

H12137

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: H12137

**LOCALITY**

State: Rhode Island

General Locality: Block Island Sound

Sub-locality: 6 NM West of Block Island

**2009**

CHIEF OF PARTY  
CDR Shepard M. Smith  
NOAA

LIBRARY & ARCHIVES

DATE

**HYDROGRAPHIC TITLE SHEET**

**H12137**

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: **Block Island Sound, RI**

Sub-Locality: **6 NM West of Block Island**

Scale: **1:20,000** Date of Survey: **08/9/09 to 08/21/09**

Instructions Dated: **26 February 2009** Project Number: **OPR-B363-TJ-09**

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

Chief of Party: **CDR Shepard M. Smith, NOAA**

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

Soundings by: **Reson 7125 multibeam echo sounder.**

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**

*Soundings converted to feet during office processing.*

Remarks:

- 1) All Times are in UTC.***
- 2) This is a Navigable Area Hydrographic Survey.***
- 3) Projection is NAD83, UTM Zone 19.***

***Bold italic red notes in the Descriptive Report were made during office processing.***

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**Descriptive Report to Accompany Hydrographic Survey H12137**

Project OPR-B363-TJ-09  
 Block Island Sound, RI  
 6NM West of Block Island  
 Scale 1:20,000  
 August 9<sup>th</sup> – August 22<sup>nd</sup> 2009  
**NOAA Ship *Thomas Jefferson***

**A. AREA SURVEYED**

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-B363-TJ-09, dated 26 February 2009. .

| North Western Limit              | South Western Limit               | South Eastern Limit               | North Eastern Limit               |
|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 41°11'23.23" N<br>071°51'30.2" W | 41°09'24.34" N<br>071°44'50.55" W | 41°06'58.61" N<br>071°42'08.15" W | 41°11'50.37" N<br>071°38'13.27" W |

Data acquisition was conducted from May 8<sup>th</sup> – May 19<sup>th</sup>, 2009.

The purpose of this project is to update the nautical charts in the area. Most of the bathymetry is from surveys completed before 1940. This project responds, in part, to a request from the president of the Northeast Marine Pilots for new hydrographic survey to support deep draft (60') vessels carrying oil along the route that proceeds northwest from the precautionary area south of the Narragansett Bay and Buzzards Bay traffic lanes. *Concur.*

|   | Linear Nautical Miles |
|---|-----------------------|
| LNM Single beam mainscheme only   | N/A                   |
| LNM Multibeam mainscheme only   | 794.83                |
| LNM Lidar mainscheme only   | N/A                   |
| LNM Side Scan Sonar mainscheme only   | N/A                   |
| Lineal nautical miles of any combination of the above techniques (specify methods)                                | 794.83                |
| LNM Crosslines singlebeam and multibeam combined  | 24.04                 |
| LNM Lidar Crosslines  | N/A                   |
| LNM development lines non mainscheme  | 0                     |
| LNM shoreline/nearshore investigations  | 0                     |
| Number of Bottom Samples  | 6                     |
| Number of items investigated that required additional time/effort in the field beyond the above survey operations | 0                     |
| Total number of square nautical miles   | 31.15                 |

**Table 1: Hydrographic Survey Statistics**

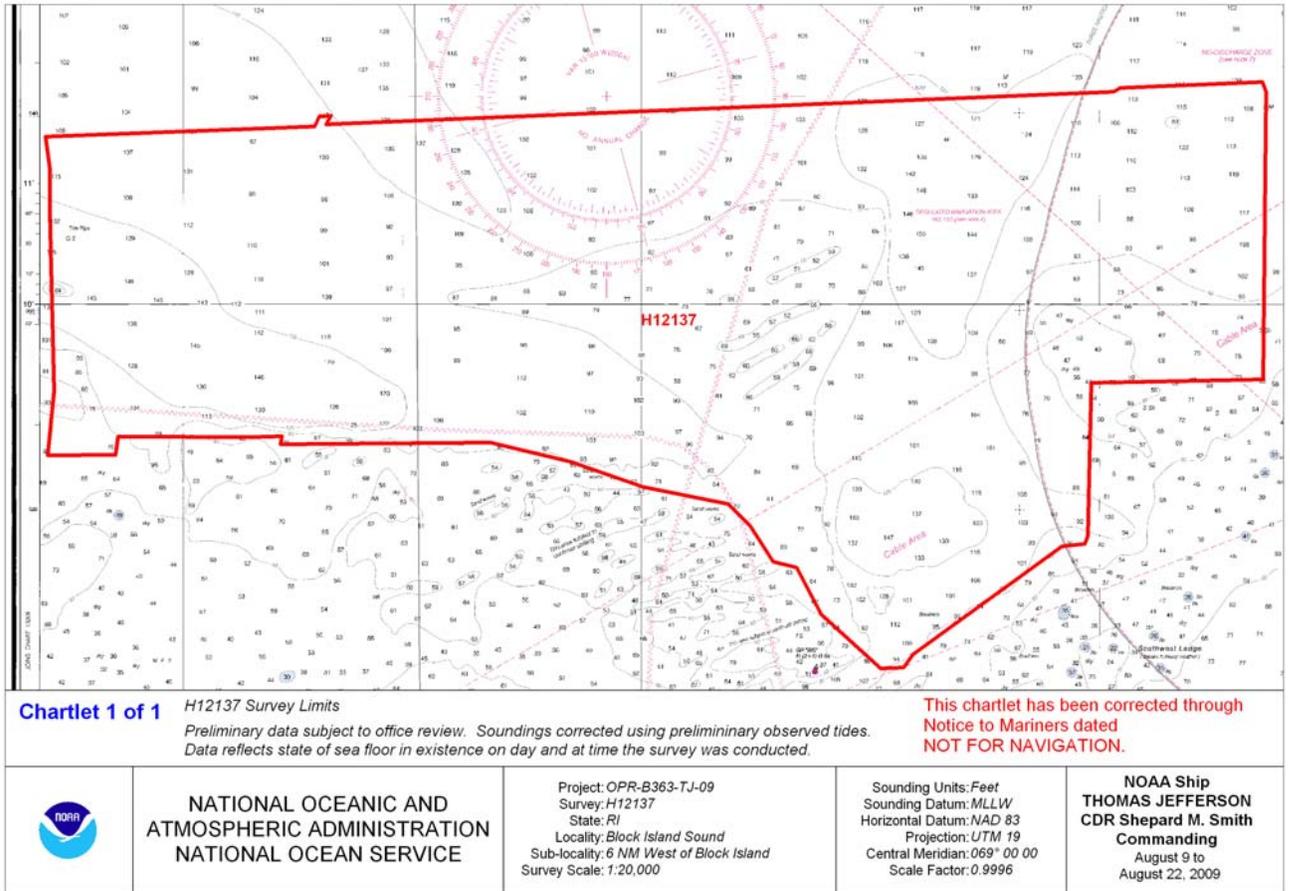


Fig. 1. H12137 Survey Area.

| Calendar Date  | Julian Day |
|----------------|------------|
| 09-August-2009 | 221        |
| 10-August-2009 | 222        |
| 11-August-2009 | 223        |
| 12-August-2009 | 224        |
| 13-August-2009 | 225        |
| 18-August-2009 | 230        |
| 19-August-2009 | 231        |
| 20-August-2009 | 232        |
| 21-August-2009 | 233        |
| 22-August-2009 | 234        |

Table 2: MB Acquisition Dates

## **B. DATA ACQUISITION AND PROCESSING**

Refer to *OPR-B363-TJ-09 Data Acquisition and Processing Report (DAPR)* \*for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR\* are included in this descriptive report. *\*Filled with original field records.*

### **B 1. EQUIPMENT AND VESSELS**

Data were acquired by NOAA Ship *Thomas Jefferson*. NOAA Ship *Thomas Jefferson* acquired Reson 7125 multibeam echo sounder soundings, sound velocity profiles, and bottom samples. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the DAPR\*. *\*Filled with original field records.*

### **B 2. QUALITY CONTROL**

#### **B 2.1 System Certification and Calibration**

Refer to NOAA Ship *Thomas Jefferson's* DAPR\* and Hydrographic Systems Readiness Report (HSRR)\*\* for a complete description of system integration and initial calibration results for equipment and sensors used for this survey. *\*. \*Filled with original field records. \*\*HSRR documentation only consists of HSRR memo.*

#### **B.2.2 Sounding Coverage**

As per the Letter Instructions, this survey was conducted using complete coverage multibeam. Bathymetry coverage was monitored by creating a BASE surface with two meter resolution, as per HTD 2009-2 for Complete Multibeam Coverage in depth ranges 20-40 meters. Coverage over areas less than twenty meters and over significant features was monitored by creating BASE surfaces with a 50cm resolution. Data density in the 50 cm grids met the 5 soundings per node criteria except in areas where multibeam data were shadowed by features of significant height from surrounding bathymetry. A multibeam data gap, approximately 20m x80m, exists in the vicinity of 41-08-30.75N, 071-40-34.45W. This data was rejected due to an intermittent problem with heave inputs. The northern edge of the survey limits has overlapping coverage from Survey H12139, acquired subsequent to H12137. *Concur.*

#### **B 2.3 Crosslines**

Multibeam echosounder cross-lines totaling 24.04 lineal nautical miles, comprising 3.02% of multibeam hydrography, were acquired during the course of the survey. Crosslines were acquired at the beginning of the survey, so that a good comparison of same-vessel soundings throughout the survey period could be achieved. As per email dated 9/10/2009 from AHB, the quality control check was done using the standard deviation layer of the survey's CUBE surface. Areas of unusually high standard deviation were investigated and resolved in processing, except where caused by areas of high bathymetric relief or features or as described in Section B2.5 Systematic Errors. *Concur.*

**B 2.4 Junctions and Prior Surveys**

The following contemporary surveys junction with H12137:

| <b>Registry #</b> | <b>Scale</b> | <b>Date</b> | <b>Field Party</b> | <b>Junction side</b> |
|-------------------|--------------|-------------|--------------------|----------------------|
| H10984            | 1:10,000     | 2000        | Rude               | south west           |
| H10914            | 1:10,000     | 1999        | Rude               | south                |
| H10795            | 1:10,000     | 2004        | Rude               | south                |
| H12033            | 1:7,500      | 2009        | Thomas Jefferson   | east                 |
| H12139            | 1:20,000     | 2009        | Thomas Jefferson   | north                |

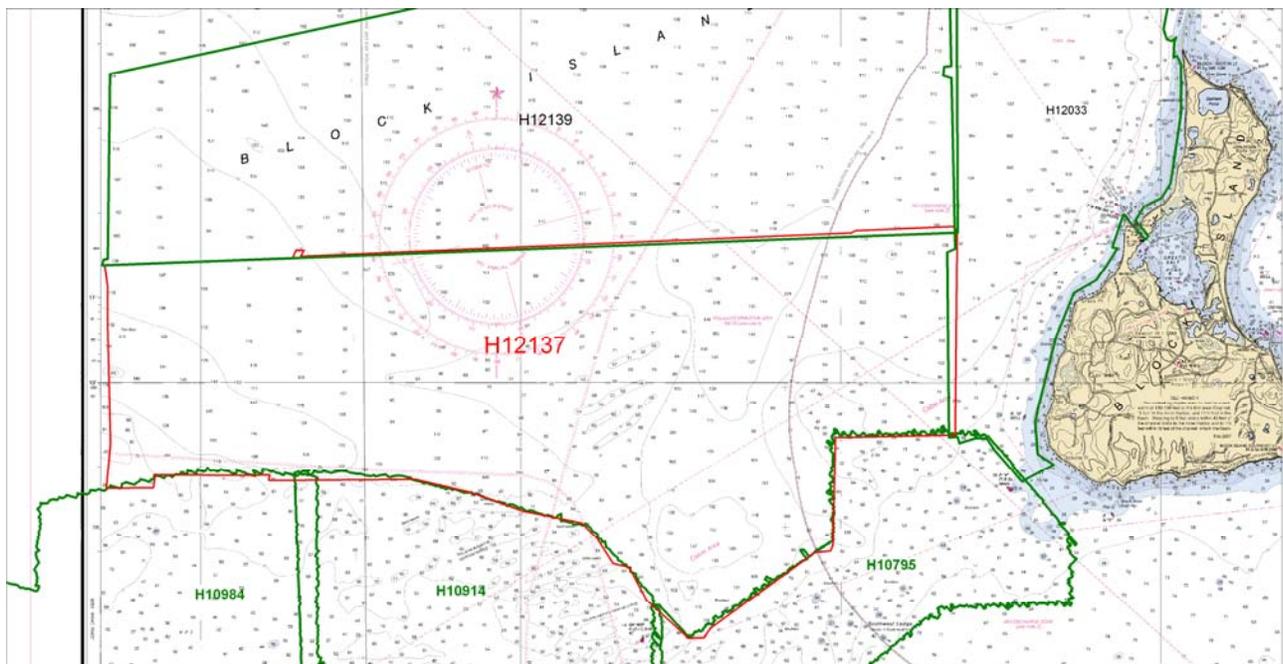
Survey H12137 junctions with survey H1984 to the south west. No data was available for junction comparison.

Survey H12137 junctions with survey H10914 to the south. Depth data was provided in a format not compatible useable by current software.

Survey H12137 junctions with survey H10795 to the south. Depth data was provided in a format not compatible with current software.

Survey H12137 junctions with survey H12033 to the east. Soundings between H12137 and H12033 agree within 2 feet. *Concur.*

Survey H12137 junctions with survey H12139 to the north. Soundings between H12137 and H12139 agree within 2 feet. *Concur.*



**Fig 2. H12137 Junction Surveys.**

## B 2.5 Systematic Errors

Some areas of the survey show high standard deviations (0.4m) where sound velocity profiles were sampled at lower intervals. The width of the survey area was over 10 NM, which required sampling at ½ hour intervals to capture the observed changes. During the first day of mainscheme acquisition, SVP's were taken at 1 hour intervals, which did not provide adequate resolution for SVP corrections. Most of the affected lines were filtered to 50m off nadir, which eliminated the most acute errors. Figure 3 shows an example of the residual error values. *Concur.*

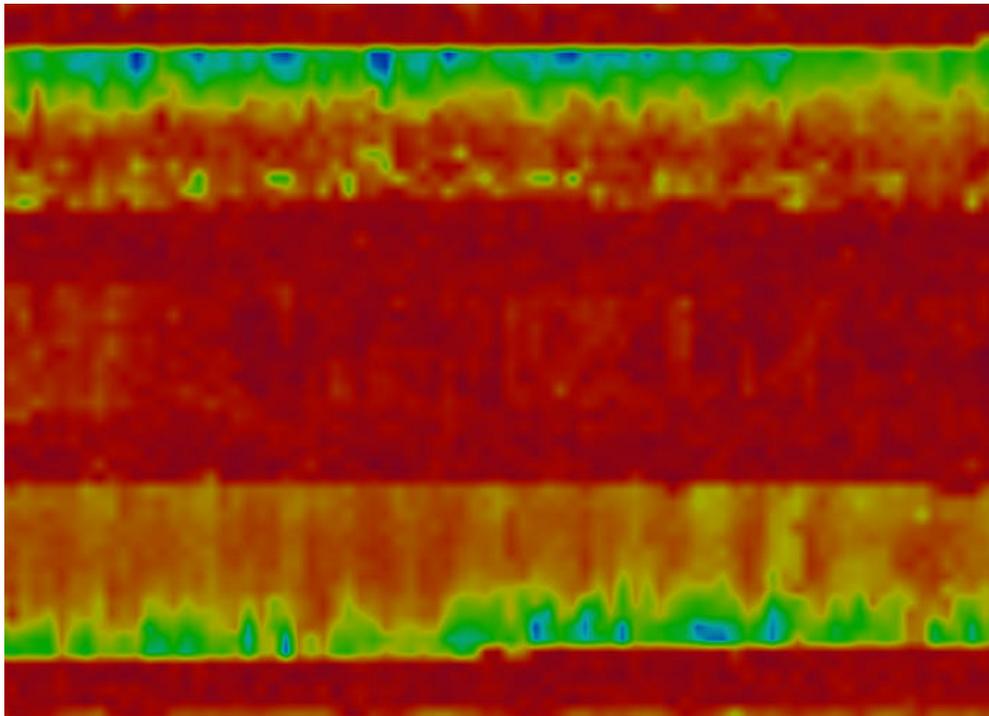
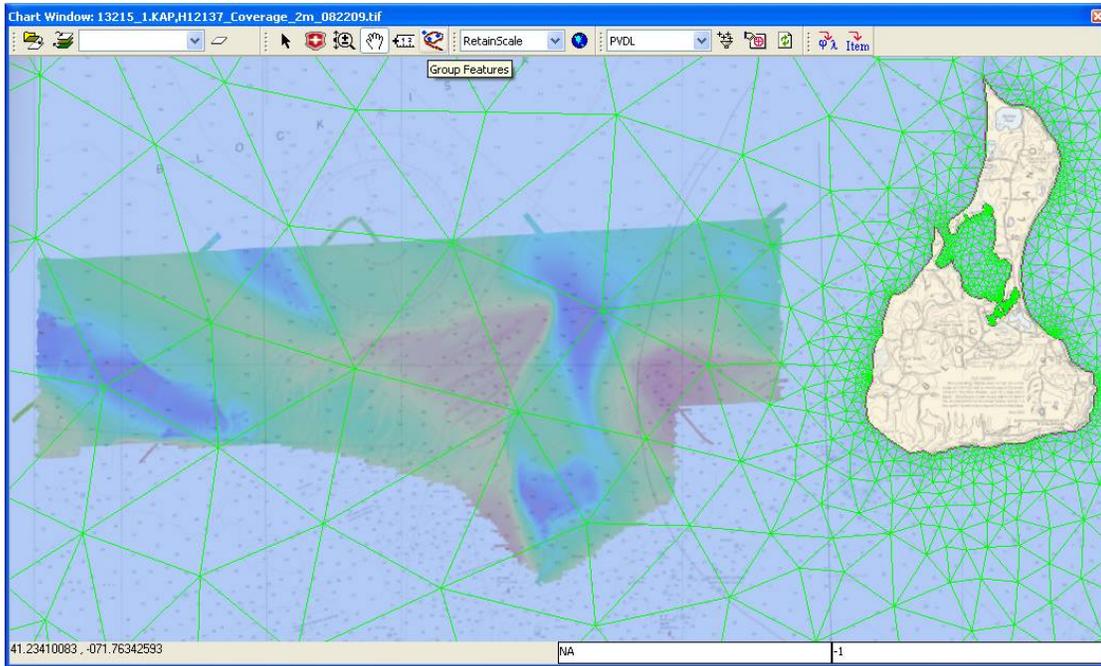


Fig 3. SVP Error, color map std deviation: red 0 and blue 0.4.

## B 3. CORRECTIONS TO ECHO SOUNDING

HDSC sounding data were reduced to mean lower-low water (MLLW) using verified water levels from New London, CT (8461490), Newport, RI (8452660), and Montauk, NY (8510560) adjusted for tidal constituents and residuals provided by CO-OPS and illustrated in Fig. 11.



**Fig 4. Final Tide Zoning**

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

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

Sound velocity corrections for this survey were applied using only data from the ships Moving Vessel Profiler (MVP). Application in CARIS HIPS was nearest in time within 1 hour for all data except DN 221, Line 379-383, which used nearest in distance due to fewer available SVPs. *\*Do not concur. CARIS log file states that the profile selection method used was Nearest in distance within time. \*\*Filled with original field records.*

**B 4. DATA PROCESSING**

**B 4.1 Total Propagated Error**

For the 2009 field season, Total Propagated Error (TPE) parameters for sound speed and tides are calculated separately for each project. The project-specific parameters for OPR-B363-TJ-09, Survey H12137 are as follows:

| Project | Vessel | Tide Values |        | Sound Speed Values |     |         |
|---------|--------|-------------|--------|--------------------|-----|---------|
|         |        | Measured    | Zoning | CTD                | MVP | Surface |
| H12139  | S222   | TCARI       | TCARI  | 4                  | 1   | 0.2     |

**Table 3: TPE Parameters**

These 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 submitted as part of Survey H12137:

| <i>Name of Surface</i>           | <i>Resolution</i> | <i>Type</i> | <i>Purpose</i>    |
|----------------------------------|-------------------|-------------|-------------------|
| H12137_East_1_CUBE_NOAA_2M_Final | 2.0 meter         | CUBE        | Sounding Coverage |
| H12137_East_2_CUBE_NOAA_2M_Final | 2.0 meter         | CUBE        | Sounding Coverage |
| H12137_West_CUBE_NOAA_2M_Final   | 2.0 meter         | CUBE        | Sounding Coverage |
| H12137_South_CUBE_NOAA_2M_Final  | 2.0 meter         | CUBE        | Sounding Coverage |
| H12137_A_Cube_NOAA_50cm_Final    | 0.5 meter         | CUBE        | Sounding Coverage |
| H12137_Wreck1_Cube_NOAA_1m_Final | 1.0 meter         | CUBE        | Feature Coverage  |
| H12137_Wreck2_Cube_NOAA_1m_Final | 1.0 meter         | CUBE        | Feature Coverage  |
| H12137_Wreck3_Cube_NOAA_1m_Final | 1.0 meter         | CUBE        | Feature Coverage  |
| H12137_Wreck4_Cube_NOAA_1m_Final | 1.0 meter         | CUBE        | Feature Coverage  |

**Table 4: BASE Surfaces**

Areas with sandwaves which were only slightly shoaler than 20m were not gridded to 50cm, as the 2 meter grid adequately captures the least depth. The rocky area in the southeast portion was fully gridded to the 50 cm requirement. *Concur.*

This survey was processed using the Combined Uncertainty and Bathymetry Estimator (CUBE) algorithm. The CUBE configuration was set to NOAA\_2m for the two meter coverage surface and NOAA\_50cm for the 50cm meter coverage and feature surfaces. Refer to the 2009 Data Acquisition and Processing Report, 2009 Field Procedures Manual, and CARIS HIPS and SIPS User Guide for further discussion. *Concur.*

## B 4.3 Data cleaning

The survey data was cleaned using the swath and subset editor tools in CARIS. All areas of the BASE surface that indicated a high standard deviation were examined and cleaned as required such that no residual errors exist in the surface that exceed the IHO order 1 depth accuracy requirements.

## C. VERTICAL AND HORIZONTAL CONTROL

As per FPM section 5.2.3.2.3 a HVCR report was not filed as no horizontal and vertical 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), 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 (kHz 306), 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 New London, CT (8461490), Newport, RI (8452660), and Montauk, NY (8510560) will serve as datum control for H12137. A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 on 25 August 2009 in accordance with the FPM and project letter instructions. Verified tides with final TCARI constituents and residuals were applied to all sounding data on September 26, 2009. *Concur.*

## D. RESULTS AND RECOMMENDATIONS

### D.1 Chart Comparison

| Chart/ENC | Edition/Date                 | Corr. For NM | Corr. For LNM | Scale    |
|-----------|------------------------------|--------------|---------------|----------|
| 13214     | 28 <sup>th</sup> Ed., Apr/06 | 7/25/09      | 7/15/09       | 1:20,000 |
| 13215     | 18 <sup>th</sup> Ed., Aug/04 | 7/25/09      | 7/15/09       | 1:40,000 |
| 13217     | 15 <sup>th</sup> Ed., Nov/06 | 7/25/09      | 7/15/09       | 1:15,000 |
| 13218     | 40 <sup>th</sup> Ed., Feb/08 | 7/25/09      | 7/15/09       | 1:80,000 |
| 13219     | 12 <sup>th</sup> Ed., Oct/01 | 7/25/09      | 7/15/09       | 1:15,000 |
| US5RI11E  | N/A                          | 7/25/09      | 7/15/09       |          |
| US4CN21M  | N/A                          | 7/25/09      | 7/15/09       |          |
| US4MA23M  | N/A                          | 7/25/09      | 7/15/09       |          |

**Table 5. Chart Editions**

#### D 1.1 Chart 13214 Comparison

No depths or features are charted within the limits of H12137.

#### D.1.2 Chart 13215 Comparison

Soundings are generally comparable with charted depths, with differences in charted and survey soundings 1 meter or less except over sandwaves where the charted depths are generally 1-2 meters less than surveyed. A charted 86 ft sounding at location 41-07-56.09N, 071-38-05.55W has a least depth in the area of 120 ft. Recommend charting current survey data in this location. A charted 86 ft sounding at location 41-10-06.79N, 071-51-21.84W has a least depth in the area of 145 ft.

Recommend charting current survey data in this location. *Concur.*

#### D.1.3 Chart 13217 Comparison

No depths or features are charted within the limits of H12137.

#### D.1.4 Chart 13218 Comparison

No depths or features are charted within the limits of H12137.

**D 1.5 Chart 13219 Comparison**

No depths or features are charted within the limits of H12137.

**D.1.6 ENC US5RI11E**

No depths or features are charted within the limits of H12137.

**D 1.7 ENC US4CN21M Comparisons**

Soundings are generally comparable with charted depths, with differences in charted and survey soundings 1 meter or less except over sandwaves where the charted depths are generally 1-2 meters less than surveyed. A charted 25.2m sounding at location 41-07-56.09N, 071-38-05.55W has a least depth in the area of 36.5m. Recommend charting current survey data in this location. *Concur.*

**D.1.8 ENC 4MA23M**

No depths or features are charted within the limits of H12137.

**D.2 Additional Results****D.2.1 Automated Wreck and Obstruction Information Service (AWOIS) Items**

No AWOIS items were located within the limits of H12137.

**D.2.4 Shoreline**

There is no shoreline within the sheet limits of survey H12137.

**D.2.5 Charted Features**

There are no charted features within the sheet limits of survey H12137.

**D.2.6 Charted Pipelines and Cables**

Several charted cables transect the survey area. None of these cables are visible in multibeam data. The Hydrographer has no recommendation on these cables.

**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 or reported to the NOAA's Office of Coast Survey.

#### **D 3.2 Shoals**

Shoals are adequately depicted as currently charted, except as noted in the chart comparison section.

#### **D.4 Aids to Navigation**

There are no charted Aids to Navigation (ATON) within the limits of H12137.

#### **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 H12137 is contained in Appendix V. *Concur.*

##### **Environmental Conditions and Notes**

Charted tide rips in the south west portion of the survey area were observed.

#### **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**

No additional work is needed to complete this survey. No changes significant to navigation have been noted and it is recommended that this survey receive normal processing priority.

**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.

The Data Acquisition and Processing Report for OPR-B363-TJ-09 is submitted separately and contains additional information relevant to this survey.

Approved and Forwarded:

 Jasper Schaer  
2009.10.09  
19:14:45 -04'00'

 Digitally signed by  
Shepard Smith  
Date: 2009.10.09  
22:03:37 -04'00'

LT Jasper D. Schaer, NOAA  
Field Operations Officer

CDR Shepard M. Smith, NOAA  
Commanding Officer

In addition, the following individual was responsible for overseeing data acquisition and processing of this survey:

Survey Manager:  Daniel Wright  
2009.10.09  
19:37:30 -04'00'

Daniel B. Wright, NOAA  
Chief Hydrographic Survey Technician

## **Appendix I**

### **Dangers to Navigation**

**No Dangers to navigation were reported for survey H12137.**

## **Appendix II**

### **Survey Features Report**

#### **1. AWOIS Items**

**-none**

#### **2. Charted Features**

**-none**

#### **3. Uncharted Features**

**-4**

# H12137 Features

**Registry Number:** H12137  
**State:** Rhode Island  
**Locality:** Rhode Island Sound  
**Sub-locality:** 6 NM West of Block Island  
**Project Number:** OPR-B363-TJ-09  
**Survey Dates:** 08/09/2009 - 08/22/2009

## Charts Affected

| Number | Edition | Date       | Scale (RNC)           | RNC Correction(s)*  |
|--------|---------|------------|-----------------------|---|
| 13215  | 18th    | 08/01/2004 | 1:40,000 (13215_1)    | USCG LNM: 01/13/2009 (07/14/2009)<br>CHS NTM: None (04/24/2009)<br>NGA NTM: None (07/25/2009) |
| 13209  | 25th    | 04/01/2007 | 1:40,000 (13209_1)    | [L]NTM: ?   |
| 13205  | 38th    | 02/01/2007 | 1:80,000 (13205_1)    | [L]NTM: ?   |
| 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 | Wreck_1 | Wreck        | 32.87 m      | 41° 11' 41.2" N | 071° 38' 46.9" W | ---        |
| 1.2 | Wreck_2 | Wreck        | 31.54 m      | 41° 10' 27.3" N | 071° 46' 48.4" W | ---        |
| 1.3 | Wreck_3 | Wreck        | 38.74 m      | 41° 11' 01.1" N | 071° 41' 31.6" W | ---        |
| 1.4 | Wreck_4 | Wreck        | 43.53 m      | 41° 09' 58.6" N | 071° 50' 07.3" W | ---        |

## **1 - New Features**

## 1.1) Wreck\_1

### Survey Summary

**Survey Position:** 41° 11' 41.2" N, 071° 38' 46.9" W  
**Least Depth:** 32.87 m (= 107.85 ft = 17.975 fm = 17 fm 5.85 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.004$  m ; **TVU (TPEv)**  $\pm 0.410$  m  
**Timestamp:** 2009-221.17:57:10.522 (08/09/2009)  
**Survey Line:** h12137 / tj\_s222\_reson7125\_stbd / 2009-221 / 382\_1754  
**Profile/Beam:** 750/156  
**Charts Affected:** 13215\_1, 13205\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

Uncharted wreck found with Reson 7125 MB.

### Feature Correlation

| Address   | Feature | Range | Azimuth | Status  |
|---|---------|-------|---------|---------|
| h12137/tj_s222_reson7125_stbd/2009-221/382_1754 | 750/156 | 0.00  | 000.0   | Primary |

### Hydrographer Recommendations

Chart non-dangerous wreck in designated location.

#### Cartographically-Rounded Depth (Affected Charts):

108ft (13215\_1, 13205\_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  
 QUASOU - 6:least depth known  
 SORDAT - 20090821  
 SORIND - US,US,graph,H12137  
 VALSOU - 32.873 m  
 WATLEV - 3:always under water/submerged

## Office Notes

Concur. Chart non-dangerous wreck at survey position.

### Feature Images

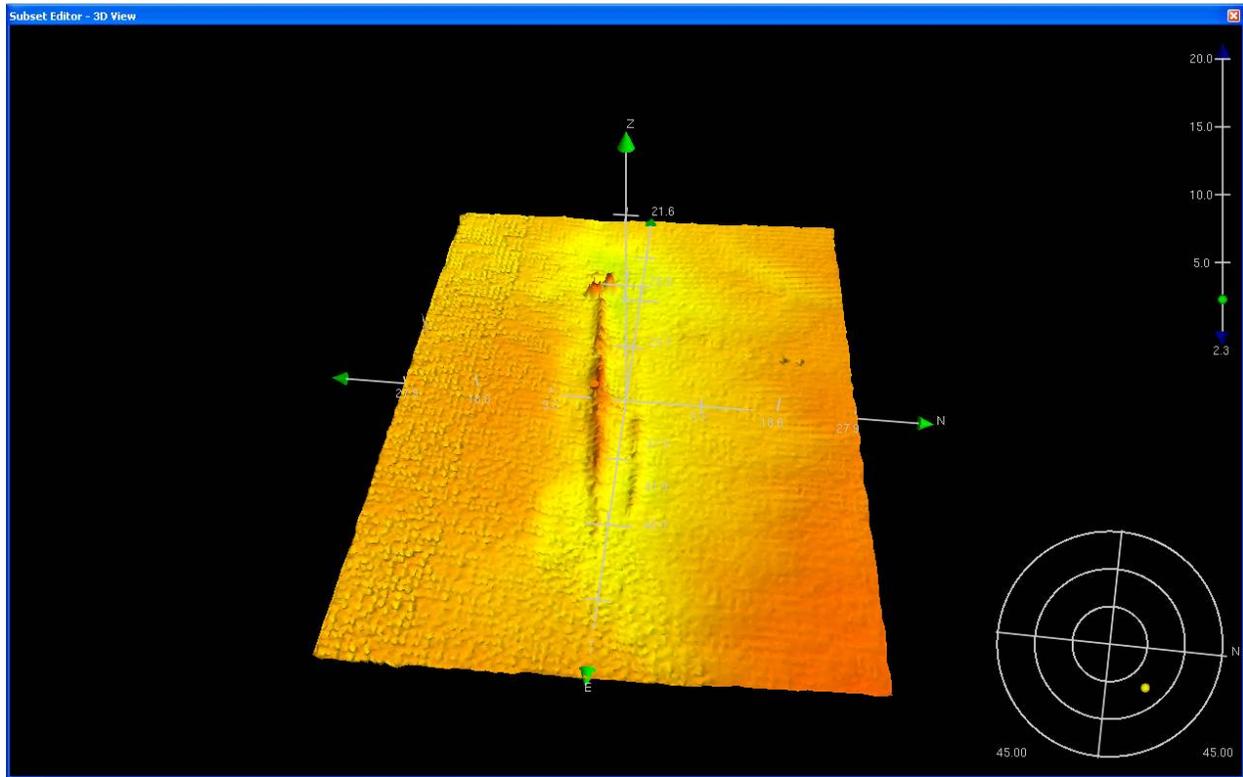


Figure 1.1.1

## 1.2) Wreck\_2

### Survey Summary

**Survey Position:** 41° 10' 27.3" N, 071° 46' 48.4" W  
**Least Depth:** 31.54 m (= 103.49 ft = 17.248 fm = 17 fm 1.49 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.003$  m ; **TVU (TPEv)**  $\pm 0.408$  m  
**Timestamp:** 2009-224.00:08:00.411 (08/12/2009)  
**Survey Line:** h12137 / tj\_s222\_reson7125\_stbd / 2009-223 / 360\_0000  
**Profile/Beam:** 2850/327  
**Charts Affected:** 13209\_1, 13215\_1, 13205\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

Uncharted wreck found with Reson 7125 MB.

### Feature Correlation

| Address   | Feature  | Range | Azimuth | Status  |
|---|----------|-------|---------|---------|
| h12137/tj_s222_reson7125_stbd/2009-223/360_0000 | 2850/327 | 0.00  | 000.0   | Primary |

### Hydrographer Recommendations

Chart non-dangerous wreck in designated location.

#### Cartographically-Rounded Depth (Affected Charts):

103ft (13209\_1, 13215\_1, 13205\_1)

17fm (12300\_1, 13006\_1, 13003\_1)

32m (5161\_1)

### S-57 Data

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 1:non-dangerous wreck  
 QUASOU - 6:least depth known  
 SORDAT - 20090821  
 SORIND - US,US,graph,H12137  
 TECSOU - 3:found by multi-beam  
 VALSOU - 31.544 m

WATLEV - 3:always under water/submerged

## Office Notes

Concur. Chart non-dangerous wreck at survey position.

### Feature Images

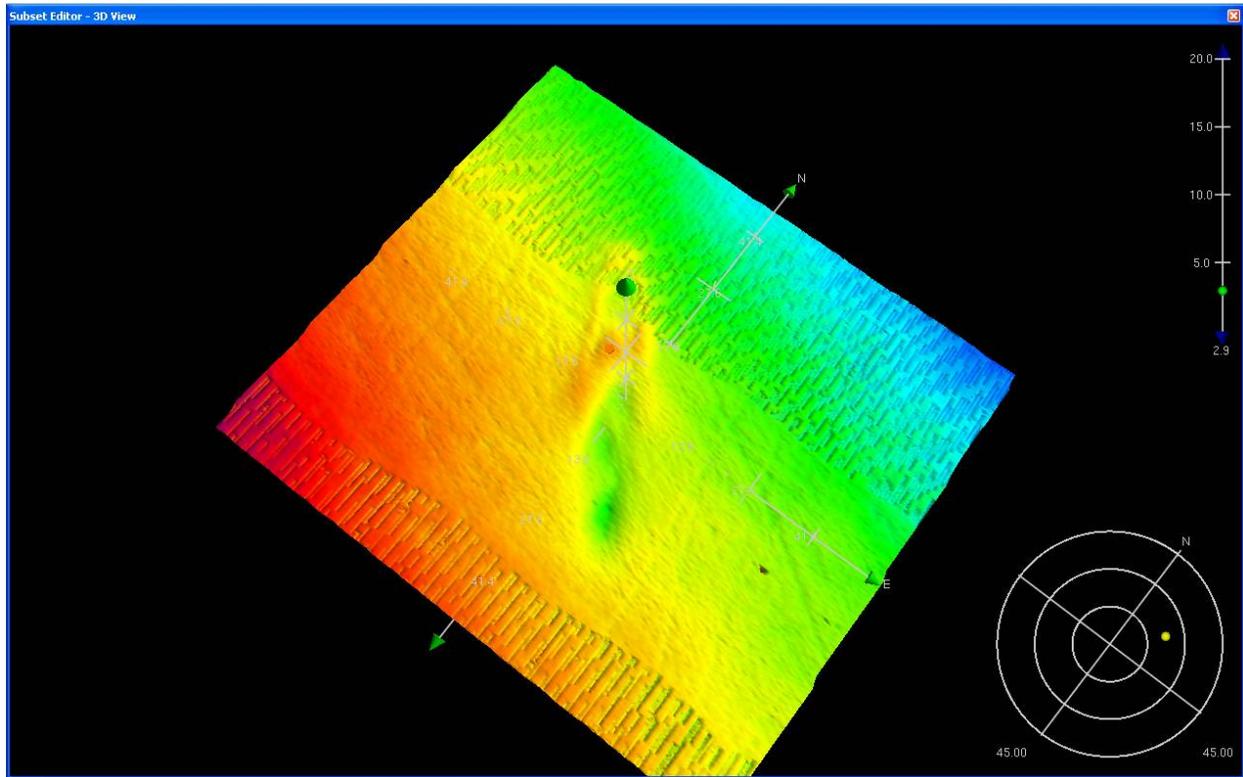


Figure 1.2.1

### 1.3) Wreck\_3

#### Survey Summary

**Survey Position:** 41° 11' 01.1" N, 071° 41' 31.6" W  
**Least Depth:** 38.74 m (= 127.10 ft = 21.183 fm = 21 fm 1.10 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.004$  m ; **TVU (TPEv)**  $\pm 0.408$  m  
**Timestamp:** 2009-224.11:36:03.088 (08/12/2009)  
**Survey Line:** h12137 / tj\_s222\_reson7125\_stbd / 2009-224 / 369\_1110  
**Profile/Beam:** 8817/280  
**Charts Affected:** 13215\_1, 13205\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

Uncharted wreck found with Reson 7125 MB.

#### Feature Correlation

| Address   | Feature  | Range | Azimuth | Status  |
|---|----------|-------|---------|---------|
| h12137/tj_s222_reson7125_stbd/2009-224/369_1110 | 8817/280 | 0.00  | 000.0   | Primary |

#### Hydrographer Recommendations

Chart non-dangerous wreck in designated location.

#### Cartographically-Rounded Depth (Affected Charts):

127ft (13215\_1, 13205\_1)

21fm (12300\_1, 13006\_1, 13003\_1)

39m (5161\_1)

#### S-57 Data

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 1:non-dangerous wreck  
 QUASOU - 6:least depth known  
 SORDAT - 20090821  
 SORIND - US,US,graph,H12137  
 TECSOU - 3:found by multi-beam  
 VALSOU - 38.739 m

WATLEV - 3:always under water/submerged

## **Office Notes**

Concur. Chart non-dangerous wreck at survey position.

### Feature Images

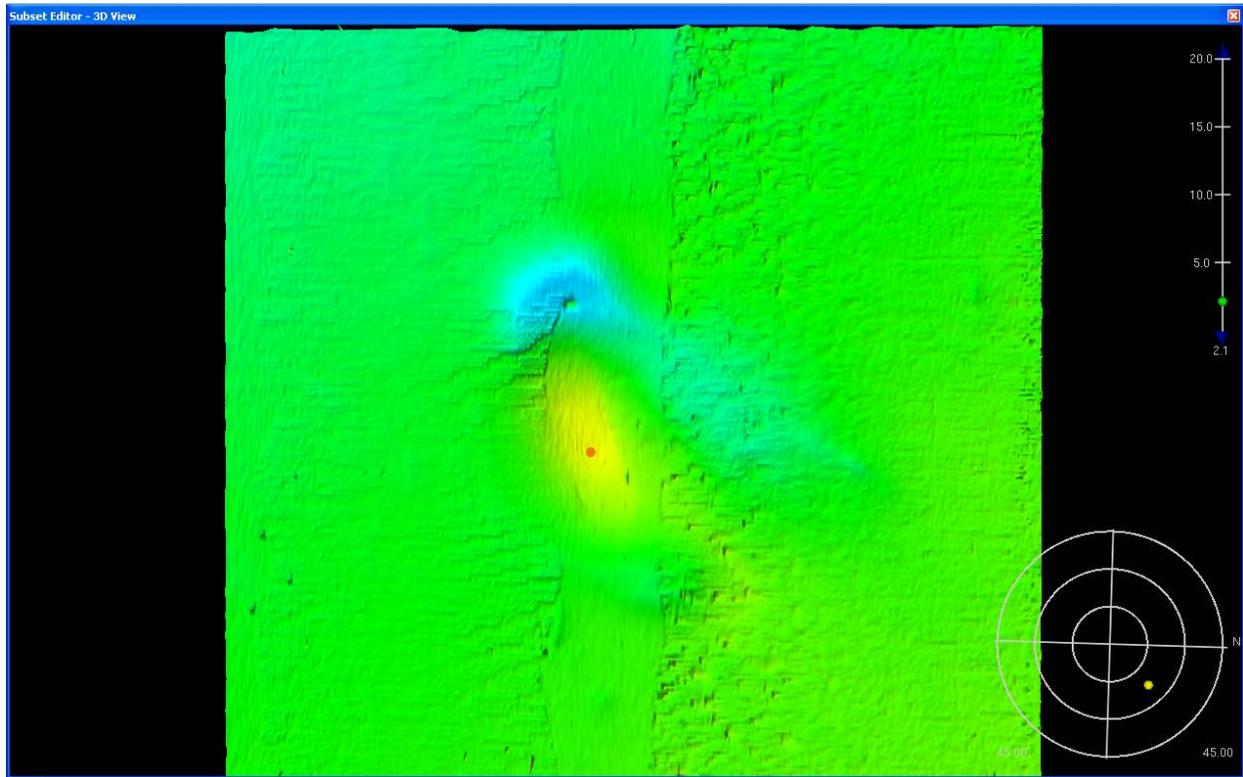


Figure 1.3.1

## 1.4) Wreck\_4

### Survey Summary

**Survey Position:** 41° 09' 58.6" N, 071° 50' 07.3" W  
**Least Depth:** 43.53 m (= 142.82 ft = 23.803 fm = 23 fm 4.82 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.010$  m ; **TVU (TPEv)**  $\pm 0.425$  m  
**Timestamp:** 2009-234.06:31:14.043 (08/22/2009)  
**Survey Line:** h12137 / tj\_s222\_reson7125\_stbd / 2009-234 / 857\_0630  
**Profile/Beam:** 85/118  
**Charts Affected:** 13209\_1, 13215\_1, 13205\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

Uncharted wreck found with Reson 7125 MB.

### Feature Correlation

| Address   | Feature | Range | Azimuth | Status  |
|---|---------|-------|---------|---------|
| h12137/tj_s222_reson7125_stbd/2009-234/857_0630 | 85/118  | 0.00  | 000.0   | Primary |

### Hydrographer Recommendations

Chart non-dangerous wreck in designated location.

#### Cartographically-Rounded Depth (Affected Charts):

143ft (13209\_1, 13215\_1, 13205\_1)

24fm (12300\_1, 13006\_1, 13003\_1)

44m (5161\_1)

### S-57 Data

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 1:non-dangerous wreck  
 QUASOU - 6:least depth known  
 SORDAT - 20090821  
 SORIND - US,US,graph,H12137  
 VALSOU - 43.531 m  
 WATLEV - 3:always under water/submerged

## Office Notes

Concur. Chart non-dangerous wreck at survey position.

### Feature Images

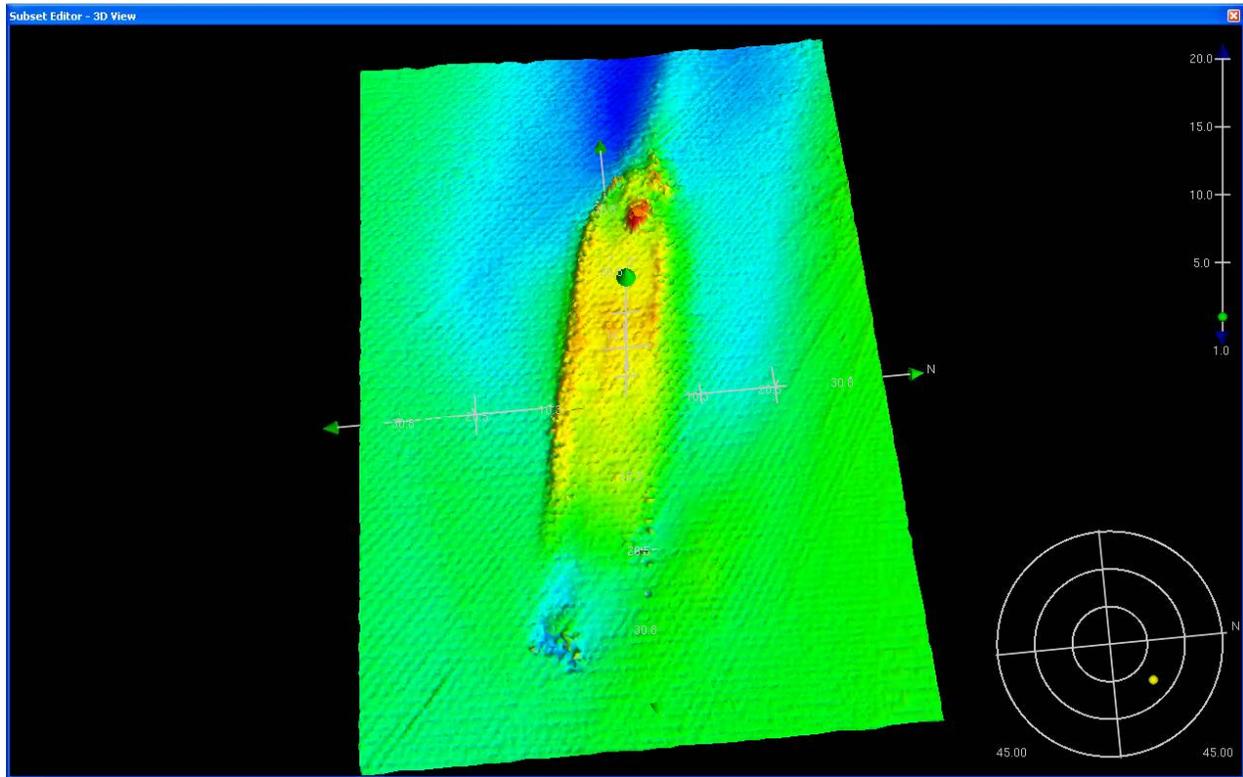
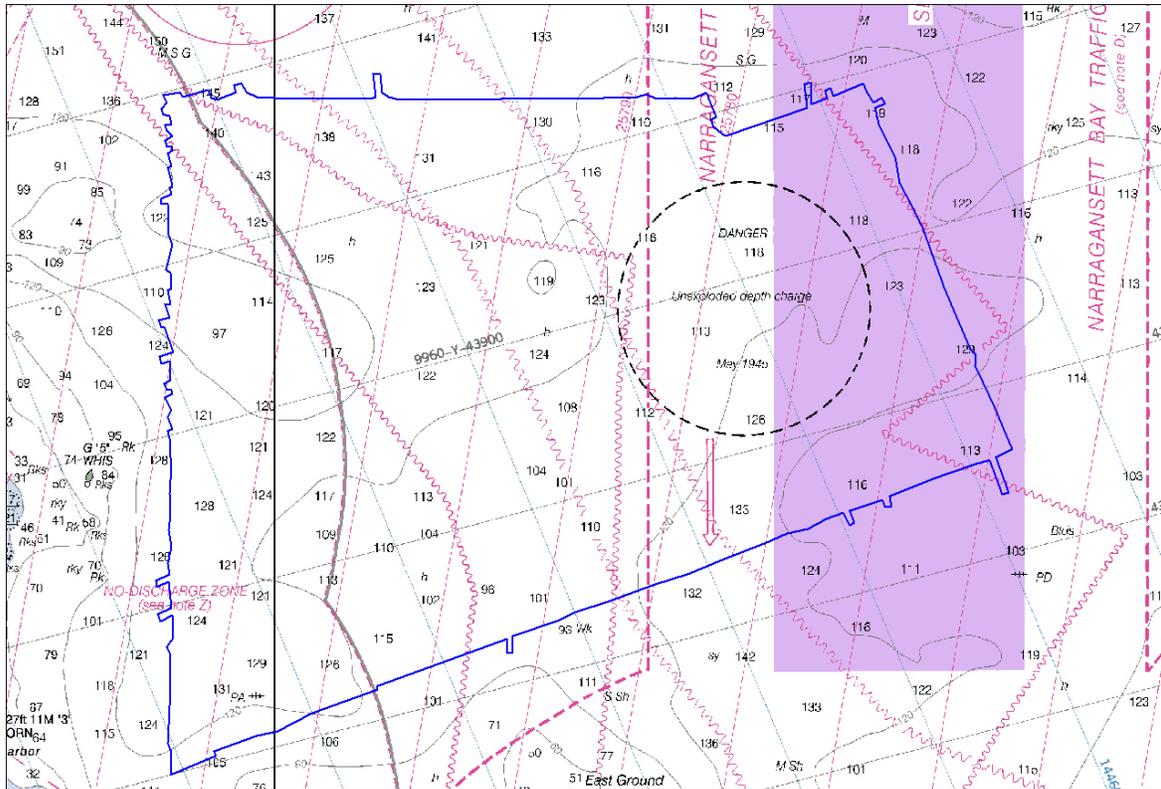


Figure 1.4.1

# Appendix III

## Progress

### Sketch



| Sheet Identifier | Registry Number | HQ Estimated SNM | Sheet Start Date | Sheet End Date | Smooth Tides Request Date | Smooth Tides Received Date | Cumulative % Complete at the end of March | Cumulative % Complete at the end of April | Cumulative % Complete at the end of May | Cumulative % Complete at the end of June | Cumulative % Complete at the end of July | Cumulative % Complete at the end of August |
|------------------|-----------------|------------------|------------------|----------------|---------------------------|----------------------------|---|---|---|--|--|--|
| 1                | H12009          | 25               | 4/7/09           | 5/19/09        | 5/27/09                   | 6/23/09                    |   |   | 100%                                    |  |  |  |
| 2                | H12010          | 13               | 7/23/09          | 8/19/09        | 8/27/09                   | 9/11/09                    |   |   |   |  | 75%                                      | 100%                                       |
| 3                | H12033          | 14               | 8/7/09           | 8/21/09        | 8/23/09                   | 9/11/09                    |   |   |   |  |  | 100%                                       |
| 4                | H12011          | 24               | 7/24/09          | 8/26/09        | 8/26/09                   | 9/11/09                    |   |   |   |  | 75%                                      | 100%                                       |
| 5                | H12023          | 16               | 8/20/09          |                |                           |                            |   |   |   |  |  | 75%  |
| 10               | H12137          |                  | 8/8/09           | 8/22/09        | 8/24/09                   | 9/11/09                    |   |   |   |  |  | 100%                                       |
| 9                | H12139          |                  | 8/24/09          | 8/31/09        | 9/14/09                   |                            |   |   |   |  |  | 100%                                       |

## **Appendix IV**

### **Tides and Water Levels**

- 1. Tide Notes**
- 2. Request for Approved Tides**
- 3. Final Tide Notes**



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

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

**DATE :** September 04, 2009

**HYDROGRAPHIC BRANCH:** Atlantic  
**HYDROGRAPHIC PROJECT:** OPR-B363-TJ-2009  
**HYDROGRAPHIC SHEET:** H12137

**LOCALITY:** 6 NM South of Block Island, Rhode Island Sound, RI  
**TIME PERIOD:** August 9 - 22, 2009

**TIDE STATION USED:** Newport, RI 845-2660  
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

**TIDE STATION USED:** New London, CT 846-1490  
Lat. 41° 21.7' N Long. 72° 05.4' W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters  
**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 0.839 meters

**Tide STATION USED:** Montauk, NY 851-0560  
Lat. 41° 02.9' Long. 71° 57.6' W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters  
**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 0.683 meters

**REMARKS: RECOMMENDED GRID**

Please use the TCARI grid "B363TJ2009-TCARI-Revised" as the final grid for project OPR-B363-TJ-2009, H12137, during the time period between August 9 and August 22, 2009.

**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: 2009.09.11 14:36:11 -04'00'

CHIEF, OCEANOGRAPHIC DIVISION







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, 2009

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

FROM: CDR Shepard M. Smith, 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-B363-TJ-09  
Registry No.: H12137  
State: Rhode Island  
Locality: Rhode Island Sound  
Sublocality: 6 NM South of Block Island

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 |
|----------|----------|----------|
| 2009_221 | 12:46:07 | 23:58:55 |
| 2009_222 | 00:00:03 | 23:20:38 |
| 2009_223 | 00:56:24 | 23:58:49 |
| 2009_224 | 00:00:06 | 23:59:29 |
| 2009_225 | 00:00:07 | 23:16:11 |
| 2009_230 | 06:09:06 | 23:17:19 |
| 2009_231 | 00:07:58 | 23:58:16 |
| 2009_232 | 00:00:12 | 10:39:21 |
| 2009_233 | 13:07:00 | 23:41:09 |
| 2009_234 | 00:05:11 | 07:33:29 |

**Subject:** OPR-B363-TJ-09 H12137 Smooth Tide request

**From:** "mark.blankenship" <mark.blankenship@noaa.gov>

**Date:** Mon, 24 Aug 2009 15:51:42 -0400

**To:** Smooth Tides <Smooth.Tides@noaa.gov>

**CC:** foo.thomas.jefferson@noaa.gov, Jeremy McHugh <Jeremy.McHugh@noaa.gov>

Attached is a smooth tide request for project OPR-B363-TJ-09

Registry number H12137

LT Blankenship

|                                       |   |
|---------------------------------------|---|
| <b>H12137_Smooth_Tide_Request.zip</b> | <b>Content-Type:</b> application/x-zip<br><b>Content-Encoding:</b> base64 |
|---------------------------------------|---|

## **Appendix V**

### **Supplemental Survey Records & Correspondence**

From "LCDR Rick Brennan, NOAA" <Richard.T.Brennan@noaa.gov>

Sent Tuesday, August 25, 2009 9:59 am

To Vanessa.Self@noaa.gov

Cc Castle E Parker <Castle.E.Parker@noaa.gov> , Edward Owens <Edward.Owens@noaa.gov> , Daniel Wright <Daniel.Wright@noaa.gov> , Shep Smith <Shep.Smith@noaa.gov>

Subject Re: To Report or Not To Report

All,

If these rocks are not significant to navigation, then I concur with simply designating them - no need to create a feature report for these. I would also suggest using the subset tiles in HIPS to guide the selection of these designated soundings within those areas where the rocks exist. I would do this by sizing the tiles to a dimension approximately 8 - 10 mm at the scale of the chart (roughly 3x the lateral ground dimension of a two digit sounding). Then, designate the most significant rock within that subset tile. So, for a 1:40,000 chart you would have a tile dimension of 400m x 400m. This provides a natural means of filtering down the designations and limits it to the maximum density that can be portrayed on the chart .

Rick

Vanessa.Self@noaa.gov wrote:

>  
> ALCON,  
>  
> While at a content review for one of the TJ's surveys the question  
> arose: To report or not to report?  
>  
> The question referenced numerous rocks that exist in the survey  
> area. The TJ would like to designate the rocks in CARIS HIPS & SIPS  
  
> so that the rocks will get a designated sounding that will carry over  
> to the CS layer in BASE however, these rocks will not be reported in  
> PYDRO as a "feature" if they are not significant to navigation. This  
> will reduce the amount of additional work that the personnel on the TJ  
> and in the office will have to perform "concurring" to an  
> insignificant features.  
>  
> Your thoughts and feedback with respect to this issue are appreciated.  
>  
> Very Respectfully,  
>  
> Vanessa  
>

--

LCDR Rick Brennan, NOAA  
Chief, Atlantic Hydrographic Branch

439 West York Street  
Norfolk, VA 23510  
Office: 757-441-6746  
Cell: 443-994-3301

Learn about "America's Seventh Service":  
[www.noaacorps.noaa.gov](http://www.noaacorps.noaa.gov)  
Learn about NOAA's Office of Coast Survey:  
[www.nauticalcharts.noaa.gov](http://www.nauticalcharts.noaa.gov)

---

All,

If these rocks are not significant to navigation, then I concur with simply designating them - no need to create a feature report for these. I would also suggest using the subset tiles in HIPS to guide the selection of these designated soundings within those areas where the rocks exist. I would do this by sizing the tiles to a dimension approximately 8 - 10 mm at the scale of the chart (roughly 3x the lateral ground dimension of a two digit sounding). Then, designate the most significant rock within that subset tile. So, for a 1:40,000 chart you would have a tile dimension of 400m x 400m. This provides a natural means of filtering down the designations and limits it to the maximum density that can be portrayed on the chart .

Rick

Vanessa.Self@noaa.gov wrote:

ALCON,

While at a content review for one of the TJ's surveys the question arose: To report or not to report?

The question referenced numerous rocks that exist in the survey area. The TJ would like to designate the rocks in CARIS HIPS & SIPS so that the rocks will get a designated sounding that will carry over to the CS layer in BASE however, these rocks will not be reported in PYDRO as a "feature" if they are not significant to navigation. This will reduce the amount of additional work that the personnel on the TJ and in the office will have to perform "concurring" to an insignificant features.

Your thoughts and feedback with respect to this issue are appreciated.

Very Respectfully,

Vanessa

--



LCDR Rick Brennan, NOAA

**Chief, Atlantic Hydrographic Branch**  
439 West York Street  
Norfolk, VA 23510  
Office: 757-441-6746  
Cell: 443-994-3301

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**Learn about NOAA's Office of Coast Survey:**

[www.nauticalcharts.noaa.gov](http://www.nauticalcharts.noaa.gov)

**Subject:** Re: Crossline comparison

**From:** Chris van Westendorp <Christiaan.VanWestendorp@noaa.gov>

**Date:** Thu, 10 Sep 2009 13:00:35 -0400

**To:** "mark.blankenship" <Mark.Blankenship@noaa.gov>

**CC:** LCDR Rick Brennan <Richard.T.Brennan@noaa.gov>, Castle Parker <Castle.E.Parker@noaa.gov>, Edward Owens <Edward.Owens@noaa.gov>, LT Jasper Schaer <jasper.schaer@noaa.gov>, CDR Shep Smith <Shep.Smith@noaa.gov>, Daniel Wright <Daniel.Wright@noaa.gov>

Mark,

Per 5.1.4.3 of the HSSD, AHB authorizes TJ to use the Standard Deviation layer to conduct surface difference comparison and analysis on future survey submissions of multibeam data. This meets the crossline comparison requirement laid out in HSSD.

Please let me know if you have any questions or need for further clarification.

R/

LCDR Chris van Westendorp, NOAA

mark.blankenship wrote:

Chris,

You mentioned in the meeting today that AHB was not going to require the multiple CUBE surface comparison, instead allowing us to use a single surface standard deviation layer to do our checks with. Is there any memo coming out for that?

Mark

LCDR Chris van Westendorp <[christiaan.vanwestendorp@noaa.gov](mailto:christiaan.vanwestendorp@noaa.gov)>

Atlantic Hydrographic Branch

NOAA OCS

**Subject:** Re: B363, priority 10. H12137

**From:** Jeremy McHugh <Jeremy.McHugh@noaa.gov>

**Date:** Wed, 30 Sep 2009 15:43:43 -0400

**To:** jasper schaeer <jasper.schaer@noaa.gov>, \_NMAO MOA FOO Thomas Jefferson <FOO.Thomas.Jefferson@noaa.gov>, \_NMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>

H12137, 6 NM West of Block Island, 31 SNM, 20k

H12139, 8 NM West of Block Island's Sandy Pt., 28 SNM, 20k

jasper schaeer wrote, On 9/30/2009 3:18 PM:

Would you resend the official verbage for sub locality, SNM, and scale for H12137 and H12139?

thanks-js

--

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

**Subject:** [Fwd: Revised Coverage Requirements]  
**From:** "co.thomas.jefferson" <co.thomas.jefferson@noaa.gov>  
**Date:** Mon, 14 Sep 2009 17:17:28 -0400  
**To:** foo.thomas.jefferson@noaa.gov, daniel wright <daniel.wright@noaa.gov>

Please include in DR correspondence as appropriate.

CO

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

**Subject:** Revised Coverage Requirements  
**Date:** Mon, 14 Sep 2009 17:05:00 -0400  
**From:** james.m.crocker <[James.M.Crocker@noaa.gov](mailto:James.M.Crocker@noaa.gov)>  
**To:** \_NMAO MOA CO Thomas Jefferson <[CO.Thomas.Jefferson@noaa.gov](mailto:CO.Thomas.Jefferson@noaa.gov)>, \_NMAO MOA FOO Thomas Jefferson <[FOO.Thomas.Jefferson@noaa.gov](mailto:FOO.Thomas.Jefferson@noaa.gov)>  
**CC:** Jeffrey Ferguson <[Jeffrey.Ferguson@noaa.gov](mailto:Jeffrey.Ferguson@noaa.gov)>, Jeremy McHugh <[Jeremy.McHugh@noaa.gov](mailto:Jeremy.McHugh@noaa.gov)>, Richard T Brennan <[Richard.T.Brennan@noaa.gov](mailto:Richard.T.Brennan@noaa.gov)>, Kyle Ward <[Kyle.Ward@noaa.gov](mailto:Kyle.Ward@noaa.gov)>, Benjamin K Evans <[Benjamin.K.Evans@noaa.gov](mailto:Benjamin.K.Evans@noaa.gov)>

CDR Smith,

This email is to detail the agreement to relax the multibeam resolution requirements for a survey when collecting multibeam bathymetry concurrent with side scan sonar data, where complete coverage for object detection for the survey is being met by 200% side scan sonar coverage. This agreement supersedes, where applicable, the requirements outlined in the 2009 HSSD and HTD 2009-2 for grid resolution and density.

For all projects assigned in 2009, where the complete coverage requirement for assigned surveys is being met by 200% side scan sonar data acquisition, the following requirements shall be met at a minimum:

- 1 - Grid resolutions shall be 2m for water depths less than 20m, and 4 m for water depths of 20m to 40m.
- 2 - Sounding density requirements are set at a minimum of 2 sounding per node.
- 3 - Grid resolution and density for feature developments used to determine least depth shall meet object detection requirements as defined in 2009 HSSD and HTD 2009-2 and soundings shall be designated where appropriate.

Regards,  
Jim

--  
CDR Shepard Smith, NOAA  
Commanding Officer  
NOAA Ship Thomas Jefferson  
439 West York St  
Norfolk, VA 23510  
757-647-0187

**Subject:** [Fwd: Re: relaxing requirements for B363's surveys.]

**From:** "co.thomas.jefferson" <co.thomas.jefferson@noaa.gov>

**Date:** Mon, 10 Aug 2009 21:16:01 +0000

**To:** foo.thomas.jefferson@noaa.gov, daniel wright <daniel.wright@noaa.gov>

Please forward to all sheet managers, and ensure it is placed in the DR supplemental correspondence.

CO

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

**Subject:** Re: relaxing requirements for B363's surveys.

**Date:** Mon, 10 Aug 2009 16:09:35 -0400

**From:** james.m.crocker <[James.M.Crocker@noaa.gov](mailto:James.M.Crocker@noaa.gov)>

**To:** co.thomas.jefferson <[CO.Thomas.Jefferson@noaa.gov](mailto:CO.Thomas.Jefferson@noaa.gov)>

**CC:** Jeremy McHugh <[Jeremy.McHugh@noaa.gov](mailto:Jeremy.McHugh@noaa.gov)>, jasper schaeer <[jasper.schaeer@noaa.gov](mailto:jasper.schaeer@noaa.gov)>, "shep.smith" <[Shep.Smith@noaa.gov](mailto:Shep.Smith@noaa.gov)>, Kyle Ward <[Kyle.Ward@noaa.gov](mailto:Kyle.Ward@noaa.gov)>, LCDR Rick Brennan NOAA <[Richard.T.Brennan@noaa.gov](mailto:Richard.T.Brennan@noaa.gov)>

**References:** <[4A7F8302.4000308@noaa.gov](mailto:4A7F8302.4000308@noaa.gov)> <[4A801AFC.7050002@noaa.gov](mailto:4A801AFC.7050002@noaa.gov)>  
<[4A80303B.6010000@noaa.gov](mailto:4A80303B.6010000@noaa.gov)> <[4A8069F3.9070008@noaa.gov](mailto:4A8069F3.9070008@noaa.gov)>

Hi Shep,

I concur with your assessment that OD MB is more efficient in this case than either 200 SSS or 100 SSS and complete MB, both with feature development. Your request to replace the SSS requirement with OB MB in water depths 4-20 m is granted for H12010, H12011, H12033 & H12137. For future sheets along the coast of RI, 100% SSS is required first, to define areas where it is most efficient to run OB MB in lieu of 200% SSS. In addition, 100% SSS should be run in areas such as, inner harbors and channels, AWOIS disprovals and over any suspect man made like identified in the 0.5m OD MB grid.

Best Regards,  
Jim

co.thomas.jefferson wrote:

> Hi Jim,

>

> It turns out that with the 7125 and 8125 working properly, there is no  
> significant penalty for achieving object detection coverage vs  
> complete coverage. We do not need to slow down, nor decrease line  
> spacing to get 0.5m resolution with 5 soundings per node in less than  
> 20m of water. Speed is limited by the increased noise level at higher  
> speeds, and line spacing is limited by the limit of clean data. Below  
> is the density of data at 0.5m. Red to orange is 1-5 soundings per  
> node. Green to blue is 5-100 soundings per node. Black is over 100  
> soundings per node.

>

>

>

> In this area, which is a glacial moraine, there are glacial erratics  
> spread in most parts of the seafloor, especially in the areas less  
> than 20m deep where the softer sediments have eroded away, leaving the  
> rocks armoring the slope to the beach. The attached photo is on the  
> beach at Block Island, and these rocks continue through most of the  
> survey area. Had we done sidescan to triage the area first, we are  
> confident we would have had to do most of the area with OD multibeam  
> to resolve all the rocks.

>

>  
>  
> I hear your concern about doing the SSS to support this, and we can  
> always wear a belt and suspenders. We estimate that it will take  
> about 12 boat-days to complete all the SSS on the five sheets, plus a  
> couple more for holidays. We will process it to a mosaic, and look  
> for manmade features that might improve interpretation of the multibeam.  
>  
> Alternately, the suggestion that Jasper made below, we could limit our  
> SSS to the harbor, the nearshore areas which are arguably the only  
> underkeel clearance areas in the survey area, the AWOIS disprovals,  
> and any areas where the multibeam interpretation is unclear. This  
> would save us time that we could apply toward doing an additional sheet.  
>  
> This approach is something we would only do in this sort of rocky  
> environment, and do not envision doing anywhere else this year or  
> next, with the possible exception of parts of the CT coast of LIS.  
>  
> I would like to give you a call to discuss this, but wanted to get you  
> these images for reference before I did.  
>  
> Best,  
>  
> Shep  
>  
>  
> CDR Shepard Smith, NOAA  
> Commanding Officer  
> NOAA Ship Thomas Jefferson  
> 439 West York St  
> Norfolk, VA 23510  
> 757-647-0187  
>

--  
CDR Shepard Smith, NOAA  
Commanding Officer  
NOAA Ship Thomas Jefferson  
439 West York St  
Norfolk, VA 23510  
757-647-0187

From [Jeremy McHugh <Jeremy.McHugh@noaa.gov>](mailto:Jeremy.McHugh@noaa.gov)

Sent Monday, July 27, 2009 1:37 pm

To "[shep.smith <Shep.Smith@noaa.gov>](mailto:Shep.Smith@noaa.gov)", [jasper.schaer <jasper.schaer@noaa.gov>](mailto:jasper.schaer@noaa.gov),  
[daniel.wright <Daniel.Wright@noaa.gov>](mailto:Daniel.Wright@noaa.gov)

Cc "[james.m.crocker <James.M.Crocker@noaa.gov>](mailto:James.M.Crocker@noaa.gov)", [Kyle Ward <Kyle.Ward@noaa.gov>](mailto:Kyle.Ward@noaa.gov)

Bcc

Subject Re: B363, priority 10. H12137

Please use H12137 for sheet 10.

Jeremy McHugh wrote, On 7/27/2009 1:04 PM:

> OK, I think I understand. Are you planning to acquire data  
> simultaneously with the ship working on 10 and the launches working on 3?

>  
> If you have weather and equipment in your favor, do you think it is  
> possible to finish all sheets (1-10) this field season? If not, what  
> may go unfinished?

>  
> Can you please let me know which days you started data acquisition for  
> 2 and 4?

>  
> I will send you the registry number for 10 this afternoon.

> Thanks,  
> Jeremy

>  
> shep.smith wrote, On 7/27/2009 8:25 AM:

>> Hi Jeremy,

>>  
>> This was my thinking. If we do 8 as the next ship sheet, we will  
>> leave 5, 6, 7 as launch sheets, with 9 and 10 as ship sheets, but  
>> they are pretty far from each other. This will make us less efficient  
>> in the future because of the long deadhead times between sheets. In  
>> addition, we may start to be on the edge of vhf radio communications  
>> with the launches, and would not be in a good position to support  
>> them in case of a problem. We can potentially work on 8 while we are  
>> in LIS as well, since it is closer to those sheets.

>>  
>> Shep

>>  
>> Jeremy McHugh wrote:

>>> Hi Jasper,  
>>> We would prefer that you all stick closer to our prioritized scheme.

>>> What is your thinking with regard to starting 10 before 2-9?  
>>> Are you all still planning to work three legs on this project?

>>> Thanks,  
>>> Jeremy

>>>  
>>> jasper.schaer wrote, On 7/26/2009 3:22 PM:  
>>>> We would like a number registry for priority 10.

>>>>  
>>>> r-js

>>>>  
>>>

>>>

--

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

## AHB COMPILATION LOG

| General Survey Information |   |
|----------------------------|---|
| REGISTRY No.               | H12137                                      |
| PROJECT No.                | OPR-B363-TJ-09                              |
| FIELD UNIT                 | NOAA SHIP THOMAS JEFFERSON                  |
| DATE OF SURVEY             | 08/09/2009 – 08/21/2009                     |
| LARGEST SCALE CHART        | <i>13215, edition 19, 20091201, 1:40000</i> |
| ADDITIONAL CHARTS          |   |
| SOUNDING UNITS             | <b>feet</b>                                 |
| COMPILER                   | Kolleen McKenzie                            |

| Source Grids                    | File Name   |
|---------------------------------|---|
|                                 | H:\Compilation\H12137_B363_TJ\AHB_H12137\                           |
|                                 | <b>E-SAR Final Products\GRIDS\H12137_50cm_Coverage_Final</b>        |
|                                 | <b>E-SAR Final Products\GRIDS\H12137_East_1_Cube_DT20_1m_Final</b>  |
|                                 | <b>E-SAR Final Products\GRIDS\H12137_East_1_Cube_DT50_2m_Final</b>  |
|                                 | <b>E-SAR Final Products\GRIDS\H12137_East_2_Cube_NOAA_2m_Final</b>  |
|                                 | <b>E-SAR Final Products\GRIDS\H12137_South_Cube_NOAA_2m_2_Final</b> |
|                                 | <b>E-SAR Final Products\GRIDS\H12137_West_Cube_NOAA_2m_Final</b>    |
|                                 | <b>E-SAR Final Products\GRIDS\H12137_Wreck1_Cube_NOAA_1m_Final</b>  |
|                                 | <b>E-SAR Final Products\GRIDS\H12137_Wreck2_Cube_NOAA_1m_Final</b>  |
|                                 | <b>E-SAR Final Products\GRIDS\H12137_Wreck3_Cube_NOAA_1m_Final</b>  |
|                                 | <b>E-SAR Final Products\GRIDS\H12137_Wreck4_Cube_NOAA_1m_Final</b>  |
| Surfaces                        | File Name   |
|                                 | H:\Compilation\H12137_B363_TJ\AHB_H12137\COMPILE\Working            |
| <i>Combined</i>                 | <b>H12137_4m_Combined.hns</b>                                       |
| <i>Interpolated TIN</i>         | \Interpolated TIN\H12137_4m_InterpTIN.hns                           |
| <i>Shifted Interpolated TIN</i> | \Shifted Surface\H12137_4m_InterpTIN_Shifted.hns                    |
| <i>Product Surface</i>          |   |
| Final HOBs                      | File Name   |
|                                 | H:\Compilation\H12137_B363_TJ\AHB_H12137\COMPILE\Final Hobs\        |
| <i>Survey Scale Soundings</i>   | <b>H12137_SS_Soundings.hob</b>                                      |
| <i>Chart Scale Soundings</i>    | <b>H12137_CS_Soundings.hob</b>                                      |
| <i>Contour Layer</i>            | <b>H12137_Contours.hob</b>  |
| <i>Feature Layer</i>            | <b>H12137_Features.hob</b>  |
| <i>Meta-Objects Layer</i>       | <b>H12137_MetaObjects.hob</b>                                       |
| <i>Blue Notes</i>               | <b>H12137_BlueNotes.hob</b>   |
| <i>ENC Retain Soundings</i>     | <b>H12137_ENC_Retain_Soundings.hob</b>                              |

| Meta-Objects Attribution |  |
|--------------------------|--|
| Acronym                  | Value                                    |
| <b>M_COVR</b>            |  |
| CATCOV                   | Coverage available                       |
| SORDAT                   | 20090821                                 |
| SORIND                   | US,US, graph,H12137                      |
| <b>M_QUAL</b>            |  |
| CATZOC                   | Zone of confidence U (data not assessed) |

[Type text]

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|               |                            |
|---------------|----------------------------|
| INFORM        | NOAA Ship Thomas Jefferson |
| POSACC        | 10 m                       |
| SORDAT        | 20090821                   |
| SORIND        | US,US,graph,H12137         |
| SUREND        | 20090821                   |
| SURSTA        | 20090809                   |
| <b>DEPARE</b> |                            |
| DRVALV 1      | 41.0 ft                    |
| DRVALV2       | 161.0 ft                   |
| SORDAT        | 20090821                   |
| SORIND        | US,US,graph,H12137         |
| <b>M_CSCL</b> |                            |
| CSCALE        |                            |
| SORDAT        |                            |
| SORIND        |                            |

**SPECIFICATIONS:**

- I. COMBINED SURFACE:
  - a. Number of ESAR Final Grids: 10
  - b. Resolution of Combined (m): 4
  
- II. SURVEY SCALE SOUNDINGS (SS):
  - a. Radius
  - b. Shoal biased
  - c. Use Single-Defined Radius (mm at Map Scale): ; Radius Value = 1
  - d. Queried Depth of All Soundings
    - i. Minimum: 41.46170 ft
    - ii. Maximum: 160.79724 ft
  
- III. INTERPOLATED TIN SURFACE:
  - a. Resolution (m): 4
  - b. Linear
  - c. Shifted value: -0.229m (feet), ( $\leq 10$  fathoms)
  
- IV. CONTOURS:
  - a. Use a Depth List: HXXXXX\_NOAA\_depth\_curves\_list.txt
  - b. Line Object: DEPCNT
  - c. Value Attribute: VALDCO
  
- V. FEATURES:
  - a. Total Number of Features: 4
  - b. Number of Insignificant Features: 0
  
- VI. CHART SURVEY SOUNDINGS (CS):
  - a. Number of ENC CS Soundings:
  - b. Radius
  - c. Shoal biased
  - d. Use Single-Defined Radius: m on the ground
    - i. Radius Value (m):
    - ii. Or use a Sounding Space Range Table (if applicable): H12137\_SSR.txt
  - e. Filter: Interpolated != 1

[Type text]

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f. Number Survey CS Soundings: 375

VII. Notes:

[Type text]

**ATLANTIC HYDROGRAPHIC BRANCH  
H-CELL REPORT to ACCOMPANY  
SURVEY H12137 (2009)**

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:

- CARIS HIPS/SIPS version 6.1 SP2 HF 7
- CARIS BathyDataBASE version 2.3 HF 1-16
- CARIS BathyDataBASE version 2.1 SP1 HF 1-10
- CARIS S57 Composer version 2.1 HF 4
- DKART INSPECTOR, version 5.0 Build 732 SP1
- CARIS HOM version 3.3 HF 8

**B.2. QUALITY CONTROL**

**B.2.1. H-Cell**

AHB personnel utilized the source depth grids for the survey's nautical chart update product by combining the ten grids of 50 centimeter, 1 meter and 2 meter resolution at 4 meter resolution. Survey scale soundings were created from the combined surface using a depth radius table with minimum value of one millimeter at chart scale for the affected chart scale of 1:40,000. A TIN was created from the survey scale soundings from which an interpolated surface was generated. The chart scale selected soundings (CS Soundings) are a subset of the survey scale selected soundings and were generated using a sounding space range file where the defined radius was 350 meters for depths below 60 feet, 400 meters for depths between 60 and 90 feet and 600 meters for depths greater than 90 feet.

Depth contours were created from a shifted interpolated TIN surface of 4 meter resolution. The interpolated TIN surface was shifted at -0.75 feet for NOAA rounding purposes. The depth contours are forwarded to MCD for reference only. The contours were utilized during chart scale sounding selection and quality assurance efforts at AHB. The depth contours 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 within this document. The SAHOB files included depth area (DEPARE), depth contours (DEPCNT), sounding selections (SOUNDG), features (WRECKS, SBDARE, SNDWAV), Meta objects (M\_COVR, M\_QUAL), and cartographic Blue Notes (\$CSYMB).

All of the components with the exception of the survey scale sounding selection and depth contours were inserted into one feature layer (including the Bluenotes, as dictated by Hydrographic Technical Directive 2008-8), and this layer was exported from CARIS Bathy DataBase into S-57 format in metric units order to create the H-Cell deliverable. Similarly, the survey scale sounding selection and depth contours were exported into S-57 format separately, and then both S-57 files were processed in CARIS HOM to convert the metric units to chart units (feet). The final products are two S-57 files, in Lat/Lon NAD-83, one that contains the chart scale soundings, Meta objects, features, and Bluenotes (H12137\_CS.000), and one that contains the survey scale sounding selection and depth contours (H12137\_SS.000). Finally, quality assurance checks were made utilizing CARIS S-57 Composer version 2.1 validation checks, with a second quality check performed in dKart Inspector.

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

H12137 CARIS H-Cell final deliverables include the following products:

|               |                |   |
|---------------|----------------|---|
| H12137_CS.000 | 1:40,000 Scale | H12137 H-Cell with Chart Scale Selected Soundings |
| H12137_SS.000 | 1:10,000 Scale | H12137 Selected Soundings (Survey Scale)          |

### **B.2.2. Junctions**

Survey H12137 junctions with Surveys H12033 and H12139. Junction analysis will be completed upon compilation of Surveys H12033 and H12139.

## **C. VERTICAL AND HORIZONTAL CONTROL**

The horizontal datum for this project is the North American Datum of 1983 (NAD83), zone 18. 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 (kHz 306), were used during this survey. No horizontal control stations were established by the field party for this survey.

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) stations at New London, CT (8461490), Newport, RI (8452660), and Montauk, NY (8510560) will serve as datum control for H12137. Verified tides with final TCARI constituents and residuals were applied to all sounding data. A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 on 25 August 2009 in accordance with the FPM and project letter instructions. Final smooth tide letter received 26 September 2009, accept preliminary TCARI grid as final.

## **D. RESULTS AND RECOMMENDATIONS**

## **D.1 CHART COMPARISON**

### **13215 (19th Edition, Dec./09)**

Corrected through NM 12/01/2009  
Corrected through LNM 12/01/2009  
Scale 1:40,000

### **ENC Comparison**

#### **US5RI10M**

Block Island Sound Point Judith to Montauk Point  
Edition 3  
Application Date 2010-03-02  
Issue Date 2010-03-02  
Chart 13215

#### **US5MA22M**

Block Island Sound and Gardiners Bay;  
Montauk Harbor  
Edition 17  
Application Date 2010-03-09  
Issue Date 2010-03-09  
Chart 13209

### **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.

## **D.2. ADDITIONAL RESULTS**

No additional results to report.

## **D.3. 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.4. 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  
H12137**

**Initial Approvals:**

The completed survey has been inspected with regard to survey coverage, delineation of depth contours, disposition 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.

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**Kolleen McKenzie**  
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: \_\_\_\_\_  
**Richard T. Brennan**  
Lieutenant Commander, NOAA  
Chief, Atlantic Hydrographic Branch