

H11996

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: **H11996**

LOCALITY

State: Rhode Island

General Locality: Approaches to Buzzards Bay

Sub-locality: 10 NM South-east of Point Judith

2008

CHIEF OF PARTY
CDR P. Tod Schattgen
NOAA

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NOVEMBER, 2008

HYDROGRAPHIC TITLE SHEET

H11996

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: **10 NM South-east of Point Judith**

Sub-Locality: **Approaches to Buzzards Bay**

Scale: **1:10,000** Date of Survey: **09/07/2008 to 10/01/2008**

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

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

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

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

Soundings by: **Reson 7125 and 8125 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 NAD83, UTM Zone 19.***
- Red, bold, italic comments were made during office verification.***

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Descriptive Report to Accompany Hydrographic Survey H11996

Project OPR-B307-TJ-08
10 NM south-east of Point Judith
Approaches to Buzzards Bay, Rhode Island
Scale 1:10,000
September 7th to October 1st, 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 approaches to Buzzards Bay and Narragansett Bay. See table A-1 and figure A-1 for approximate survey area.

** Filed with original field records.*

North-east corner	North-west corner	South-east corner	South-west corner
41° 17' 47.1" N	41° 15' 41.3" N	41° 15' 19.8" N	41° 13' 01.8" N
71° 15' 50.8" W	71° 23' 36.7" W	71° 14' 28.1" W	71° 22' 09.8" W

Table A-1: Approximate Survey Area H11996.

Data acquisition was conducted from September 7th to October 1st, 2008, see table A-3.

This is a navigable area survey in accordance with NOS *Hydrographic Surveys Specifications and Deliverables Manual (HSSDM)* and *Field Procedures Manual (FPM)* for hydrographic surveying.

	Lineal Nautical Miles
Single beam mainscheme only	N/A
Multibeam mainscheme only	397
Side Scan Sonar mainscheme only	N/A
Crosslines	19.9
Developments	N/A
Shoreline/nearshore investigations	N/A
Number of Bottom Samples	5
Number of AWOIS items Investigated	2

Table A-2: Survey Statistics.

Calendar Date	Julian Day	Calendar Date	Julian Day
07-Sept-2008	251	12-Sept-2008	256
08-Sept-2008	252	29-Sept-2008	273
10-Sept-2008	254	30-Sept-2008	274
11-Sept-2008	255	1-Oct-2008	275

Table A-3: Dates of Data Acquisition for Survey H11996.

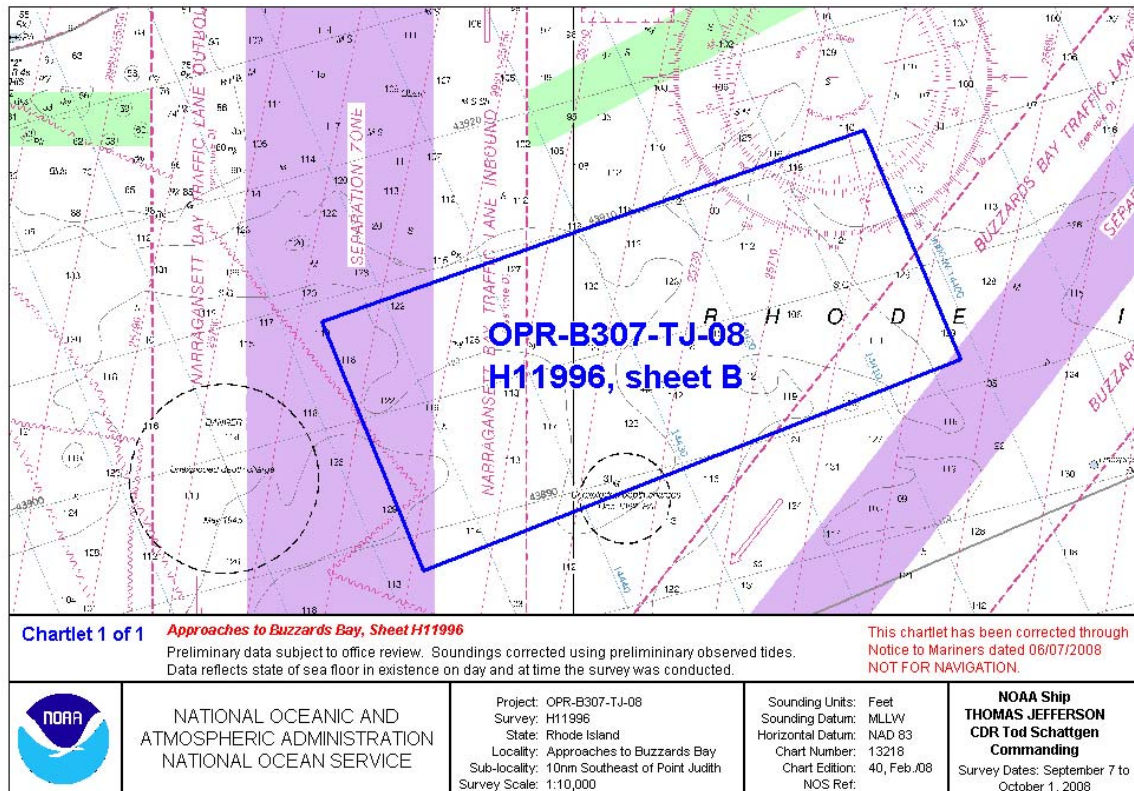


Figure A-1: Survey Area.

B. DATA ACQUISITION AND PROCESSING

Refer to *Thomas Jefferson Data Acquisition and Processing Report (DAPR)**, Spring-addendum*, 2008 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 a Reson 7125 multi-beam echo sounder (MBES) on the NOAA ship *Thomas Jefferson* and a Reson 8125 MBES on NOAA launch 3101. Water column sound velocity data were collected with a Brook Ocean Technology, Ltd. MVP-100 moving vessel profiler and a Sea Bird Electronics, Inc. 19-plus Conductivity, Temperature and Depth (CTD) profiler. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the DAPR*. Five bottom samples were collected from launch 3101 with a Khalisco Mud Snapper.

B 2. QUALITY CONTROL

B 2.1 System Certification and Calibration

Refer to NOAA Ship *Thomas Jefferson* 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.

B.2.2 Sounding Coverage

As per the Letter Instructions*, this survey was conducted using complete multi-beam echo sounding. The water depth over the entire survey area is greater than 20 meters.

B 2.3 Crosslines

A total of 19.9 lineal nautical miles of cross line MBES data were collected by the ship, see table A-2. This equals 5% of the total main scheme collected by the ship and survey launch 3101. Crosslines were acquired only with the ship S222 which also collected the vast majority of the main scheme data. During Crossline acquisition, both launches were aboard the *Thomas Jefferson*, which caused a squat in the draft of approximately -8 cm. All other data in the survey was collected while launches were deployed. The mainscheme data show high internal consistency therefore, it is recommended that crossline data be excluded from final gridded surfaces. Each finalized surface has been generated without crossline data. As per HSSD 2008, Section 5.4.1.3, a surface difference between crosslines and mainscheme data was generated using CARIS Base Editor as the means to analyze the variation in draft and is included in separates under *Crossline Comparisons*.

B 2.4 Junctions and Prior Surveys

The following contemporary surveys junction with H11996:

Registry #	Scale	Date	Field Party	Junction side
H11995	1:10,000	2008	<i>Thomas Jefferson</i>	East
H11321		2004	<i>Rude</i>	North
H11322		2004	<i>Rude</i>	North

**Filed with original field records*

Survey H11995 junctions the current survey (H11996) to the east (see figure B-1 for chart of junction surveys). H11995 was surveyed by the *Thomas Jefferson* immediately before H11996 using the same systems and standards. The surfaces between the two surveys line up within 0.1 meter along the entire junction. Surveys H11321 and H11322 to the north, completed in 2004 by the NOAA ship *Rude* were in a format unreadable by the current software aboard the *Thomas Jefferson*. Current chart soundings are considered adequate to provide surrounding comparison data and the northern edge of H11996 data are all within 2 feet of the charted soundings.

Concur.

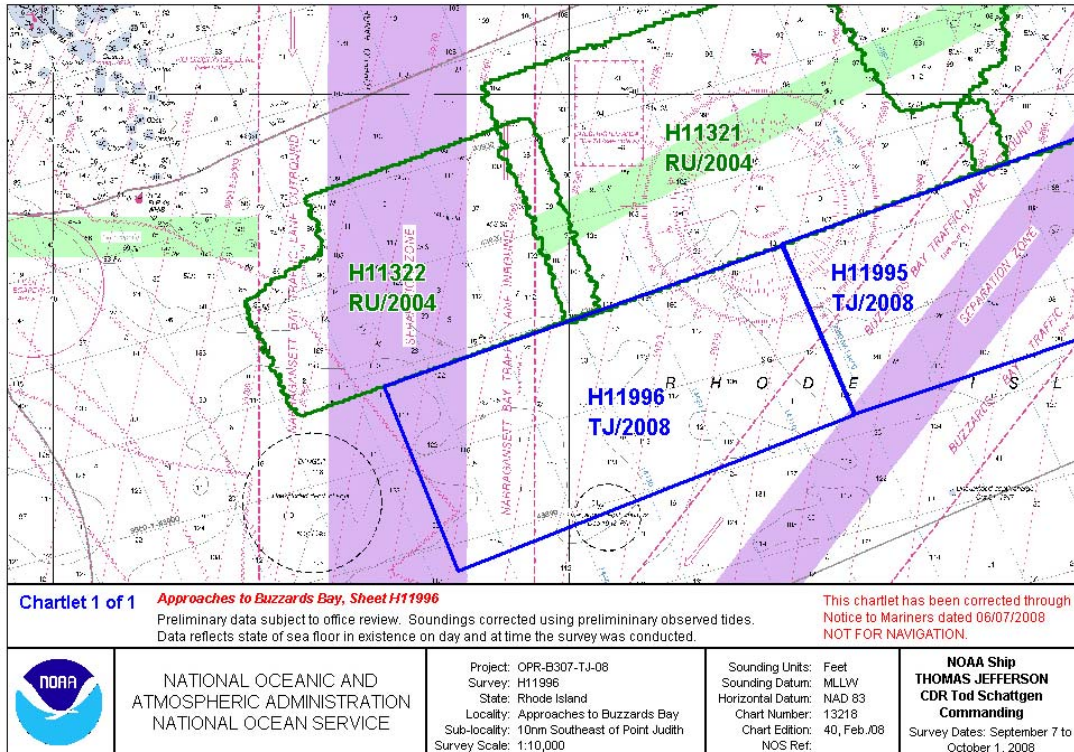


Figure B-1: H11996 Junction Surveys.

B 2.5 Systematic Errors

On day 274 there was ship motion related artifact along a portion of one line. Line 156_1636 would not accept the heave correction, see figure B-2. The heave error is as much as plus or minus 0.6 meters. This error is within 2% of the water depth but is 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 this 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.

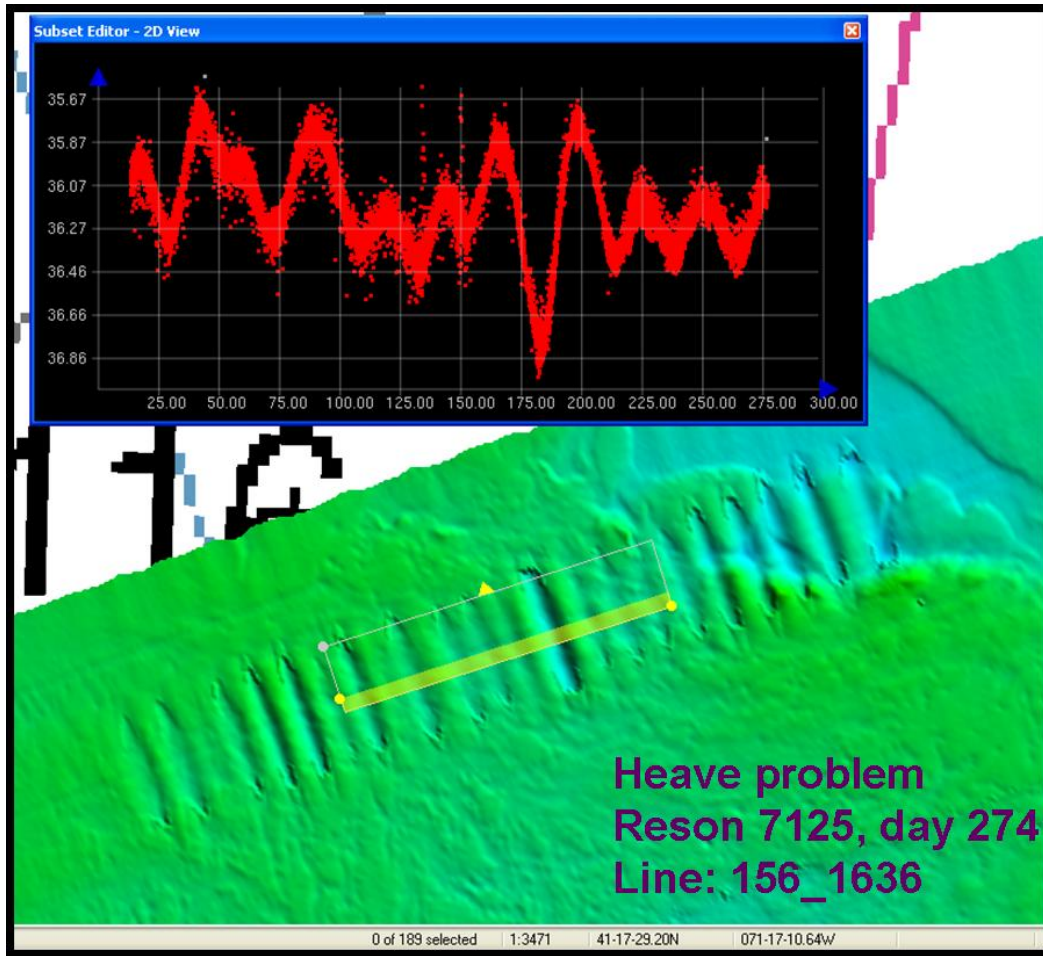


Figure B-2: heave artifact line 156_1636.

B 3. CORRECTIONS TO ECHO SOUNDING

HDSC sounding data were reduced to mean lower-low water (MLLW) on 11/17/2008 using verified tides from the primary station 845-2660 at Newport, RI and secondary station 844-8725 at Menemsha Harbor, MA for the dates of the survey. These tides were adjusted for tidal constituents and residuals provided by CO-OPS as specified in the Letter Instructions*; tide zones are illustrated in Figure B-3.

** Filed with original field records.*

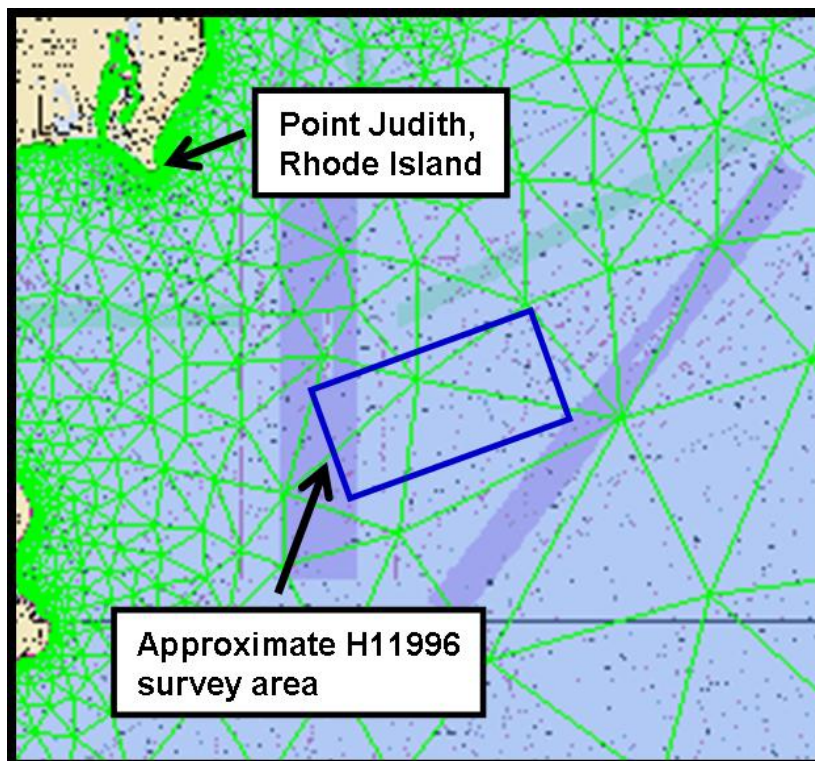


Figure B-3: Final Tide Zoning

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 file 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 H11996 are as illustrated in table B-1. All ship profiles were made with MVP.

Vessel	Tide Values		Sound Speed Values	
	Measured	Zoning	Measured	Surface
3101	0	0	4	0.2
S222 MVP	0	0	1	0.2
S222 CTD	0	0	4	0.2

Table B-1: TPE parameters.

B 4.2 BASE Surfaces and Mosaics

The submitted base surfaces for survey H11996 are listed in table B2.

<i>Name of Fieldsheet</i>	<i>Resolution</i>	<i>Type</i>	<i>Purpose</i>
H11996_E_CUBE_2m_Deep	2 meters	CUBE	Coverage check
H11996_E_CUBE_2m_Deep_Final	2 meters	CUBE- Finalized	
H11996_W_CUBE_2m_Deep	2 meters	CUBE	Coverage check
H11996_W_CUBE_2m_Deep_Final	2 meters	CUBE- Finalized	
H11996_Combined_2m	2 meters	Above combined	Coverage check
H11996_Combined_2m_Final	2 meters	Combined Finalized	Basis for PSS, not a deliverable

Table B-2: Compiled Field Sheets

This survey was processed using the Combined Uncertainty and Bathymetric Estimator (CUBE) algorithm. The CUBE configuration was set to ‘Deep’ and ‘IHO order 1’ for this entire survey. Refer to the spring 2008 *Data Acquisition and Processing Report**, 2008 *Field Procedures Manual*, and *CARIS HIPS/SIPS 6.1 Users Manual* for further discussion of data processing procedures.

** Filed with original field records.*

C. HORIZONTAL AND VERTICAL CONTROL

As per FPM section 5.2.3.2.3 guidance a HVCR report was not filed as no horizontal control stations were established by the field party for this survey. A summary of horizontal and vertical control for this survey follows.

C 1.1 Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83), Universal Transverse Mercator (UTM) zone 19. Differential GPS (DGPS) was the sole method of positioning. Differential corrections from U.S. Coast Guard beacons at Moriches, NY (293 KHz), and 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 Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station 8452660 at Newport, RI and secondary

station 8448725 at Menemsha Harbor, MA serve as datum control for H11996. Revised-B307TJ2008-TCARI zoning were applied as the final tide zoning to all sounding data.

A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 October 2, 2008 in accordance with the FPM and project letter instructions.

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

Survey H11996 was compared with chart 13218 (40th Ed.; February, 2008) and Electronic Navigational Chart US4MA23M (9th edition, May 30, 2008). Chart comparisons were performed in MapInfo using survey-scale and chart-scale excess soundings exported from Pydro.

D.1.1 Chart 13218 40th edition, February, 2008 Comparison

Depths from charts 13218 generally agree with the current survey, with differences generally 2 feet or less with the exception of three significant features. A rock located at 41°15'35"N, 071°15'27"W is approximately 18 feet shoal of the nearest charted sounding. The least depth over this contact is 93 feet and does not require a Danger to Navigation report. An uncharted wreck appears in the survey data at position 41° 17' 28.0" N, 071° 16' 26.7" W. See Appendix II* for detailed information.

**appended to this report*

D.1.3 ENC USMA23M, 9th edition, May 30, 2008 comparison

Soundings are generally comparable with charted depths, with differences in charted and survey soundings of 1 meter or less. Exceptions are as noted in section D.1.1 above.

D.2 Additional Results

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

There are two AWOIS items within the limits of survey H11996. The first is reported to be the sunken 38 foot boat *Beatrice R.* No discernable wreckage could be found within the AWOIS circle around this item. The second AWOIS item is described as a lost depth charge. Many small contacts are visible in the MBES record within the area but there is no evidence to conclude that any of these is the item. See Appendix II* for detailed information.

**appended to this report*

D.2.4 Shoreline

There is no shoreline within the sheet limits of survey H11996. *Concur.*

D.2.5 Charted Features

All charted features and item investigations are described in detail in Appendix II* of this report.
**appended to this report*

D.2.6 Charted Pipelines and Cables

There is one charted submarine cable near the west edge of the survey area. This cable does not show up in the MBES data and, if it exists, is likely buried. The hydrographer has no recommendations regarding this cable. *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 H11996. *Concur.*

D.3 Dangers to Navigation and Shoals

D 3.1 Dangers to Navigation

No dangers to navigation were found within the survey area H11996. *Concur.*

D 3.2 Shoals

There is no evidence of significant, hazardous shoals in this survey. *Concur.*

D.4 Aids to Navigation

There are no charted Aids to Navigation (ATON) within the limits of H11996. *Concur.*

D.5 Coast Pilot Information

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

D.6 Miscellaneous

Five bottom samples were collected in accordance with NOAA Hydrographic Survey Specifications and Deliverables. A complete description of all bottom samples acquired during Survey H11996 is contained in the Pydro PSS and appendix V* of this report.
**appended to this report*

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*. *Concur.*
**Filed with original field records*

Summary and Recommendations for Additional Work

The hydrographer has no recommendations for additional work in this survey area at this time.

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 H11996 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</u>	<u>Office</u>
<i>Data Acquisition and Processing Report-Spring-addendum</i>	4 Feb 09	N/CS33
<i>Horizontal and Vertical Control Report for OPR-307-TJ-08</i>	N/A	N/CS33
Tides and Water Levels Package for OPR-307-TJ-08	N/A	N/OPS1
Coast Pilot Report for OPR-307-TJ-08	N/A	N/CS26

Approved and Forwarded:

 Jasper Schaer
I have reviewed this document
2009.02.06 21:13:07 Z

 2009.02.06
16:06:16 Z


LT Jasper D. 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:

Survey Managers:

 Jasper Schaer
2009.02.06
21:13:43 Z

 doug wood
I am the author of this document
2009.02.06 21:16:32 Z

ENS Megan Nadeau, NOAA
Junior Officer

SST Douglas Wood
Senior Survey Tech

Appendix I

Dangers to Navigation

There were no new Dangers to Navigation found while conducting survey H11996.

Appendix II

Survey Features Report

H11996 Feature Report

Registry Number: H11996
State: Rhode Island
Locality: Rhode Island Sound and Approaches, RI MA
Sub-locality: 10 NM Southeast of Point Judith
Project Number: OPR-B307-TJ-08
Survey Dates: Sept 7, 2008 - Sept 30, 2008

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13218	40th	02/01/2008	1:80,000 (13218_1)	USCG LNM: 05/20/2008 (06/03/2008) NGA NTM: 11/15/2003 (06/07/2008)
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	93-ft Sounding (Rock)	Rock	28.55 m	41° 15' 34.9" N	071° 15' 26.7" W	---
1.2	108-ft Wreck (Barge)	Wreck	32.91 m	41° 17' 28.0" N	071° 16' 26.7" W	---
2.1	AWOIS #2419 charted Wk PA BEATRICE R	AWOIS	[no data]	[no data]	[no data]	---
2.2	AWOIS #1837 OBSTRUCTION (ENC-Dumping Ground)	AWOIS	[no data]	[no data]	[no data]	---

1 - New Features

1.1) 93-ft Sounding (Rock)

Survey Summary

Survey Position: 41° 15' 34.9" N, 071° 15' 26.7" W
Least Depth: 28.55 m (= 93.67 ft = 15.612 fm = 15 fm 3.67 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.003 m ; **TVU (TPEv)** ± 0.238 m
Timestamp: 2008-254.17:42:05.157 (09/10/2008)
Survey Line: h11996 / tj_s222_reson7125_port / 2008-254 / 111_1738
Profile/Beam: 1567/156
Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rock, substantially shoal of charted depth near this location.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11996/tj_s222_reson7125_port/2008-254/111_1738	1567/156	0.00	000.0	Primary

Hydrographer Recommendations

The hydrographer has no recommendations.

Cartographically-Rounded Depth (Affected Charts):

93ft (13218_1)

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

29m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: SORDAT - 20081001
 SORIND - US,US,nsurf,H11996
 VALSOU - 28.552 m
 WATLEV - 3:always under water/submerged

Office Notes

AHB recommends to chart feature as an obstruction at the survey location.

Feature Images

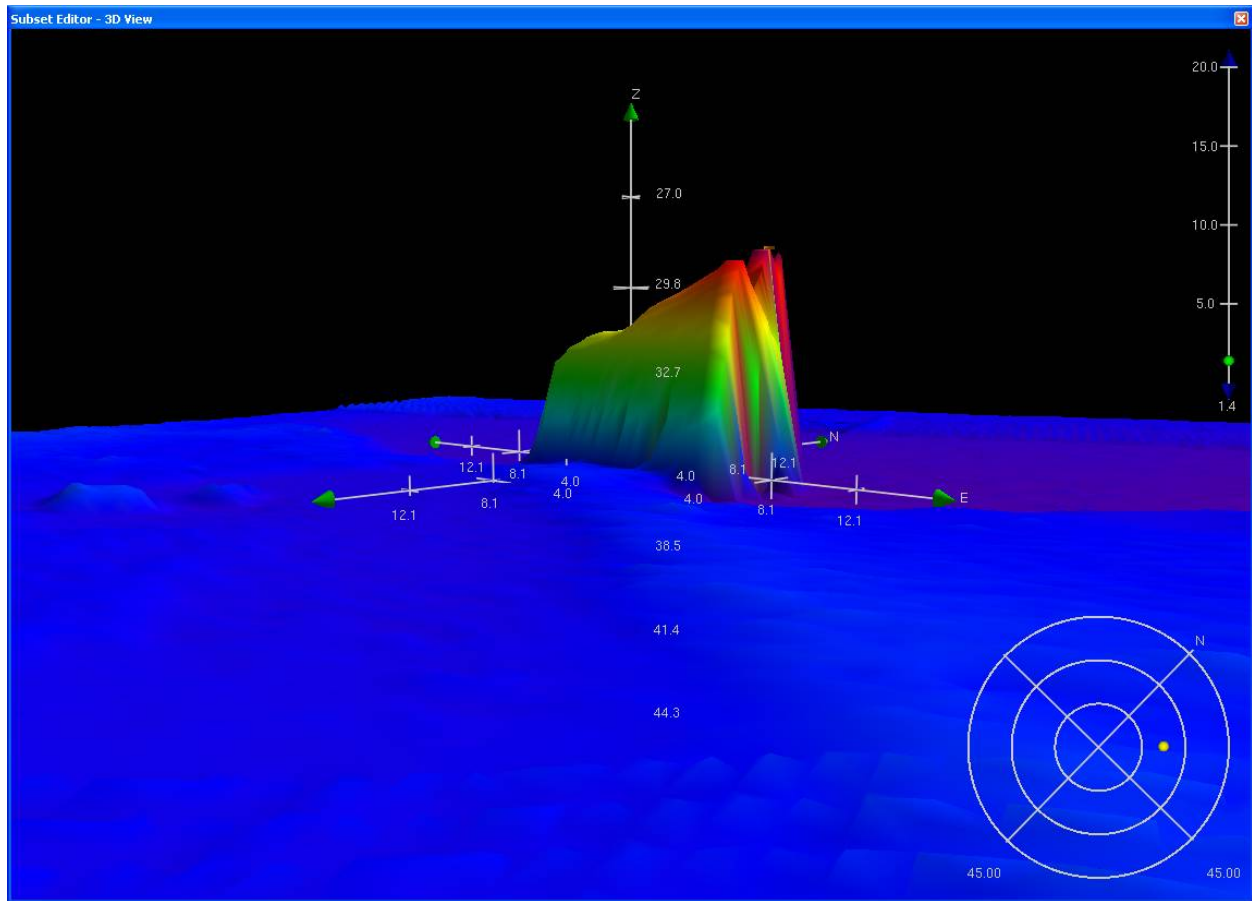


Figure 1.1.1

1.2) 108-ft Wreck (Barge)

Survey Summary

Survey Position: 41° 17' 28.0" N, 071° 16' 26.7" W
Least Depth: 32.91 m (= 107.98 ft = 17.997 fm = 17 fm 5.98 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.009 m ; TVU (TPEv) ± 0.221 m
Timestamp: 2008-274.11:36:29.608 (09/30/2008)
Survey Line: h11996 / tj_s222_reson7125_port / 2008-274 / 153_1132
Profile/Beam: 2169/68
Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Sunken 100 foot barge.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11996/tj_s222_reson7125_port/2008-274/153_1132	2169/68	0.00	000.0	Primary

Hydrographer Recommendations

The hydrographer has no recommendations.

Cartographically-Rounded Depth (Affected Charts):

108ft (13218_1)

18fm (12300_1, 13006_1, 13003_1)

33m (5161_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 1:non-dangerous wreck
 CONVIS - 2:not visual conspicuous
 OBJNAM - 108-ft Wreck (Barge)
 QUASOU - 6:least depth known
 SORDAT - 20081001
 SORIND - US,US,nsurf,H11996

STATUS - 1:permanent

TECSOU - 3:found by multi-beam

VALSOU - 32.912 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Recommend to chart wreck at the surveyed location.

Feature Images

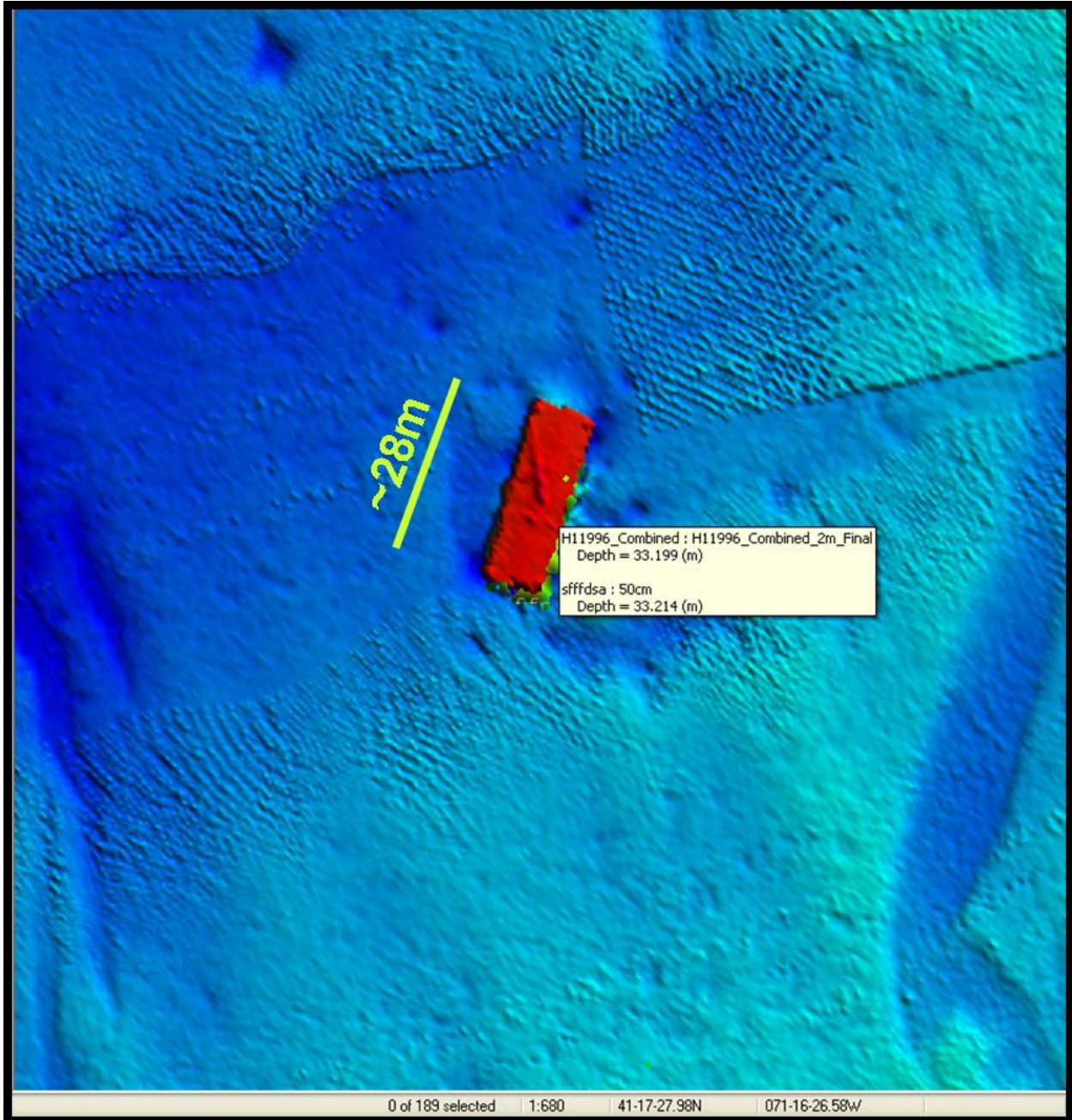


Figure 1.2.1

2 - AWOIS Features

2.1) AWOIS #2419 - AWOIS #2419 charted Wk PA BEATRICE R

No Primary Survey Feature for this AWOIS Item

Search Position: 41° 15' 00.4" N, 071° 18' 58.2" W
Historical Depth: [None]
Search Radius: 1500
Search Technique: S2, MB
Technique Notes: [None]

History Notes:

LNM38/76--1ST CGD; 38 FT. L/B BEATRICE R HAS BEEN REPORTED SUNK IN 115 FT. OF WATER IN PA LAT 41-15N, LONG 71-19W AFTER APPARENTLY STRIKING A SUBMERGED OBJECT. (ENTERED MSM 3/89)

Survey Summary

Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

There are several obstructions (probable rocks) found in the MBES record but no evidence found of wreckage within this AWOIS area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS_B307-TJ-08	AWOIS # 2419	0.00	000.0	Primary

Hydrographer Recommendations

The hydrographer has no recommendations.

S-57 Data

Geo object 1: Cartographic symbol (\$CSYMB)

Office Notes

Consider the Wreck PA as disproved through object detection Shallow Water Multibeam. Recommend to delete the charted wreck PA.

2.2) AWOIS #1837 - AWOIS #1837 OBSTRUCTION (ENC-Dumping Ground)

No Primary Survey Feature for this AWOIS Item

Search Position: 41° 13' 48.4" N, 071° 19' 16.2" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [None]
Technique Notes: [None]

History Notes:

NM44/52--ON OCTOBER 15, 1952 A PATTERN OF ARMED UNEXPLODED DEPTH CHARGES WAS DROPPED IN PA LAT 41-14-13N, LONG 71-17-12W. NM46/52--US NAVY ADVISES THAT AN AREA OF 2 MILES RADIUS AROUND THE PATTERN OF ARMED UNEXPLODED DEPTH CHARGES IS DANGEROUS AND WILL CONTINUE TO BE SO UNTIL FURTHER NOTICE. CL831/52-- NM52/52; US NAVY ADVISES THAT A DANGER AREA WITH A RADIUS OF 1 MILE EXISTS AROUND UNEXPLODED DEPTH CHARGES WITH ITS CENTER IN PA LAT 41-13-18N, LONG 71-19-18W. (ENTERED MSM 3/89) NM14/53--POSITION REVISED TO LAT 41-13-48N, LONG 71-19-18W. NM24/53--BUOY ESTABLISHED IN 122 FT. IN PA LAT 41-13-48N, LONG 71-19-18W TO MARK A DANGEROUS AREA OF UNEXPLODED DEPTH CHARGES WITHIN A RADIUS OF 1/2 MILE OF BUOY. DESCRIPTION 24 NO.1275; DEPTH CHARGES, POSITION ACCURACY WITHIN 1 MILE; REPORTED THRU NM.

Survey Summary

Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Only coverage MB covered. Many small obstructions in evidence within this AWOIS radius. Specific feature could not be determined.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS_B307-TJ-08	AWOIS # 1837	0.00	000.0	Primary

Hydrographer Recommendations

The hydrographer has no recommendations.

S-57 Data

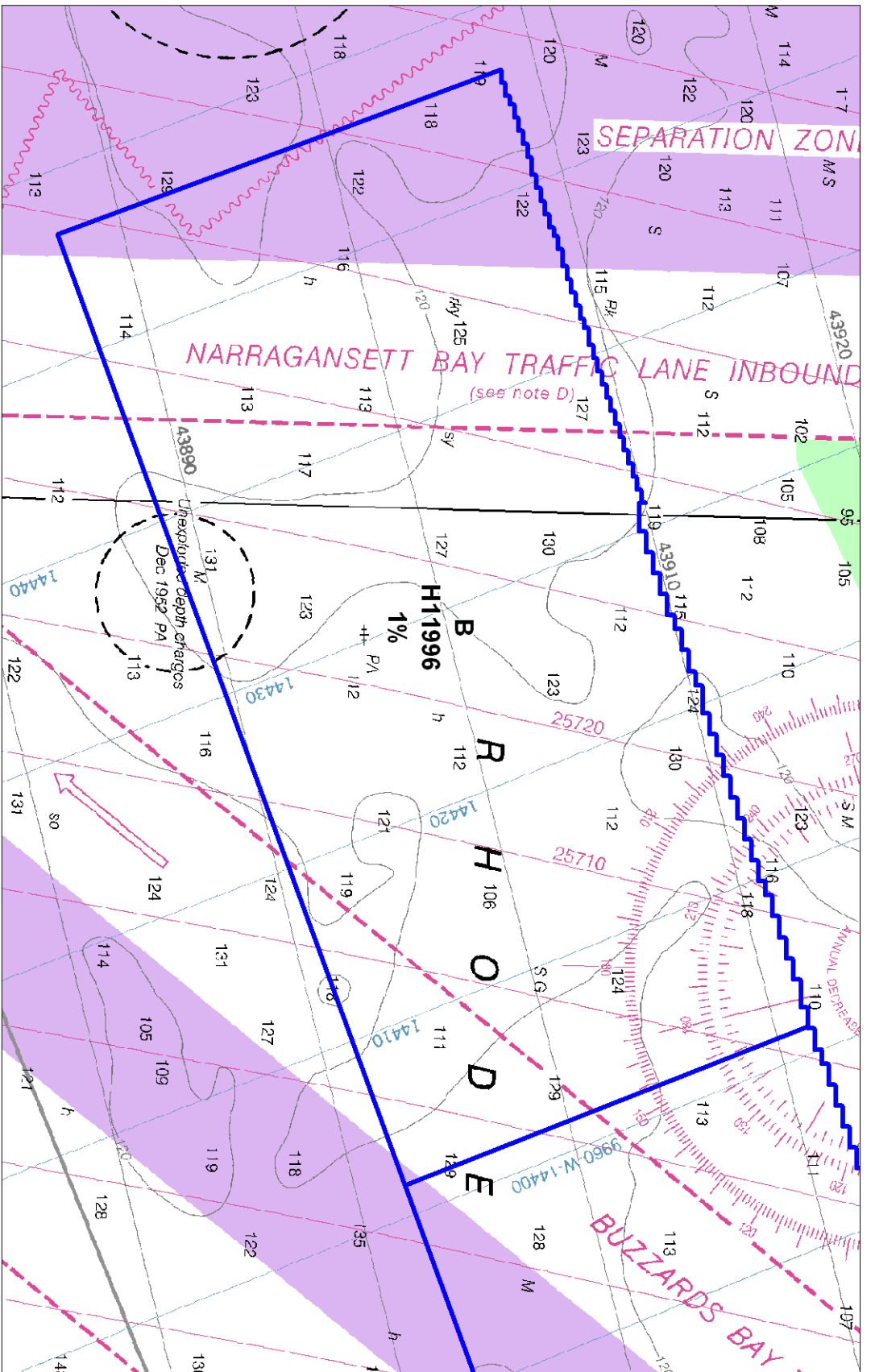
[None]

Office Notes

Entire area (1 NM diameter) not surveyed. Charted feature is not considered disproved. AHB recommends to retain the charted notation "Unexploded depth charges Dec 1952 PA". No cartographic action necessary.

Appendix III

Progress Sketch



Project	Sheet Letter	H_num	HQ_Est_SNM	CumPercCompPrev	CumPercCompCur	SNM_CompCurV	CumSNMcomf
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.: H11996
State: Rhode Island
Locality: Rhode Island Sound and Approaches, RI & MA
Sublocality: 10 NM Southeast 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_251	19:47:24	22:55:04
2008_252	15:03:50	23:35:47
2008_254	15:50:27	22:41:28
2008_255	17:54:23	23:59:57
2008_256	00:00:01	05:08:01
2008_273	20:03:00	23:59:57
2008_274	00:00:02	23:38:17
2008_275	00:37:59	01:17:40



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: H11996

LOCALITY: 10 NM Southeast of point Judith, Rhode Island and Approaches, RI
TIME PERIOD: September 7 - October 1, 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, H11996, during the time period between September 7 and October 1, 2008.

Refer to attachments for grid 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).

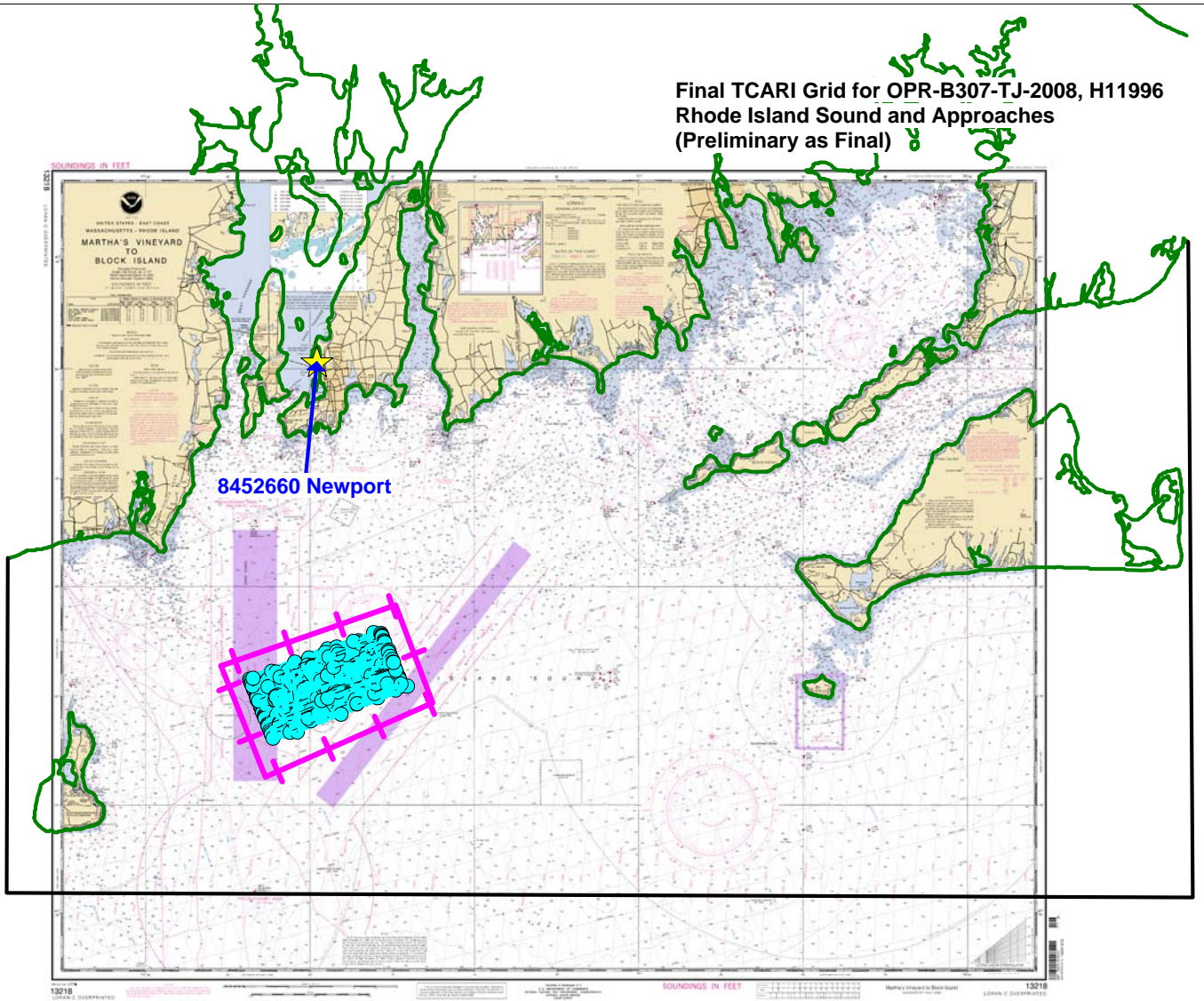
Peter J. Stone

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 06:59:29 -04'00'

CHIEF, OCEANOGRAPHIC DIVISION



**Final TCARI Grid for OPR-B307-TJ-2008, H11996
Rhode Island Sound and Approaches
(Preliminary as Final)**



Appendix V

Supplemental Survey Records and Correspondences

H11996_Bottom_Samples.txt

Bottom samples taken for survey H11996
Collected on September 30, 2008

Sample characteristics	Latitude	Longitude	Time
MUD	41.23838228	-71.32864008	13:11:13
Fine sand	41.25747092	-71.30419425	13:27:02
fine sand, shells	41.26887519	-71.26970933	14:26:45
Mud, (silty)	41.26768897	-71.22804658	16:07:02
Mud (silty)	41.30469306	-71.204553	17:07:54
Silt	41.25820222	-71.34255664	19:25:27
Mud 10% pea size gravel	41.25818272	-71.36070711	20:11:42

Subject: Re: B307, Sheet B**From:** Jeremy McHugh <Jeremy.McHugh@noaa.gov>**Date:** Wed, 27 Aug 2008 10:55:11 -0400**To:** jasper.schaer <jasper.schaer@noaa.gov>**CC:** Tod Schattgen <Tod.Schattgen@noaa.gov>, James M Crocker <James.M.Crocker@noaa.gov>

Hi Jasper,

It will be H11996. The details in Survey Tracker are below:

Success - Survey Added

Survey Number H11996

Project Number OPR-B307-TJ-08

Survey Type H

Locality Rhode Island Sound

Sub Locality 10 NM Southeast of Point Judith

State Rhode Island,

Scale 10000

Sheet B

Max/North Latitude (DDMMSS.S)	411756.0	Min/South Latitude (DDMMSS.S)	411255.0
----------------------------------	----------	----------------------------------	----------

Max/West Longitude (DDDMMSS.S)	0732347.0	Min/East Longitude (DDDMMSS.S)	0711420.0
-----------------------------------	-----------	-----------------------------------	-----------

12300

12354

12363

12364

12370

12371

12372

12373

12374

Affected Charts 12375

13003

13006

13209

13211

13213

13214

13215

13217

13218

5161

ESNM 17

Field Unit NOAA SHIP THOMAS JEFFERSON

Processing Center AHB

Comments Registry number requested by TJ via email on 27 Aug 2008.

jasper schaer wrote:

Jeremy-

Need a registry for sheet B.

r-js

--

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

Subject: October 2008 data at MENEMSHA HARBOR, MA 8448725 processed.

From: Gerald Hovis <Gerald.Hovis@noaa.gov>

Date: Tue, 14 Oct 2008 16:59:26 -0400

To: Janet Culp <Janet.Culp@noaa.gov>

CC: jasper.schaer <jasper.schaer@noaa.gov>, NOS.COOPS.HPT@noaa.gov

Jan,

Would it be possible to have the first two days of October 2008 data at MENEMSHA HARBOR, MA 8448725 processed. OCS needs Oct 1 & 2 to apply verified tides. Sorry for any confusion.

Thanks
Jerry

jasper.schaer wrote:

Thanks for the response and your explanation. We appreciate all the work you, CO-OPs, do for us so we can survey and stay productive.....

cheers-js

Craig Martin wrote:

Jasper,

The data for Menemsha was processed through the end of the month....I will get in touch with our processing team to have them finish up the first few days of October so you can move forward with your processing, as it should be finished regardless if you have to use it or not. I checked the Tide notes for H11995 and H11996 and both just require Newport for tide control. If the TCARI grid we supplied gives you any issues just using Newport please let us know and we'll work to adjust it appropriately.

thanks,
Craig

jasper.schaer wrote:

My smooth tides letter requested coverage for DN234 (aug 21) to DN275 (oct 1). I am trying to apply verified tides to H11995 & H11996, which uses Menemsha & Newport Station. I do not have any verified tides to download for Menemsha past 9/30-need a oct 1 data set. I do not think this is a big issue, because the location of H11995 & 96 is in the separation zones to Newport Approaches, therefore I would think Newport Station should take dominance over Menemsha. What are your thoughts on this?

r-js

--
Jerry Hovis
Tidal Datums & Hydrographic Support Team
Center for Operational Oceanographic Products & Services
Products and Services Division
National Ocean Service
National Oceanographic Atmospheric Administration
<http://www.tidesandcurrents.noaa.gov/>

gerald.hovis@noaa.gov
SSMC4, Sta. 7200
1305 East-West Highway
Silver Spring, MD 20910 USA Work: (301) 713-2890 x109

cell: (240)-997-2651
Fax: (301) 713-4437

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
-----------------------	--

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

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

31 March 2008

Mr. William A. Adler
Executive Director, Massachusetts Lobstermen's Association, Inc
8 Otis Place
Scituate, MA 02066

Dear Mr. Adler,
The National Oceanic and Atmospheric Administration (NOAA) Ship THOMAS JEFFERSON will be conducting hydrographic survey operations in the Rhode Island Sound and approaches from **mid-July thru Late August, 2008.**

A map showing the planned survey areas is enclosed. These planned survey operations are subject to change due to weather and logistical constraints.

It is the intent of the National Ocean Service (NOS) to coordinate with local regulatory authorities and lobstermen so survey operations can be conducted with minimal interference to lobster fishing. The commanding officer of THOMAS JEFFERSON will contact you prior to beginning operations to discuss specific dates and locations of survey work.

A hydrographic survey of this type requires that THOMAS JEFFERSON tow a side scan sonar towfish approximately 20 to 60 feet off the bottom in some areas of this region. The towfish is approximately five feet in length, five inches in diameter, and towed by a cable. Side scan sonar and multibeam sonar systems will acquire detailed data of the bottom, delineating and obtaining least depths of potential hazards to navigation. Multibeam sonar data will be collected by two 29-foot aluminum survey launches. **Please Note: These survey launches do not tow any sonar equipment.** Their sonar equipment is rigidly mounted to the aluminum hulls.

It is understood that a high density of pots may be in the area during the survey operations. The personnel of THOMAS JEFFERSON will exercise every caution while surveying to avoid entanglement of lobster pots. If a lobster pot does become entangled, THOMAS JEFFERSON will immediately take action to stop the vessel and clear the pot lines from the sonar gear. In previous survey projects, coordination with local lobstermen allowed us to postpone certain areas of the survey knowing the lobster traps were to be moved at a later time frame. This coordination works out well for both survey operations and the lobstermen.

If you have any questions on the survey operations or general comments on how we may approach an effective coordination effort, please contact our Navigation Manager for the Northeast, Lt. Matthew J. Wingate, at (401) 782-3252 or via e-mail: matt.wingate@noaa.gov. Your cooperation is greatly appreciated.

Sincerely,
Jeremy McHugh, project planner and coordinator for NOAA ship THOMAS JEFFERSON
phone (301) 713-2698
email jeremy.mchugh@noaa.gov





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN 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



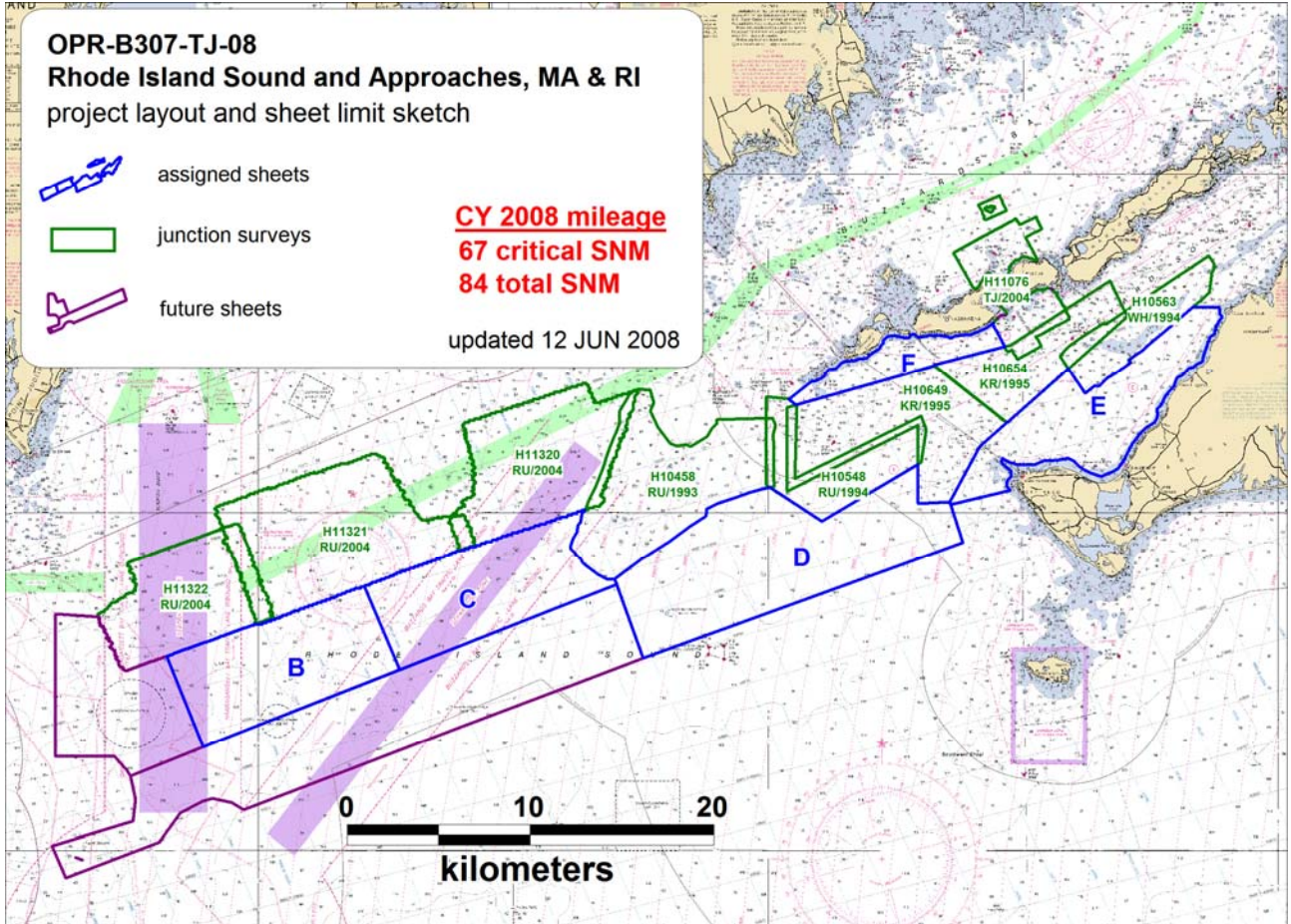
OPR-B307-TJ-08

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.

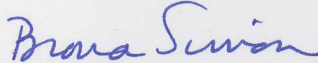
The survey area has a high potential to contain intact significant archaeological resources, including historic maritime resources (chiefly shipwrecks) and ancient Native American occupations on formerly exposed land surfaces that have been submerged. Evidence may be detected of these ancient and historic 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

AHB COMPILATION LOG

General Survey Information	
REGISTRY No.	<i>H11996</i>
PROJECT No.	<i>OPR-B307-TJ-08</i>
FIELD UNIT	<i>THOMAS JEFFERSON</i>
DATE OF SURVEY	<i>20080907-20081001</i>
LARGEST SCALE CHART	<i>13218, edition 40, 20080201, 1:80000</i>
SOUNDING UNITS	<i>Feet</i>
COMPILER	<i>Katrina Wyllie</i>

Source Grids	File Name
	H:\Compilation\H11996_B307-TJ\AHB_H11996\E-SAR Final Products\GRIDS
	<i>H11996_W_CUBE_2m_Deep_Final.hns</i>
	<i>H11996_E_CUBE_2m_Deep_Final.hns</i>
Surfaces	File Name
	H:\Compilation\H11996_B307-TJ\AHB_H11996\COMPILE\Working
<i>Combined</i>	<i>H11996_8m_Combined.hns</i>
<i>Interpolated TIN</i>	<i>\Interpolated TIN\H11996_2m_InterpTIN.hns</i>
<i>Shifted Product Surface</i>	<i>\Shifted Surface\H11996_PS_Shifted.hns</i>
<i>Product Surface</i>	<i>\Product Surface\H11996_PS_80k.hns</i>
Final HOBs	File Name
	H:\Compilation\H11996_B307-TJ\AHB_H11996\COMPILE\Final_Hobs
<i>Survey Scale Soundings</i>	<i>H11996_SS_Soundings.hob</i>
<i>Chart Scale Soundings</i>	<i>H11996_CS_Soundings.hob</i>
<i>Contour Layer</i>	<i>H11996_Contours.hob</i>
<i>Feature Layer</i>	<i>H11996_Features.hob</i>
<i>Meta-Objects Layer</i>	<i>H11996_MetaObjects.hob</i>
<i>Blue Notes</i>	<i>H11996_BlueNotes.hob</i>

Meta-Objects Attribution	
Acronym	Value
M_COVR	
CATCOV	<i>coverage available</i>
SORDAT	<i>20081001</i>
SORIND	<i>US,US,survey,H11996</i>
M_QUAL	
CATZOC	<i>zone of confidence U (data not assessed)</i>
INFORM	<i>H11996,NOAA Thomas Jefferson</i>
POSACC	<i>10</i>
SORDAT	<i>20081001</i>
SORIND	<i>US,US,survey,H11996</i>
SUREND	<i>20081001</i>
SURSTA	<i>20080907</i>
DEPARE	
DRVALV 1	<i>93.6745</i>
DRVALV2	<i>135.4541</i>
SORDAT	<i>20081001</i>
SORIND	<i>US,US,nsurf,H11996</i>

[Type text]

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 (**1mm at 80,000**): ; Radius Value = 1
 - d. Queried Depth of All Soundings
 - i. Minimum: **93.6745**
 - ii. Maximum: **135.4541**

- III. INTERPOLATED TIN SURFACE:
 - a. Resolution (m): **2**
 - b. Linear
 - c. Shifted value: **-0.229** *[-0.229m (feet), (\leq 10 fathoms)]*
[-1.372m (fathoms), ($>$ 10 fathoms)]

- IV. CONTOURS:
 - a. Use a Depth List: H11996_NOAA_depth_curves_list.txt
 - b. Line Object: DEPCNT
 - c. Value Attribute: VALDCO

- V. FEATURES:
 - a. Total Number of Features: **8**

- VI. CHART SURVEY SOUNDINGS (CS):
 - a. Number of ENC CS Soundings: **35**
 - b. Radius
 - c. Shoal biased
 - d. Use Single-Defined Radius: m on the ground
 - i. Radius Value (m): **1300**
 - e. Filter: Interpolated != 1
 - f. Number Survey CS Soundings: **35**

- VII. Notes:

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to ACCOMPANY
SURVEY H11996 (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 SP2 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 (OBSTRN, SBDARE, WRECKS), 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. H11821 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 (H11996_CS.000), and one that contains the sounding selections and depth contours (H11996_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.

H11996 CARIS H-Cell final deliverables include the following products:

H11996_CS.000	1:80,000 Scale	H11996 H-Cell (Chart Scale)
H11996_SS.000	1:80,000 Scale	H11996 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 H11996. 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°14'36.1474”N, 071°21'49.9897”W that was not updated by the field. That SBDARE point feature was carried forward from the ENC (US4MA23M).

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
H11996**

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