H11922

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: **H11922**

LOCALITY

State: RI and MA

General Locality: Rhode Island Sound and Approaches

Sub-locality: 8 NM West of Gay Head

2008

CHIEF OF PARTY
CDR P. Tod Schattgen
NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET

H11922

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:	**RI and MA**		
General Locality:	**Rhode Island Sound and Approaches**		
Sub-Locality:	**8 NM West of Gay Head**		
Scale:	**1:10,000**	Date of Survey:	**07/16/08 to 08/22/08**
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:			
Soundings in:	**Meters 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.

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Descriptive Report to Accompany Hydrographic Survey H11922

Project OPR-B307-TJ-08
8 NM West of Gay Head
Rhode Island Sound and Approaches
Scale 1:10,000
July 16th – August 22nd 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 following area:

North-east corner	North-west corner	South-east corner	South-west corner
41° 21’ 27.72” N 70° 54’ 09.78” W	41° 18’ 02.10” N 71° 06’ 00.38” W	41° 19’ 06.88” N 70° 52’ 19.30” W	41° 15’ 38.05” N 071° 04’ 54.91” W

Table A-1: Survey Extents

Data acquisition was conducted from 16 July 2008 to 22 August 2008.

The purpose of this survey was to provide modern complete coverage hydrographic surveys for 28 square nautical miles area, which was designated as a critical area in the Hydrographic Survey Priorities, 2007 edition.

***NOAA Ship THOMAS JEFFERSON,* Sheet D H11922**	**Linear Nautical Miles**
LNM Single beam mainscheme only	N/A
LNM Multibeam mainscheme only	830.0
LNM Lidar mainscheme only	N/A
LNM Side Scan Sonar mainscheme only	N/A
Linear nautical miles of any combination of the above techniques (specify methods)	N/A
LNM Crosslines singlebeam and multibeam combined	41.0
LNM Lidar Crosslines	N/A
LNM development lines non mainscheme	53.4
LNM shoreline/nearshore investigations	0
Number of Bottom Samples	14
Number of items investigated that required additional time/effort in the field beyond the above survey operations	0
Total number of square nautical miles	28

Table A-2. Hydrographic Survey Statistics

Calendar Date	Julian Day	Calendar Date	Julian Day
16-July-2008	198	10-August-2008	223
17-July-2008	199	11-August-2008	224
18-July-2008	200	12-August-2008	225
22-July-2008	204	13-August-2008	226
23-July-2008	205	14-August-2008	227
24-July-2008	206	19 August-2008	232
25-July-2008	207	20-August-2008	233
26-July-2008	208	21-August-2008	234
27-July-2008	209		
28-July-2008	210		
31-July-2008	213		
06-August-2008	219		
07-August-2008	220		
09-August-2008	222		

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

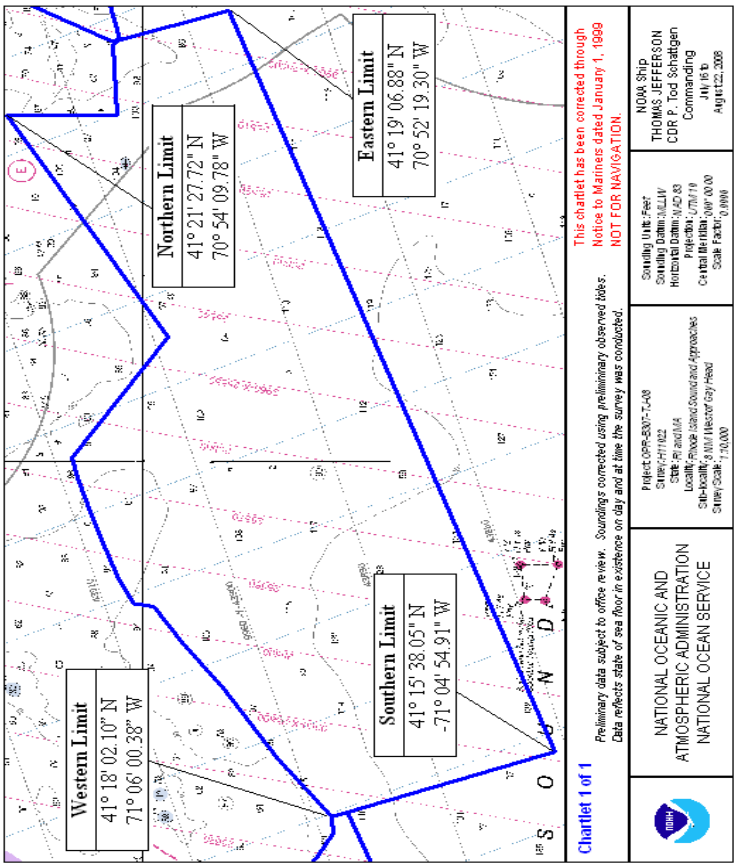


Fig. A-1: H11922 Survey Area

B. DATA ACQUISTION AND PROCESSING

Refer to ***Fall 2008 Thomas Jefferson Data Acquisition and Processing Report*** (DAPR) 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.

B 1. EQUIPMENT AND VESSELS

Data were acquired by NOAA Ship *Thomas Jefferson* (S222) and Hydrographic Survey Launches 3101 and 3102. S222 acquired RESON 7125 multibeam echosounder soundings, sound velocity profiles, and bottom samples. S222 acquired data using both its port and starboard heads separately. Launch 3101 acquired RESON 8125 multibeam echosounder soundings, and sound velocity profiles. Launch 3102 acquired RESON 8101 multibeam echosounder soundings, and sound velocity profiles. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the DAPR.

B 2. QUALITY CONTROL

B 2.1 System Certification and Calibration

Refer to the included 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 multibeam coverage, which was monitored by the creation of a 2 meter BASE surface. A list of all navigationally significant features is contained in Appendix II. A coverage gap is located at 41°20’29.11”N, 070°59’54.94”W which is 112 meters in length, does not appear to contain any potentially significant features, and lies in a flat-bottomed area.

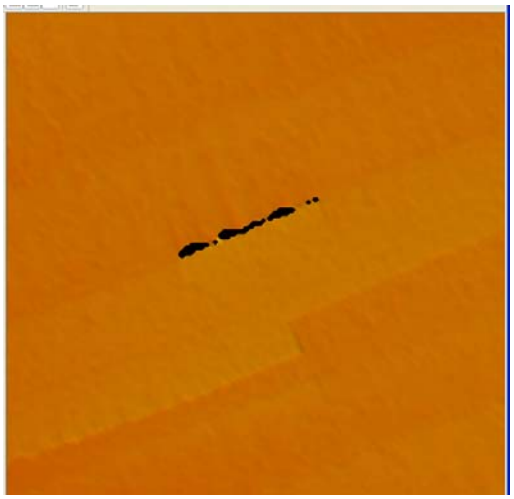


Fig. B-1. Holiday at 41°20’29.11”N, 070°59’54.94”W

B.2.3 Crosslines

Multibeam echosounder cross-lines totaling 40.9 linear nautical miles, comprising 5 percent of multibeam hydrography, were acquired during the course of the survey. Crosslines were acquired with all three vessels, so that a good comparison of same-vessel soundings for each of the three vessels could be achieved. Visual comparison was conducted to assess any differences between crosslines and mainscheme data. Standard deviation for crosslines and artifacts was within the IHO Order 1 Error Budget of 0.5m, and was generally within 0.20 m. Please see the document entitled “H11922 Standard Deviation Report”, located under the Crossline Comparisons folder, for a detailed description of the results.

B 2.4 Junctions and Prior Surveys

The following contemporary surveys junction with H11922:

Registry #	Scale	Date	Field Party	Junction side
H10458	1:20,000	1993	*Rude*	NW
H10548	1:10,000	1994	*Rude*	N
H10649	1:10,000	2004	Contractor	NE
H11920	1:10,000	2008	*Thomas Jefferson*	E
H11995	1:10,000	2008	*Thomas Jefferson*	W

Table B-1. Junction and Prior Surveys

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.

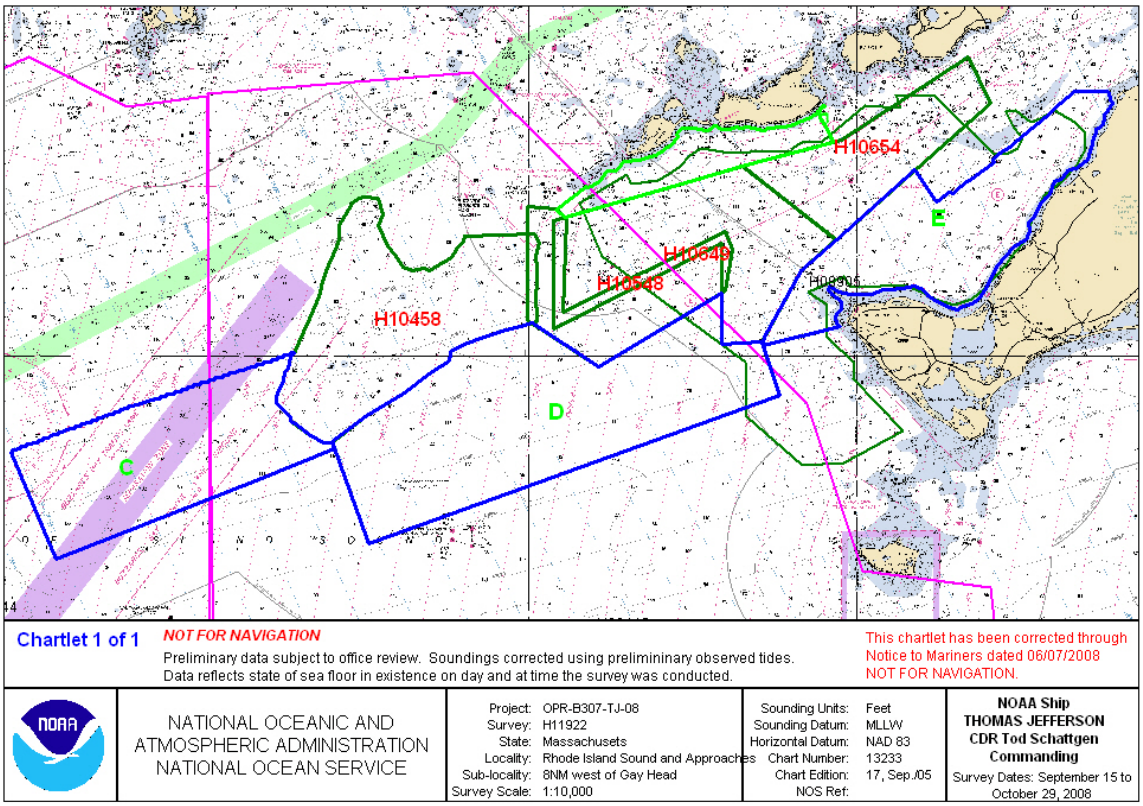


Figure B-2. H11922 Junction Surveys.

B 2.5 Systematic Errors

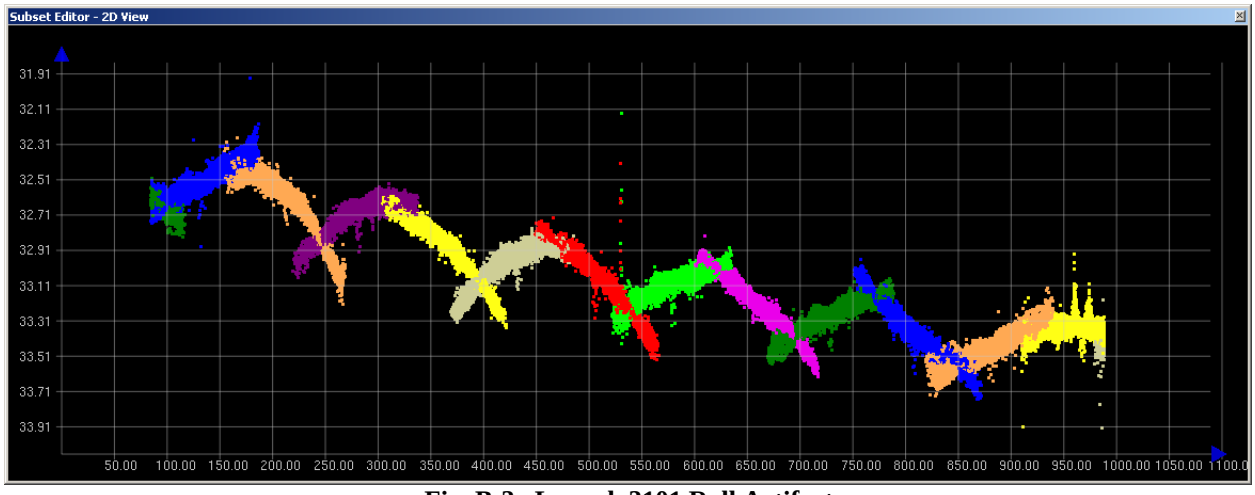


Fig. B-3. Launch 3101 Roll Artifact

A roll artifact was found in the RESON 8125 on Launch 3101. This was corrected by adding a 0.10 value for time series

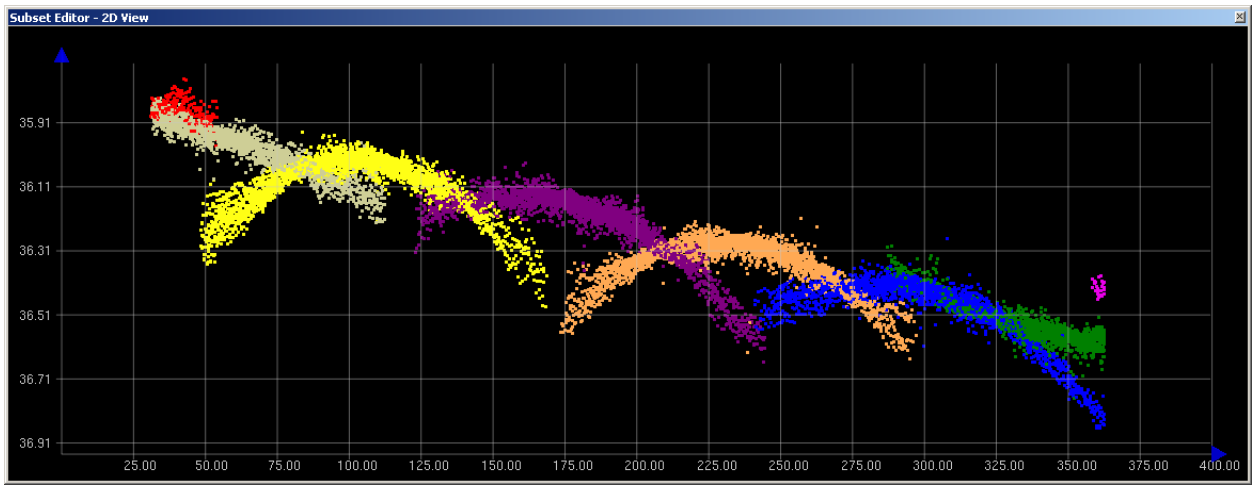


Fig. B-4. Launch 3101 sound speed error.

A sound speed error was encountered on day numbers 205 and 207 with data acquired by HSL 3101. An attempt was made to correct by substituting SVP information collected by *Thomas Jefferson* which was operating nearby, with no success. An approximately 20 centimeter difference between nadir and outer beams was observed, as demonstrated by the above image. This falls well within IHO Order 1 specifications for vertical error.

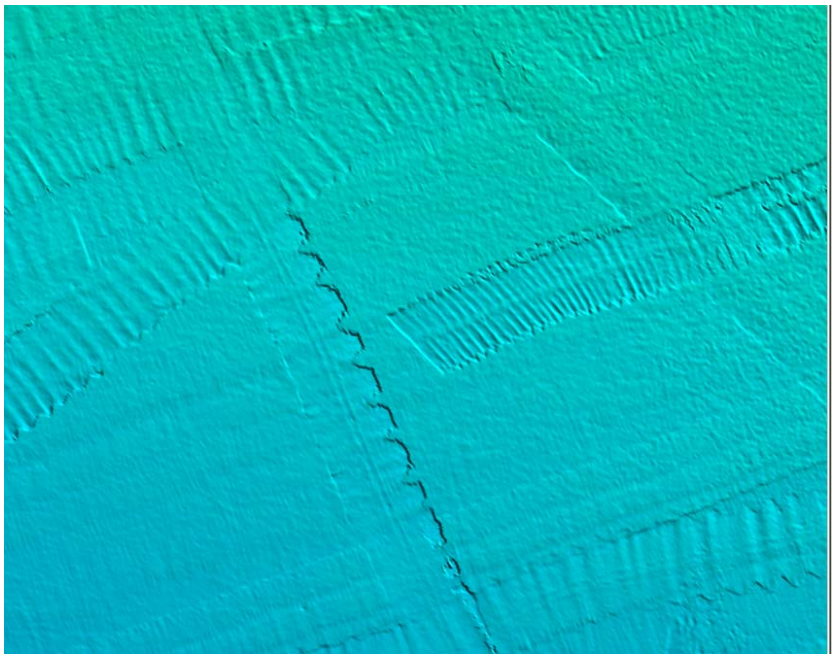


Fig. B-5. Crossline error.

Junction between Reson 8125 mainscheme and Reson 7125 Crosslines. The 7125 crossline data was found to have significant sound speed error in the outer beams. This was determined by examining the area in subset editor, the surrounding mainscheme data is flat while the crossline data displayed significant “frowning”. As this data was not needed for coverage, the outer beams were filtered out (from 30 degrees on either side of nadir).

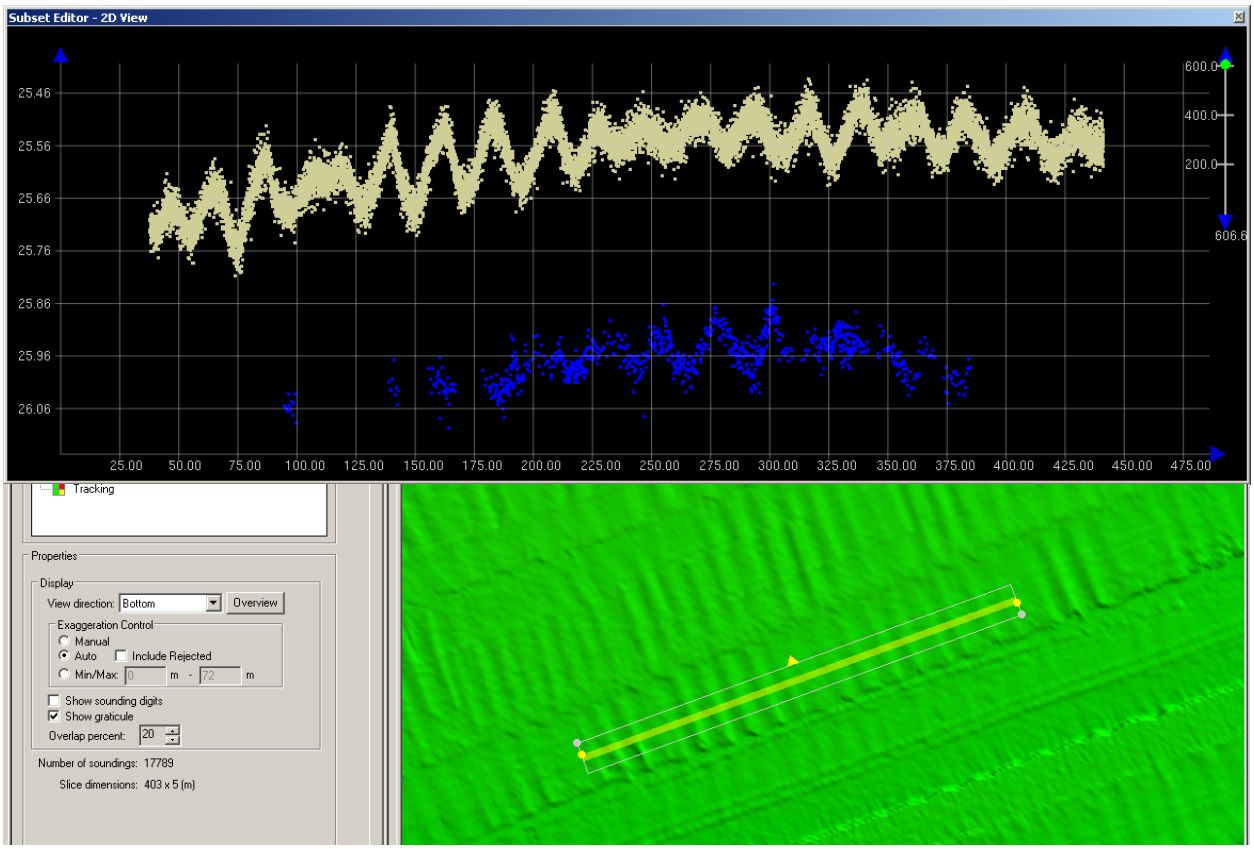


Figure B-6. Heave artifact.

A heave artifact was noted throughout the data in various places. The cause of this error is unknown; however, the 0.2 meter error it creates is well within the IHO Order 1 error budget for this survey.

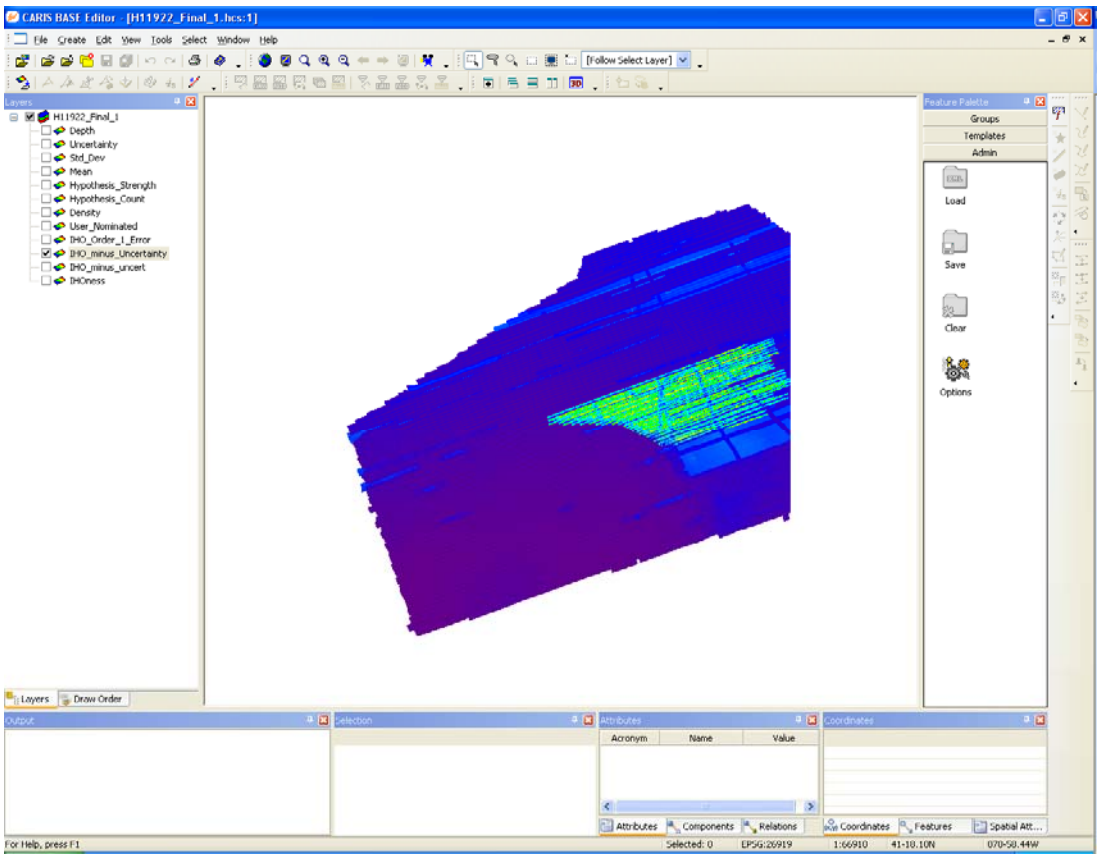


Figure B-7. IHO order issues.

The Reson 8125 data from DN 234 (green lines in the figure above) did not initially meet IHO Order 1 Specifications. The problem was traced to an abnormally high value in the MRU Align StdDev Roll/Pitch entry in the TPE section of the HVF. The patch test was re-examined and a new value was derived, which brought the data into IHO Order 1 specifications.

B 3. CORRECTIONS TO ECHO SOUNDING

Sounding data were reduced to mean lower-low water (MLLW) using approved tides from the primary station at Newport, RI (845-2660) and secondary station at Menemsha Harbor (844-8725), adjusted for tidal constituents and residuals provided by CO-OPS as specified in the Letter Instructions and illustrated in Figure 4.

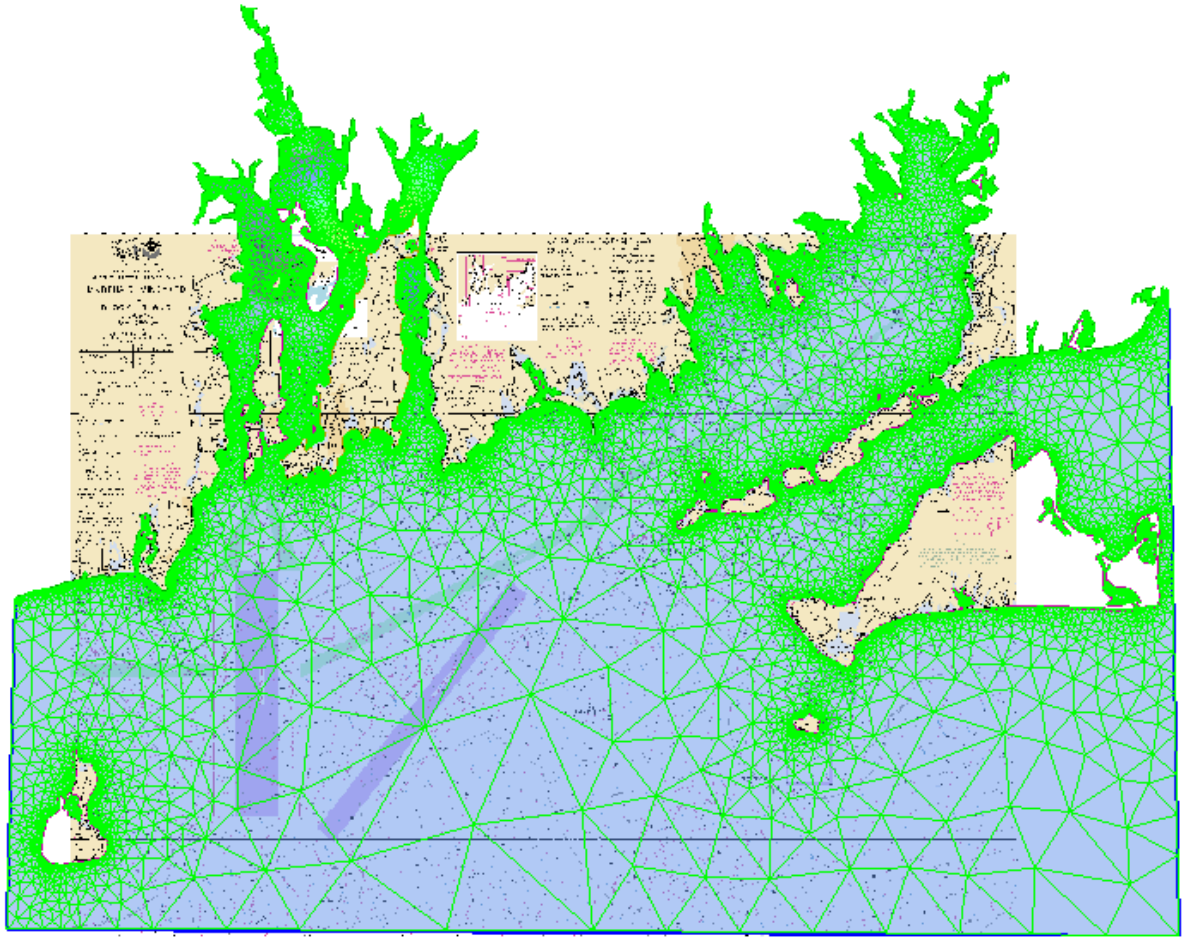


Figure B-8: Final Tide Zoning

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.

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 H11922 are as follows:

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

Table B-2. TPE parameters

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 the Acquisition_&_Processing_Logs folder in the Separates folder. The TPE values were calculated for all MBES data 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 H11922:

Name of Fieldsheet	***Resolution***	***Type***	***Purpose***
H11922_1	2 m	CUBE	Coverage and Bathymetry Monitoring
H11922_2	2 m	CUBE	Coverage and Bathymetry Monitoring

Table B-3. Compiled field sheets

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”. Refer to the ***Fall 2008 Thomas Jefferson Data Acquisition and Processing Report***, 2008 Field Procedures Manual (FPM), and CARIS HIPS/SIPS 6.1 manual for further discussion.

C. VERTICAL AND HORIZONTAL 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), UTM zone 19. 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 Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at Newport, RI (845-2660) and secondary station at Menemsha Harbor (844-8725), served as datum control for H11922. Verified water level data with approved TCARI constituents and residuals were applied to all sounding data after completion of operations.

A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 on August 25, 2008, in accordance with the FPM and project letter instructions. Approved (verified) water levels were downloaded from CO-OPS on October 15th, 2008, and applied with preliminary TCARI zoning which was accepted as final TCARI zoning.

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

Survey H11922 was compared with chart 13218 (40th Ed.; February 2008, 1:80,000), 13200 (35th Ed; May 2007, 1:400,000), 12300(47th Ed; May 2008, 1:400,000), 13009 (33rd Ed.; May 2007, 1:675,000), 5161 (13th Ed.; October 2003, 1:1,058,400) 13003 (49th Ed.; April 2007, 1: 1,200,000) ENC US4MA23M. Chart comparisons were performed in CARIS.

D.1.1 Chart 13218 Comparison

Depths from charts 13218 generally agree with the current survey, with differences generally 2 feet or less. Forty soundings were compared from the chart to the survey, resulting in an average difference of 2.3 feet. The chart was generally shoaler than the acquired depths.

A charted 90 foot mound in location 41˚ 18’ 09.77” N, 071˚ 00’ 10.60” W was surveyed by all three platforms and found to have a least depth of 101 feet at MLLW, corrected with approved tides and final tide zoning. The Hydrographer recommends charting present survey soundings in this location.

A charted 96 foot sounding in location 41˚ 17’ 16.47” N, 071˚ 00’ 12.75” W was found to have a least depth of 103 feet at MLLW, corrected with approved tides and final tide zoning. The Hydrographer recommends charting present survey soundings in this location.

D.1.2 Chart 12300 Comparison

Depths from Chart 12300 generally agree with the current survey, with the average difference of 3-4 feet. The only noteworthy exceptions are the aforementioned 90 foot (15 fathom) mound that was found to be 101 feet deep and the AWOIS wreck that was not disproved.

D.1.3 Chart 13200 Comparison

Depths from Chart 13200 generally agree with the current survey, with the average difference of 3-4 feet. The only noteworthy exceptions are the aforementioned 90 foot (15 fathom) mound that was disproved and the AWOIS wreck that was not disproved.

D.1.4 Chart 13009 Comparison

Depths from Chart 12300 generally agree with the current survey, with the average difference of 3-4 feet. The only noteworthy exceptions are the aforementioned 90 foot (15 fathom) mound that was found to be 101 feet and the AWOIS wreck that was not disproved.

D.1.5 Chart 5161 Comparison

This chart contains no soundings for the surveyed area.

D.1.6 Chart 13003 Comparison

This chart contains no soundings for the surveyed area. It does however display the disproved AWOIS item.

D.1.7 ENC US4MA23M

Depths from Electronic Navigation Chart US4MA23M generally agree with the current survey, with differences in most cases 1 feet or less. Twenty soundings were compared from the chart to the survey, with an average difference of 2.5 feet. The chart was generally shoaler than the survey data.

D.2 Additional Results

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

AWOIS item #7226, assigned, was not disproved, see Appendix 2.

D.2.4 Shoreline

There is no shoreline within the sheet limits of survey H11922.

D.2.5 Charted Features

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

D.2.6 Charted Pipelines and Cables

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

D.2.7 Bridges, Ferry Routes, and Overhead Cables

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

D.3 Dangers to Navigation and Shoals

D 3.1 Dangers to Navigation

No dangers to navigation were found in this survey.

D 3.2 Shoals

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

D.4 Aids to Navigation

No charted Aids to Navigation (ATON) within the revised limits of H11922.

D.5 Coast Pilot Information

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

D.6 Miscellaneous

Bottom Samples

Bottom samples were collected in accordance with NOAA Hydrographic Survey Specifications and Deliverables. A list of all bottom samples acquired during Survey H11922 is contained in Appendix V. A complete description of all bottom samples acquired during Survey H11922 is contained in the Pydro PSS.

Environmental Conditions and Notes

A high density of lobster traps existed within the sheet limits of H11922 during the time of acquisition. This necessitated the use of all three platforms during the survey. The launches were able to enter areas where the lobster pot density was deemed to be too high to operate the ship safely without undue risk to private property.

D.8 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.

Summary and Recommendations for Additional Work

The area of the survey was exceptionally rocky, and bathymetric grids indicated a large number of objects. Over 450 significant features (as defined by HSSDM) were selected, noted, and imported into Pydro. The majority of the features located were boulders; and given that the grid honors these features, the decision was made to not label any of them with a “significant” or “report” flag in Pydro. This decision has been supported by personnel from the Atlantic Hydrographic Branch. The Hydrographer recommends referencing the Base CUBE-processed surface and soundings over features for bathymetry.

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 H11922 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:

Title	**Date Sent**	**Office**
Data Acquisition and Processing Report for OPR-B307-TJ-08 (fall)	pending	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:

_____ _____

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:

_____ _____

ENS Michael O'Neal, NOAA

AST Matthew Forrest

Appendix I

Dangers to Navigation

There were no dangers to navigation encountered over the course of this survey.

Appendix II
Survey Features Report

1. AWOIS Items
One listed AWOIS item in the survey area
2. Charted Features
One charted feature in the survey was addressed.
3. Uncharted Features
No uncharted features of navigational significance were observed.

H11922 Charted Feature Report

Registry Number: H11922

State: Massachusetts

Locality: Rhode Island Sound and Approaches

Sub-locality: 8 NM W of Gay Head

Project Number: OPR-B307-TJ-08

Survey Date: 11/15/2008

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)
13200	35th	05/01/2007	1:400,000 (13200_1)	[L]NTM: ?
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13009	33rd	05/01/2007	1:500,000 (13009_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
1.1	---	GP	[None]	41° 16' 60.0" N	071° 03' 58.8" W

1 - DR_Chart

1.1) GP No. - 1 from ChartGPs - Digitized

Survey Summary

Survey Position: 41° 16' 60.0" N, 071° 03' 58.8" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-320.18:59:50 (11/15/2008)

GP Dataset: ChartGPs - Digitized

GP No.: 1

Charts Affected: 13218_1, 12300_1, 13200_1, 13009_1, 13006_1, 5161_1, 13003_1

Remarks:

Item was covered with coverege bathymetry and no item was found.

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: CATOBS - 1:snag / stump

INFORM - Charted unexploded depth charge, rep. 9/14/1957.

OBJNAM - Unexploded depth charge

SORDAT - 20081115

SORIND - US, US, Graph, 13218

WATLEV - 3:always under water/submerged

H11922 Feature Report

Registry Number: H11922

State: Massachusetts

Locality: Rhode Island Sound and Approaches

Sub-locality: 8 NM W of Gay Head

Project Number: OPR-B307-TJ-08

Survey Date:

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)
13200	35th	05/01/2007	1:400,000 (13200_1)	[L]NTM: ?
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13009	33rd	05/01/2007	1:500,000 (13009_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	UNKNOWN	AWOIS	[no data]	[no data]	[no data]	---

1 - AWOIS Features

1.1) AWOIS #7226 - UNKNOWN

No Primary Survey Feature for this AWOIS Item

Search Position: 41° 20' 12.4" N, 070° 54' 58.1" W

Historical Depth: [None]

Search Radius: 1500

Search Technique: S2

Technique Notes: [None]

History Notes:

NM41/48--A FISHING VESSEL HAS BEEN REPORTED SUNK IN 104 FT. OF ì■WATER IN PA LAT 41-20-12N, LONG 70-55-00W. (ENTERED MSM 3/89)■ REFERENCE--SEE AWOIS ITEM 1876■ H6445/39--104FT DEPTHS EXIST IN VICINITY. (UPDATED 11/91 RWD)

Survey Summary

Charts Affected: 13218_1, 12300_1, 13200_1, 13009_1, 13006_1, 5161_1, 13003_1

Remarks:

Unknown charted wreck, AWOIS item 7226, does not appear in bathymetric data. The criteria, 200% SSS and 1500 meter radius, was too large for the scope of the work assigned. However, current acquired coverage bathymetry within this 1500 radius reveals no wreck.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS_B307-TJ-08	AWOIS # 7226	0.00	000.0	Primary
h11922/tj_s222_reson7125_port/2008-233/h11922_s222_233_dp	13/1	1139.67	322.4	Secondary

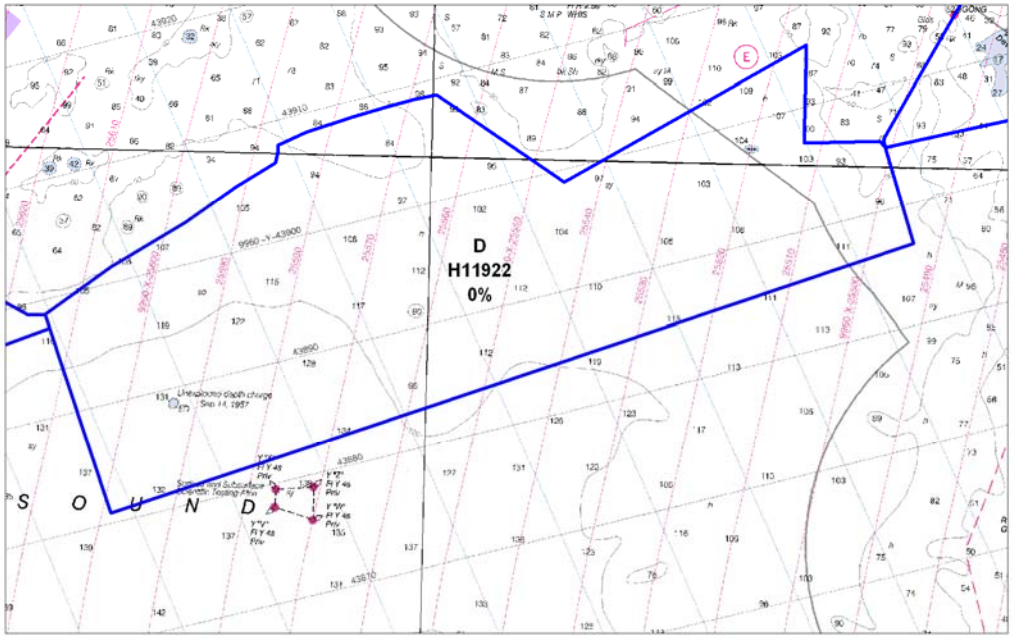
Hydrographer Recommendations

S-57 Data

[None]

Appendix III

Progress Sketch



Project	Sheet_Letter	H_num	HQ_Est_SNM	CumlPercCompPrev	CumlPercCompCur	SNM_CompCurIV	CumSNMcomp
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

August 25, 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. Final zoning in MapInfo and .MIX format
4. 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.:	H11922
State:	Massachusetts
Locality:	Rhode Island Sound and Approaches
Sublocality:	8 NM W of Gay Head

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_198	11:26:13	23:00:24
2008_199	15:40:48	23:59:57
2008_200	00:00:01	08:24:24
2008_204	14:18:09	20:14:57
2008_205	13:12:04	21:25:07
2008_206	13:09:02	14:18:39
2008_207	13:27:10	20:58:42
2008_208	13:17:55	20:39:13
2008_209	14:55:14	17:56:21
2008_210	13:35:27	20:16:57
2008_213	13:40:58	19:57:13
2008_218	13:47:10	19:10:32
2008_219	13:17:56	21:36:17
2008_220	12:59:11	20:52:46
2008_222	13:25:55	20:28:41
2008_223	13:55:33	20:21:12
2008_224	12:44:23	20:16:33
2008_225	13:35:25	21:04:16
2008_226	12:54:42	20:44:32
2008_227	13:52:21	20:59:16
2008_232	17:16:21	20:21:21
2008_234	12:22:27	21:00:58
2008_235	13:32:06	19:25:33

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : September 5, 2008

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-B307-TJ-2008
HYDROGRAPHIC SHEET: H11922

LOCALITY: 8 NM W of Gay Head, Rhode Island and Approaches, RI
TIME PERIOD: July 16 - August 22, 2008

TIDE STATION USED: 845-2660 Newport
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 ZONING

Please use the TCARI grid "Revised-B307TJ2008-TCARI.tc" as the final grid for project OPR-B307-TJ-2008, H11922, during the time period between July 16 and August 22, 2008

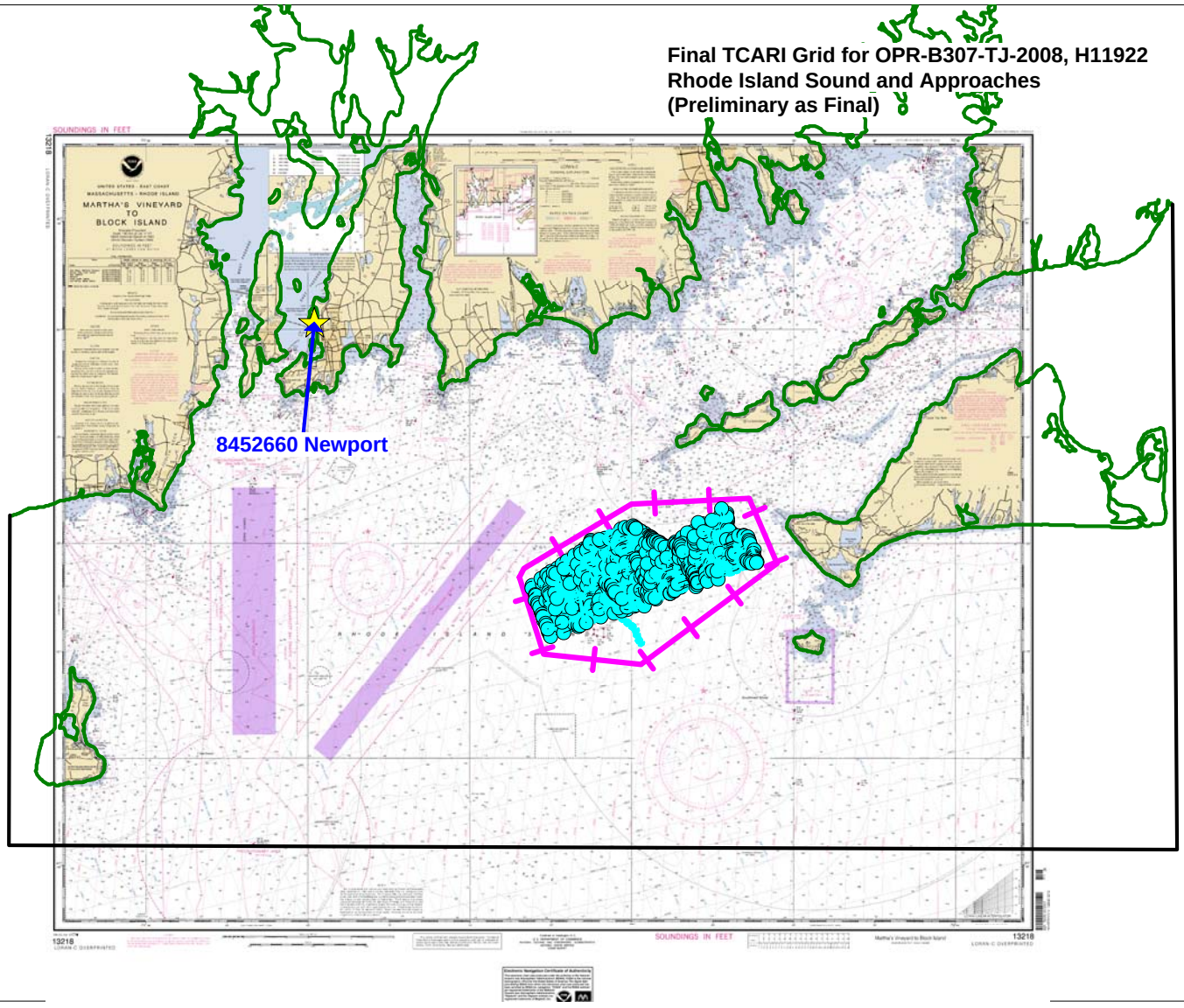
Refer to attachments for zoning information.

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: 2008.09.19 14:29:38 -04'00'

CHIEF, OCEANOGRAPHIC DIVISION


Final TCARI Grid for OPR-B307-TJ-2008, H11922
Rhode Island Sound and Approaches
(Preliminary as Final)
8452660 Newport
MARTHA'S VINEYARD
TO
BLOCK ISLAND
SOUNDINGS IN FEET
13218

Appendix V

Supplemental Survey Records & Correspondence

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 H10458-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-vslightship.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
Massachussetts 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,

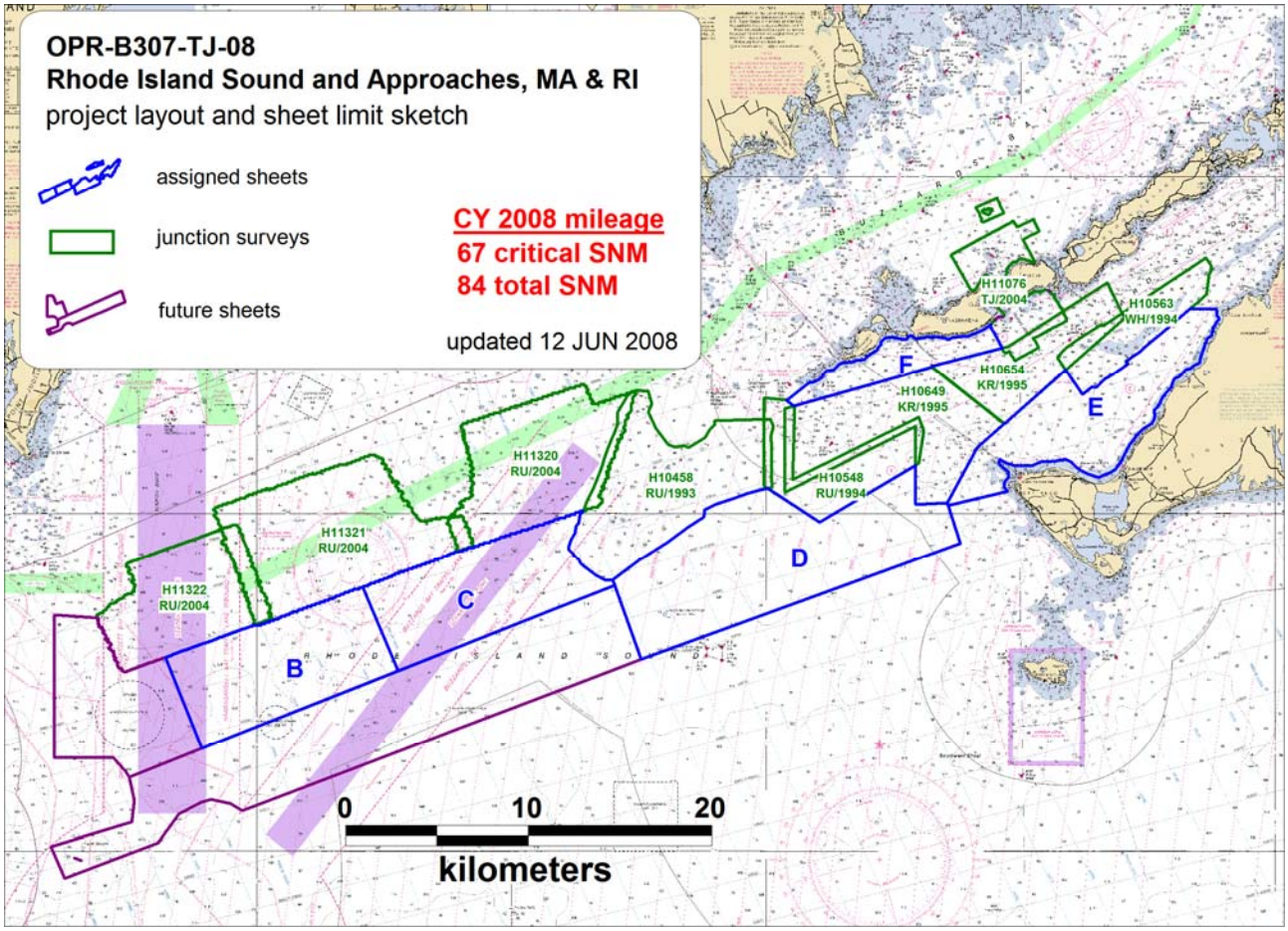
The National Oceanic and Atmospheric Administration's Office of Coast Survey (OCS) is currently conducting hydrographic surveys (multibeam and side scan sonar data acquisition) in the Rhode Island Sound through August, 2008.

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
H11076
TJ/2004
H10563
WH/1994
H10654
KR/1995
H10649
KR/1995
F
E
H11320
RU/2004
H10458
RU/1993
H10548
RU/1994
H11321
RU/2004
H11322
RU/2004
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B
RHODE ISLAND SOUND
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20
kilometers

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,

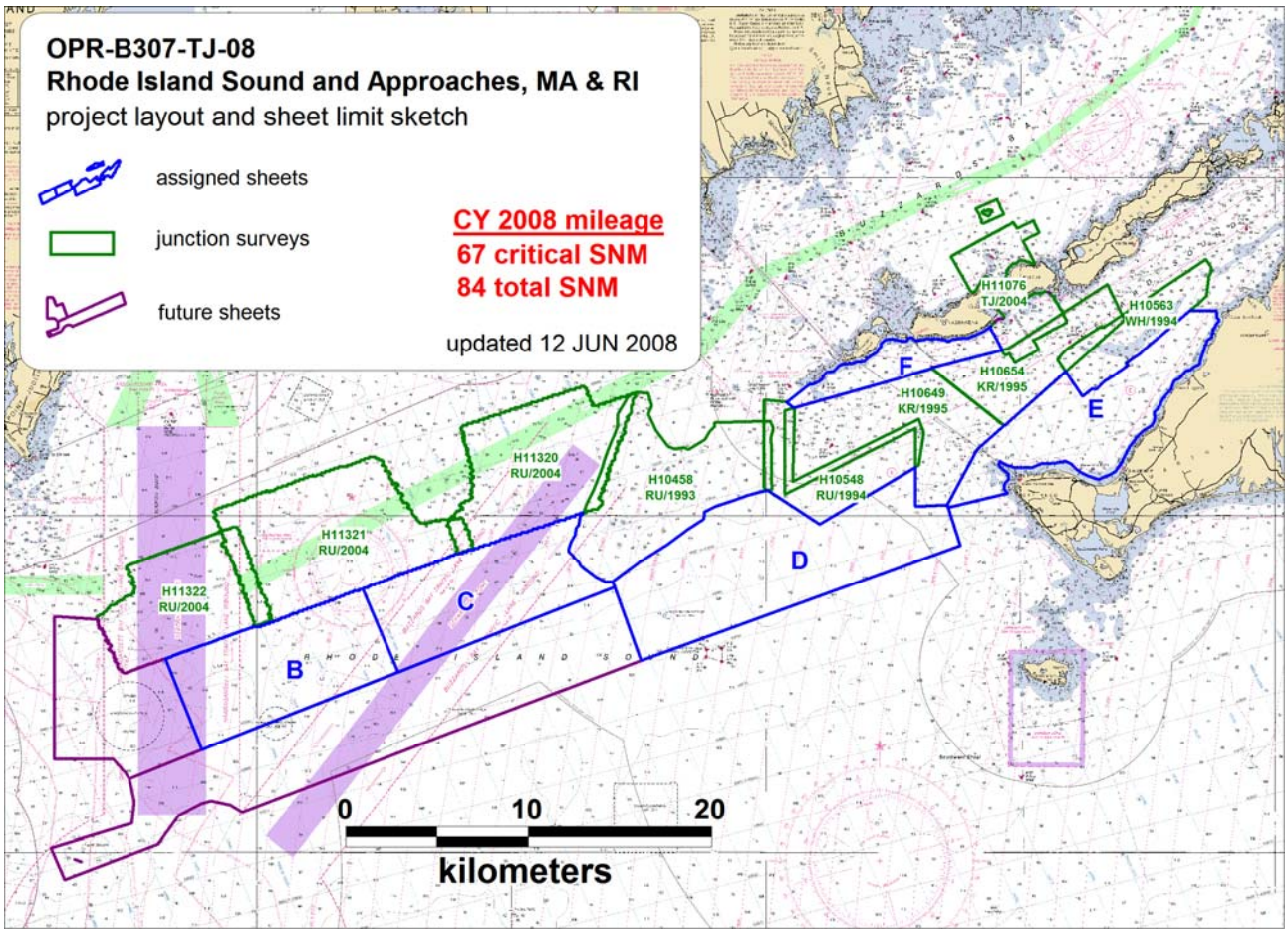
The National Oceanic and Atmospheric Administration's Office of Coast Survey (OCS) is currently conducting hydrographic surveys (multibeam and side scan sonar data acquisition) in the Rhode Island Sound through August, 2008.

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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Rhode Island Sound and Approaches, MA & RI
project layout and sheet limit sketch
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CY 2008 mileage
67 critical SNM
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H10654
KR/1995
H10649
KR/1995
H11320
RU/2004
H10458
RU/1993
H10548
RU/1994
H11321
RU/2004
H11322
RU/2004
B
C
D
E
F
0
10
20
kilometers

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

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

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

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

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