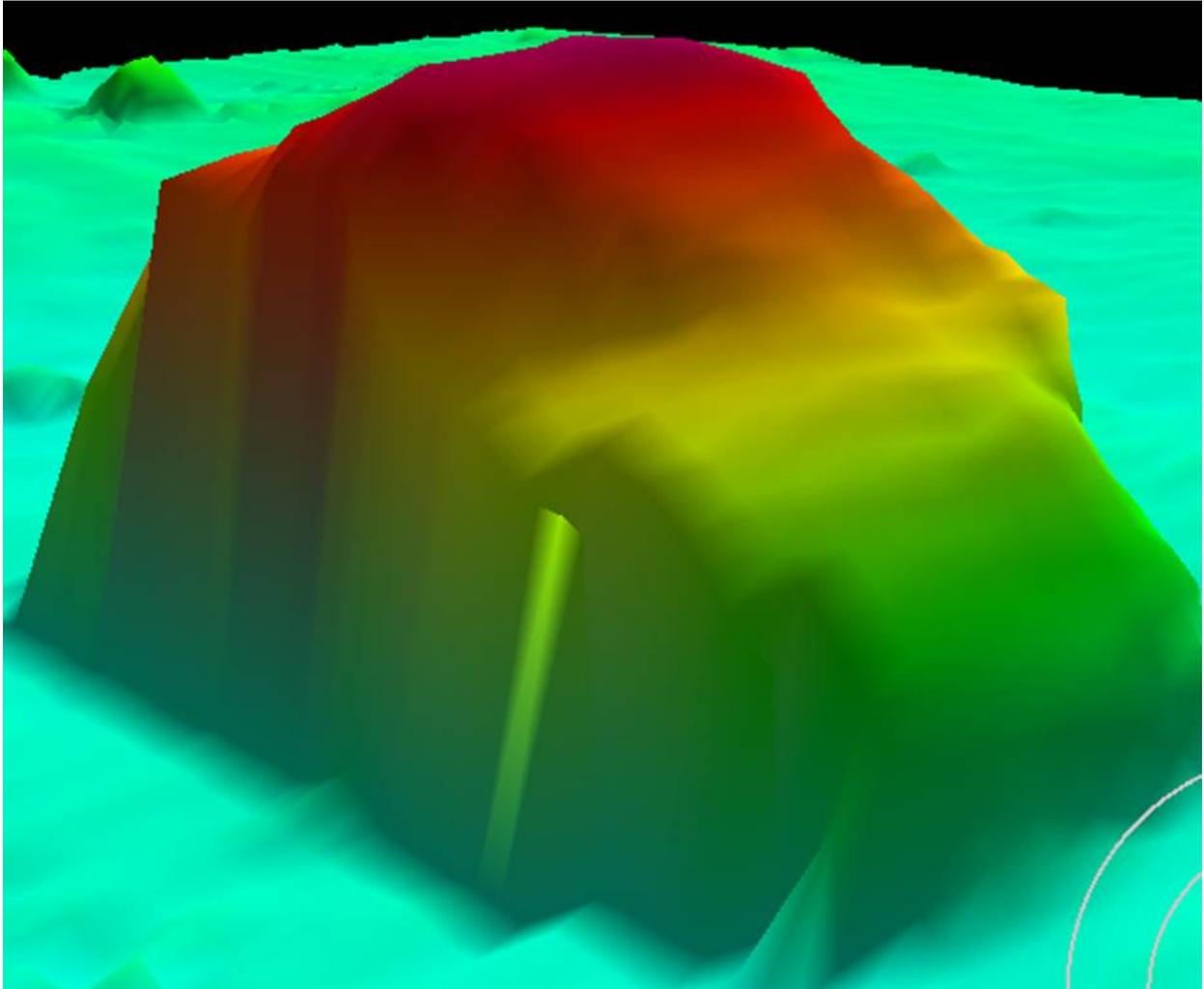


Figure 1.7.1

1.8) 80ft Rock

Survey Summary

Survey Position: 41° 19' 30.6" N, 071° 07' 57.3" W
Least Depth: 24.45 m (= 80.20 ft = 13.367 fm = 13 fm 2.20 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.004 m ; **TVU (TPEv)** ± 0.233 m
Timestamp: 2008-238.20:22:38.453 (08/25/2008)
Survey Line: h11995 / tj_s222_reson7125_port / 2008-238 / 144_1949
Profile/Beam: 2630/91
Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Not Navigationally Significant

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11995/tj_s222_reson7125_port/2008-238/144_1949	2630/91	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

80ft (13218_1)

13fm (12300_1, 13006_1, 13003_1)

24m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: SORDAT - 20080930
 SORIND - US,US,nsurf,H11995
 VALSOU - 24.446 m
 WATLEV - 3:always under water/submerged

Office Notes

Do not concur. 80 ft soundings is significantly shoaler than surrounding charted soundings. Chart 80 ft rock.

Feature Images

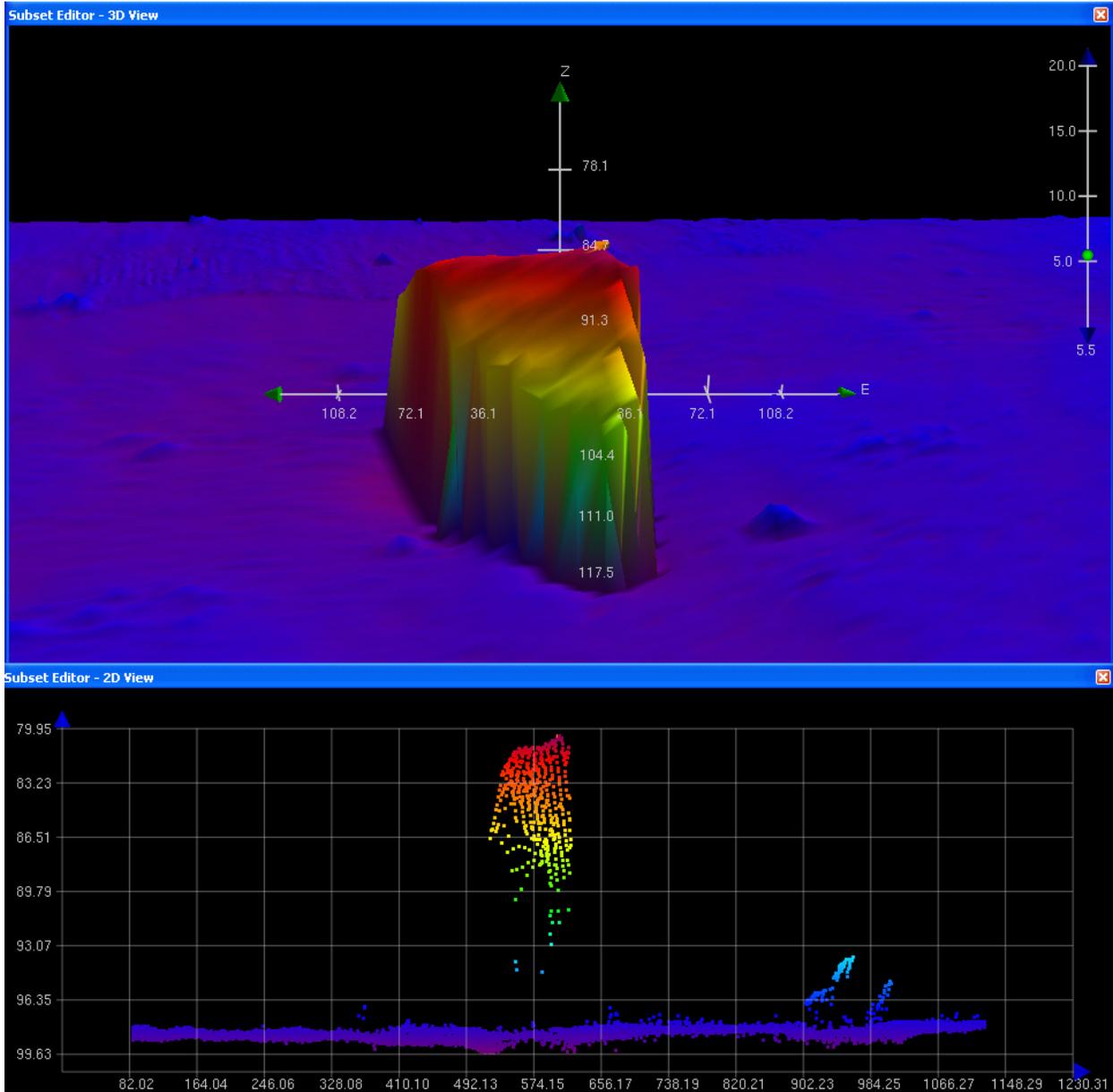


Figure 1.8.1

1.9) 75ft Rock

Survey Summary

Survey Position: 41° 19' 23.2" N, 071° 08' 48.8" W
Least Depth: 23.08 m (= 75.71 ft = 12.619 fm = 12 fm 3.71 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.021 m ; **TVU (TPEv)** ± 0.169 m
Timestamp: 2008-238.22:13:29.060 (08/25/2008)
Survey Line: h11995 / tj_s222_reson7125_port / 2008-238 / 147_2206
Profile/Beam: 3685/2
Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rock significantly shoaler than surrounding soundings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11995/tj_s222_reson7125_port/2008-238/147_2206	3685/2	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

75ft (13218_1)

12fm (12300_1, 13006_1, 13003_1)

23m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: SORDAT - 20080930
 SORIND - US,US,nsurf,H11995
 VALSOU - 23.077 m
 WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart 75 ft sounding.

Feature Images

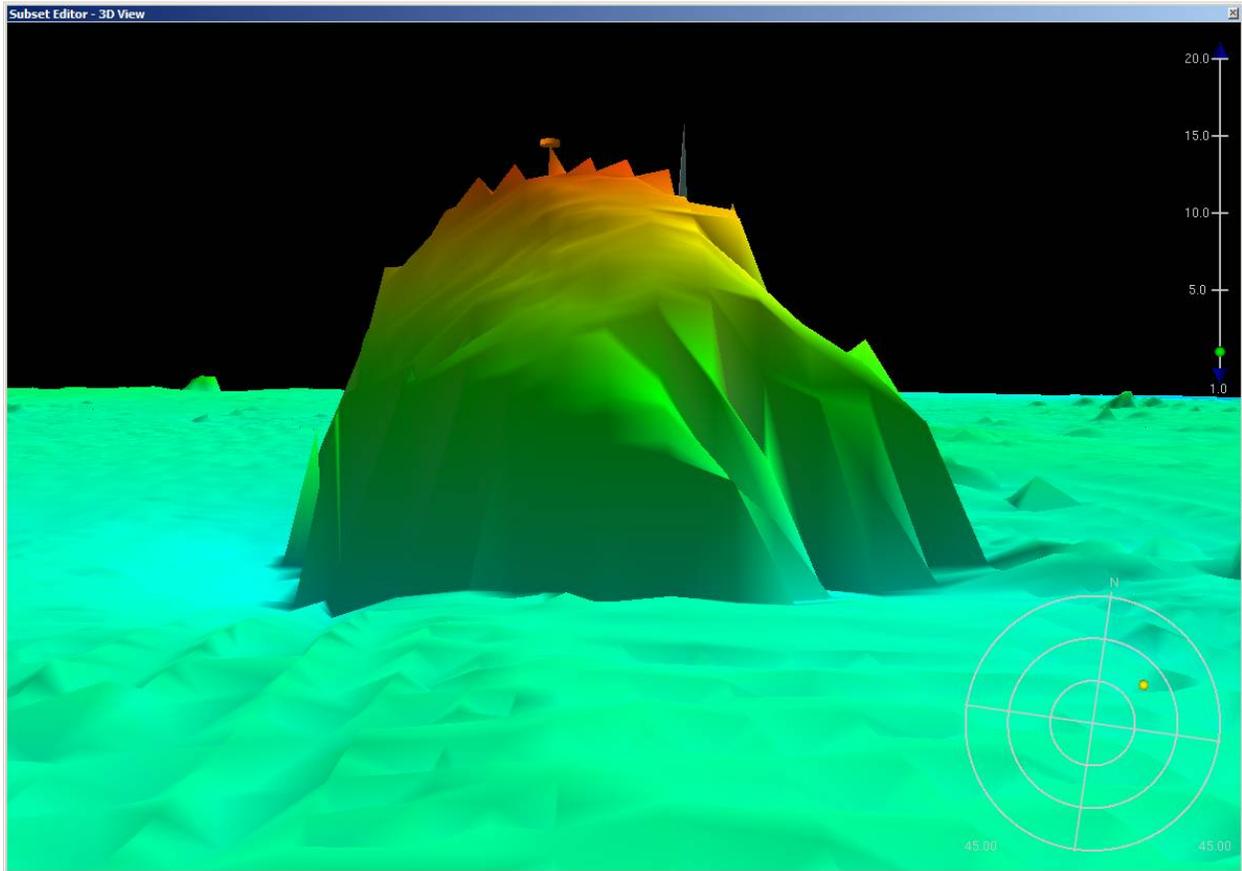
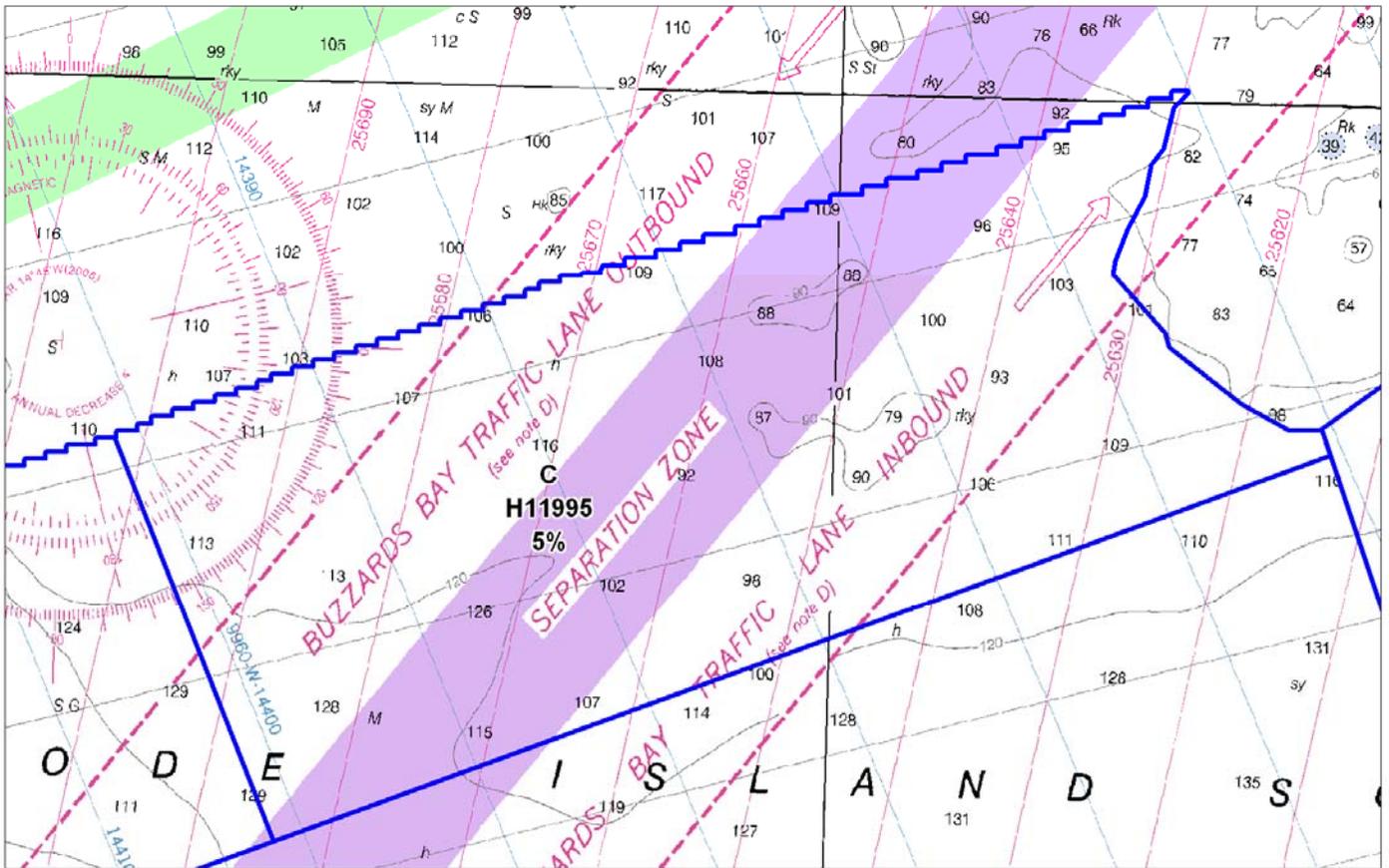


Figure 1.9.1

Appendix III

Progress Sketch



Project	Sheet_Letter	H_num	HQ_Est_SNM	CumiPercCompPrev	CumiPercCompCur	SNM_CompCurV	CumSNMcomj
B307-TJ-08	F	H11921	5	99	1	0	5
B307-TJ-08	E	H11920	15	99	1	0	15
B307-TJ-08	D	H11922	28	100	0	0	28
B307-TJ-08	B	H11996	17	99	1	1	17
B307-TJ-08	C	H11995	17	95	5	1	17

**Progress Sketch OPR-B307-TJ-08
September 2008**

Appendix IV

Tides and Water Levels



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

NOAA Ship THOMAS JEFFERSON (MOA-TJ)
439 West York St
Norfolk, VA 23510-1145

October 01, 2008

MEMORANDUM FOR: Chief, Requirements and Development Division, N/OPS1

FROM: CDR P. Tod Schattgen, NOAA, NOAA Ship THOMAS JEFFERSON (MOA-TJ)

SUBJECT: Request for Approved Tides/Water Levels

Please provide the following data:

1. Tide Note
2. Final TCARI grid
3. Six Minute Water Level data (Co-ops web site)

Transmit data to the following:

NOAA/NOS/Atlantic Hydrographic Branch
N/CS33, Building #2
439 West York Street
Norfolk, VA 23510
ATTN: Chief AHB

These data are required for the processing of the following hydrographic survey:

Project No.: OPR-B307-TJ-08
Registry No.: H11995
State: Rhode Island
Locality: Rhode Island Sound and Approaches, RI & MA
Sublocality: 7 NM South of Point Judith

Attachments containing:

- 1) an Abstract of Times of Hydrography,
- 2) digital MID MIF files of the track lines from Pydro

cc: N/CS33



Year_DOY	Min Time	Max Time
2008_234	12:57:40	23:53:16
2008_235	12:28:29	23:59:57
2008_236	00:00:01	20:33:25
2008_237	14:28:28	23:20:48
2008_238	14:14:32	22:44:27
2008_252	19:58:54	21:20:22
2008_254	15:30:42	20:11:34
2008_274	15:01:24	15:58:32



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : October 2, 2008

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-B307-TJ-2008
HYDROGRAPHIC SHEET: H11995

LOCALITY: 7 NM south of Point Judith, Rhode Island Sound and Approaches, RI
TIME PERIOD: August 21 - September 30, 2008

TIDE STATION USED: 845-2660 Newport, RI
Lat. 41° 30.3'N Long. 71° 19.6' W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.099 meters

REMARKS: RECOMMENDED Grid

Please use the TCARI grid "Revised-B307TJ2008-TCARI" as the final grid for project OPR-B307-TJ-2008, H11995, during the time period between August 21 and September 30, 2008.

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 on the 1983-2001 National Tidal Datum Epoch (NTDE).

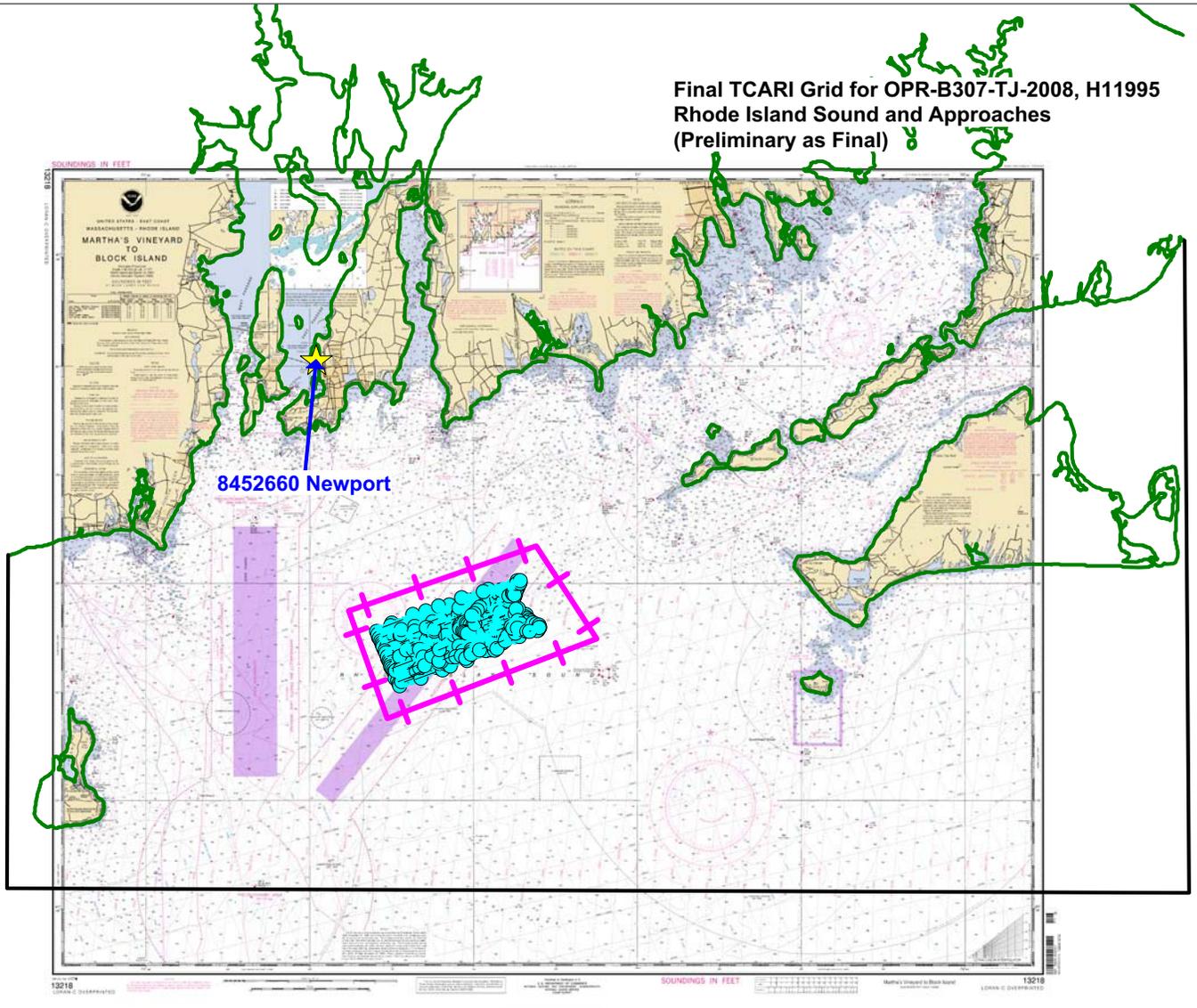
Peter J. Stone

Digitally signed by Peter J. Stone
DN: cn=Peter J. Stone, o=CO-OPS, ou=NOAA/
NOS, email=peter.stone@noaa.gov, c=US
Date: 2008.10.09 06:57:26 -04'00'

CHIEF, OCEANOGRAPHIC DIVISION



**Final TCARI Grid for OPR-B307-TJ-2008, H11995
Rhode Island Sound and Approaches
(Preliminary as Final)**



Appendix V

Supplemental Survey Records and Correspondences

Subject: RE: Request for Comments on Historic Properties in the Approaches to the Rhode Island Sound, MA and RI

From: "Mastone, Victor (EEA)" <Victor.Mastone@state.ma.us>

Date: Fri, 08 Aug 2008 08:00:14 -0400

To: Jeremy McHugh <Jeremy.McHugh@noaa.gov>

CC: James M Crocker <James.M.Crocker@noaa.gov>, Tod Schattgen <Tod.Schattgen@noaa.gov>, Jasper Schaer <jasper.schaer@noaa.gov>, Bruce Terrell <Bruce.Terrell@noaa.gov>, ctaylor@preservation.ri.gov

Dear Jeremy,

I am taking this opportunity to provide you some very preliminary and informal comments on your survey area.

I have conducted a very preliminary review of literature and BUAR files for the eastern approaches to Rhode Island Sound. The area lies along the main historic vessel transit route. So, we would anticipate a heavy volume of vessel traffic for all historic periods. However, a review of known and reported vessel loss locations in your proposed study area generally show lower numbers of vessel losses, except for the eastern portion (Vineyard Sound and Elizabeth Islands) and extreme western portions (Block Island and approaches to Narragansett Bay) of your study area.

Within or near Massachusetts waters, I offer the following preliminary assessments. For the area of the Vineyard Sound, we would broadly assign a moderate to high probability of shipwreck site occurrence. For the area of Buzzards Bay, we would broadly assign a moderate probability of shipwreck site occurrence for the vicinity of the Elizabeth Islands and the approach to New Bedford with low probability the rest of that area. Similarly, the western half of Areas D and HI0458-RU/1993 have a low probability of shipwreck site occurrence. We have very little information for the areas west of the former Vineyard Sound and Hens & Chickens Lightship stations.

With respect to notifying the MA SHPO, you should contact Brona Simon, SHPO/State Archaeologist, or Ed Bell (Ed.Bell@state.ma.us) on her staff at: Massachusetts Historical Commission, 220 Morrissey Boulevard,

Boston, MA 02125. Please note that while I have provided an email for Ed Bell, the MHC does not typically formally reply to/by emails.

Among important vessel losses in your study area is the Vineyard Sound Lightship (LV-73) which sank during a hurricane on September 14, 1944 with loss of all hands

(<http://www.mass.gov/czm/buar/shipwrecks/ua-vsflightship.htm>). We would be very interested in receiving copies of your images of this as well as other sites. Further, you should consider sending similar information on the LV-73 to Dr. Robert Browning, USCG Historian, at: RBrowning@comdt.uscg.mil.

Thank you for keeping me informed and providing an opportunity to provide comments. I look forward to further information sharing. Calm waters.

Best regards,

Vic

Victor T. Mastone
Director and Chief Archaeologist
Board of Underwater Archaeological Resources
251 Causeway Street, Suite 800
Boston, MA 02114
Direct Line: 617-626-1141
Fax line: 617-626-1240
Email: victor.mastone@state.ma.us
Website: www.mass.gov/czm/buar/index.htm

-----Original Message-----

From: Jeremy McHugh [<mailto:Jeremy.McHugh@noaa.gov>]
Sent: Tuesday, August 05, 2008 10:27 AM
To: Mastone, Victor (ENV); Bruce Terrell; ctaylor@preservation.ri.gov
Cc: James M Crocker; Tod Schattgen; Jasper Schaer
Subject: Request for Comments on Historic Properties in the Approaches to the Rhode Island Sound, MA and RI

Hi Charlotte, Victor and Bruce,

I attached a memo requesting comments from you related to an ongoing NOAA hydrographic survey project in the approaches to the Rhode Island Sound.

Details are in the memo. Please send any comments directly to me.

thanks,

Jeremy

--

Jeremy McHugh, Physical Scientist
NOAA's Office of Coast Survey
301-713-2702 x117



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

8 August 2008

MEMORANDUM FOR: Brona Simon
State Archaeologist / SHPO, Massachusetts Historical Commission

Ed Bell
Massachusetts Historical Commission

FROM: Jeremy McHugh
Hydrographic Surveys Division

SUBJECT: Request for Comments on Historic Properties in the Rhode Island
Sound and Approaches, MA and RI

Dear Brona and Ed,

The National Oceanic and Atmospheric Administration's Office of Coast Survey (OCS) is currently conducting hydrographic surveys (multibeam and side scan sonar data acquisition) in the Rhode Island Sound through August, 2008.

The purpose of this notice is to request comments regarding historic properties in the area. The information produced by survey operations will be used to provide navigational information and products, including nautical charts, to the public. Except for dangers to navigation, which are made known to the public immediately, it is OCS policy to make information regarding possible historic resources available for SHPO review before public dissemination. If the upcoming survey finds information on features that may be historic, OCS will contact your office when this information is available for your review.

I attached a map showing the area where we plan to survey.

Please do not hesitate to contact me with any questions.

Respectfully,
Jeremy McHugh



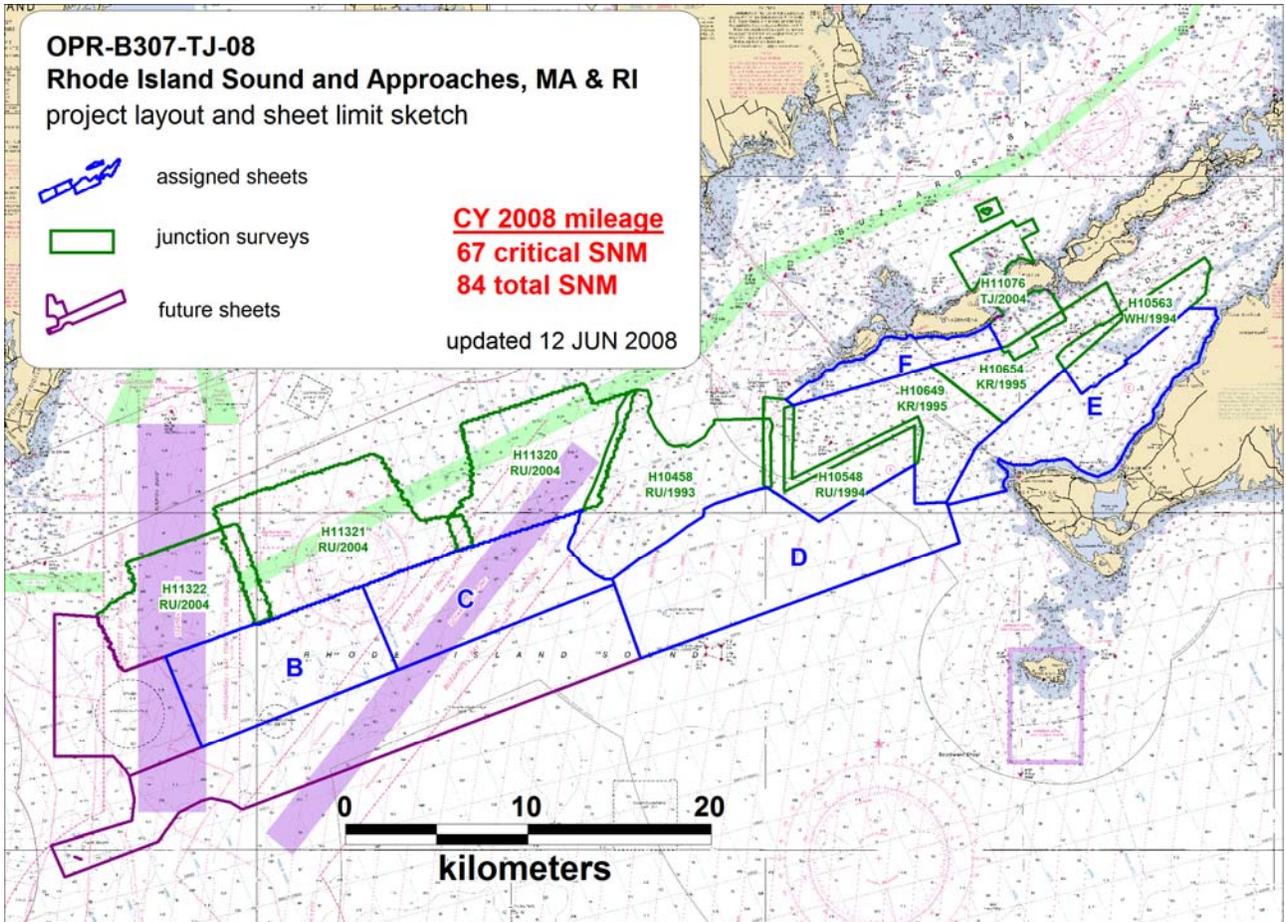
OPR-B307-TJ-08

Rhode Island Sound and Approaches, MA & RI
project layout and sheet limit sketch

-  assigned sheets
-  junction surveys
-  future sheets

CY 2008 mileage
67 critical SNM
84 total SNM

updated 12 JUN 2008





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

4 August 2008

MEMORANDUM FOR: Charlotte Taylor
State Archaeologist, Rhode Island

Victor Mastone,
State Underwater Archaeologist, Massachusetts

Bruce Terrell
Marine Historian with NOAA's National Marine Sanctuary Program

FROM: Jeremy McHugh
Hydrographic Surveys Division

SUBJECT: Request for Comments on Historic Properties in the Rhode Island
Sound and Approaches, MA and RI

Dear Charlotte, Victor and Bruce,

The National Oceanic and Atmospheric Administration's Office of Coast Survey (OCS) is currently conducting hydrographic surveys (multibeam and side scan sonar data acquisition) in the Rhode Island Sound through August, 2008.

The purpose of this notice is to request comments regarding historic properties in the area. The information produced by survey operations will be used to provide navigational information and products, including nautical charts, to the public. Except for dangers to navigation, which are made known to the public immediately, it is OCS policy to make information regarding possible historic resources available for SHPO review before public dissemination. If the upcoming survey finds information on features that may be historic, OCS will contact your office when this information is available for your review.

I attached a map showing the area where we plan to survey.

Please do not hesitate to contact me with any questions.

Respectfully,
Jeremy McHugh



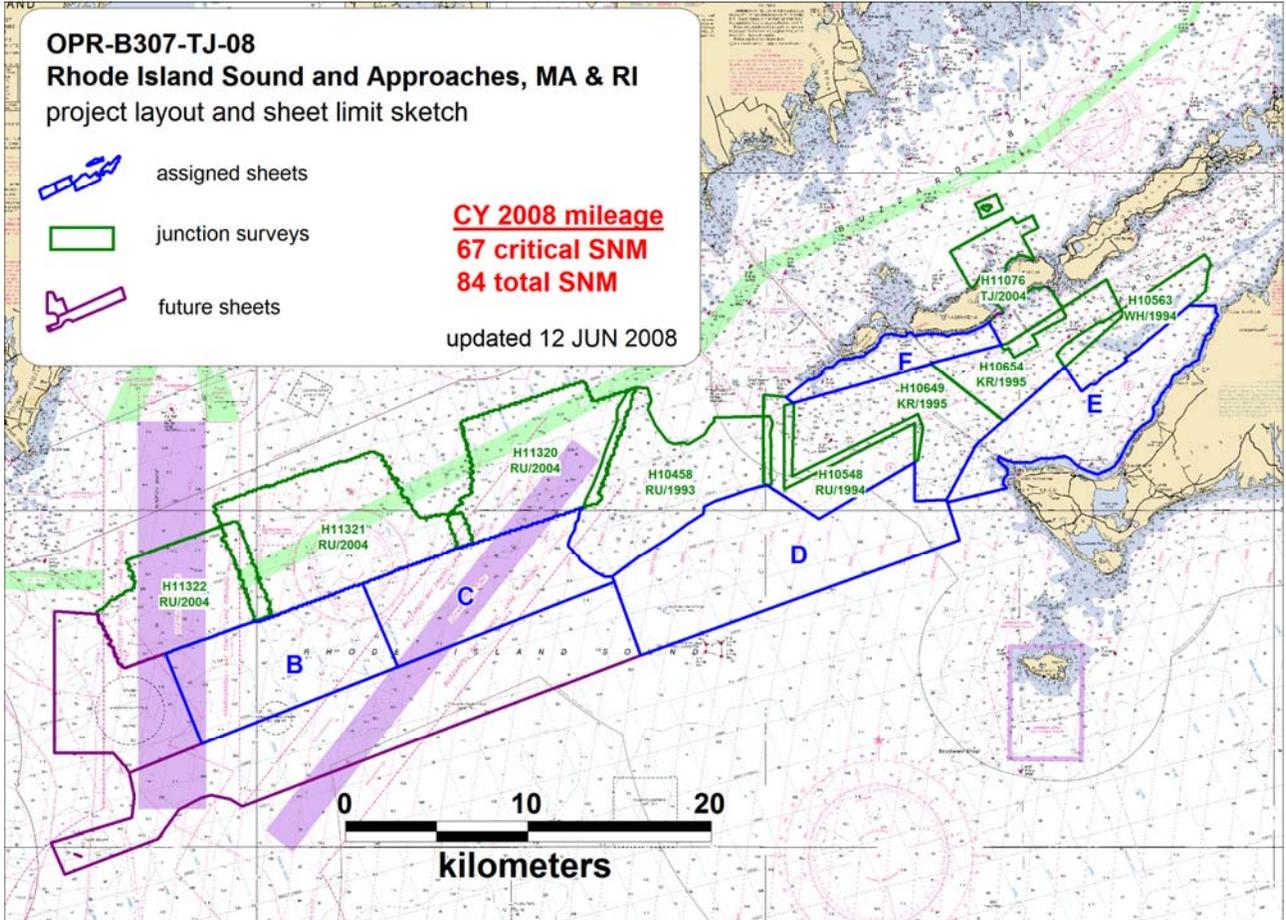
OPR-B307-TJ-08

Rhode Island Sound and Approaches, MA & RI
project layout and sheet limit sketch

-  assigned sheets
-  junction surveys
-  future sheets

CY 2008 mileage
67 critical SNM
84 total SNM

updated 12 JUN 2008





The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

August 20, 2008

Jeremy McHugh
Hydrographic Surveys Division
United States Department of Commerce
National Oceanic and Atmospheric Administration
Office of Coastal Survey
Silver Spring, MD 20910-3282

RE: Rhode Island Sound Coastal Survey, Massachusetts and Rhode Island, MHC # RC.44967

Dear Mr. McHugh:

Thank you for providing information to the Massachusetts Historical Commission for the survey and mapping project referenced above. The project includes hydrographic surveys utilizing multibeam and sidescan sonar, of coastal waters within Rhode Island Sound and Vineyard Sound, generally between Point Judith in Rhode Island and Cuttyhunk Island in Massachusetts.

Review of the MHC's Inventory of Historic and Archaeological Assets of the Commonwealth determined that there is one recorded historical period archaeological resource adjacent to Survey Area F in the tidal zone of the southwest end of Cuttyhunk Island in the Town of Gosnold, and designated in MHC's files as GOS.HA.2, the 19th-century bark *Wanderer*. There are many ancient and historical period archaeological sites and historic period resources along the present-day coastline at the margins of Survey Areas E and F and further inland.

The sole recorded site in MHC's files for the survey area is not representative of the number and type of historic and archaeological resources expected in the survey area because of the lack of current professional archaeological surveys. Archaeological surveys are typically conducted for specific proposed development or other projects with seabed impacts. The identification of ancient and historical period sites requires advanced technologies and methods developed for that purpose. Recent professional archaeological surveys in the waters of Massachusetts and Rhode Island have used multiple technologies and the examination of soil cores to detect evidence of preserved ancient terrestrial surfaces and historic period shipwrecks and other types of maritime cultural resources.

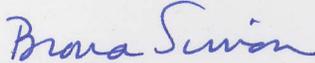
The survey area has a high potential to contain intact significant archaeological resources, including historic maritime resources (chiefly shipwrecks) and ancient Native American occupations on formerly exposed land surfaces that have been submerged. Evidence may be detected of these ancient and historic period activities in the survey area. The preliminary comments provided by the Massachusetts Board of Underwater Archaeological Resources (BUAR) support the sensitivity assessment for the survey areas. The survey area in Massachusetts is within the traditional Wampanoag homelands. Two federally-recognized Indian Tribes have interest in and continue to occupy and use this area: the Mashpee Wampanoag Tribe and the Wampanoag Tribe of Gay Head (Aquinnah).

MHC appreciates the opportunity to consult further about any proposed publication of sensitive archaeological site locational information. NOAA may withhold this data from public disclosure under

Section 304 of the National Historic Preservation Act of 1966 as amended (16 U.S.C. 470w-3(a)). MHC would greatly appreciate the opportunity to review survey reports and/or summaries of findings of potential historic sites in consultation with the BUAR. If these surveys may relate to future projects consultation as part of the Section 106 process (36 CFR 800) should be initiated with the MHC as early as possible in the planning stage of the project.

MHC looks forward to continued consultation with NOAA for this and other survey efforts. Your cooperation to provide the printed color map for MHC review is greatly appreciated. If you have questions or require additional information please contact Jonathan K. Patton at this office.

Sincerely,



Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc:

Victor T. Mastone, Massachusetts BUAR
Paul Robinson, SHPO, Rhode Island Historic Preservation Commission

Subject: Lobster gear

From: "jasper.schaer" <jasper.schaer@noaa.gov>

Date: Sun, 20 Jul 2008 17:33:38 -0400

To: Matt Wingate <matt.wingate@noaa.gov>

CC: "james.m.crocker" <James.M.Crocker@noaa.gov>, tod.schattgen <tod.schattgen@noaa.gov>, Jeffrey Ferguson <Jeffrey.Ferguson@noaa.gov>

Matt-

On 18 Jul, while surveying on sheet D late night/early morning, before we broke ops to transit to Newport, RI, we catch a row of lobster gear on ship's std head transducer. We dove to clear the lines around the std transducer head and kept the buoy pot line.

The buoys are marked yellow and green with 2856, see pic. Would you help us find the owner?

V/r-js





LT.Jasper Schaer <jasper.schaer@noaa.gov>
Operations Officer
SHIP THOMAS JEFFERSON
NOAA

lobster_gear_2856.JPG	Content-Type: image/jpeg Content-Encoding: base64
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Subject: Re: Request for Comments on Historic Properties in the Approaches to the Rhode Island Sound, MA and RI

From: Charlotte Taylor <ctaylor@preservation.ri.gov>

Date: Mon, 11 Aug 2008 13:49:00 -0400

To: Jeremy McHugh <Jeremy.McHugh@noaa.gov>

Hi Jeremy,

Well, we have quite a few wrecks in the area, and not very good location data. I've shared a database of all the shipwrecks I know about with a person at the Rhode Island Marine Archaeology Project, who is working on getting it into GIS format, and Rod Mather at URI also is working on a GIS database of the shipwrecks. So there might be something useful available now (through Rod) or soonish (through RIMAP).

To give you an idea of what I have, I've attached the access version of the database (which is itself a work in progress). If you need specific information ASAP, I can pull out of that the ones that I think might be in the area of interest. But it won't be that ASAP, because I am on vacation until August 20th....

Let me know!

Charlotte

shipwrecks.mdb	Content-Type: application/msaccess Content-Encoding: base64
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Subject: Re: Request for Comments on Historic Properties in the Approaches to the Rhode Island Sound, MA and RI

From: "Bruce.Terrell" <Bruce.Terrell@noaa.gov>

Date: Wed, 06 Aug 2008 11:59:28 -0400

To: Jeremy McHugh <Jeremy.McHugh@noaa.gov>

CC: Victor.Mastone@State.MA.US, ctaylor@preservation.ri.gov, James M Crocker <James.M.Crocker@noaa.gov>, Tod Schattgen <Tod.Schattgen@noaa.gov>, Jasper Schaer <jasper.schaer@noaa.gov>

Thank you Jeremy. I have no comments on this area other than generally this was an area of historic navigation and I would expect there to be a strong likelihood of historical shipwrecks in the area.

Bruce Terrell

Jeremy McHugh wrote:

Hi Charlotte, Victor and Bruce,

I attached a memo requesting comments from you related to an ongoing NOAA hydrographic survey project in the approaches to the Rhode Island Sound.

Details are in the memo. Please send any comments directly to me.

thanks,
Jeremy

Bottom Samples

No.	Feature Type	Survey Latitude	Survey Longitude	NATQUA	NATSUR
1.1	dk gy M Si	41° 17' 57.5" N	070° 56' 41.4" W	5:sticky	1:mud
1.2	dk gy M Si	41° 17' 39.3" N	070° 58' 00.1" W	5: Sticky	1: Mud
1.3	dk gy S Sh Si	41° 17' 14.6" N	070° 59' 25.4" W	2: Medium	4: Sand
1.4	dk gy M	41° 16' 54.1" N	071° 00' 45.0" W	2: Medium	4: Sand
1.5	gy M	41° 16' 36.0" N	071° 01' 58.8" W	5: Sticky	1: Mud
1.6	dk gy M	41° 17' 11.4" N	071° 03' 55.7" W	5: sticky	1: Mud
1.7	dk gy M	41° 17' 54.8" N	071° 01' 15.7" W	5: Sticky	1: Mud
1.8	dk gy sft M	41° 19' 17.3" N	071° 00' 24.1" W	5: Sticky	1: mud
1.9	dk gy M	41° 18' 40.3" N	071° 03' 01.0" W	6: Soft	1: Mud
1.10	dk gy M	41° 18' 44.8" N	070° 58' 23.1" W	5: Sticky	1: mud
1.11	dk gy M	41° 19' 00.6" N	070° 57' 03.7" W	5: Sticky	1: mud
1.12	dk gy M	41° 19' 24.4" N	070° 55' 52.9" W	5. Sticky	1. Mud
1.13	gy sticky M	41° 19' 43.2" N	070° 54' 28.3" W	5: Sticky	1. Mud
1.14	dk gy M	41° 20' 06.3" N	070° 53' 09.4" W	5: Sticky	1: Mud

AHB COMPILATION LOG

General Survey Information	
REGISTRY No.	H11995
PROJECT No.	OPR-B307-TJ-08
FIELD UNIT	THOMAS JEFFERSON
DATE OF SURVEY	20080821-20080930
LARGEST SCALE CHART	13218, edition 40, 20080201, 1:80000
SOUNDING UNITS	Feet
COMPILER	Katrina Wyllie

Source Grids	File Name
	H:\Compilation\H11995_B307-TJ\AHB_H11995\E-SAR Final Products\GRIDS
	<i>H11995_E_Cube_Deep_2m_Final.hns</i>
	<i>H11995_W_Cube_Deep_2m_Final.hns</i>
Surfaces	File Name
	H:\Compilation\H11995_B307-TJ\AHB_H11995\COMPILE\Working
<i>Combined</i>	<i>H11995_8m_combined.hns</i>
<i>Interpolated TIN</i>	<i>\Interpolated TIN\H11995_Interp_tin_8m.hns</i>
<i>Shifted Interpolated TIN</i>	<i>\Shifted Surface\H11995_InterpTin_shifted.hns</i>
Final HOBs	File Name
	H:\Compilation\H11995_B307-TJ\AHB_H11995\COMPILE\Final_Hobs
<i>Survey Scale Soundings</i>	<i>H11995_SS_Soundings.hob</i>
<i>Chart Scale Soundings</i>	<i>H11995_CS_Soundings.hob</i>
<i>Contour Layer</i>	<i>H11995_Contours.hob</i>
<i>Feature Layer</i>	<i>H11995_Features.hob</i>
<i>Meta-Objects Layer</i>	<i>H11995_MetaObjects.hob</i>
<i>Blue Notes</i>	<i>H11995_BlueNotes.hob</i>

Meta-Objects Attribution	
Acronym	Value
M_COVR	
CATCOV	<i>coverage available</i>
SORDAT	<i>20080930</i>
SORIND	<i>US,US,survey,H11996</i>
M_QUAL	
CATZOC	<i>zone of confidence U (data not assessed)</i>
INFORM	<i>H11995, Thomas Jefferson</i>
POSACC	<i>10</i>
SORDAT	<i>20080930</i>
SORIND	<i>US,US,survey,H11995</i>
SUREND	<i>20080930</i>
SURSTA	<i>20080821</i>
DEPARE	
DRVALV 1	<i>74.8589</i>
DRVALV2	<i>130.6332</i>
SORDAT	<i>20080930</i>
SORIND	<i>US,US,nsurf,H11995</i>

[Type text]

This Document is for Office Process use only and is intended to supplement, not supersede or replace, information/recommendations in the Descriptive or Evaluation Reports

SPECIFICATIONS:

- I. COMBINED SURFACE:
 - a. Number of ESAR Final Grids: **2**
 - b. Resolution of Combined (m): **8m**

- II. SURVEY SCALE SOUNDINGS (SS):
 - a. Radius
 - b. Shoal biased
 - c. Use Single-Defined Radius (1.5mm at 80000): ; Radius Value = 1
 - d. Queried Depth of All Soundings
 - i. Minimum: **74.8589m**
 - ii. Maximum: **130.633m**

- III. INTERPOLATED TIN SURFACE:
 - a. Resolution (m): **8**
 - b. Linear
 - c. Shifted value: **-0.229m** [-0.229m (feet), (≤ 10 fathoms)]
 [-1.372m (fathoms), (> 10 fathoms)]

- IV. CONTOURS:
 - a. Use a Depth List: H11995_NOAA_depth_curves_list.txt
 - b. Line Object: DEPCNT
 - c. Value Attribute: VALDCO

- V. FEATURES:
 - a. Total Number of Features: **16**

- VI. CHART SURVEY SOUNDINGS (CS):
 - a. Number of ENC CS Soundings: **38**
 - b. Radius
 - c. Shoal biased
 - d. Use Single-Defined Radius: m on the ground
 - i. Radius Value (m): **1250**
 - e. Filter: Interpolated != 1
 - f. Number Survey CS Soundings: **31**

- VII. Notes:

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to ACCOMPANY
SURVEY H11995 (2008)**

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.

B. DATA ACQUISITION AND PROCESSING

B.1 DATA PROCESSING

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

HSTP PYDRO version 9.4 r2691
CARIS HIPS/SIPS version 6.1 HF 1-8
CARIS Bathy Manager version 2.1 SP1 HF 1-10
DKART INSPECTOR, version 5.0 Build 732 SP1
CARIS HOM version 3.3 SP3
CARIS S57 Composer version 2.0 HF 1-2

B.2. QUALITY CONTROL

B.2.1. H-Cell

The AHB source depth grid for the survey's nautical chart update product entailed the field's original 2m grids, combined at 8 meter resolution. The survey scale soundings were created from the combined surface at 1mm radius at 1:80000. The chart scale selected soundings are a subset of the survey scale selected soundings. The surface model was referenced when selecting the chart scale soundings, to ensure that the selected soundings portrayed the bathymetry within the common area.

A TIN (Triangulated Irregular Network) surface was created from the survey scale soundings from which an interpolated surface was generated for the purpose of generating depth curves. Depth curves were manually edited and are forwarded to MCD for reference only. The curves were utilized during chart scale sounding selection and quality assurance efforts at AHB. The depth curves are incorporated into the SS H-Cell product as per 2009 H-Cell Specifications.

The pre-compilation products or components (Stand Alone HOB files (SAHOB)) are detailed in the Compile Log attached at the end of this document. The SAHOB files included depth areas (DEPARE), depth contours (DEPCNT), sounding selections (SOUNDG), features (UWTROC, SBDARE,), Meta objects (M_COVR, M_QUAL), and cartographic Blue Notes (\$CSYMB).

All of the components with the exception of the sounding selection and depth contours were inserted into one feature layer (including the Bluenotes, as dictated by Hydrographic Technical Directive 2008-8 and HSD's H-Cell Specifications 2009). The

SAHOB H-Cell layer was exported to S-57 format for H-Cell deliverable. H11995 H-Cell chart scale selected soundings were selected based upon the scale of the applicable chart. The H-Cell's SS deliverable includes survey scale sounding selections and depth contours.

Both S-57 files were converted in CARIS HOM for output of H-Cell in chart units (feet). The final deliverables are two S-57 files; one that contains the chart soundings, all the Features, Meta objects, and Bluenotes (H11995_CS.000), and one that contains the sounding selections and depth contours (H11995_SS.000). Quality assurance checks were made utilizing CARIS S-57 Composer version 2.0 validation checks and DKART INSPECTOR, version 5.0, tests.

Chart compilation was performed by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland.

H11995 CARIS H-Cell final deliverables include the following products:

H11995_CS.000	1:80,000 Scale	H11995 H-Cell (Chart Scale)
H11995_SS.000	1:80,000 Scale	H11995 Selected Soundings (Survey Scale)

C. VERTICAL AND HORIZONTAL CONTROL

Final vertical correction processing was completed by the field unit with no additional correction required by Atlantic Hydrographic Branch. The field unit applied verified water levels in conjunction with the preliminary tidal zoning which was accepted and approved by N/OPSI CO-OPS as the final zoning for H11995. Sounding datum is Mean Lower Low Water (MLLW). Vertical datum is Mean High Water (MHW).

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 19.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON **13218 (40th Edition, FEB./08)**
 Corrected through NM 04/25/2009
 Corrected through LNM 04/14/2009
 Scale 1:80,000

ENC Comparison **US4MA23M**
 Martha's Vineyard to Block Island
 Edition 12
 Application Date 2008-11-20
 Issue Date 2009-01-27
 Chart 13218

D.1.1 Hydrography

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section “D” and Appendix 1&2 of the Descriptive Report. The following exceptions are noted:

a. The field unit obtained bottom samples as per Letter Instructions. However, there was one charted SBDARE, located at 41°16'43.4280”N, 071°09'27.1116”W that was not updated by the field. That SBDARE point feature was carried forward from the ENC (US4MA23M).

b. Three rocky seabed areas were digitized by office personnel to better represent the seafloor in the survey area. They are included in the H-cell as SBDARE area features.

D.6. MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. See Section D.1. of this report for a list of the Raster Charts and Electronic Navigation Charts (ENC) used for compiling the present survey:

D.7. ADEQUACY OF SURVEY

The present survey is adequate to supersede the charted bathymetry within the common area. Any features not specifically addressed either in the H-Cell BASE Cell File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

APPROVAL SHEET
H11995

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, representation of critical depths, cartographic symbolization, and verification or disproof of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone a comprehensive reviews per the Hydrographic surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

Katrina Wyllie
Hydrographic Intern
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved: _____
Shepard Smith
Commander, NOAA
Chief, Atlantic Hydrographic Branch