H12009

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: H12009

LOCALITY

State: Rhode Island

General Locality: Block Island Sound

Sub-locality: 7NM East of Block Island's Balls North Pt.

2009

CHIEF OF PARTY
CDR P. Tod Schattgen
NOAA

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DATE

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

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET

H12009

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:	**7NM East of Block Island's Balls North Pt.**
Scale:	**1:20,000** Date of Survey: **05/8/09 to 05/19/09**
Instructions Dated:	**26 February 2009** Project Number: **OPR-B363-TJ-09**
Vessel:	**NOAA Ship *Thomas Jefferson***
Chief of Party:	**CDR P. Tod Schattgen, NOAA**
Surveyed by:	***Thomas Jefferson* Personnel**
Soundings by:	**Reson 7125 and 8125 multibeam echo sounders.**
Graphic record scaled by:	**N/A**
Graphic record checked by:	**N/A**
Protracted by:	**N/A** Automated Plot: **N/A**
Verification by:	***Atlantic Hydrographic Branch***
Soundings in:	**Meters at MLLW**
H-Cell Compilation units in:	***Feet at MLLW***

Remarks:
1) All Times are in UTC.
2) This is a Navigable Area Hydrographic Survey.
3) Projection is NAD83, UTM Zone 19.
Bold, italic, red notes in the Descriptive Report were made during office processing.

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Descriptive Report to Accompany Hydrographic Survey H12009

Project OPR-B363-TJ-09
Block Island Sound, RI
7NM East of Block Island's Balls North Pt.
Scale 1:20,000
May 8th – May 19th 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. ***Concur***

North Western Limit	South Western Limit	South Eastern Limit	North Eastern Limit
41° 15' 42.12" N 071° 31' 04.44" W	41° 10' 22.80" N 071° 31' 04.80" W	41° 12' 55.44" N 071° 22' 16.32" W	41° 15' 42.37" N 071° 23' 44.27" W

Data acquisition was conducted from May 8th – May 19th, 2009. ***Concur***

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	511.33
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)	511.33
LNM Crosslines singlebeam and multibeam combined	32.35
LNM Lidar Crosslines	N/A
LNM development lines non mainscheme	1.78
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	17
Total number of square nautical miles	26.86

Table 1: Hydrographic Survey Statistics

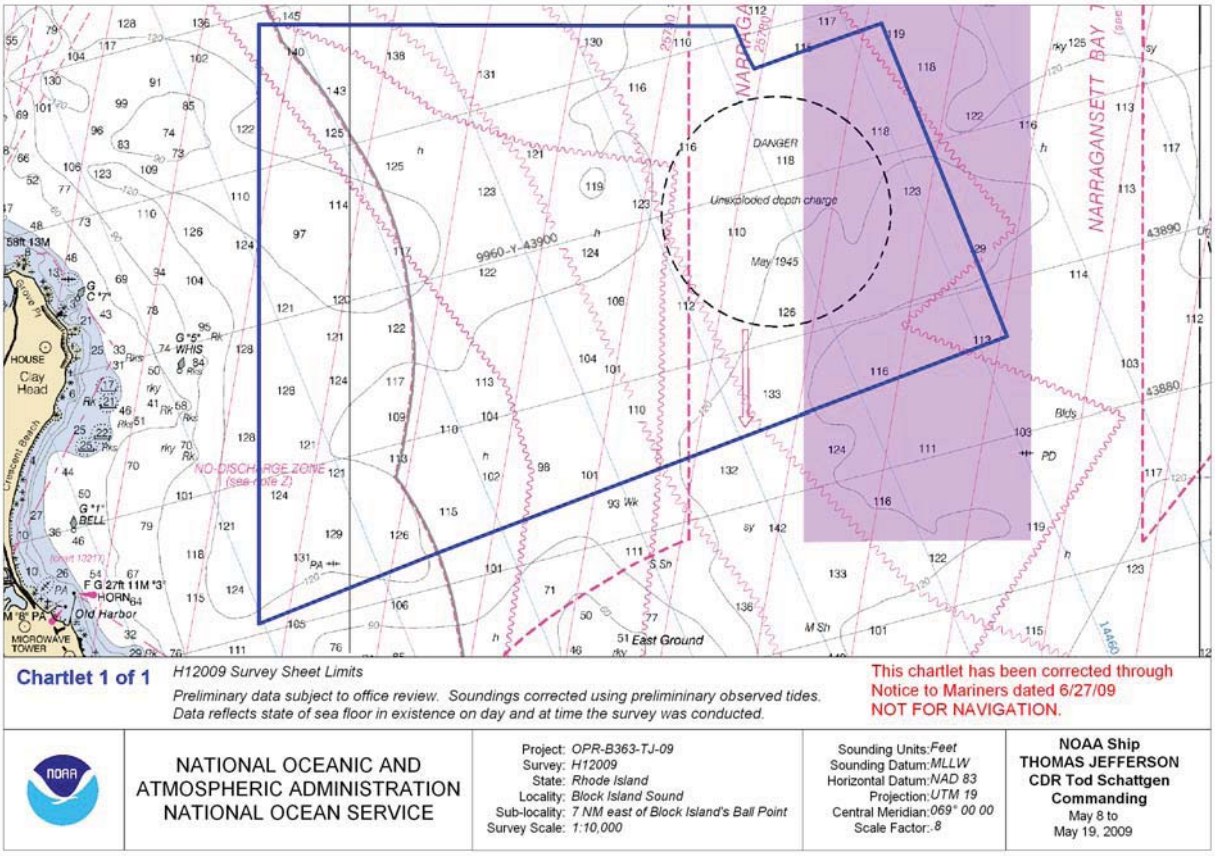


Fig. 1. H12009 Survey Area.

Calendar Date	Julian Day
08-May-2006	128
14-May-2006	134
15-May-2006	135
16-May-2006	136
18-May-2006	138
19-May-2006	139

Table 2: MB Acquisition Dates

B. DATA ACQUISTION 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. ***Concur***

B 1. EQUIPMENT AND VESSELS

Data were acquired by NOAA Ship *Thomas Jefferson* and Hydrographic Survey Launches (HSL) *3101* and *3102*. NOAA Ship *Thomas Jefferson* acquired Reson 7125 multibeam echo sounder soundings and sound velocity profiles. HSL 3101 acquired Reson 8125 multibeam echo sounder soundings. Bottom samples were collected by HSL 3101. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the DAPR. ***Concur***

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. ***Concur***

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 one meter resolution, as per HTD 2009-2 for Complete Multibeam Coverage in depth ranges 20-40 meters. Coverage over the AWOIS item was monitored by creating BASE surfaces with a 50cm resolution over the radius. ***Concur with clarification. BASE surfaces were submitted to AHB as two meter and AWOIS items were submitted as one meter resolution surfaces, and not the above stated one meter.***

B 2.3 Crosslines

Multibeam echosounder cross-lines totaling 32.35 lineal nautical miles, comprising 6.33% of multibeam hydrography, were acquired during the course of the survey. Crosslines were acquired with two vessels, so that a good comparison of same-vessel soundings for each of the two vessels could be achieved. A quality control check was done using the standard deviation layer of the survey's CUBE surface. Standard deviation of the layers was less than a 0.3m for all lines with the exception of the systematic artifact, which indicates that this survey meets IHO Order I specifications. ***Concur with clarification. The reviewer calculated 5.34% crossline coverage achieved over the full survey extent, as well as, a difference between the XL and MS lines being as much as 19.4 meters.***

B 2.4 Junctions and Prior Surveys

The following contemporary surveys junction with H12009:

Registry #	Scale	Date	Field Party	Junction side
H11996	1:10,000	2008	Thomas Jefferson	east
H11322	1:10,000	2004	Rude	north east
H12010*	1:7,500	2009	Thomas Jefferson	west
H12011*	1:20,000	2009	Thomas Jefferson	north

Survey H12009 junctions with survey H11996 to the east. Soundings between H12009 and H11996 agreed within 3 feet. ***Do not concur. Difference surface created by AHB Reviewer depicted a difference of 4 feet.***

Survey H12009 junctions with survey H11322 to the north east. Soundings between H12009 and H11322 agreed within 3 feet. ***Concur with clarification. The Reviewer was unable to verify the comparison between H11322 and H12009, because H11322 no longer exist within the AHB directory.***

Survey H12009 junctions with survey H12010 to the west. Soundings between H12009 and H12010 agreed within 3 feet. ***Concur***

Survey H12009 junctions with survey H12011 to the north. Soundings between H12009 and H12011 agreed within 3 feet. ***Concur***

*survey currently still being processed on ship. ***Do not concur. H12010 and H12011 have been submitted to AHB as of 11/18/2009.***

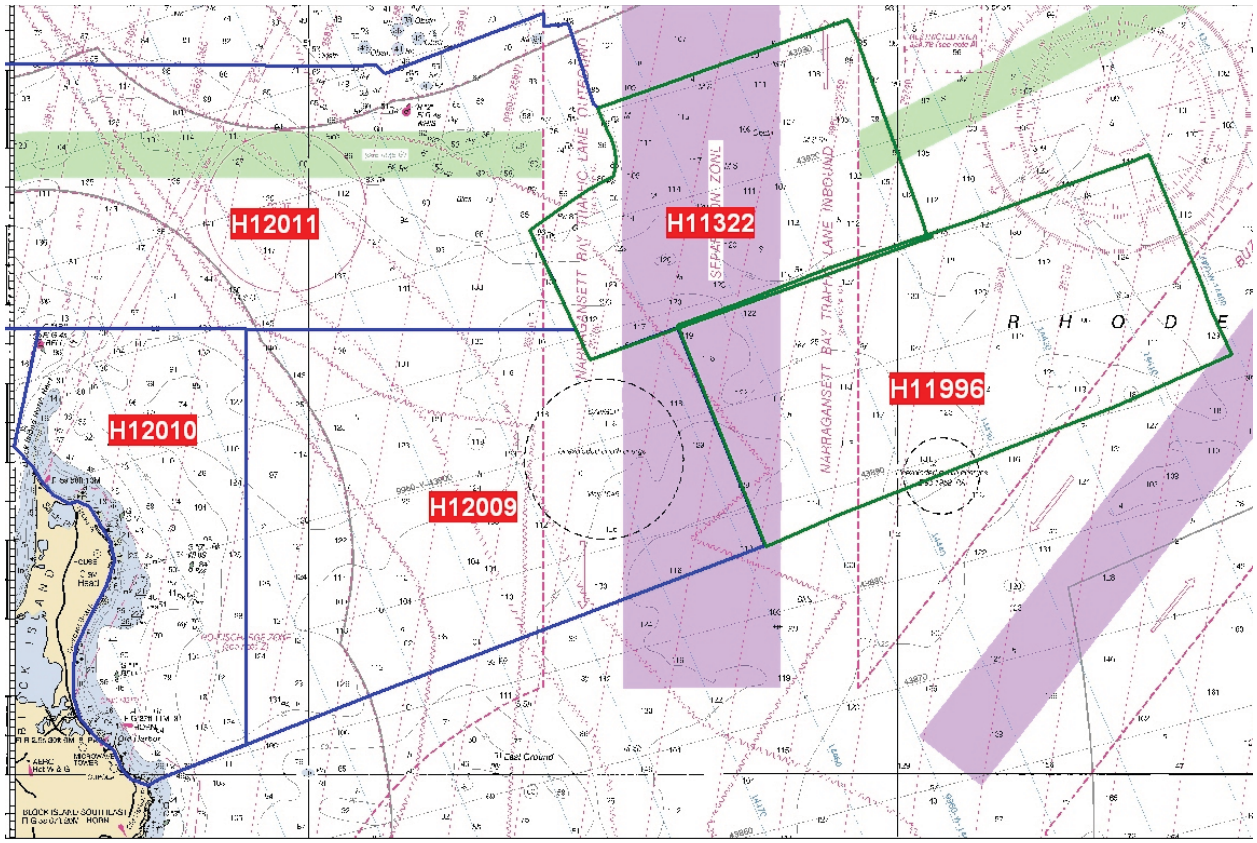


Fig 2. H12009 Junction Surveys.

B 2.5 Systematic Errors

Due to a faulty RESON 7125 multibeam receiver on S-222, a systematic artifact appears throughout the data as dual along track striping near nadir, ranging in height from 10cm to 20cm (Fig. 3). This error was accounted for in the CARIS vessel configuration (TJ_S222_RESON7125.hvf) by adding a 0.20 meter value for the Total Propagated Error for the delta draft. An additional artifact resulted in a spread of the outer soundings along track ranging in height +/- 1.2m. This device was replaced subsequent to data acquisition. ***Concur***

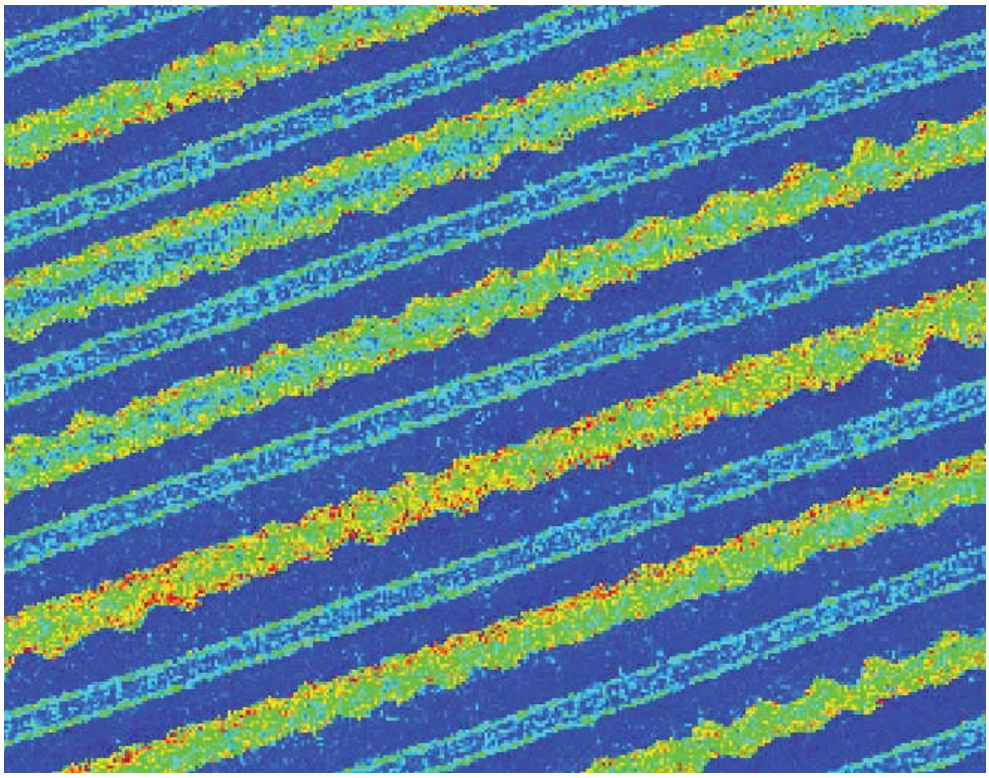


Fig 3. Systematic error standard deviation layer.

An unaccounted for system error resulted in an induced wave feature in a section of a line. There is no apparent reason for the wave to have been created, Navigation and Attitude data does not show a distinct change in the area of the wave. This section of the line was removed from the CUBE surface creating a holiday, inspection of the data from line shows no objects or items needing further investigation. Fig. 4 shows the wave artifact and an adjoining line. ***Concur***

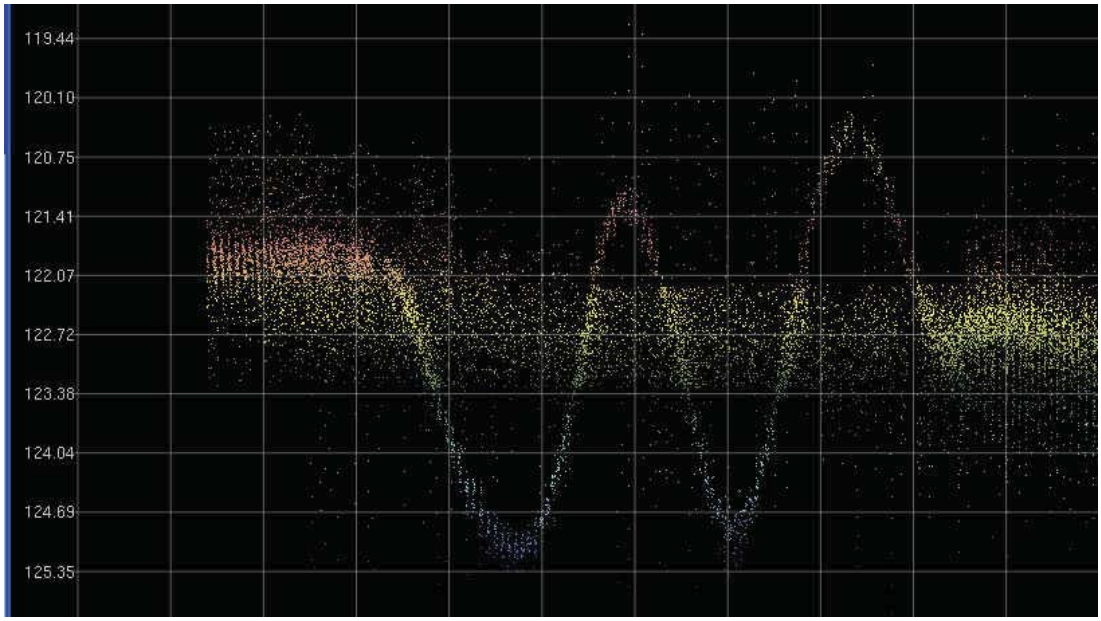


Fig 4. Line wave artifact

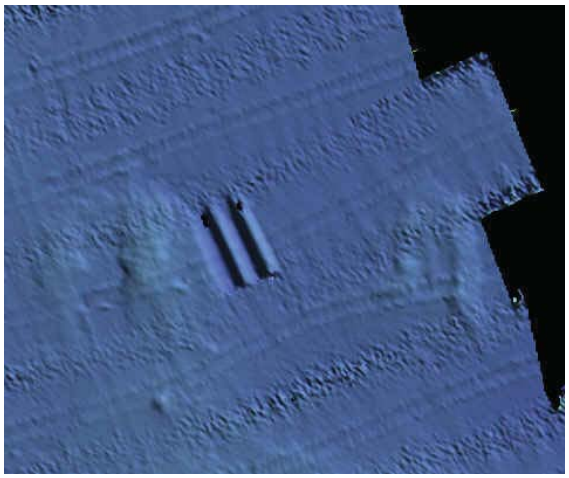


Fig 5. System wave before

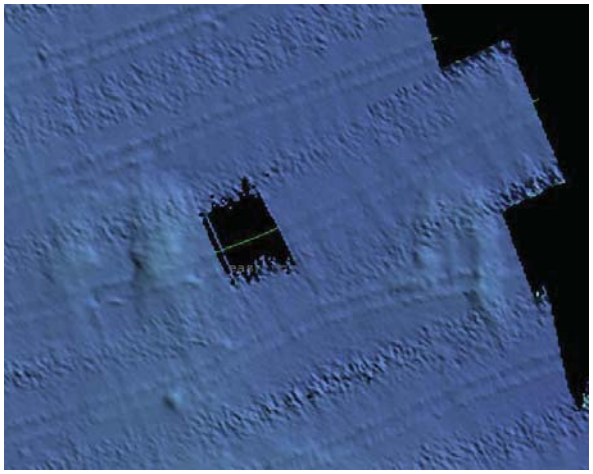


Fig 6. System wave after

A holiday was created in the survey's northwest corner due to degraded navigation data. Examination of the multibeam data shows no objects or items needing further investigation. ***Concur***

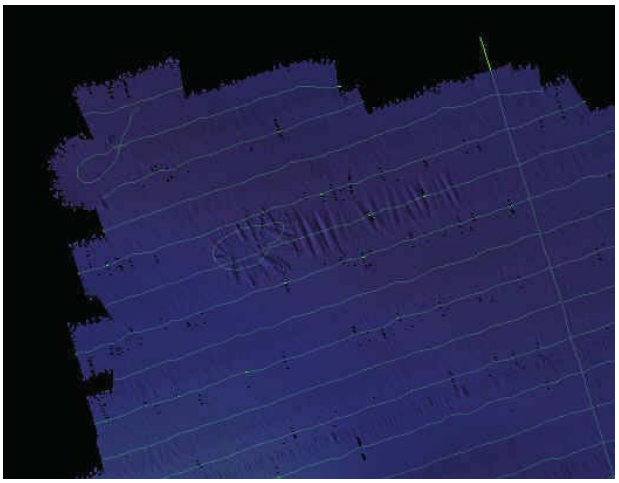


Fig. 7. Degraded Navigation data before

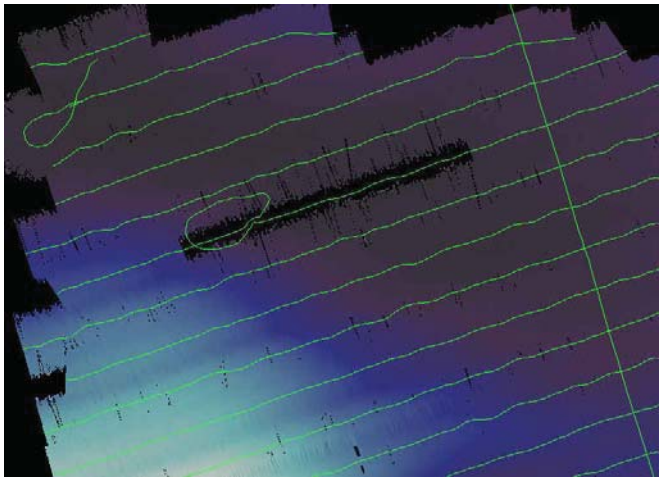


Fig. 8. Degraded Navigation data after

B 3. CORRECTIONS TO ECHO SOUNDING

HDCS 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. ***Concur***

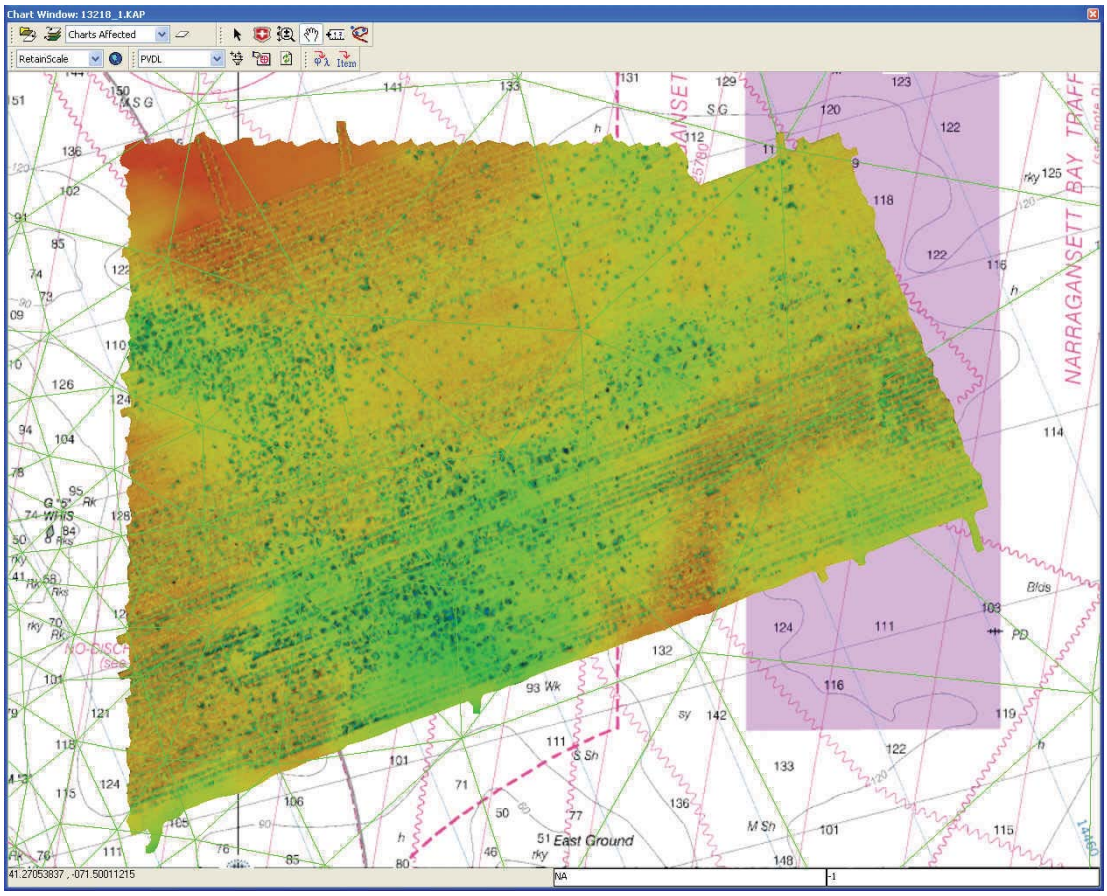


Fig 9. Final Tide Zoning

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

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. ***Concur with clarification. There is no table of sound velocity casts provided in Separate II that accompanied submitted DR. A DQA format file was provided which was unable to be opened and reviewed.***

Sound velocity corrections for this survey were applied using only the ships Moving Vessel Profiler (MVP). Launch acquired data was on the same days in the same general vicinity of the ship. ***Concur with clarification. Omitting the launch acquired data causes SVP artifacts in the launch data lines, which are further explained in the SAR document section 16 HIPS Flier Review.***

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 H12009 are as follows: ***Concur***

Project	Vessel	Tide Values		Sound Speed Values		
		Measured	Zoning	CTD	MVP	Surface
H12009	3101	TCARI	TCARI	4	NA	0.2
	S222	TCARI	TCARI	4	1	0.2

Table 3: TPE Parameters

These values were calculated for all MBES data immediately following CARIS Merge. ***Concur***

B 4.2 BASE Surfaces and Mosaics

The following table describes all BASE Surfaces submitted as part of Survey H12009:

Name of Surface	*Resolution*	*Type*	*Purpose*
H12009_East_CUBE_NOAA_2M_Final	2.0 meter	CUBE	Sounding Coverage
H12009_NW_CUBE_NOAA_2M_Final	2.0 meter	CUBE	Sounding Coverage
H12009_SW_CUBE_NOAA_2M_Final	2.0 meter	CUBE	Sounding Coverage
H12009_AWOIS_1833_Final	0.5 meter	CUBE	AWOIS Coverage
H12009_AWOIS_1841_Final	0.5 meter	CUBE	AWOIS Coverage
H12009_AWOIS_1824_Final	0.5 meter	CUBE	AWOIS Coverage
H12009_AWOIS_WKPA_Final	0.5 meter	CUBE	AWOIS Coverage
H12009_WK_01_Final	0.5 meter	CUBE	Feature Coverage

Table 4: BASE Surfaces

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 one meter AWOIS 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. ***Concur with clarification. AHB reviewer had to make additional edits that are further discussed in section 19. Preliminary Sounding Review in the survey's accompanying SAR document.***

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. ***Concur***

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. ***Concur***

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

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 H12009. 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 26 May 2009 in accordance with the FPM and project letter instructions. ***Concur***

A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 26 May 2009 in accordance with the FPM and project letter instructions. ***Concur***

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

Concur.

Chart/ENC	Edition/Date	Corr. For NM	Corr. For LNM	Scale
13214	28th Ed., Apr/06	7/25/09	7/15/09	1:20,000
13215	18th Ed., Aug/04	7/25/09	7/15/09	1:40,000
13217	15th Ed., Nov/06	7/25/09	7/15/09	1:15,000
13218	40th Ed., Feb/08	7/25/09	7/15/09	1:80,000
13219	12th 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 H12009. ***Concur***

D.1.2 Chart 13215 Comparison

Depths from charts 13215 generally agree with the current survey, with differences generally 3 feet or less. ***Concur.***

D.1.3 Chart 13217 Comparison

Depths from charts 13217 generally agree with the current survey, with differences generally 3 feet or less. ***Concur***

D.1.4 Chart 13218 Comparison

Depths from charts 13218 generally agree with the current survey, with differences generally 3 feet or less with the exception of a shoal. The shoal has spread from east to west in the southern portion of the outbound lane of the Narragansett traffic scheme. Shoal depths are showing 124 ft in 133 ft of water. ***Concur with clarification. Approximate location of the shoaling is within Latitude 41-12-2.86N and Longitude 71-25-20.91W; Latitude 41-12-43.53N and Longitude 71-23-50.32W.***

D 1.5 Chart 13219 Comparison

No depths or features are charted within the limits of H12009. ***Concur***

D.1.6 ENC US5RI11E

Soundings are generally comparable with charted depths, with differences in charted and survey soundings 1 meter or less. This ENC was scanned from paper chart 13217; differences between ENC US5RI11E and this survey are identical to differences between raster chart 13217 and this survey. ***Concur***

D 1.7 ENC US4CN21M Comparisons

No depths or features are charted within the limits of H12009. ***Concur***

D.1.8 ENC 4MA23M

Soundings are generally comparable with charted depths, with differences in charted and survey soundings 1 meter or less. This ENC was scanned from paper chart 13218; differences between ENC 4MA23M and this survey are identical to differences between raster chart 13218 and this survey. ***Concur***

D.2 Additional Results

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

A total of four assigned AWOIS items were located within the limits of H12009 and investigated during this survey. AWOIS items were investigated with object detection resolution multibeam over the search radius. All AWOIS items are described in detail in Appendix II of this report. ***Concur***

D.2.4 Shoreline

There is no shoreline within the sheet limits of survey H12009. ***Concur***

D.2.5 Charted Features

A wreck, position approximate, in position 41° 10' 53.7" N, 071° 30' 11.8" W was not located during H12009. AWOIS #14582 with a 500m search radius for a wreck is associated with the charted feature. Nothing was found using a RESON 7125 MB, with a 0.50m object detection CUBE surface. Recommend removal of charted Wreck, PA to Update Services Division, MCD. ***Concur***

A charted "DANGER *Unexploded depth charge* May 1945" area is located on the charts covered by the survey. The charted purpose of this danger area is to warn of unexploded depth charges. AWOIS # 1841 details the area and its history. The Hydrographer has no recommendations on this danger area. ***Concur with clarification. AHB reviewer recommends retaining danger area about the Obstruction point as charted.***

A charted traffic separation scheme for Narragansett Bay is located in the survey area. Depths in this traffic scheme are comparable to charted soundings, generally with a difference of 1' or less. The Hydrographer has no recommendations on this traffic scheme. ***Concur with clarification. AHB reviewer recommends updating the chart with the survey soundings.***

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

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. ***Concur with clarification. AHB review recommends that the charted cables be retained as charted.***

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. ***Concur***

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. ***Concur***

D 3.2 Shoals

There is a shoal that has spread from east to west in the southern portion of the outbound lane of the Narragansett traffic scheme. Shoal depths are showing 124 ft in 133 ft of water. ***Concur with clarification. Approximate location of the shoaling is within Latitude 41-12-2.86N and Longitude 71-25-20.91W; Latitude 41-12-43.53N and Longitude 71-23-50.32W.***

D.4 Aids to Navigation

There are no charted Aids to Navigation (ATON) within the revised limits of H12009. ***Concur***

D.5 Coast Pilot Information

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

D.6 Miscellaneous

Bottom Samples

Bottom samples were collected in accordance with NOAA Hydrographic Survey Specifications and Deliverables. A complete description of all bottom samples acquired during Survey H12009 is contained in the Pydro PSS. A list of all bottom samples acquired during Survey H12009 is contained in Appendix V. ***Concur***

Environmental Conditions and Notes

No environmental conditions occurred. ***Concur***

D.8 Adequacy of Survey

This survey is considered complete and adequate to supersede charted depths and features within the common area except as noted in this report. ***Concur***

Summary and Recommendations for Additional Work

No additional work is needed to complete this survey. ***Concur with clarification. AHB reviewer had to make edits to the submitted BASE surfaces.***

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
2009.09.17 15:47:59
-04'00'

LT Jasper D. Schaer, NOAA
Field Operations Officer

Digitally signed by Shepard Smith
Date: 2009.09.17 18:50:05 -04'00'

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 Manager:

mark blankenship
cn=mark blankenship, o=NOAA Ship Thomas Jefferson, ou=NOAA, email=mark.blankenship@noaa.gov, c=US
2009.09.17 15:45:33 -04'00'

LT Mark A. Blankenship, NOAA

Appendix I

Dangers to Navigation

No Dangers to navigation were reported for survey H12009.

Appendix II

Survey Features Report

1. **Charted Features**
2. **AWOIS Items**
3. **Uncharted Features**

AHB_H12009_Features

Registry Number: H12009

State: Rhode Island

Locality: Block Island Sound

Sub-locality: 7NM East of Block Island

Project Number: OPR-B363-TJ-09

Survey Dates: 05/15/2009 - 05/18/2009

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13217	15th	11/01/2006	1:15,000 (13217_1)	USCG LNM: 12/30/2008 (06/23/2009) CHS NTM: None (04/24/2009) NGA NTM: None (06/27/2009)
13215	18th	08/01/2004	1:40,000 (13215_1)	USCG LNM: 01/13/2009 (06/23/2009) CHS NTM: None (04/24/2009) NGA NTM: None (06/27/2009)
13205	38th	02/01/2007	1:80,000 (13205_1)	[L]NTM: ?
13218	41st	10/01/2009	1:80,000 (13218_1)	USCG LNM: 11/10/2009 (11/24/2009) NGA NTM: 11/15/2003 (12/05/2009)
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13006	34th	05/01/2007	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	49th	04/01/2007	1:1,200,000 (13003_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	140ft Wreck	Wreck	42.92 m	41° 15' 40.7" N	071° 31' 08.3" W	---
1.2	110ft Wk (uncharted)	Wreck	33.13 m	41° 14' 11.5" N	071° 25' 03.7" W	---
2.1	#1833 - Wreck	Wreck	29.82 m	41° 13' 34.9" N	071° 25' 06.9" W	1833
2.2	#14582 - Disproved	AWOIS	[no data]	[no data]	[no data]	---
2.3	#1824 - Disproved	AWOIS	[no data]	[no data]	[no data]	---
2.4	#1841 - OBSTRUCTION	AWOIS	[no data]	[no data]	[no data]	---

1 - New Features

1.1) 140ft Wreck

Survey Summary

Survey Position: 41° 15' 40.7" N, 071° 31' 08.3" W

Least Depth: 42.92 m (= 140.81 ft = 23.468 fm = 23 fm 2.81 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.020 m ; **TVU (TPEv)** ±0.198 m

Timestamp: 2009-138.21:13:21.277 (05/18/2009)

Survey Line: h12009 / tj_3101_reson8125_mb / 2009-138 / 099_2112

Profile/Beam: 142/207

Charts Affected: 13217_1, 13215_1, 13205_1, 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Unknown wreck discovered post acquisition. Wreck is outside survey limits and was not developed. Wreck is inside survey limits for OPR-B363-TJ-09 sheet H12010, next survey sheet to west of H12009.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12009/tj_3101_reson8125_mb/2009-138/099_2112	142/207	0.00	000.0	Primary

Hydrographer Recommendations

Chart a wreck, details from survey H12010.

Cartographically-Rounded Depth (Affected Charts):

141ft (13217_1, 13215_1, 13205_1, 13218_1)

23fm (12300_1, 13006_1, 13003_1)

43m (5161_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes: CATWRK - 1:non-dangerous wreck

OBJNAM - Wreck

QUASOU - 6:least depth known

SORDAT - 20090519

SORIND - US,US,graph,H12009

STATUS - 1:permanent

TECSOU - 3:found by multi-beam

VALSOU - 42.919 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Wreck feature was not identified nor addressed as a wreck in H12010 and therefore charted as a sounding during the H-Cell compilation of Survey H12010 on chart 13217, 1:15,000k. Chart non-dangerous wreck, least depth 140 ft at the surveyed position.

Feature Images

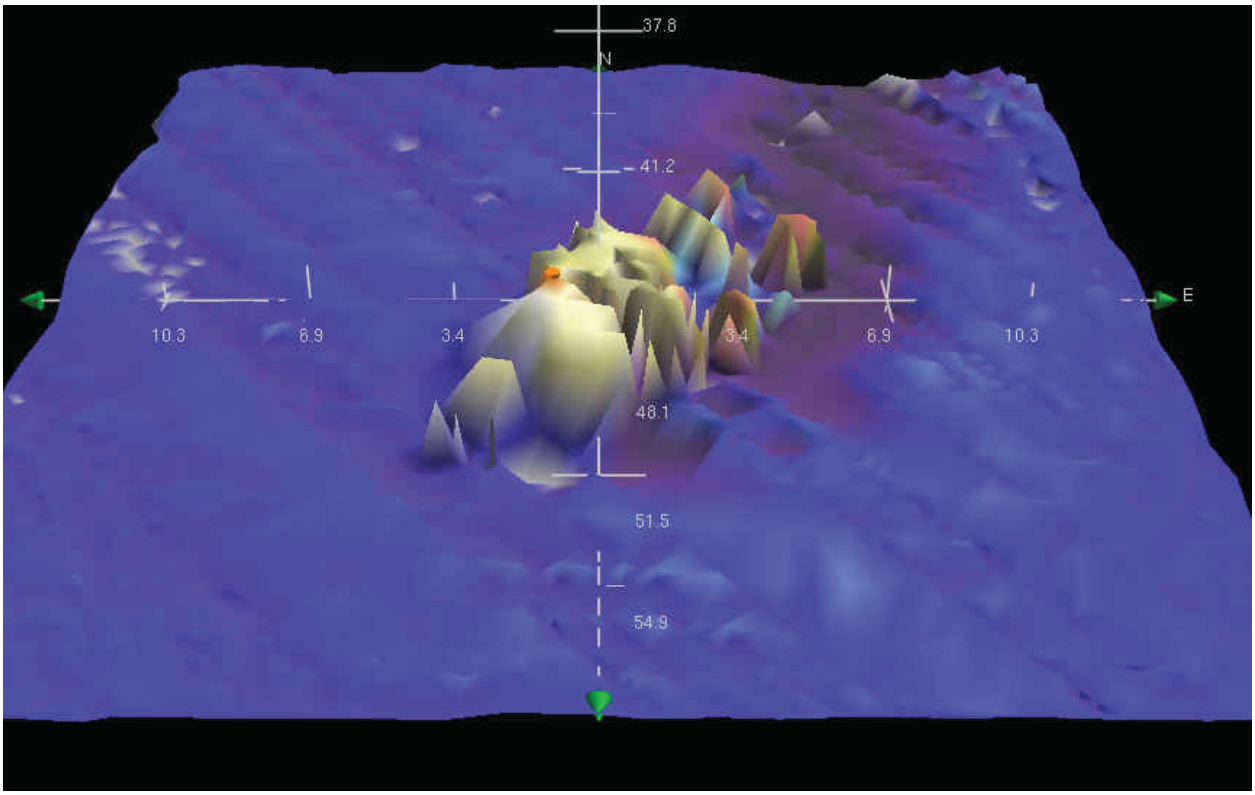


Figure 1.1.1

1.2) 110ft Wk (uncharted)

Survey Summary

Survey Position: 41° 14' 11.5" N, 071° 25' 03.7" W

Least Depth: 33.13 m (= 108.70 ft = 18.117 fm = 18 fm 0.70 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.008 m ; **TVU (TPEv)** ±0.435 m

Timestamp: 2009-138.09:02:04.505 (05/18/2009)

Survey Line: h12009 / tj_s222_reson7125_stbd / 2009-138 / 137_0825

Profile/Beam: 10817/25

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

Remarks:

Wreck found in center of "unexploded depth charge" area, location near AWOIS #1841.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12009/tj_s222_reson7125_stbd/2009-138/137_0825	10817/25	0.00	000.0	Primary
h12009/tj_s222_reson7125_stbd/2009-138/138_0710	2911/407	9.24	160.5	Secondary

Hydrographer Recommendations

Chart as a wreck.

Cartographically-Rounded Depth (Affected Charts):

108ft (13218_1)

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

33m (5161_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes: OBJNAM - 110ft Wreck

QUASOU - 6:least depth known

SORDAT - 20090519

SORIND - US,US,graph,H12009

TECSOU - 3:found by multi-beam

VALSOU - 33.132 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart non-dangerous Wreck, least depth 110 ft at the surveyed position.

Feature Images

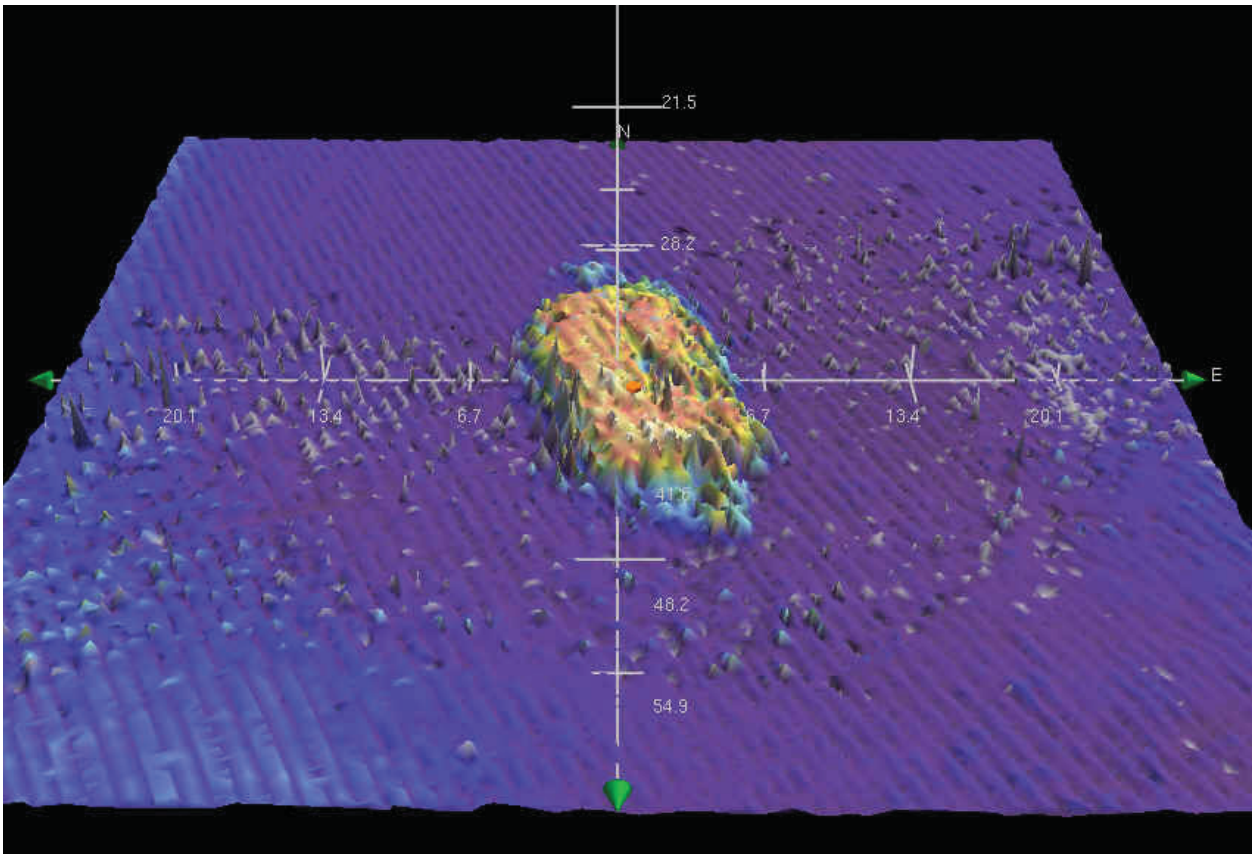


Figure 1.2.1

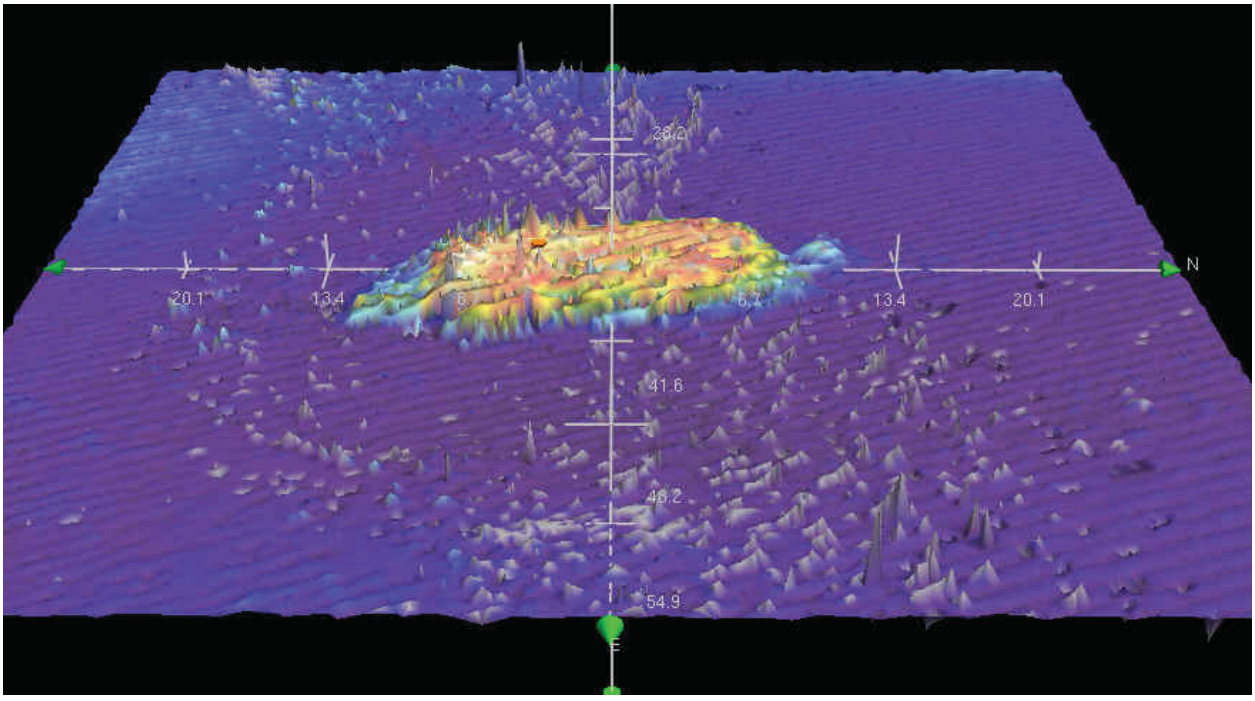


Figure 1.2.2

2 - AWOIS Features

2.1) #1833 - Wreck

Primary Feature for AWOIS Item #1833

Search Position: 41° 13' 36.4" N, 071° 25' 07.2" W

Historical Depth: [None]

Search Radius: 0

Search Technique: [None]

Technique Notes: [None]

History Notes:

DESCRIPTION■ 24 NO.36; SUBMARINE, 740 GT; SUNK 5/6/45; POSITION ACCURACY WITHIN 1 MILE■ 58 DATED 4/3/53■ **** BOAT LIFE, VOL.X, NO.1, 1981; 252 FT L, 22 FT W, 1120 TON DISPLACEMENT ì■15 FT DRAFT; SUNK 5/6/45; NAVY DIVERS REPORTED 12 UNEXP. DEPTH CHARGES ì■AROUND WK; TODAY WK LIES UPRIGHT ON SANDY BOTTOM IN 130 FT OF WATER, ì■DIVERS CAN ENTER THRU CONNING TOWER HATCH OR THRU RUPTURED HULL, ì■VISIBILITY MAY DETERIORATE DUE TO HEAVY SEDIMENTATION, POPULAR ì■RECREATIONAL DIVE.■ **** LORAN C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH, ì■CT. POLICE DEPARTMENT, TEL NO. 203-622-8007; 9960-W 14472.9, ì■9960-Y 43895.1, 9960-X 25998.1.(X RATE DOES NOT FIT WITH POSITION ì■OF W AND Y RATES) (ENTERED MSM 3/89)

Survey Summary

Survey Position: 41° 13' 34.9" N, 071° 25' 06.9" W

Least Depth: 29.82 m (= 97.83 ft = 16.306 fm = 16 fm 1.83 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.006 m ; **TVU (TPEv)** ±0.431 m

Timestamp: 2009-135.22:42:08.480 (05/15/2009)

Survey Line: h12009 / tj_s222_reson7125_stbd / 2009-135 / 128_2224

Profile/Beam: 6705/1

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

Remarks:

Remains of German Submarine U-853 found by MB.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12009/tj_s222_reson7125_stbd/2009-135/128_2224	6705/1	0.00	000.0	Primary
H12009_AWOIS	AWOIS # 1833	47.05	172.2	Secondary

Hydrographer Recommendations

Refer to state SHPO for recomendations as to charting, currently it is uncharted. Submarine is within the "Danger" radius of unexploded depth charge, May 1945.

Cartographically-Rounded Depth (Affected Charts):

98ft (13218_1)

16fm (12300_1, 13006_1, 13003_1)

30m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 1:non-dangerous wreck
	OBJNAM - #1822 - Wreck
	QUASOU - 6:least depth known
	SORDAT - 20090519
	SORIND - US,US,graph,H12009
	TECSOU - 3:found by multi-beam
	VALSOU - 29.820 m
	VERDAT - 12:Mean lower low water
	WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. No response from SHPO. Chart non-dangerous Wreck, least depth 98 ft at the surveyed position.

Feature Images

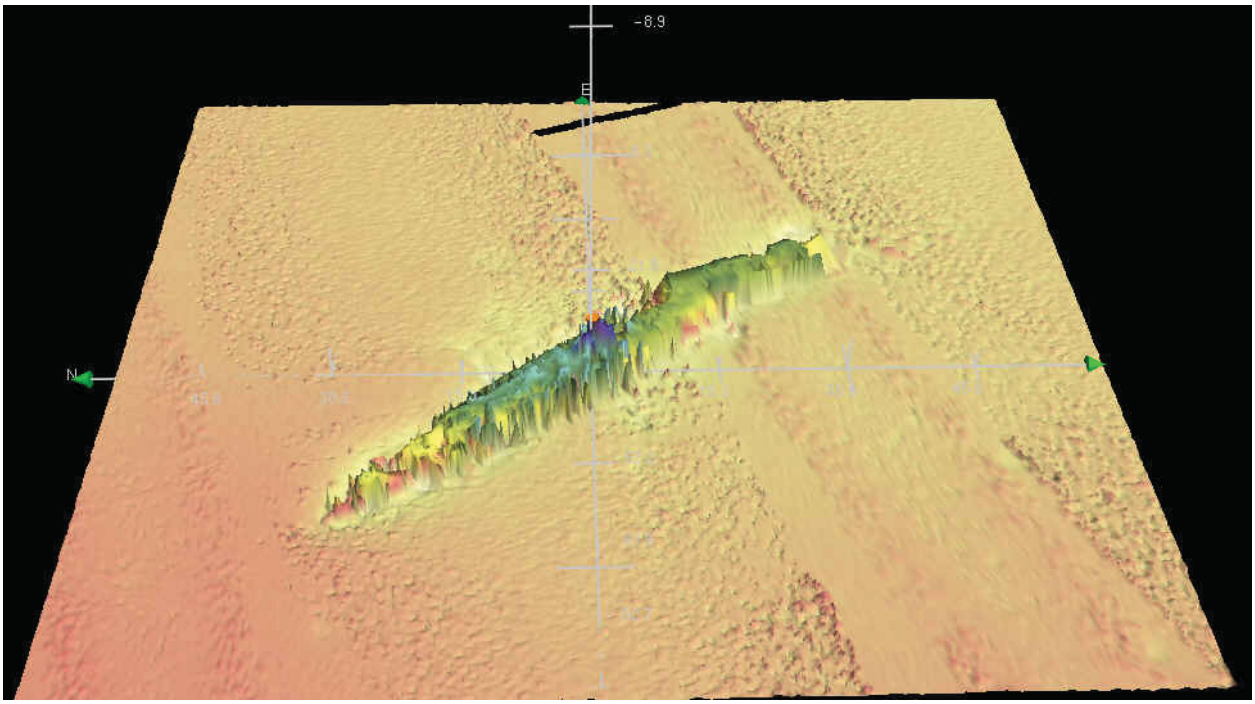


Figure 2.1.1

2.2) AWOIS #14582 - #14582 - Disproved

No Primary Survey Feature for this AWOIS Item

Search Position: 41° 10' 53.7" N, 071° 30' 11.8" W

Historical Depth: [None]

Search Radius: 500

Search Technique: MB, S2

Technique Notes: [None]

History Notes:

unknown source

Survey Summary

Charts Affected: 13215_1, 13205_1, 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

AWOIS with a 500m search radius for a wreck, position approximate. Not found using RESON 7125 MB, with a 0.50m object detection CUBE surface.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H12009_AWOIS	AWOIS # 14582	0.00	000.0	Primary

Hydrographer Recommendations

Delete the charted wreck (PA).

S-57 Data

[None]

Office Notes

Concur. Delete charted Wreck PA.

2.3) AWOIS #1824 - #1824 - Disproved

No Primary Survey Feature for this AWOIS Item

Search Position: 41° 12' 00.4" N, 071° 29' 58.2" W

Historical Depth: [None]

Search Radius: 500

Search Technique: MB,S2,ES

Technique Notes: [None]

History Notes:

HISTORY■ NM27/46--A MINE HAS BEEN REPORTED SUNK ABOUT 2 1/2 MILES EASTWARD i■OF BLOCK ISLAND IN PA LAT 41-12N, LONG 71-30W; THE MINE IS NOT i■CONSIDERED DANGEROUS TO SURFACE NAVIGATION BUT IS A POSSIBLE i■HAZARD IF CONTACTED BY FISHING GEAR OR GROUND TACKLE; NOT ADDED i■TO CHART. (ENTERED MSM 6/89)■■ DESCRIPTION■ 24 NO.1270; MINE; POSITION ACCURACY WITHIN 1 MILE. ■ **** PLEASE NOTE THIS MINE FALLS JUST OUTSIDE THE EAST EDGE OF i■THE SEARCH AREA FOR ITEM 1826 ****

Survey Summary

Charts Affected: 13215_1, 13205_1, 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

AWOIS with a 500m search radius for a wreck, position approximate. Not found using RESON 7125 MB, with a 0.50m object detection CUBE surface.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H12009_AWOIS	AWOIS # 1824	0.00	000.0	Primary

Hydrographer Recommendations

Retain as uncharted.

S-57 Data

[None]

Office Notes

Concur. No charting action required.

2.4) AWOIS #1841 - #1841 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 41° 14' 03.4" N, 071° 24' 58.2" W

Historical Depth: [None]

Search Radius: 0

Search Technique: [None]

Technique Notes: [None]

History Notes:

NM20/45--DANGER TO ANY FISHING OR DRAGGING OPERATION EXISTS i■WITHIN 1 MILE RADIUS OF LAT 41-14-03N, LONG 71-25-00W DUE TO i■UNEXPLODED DEPTH CHARGES IN THE VICINITY.■ NM21/45--LIGHTED BUOY ESTABLISHED TO MARK DANGEROUS AREA DUE TO i■UNEXPLODED DEPTH CHARGES. (ENTERED MSM 4/89)■■ DESCRIPTION■ 24 NO.1277; DEPTH CHARGES, SUNK 1945; POSITION ACCURACY WITHIN 1 MILE

Survey Summary

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

Remarks:

AWOIS located in center of "DANGER, Unexploded depth charge, May 1945", multiple small objects found within area, not of significant height.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H12009_AWOIS	AWOIS # 1841	0.00	000.0	Primary

Hydrographer Recommendations

Retain "DANGER, Unexploded depth charge, May 1945" as charted.

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: OBJNAM - #1841 - Obstruction

QUASOU - 6:least depth known

SORDAT - 20090519

SORIND - US,US,graph,H12009

TECSOU - 3:found by multi-beam

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

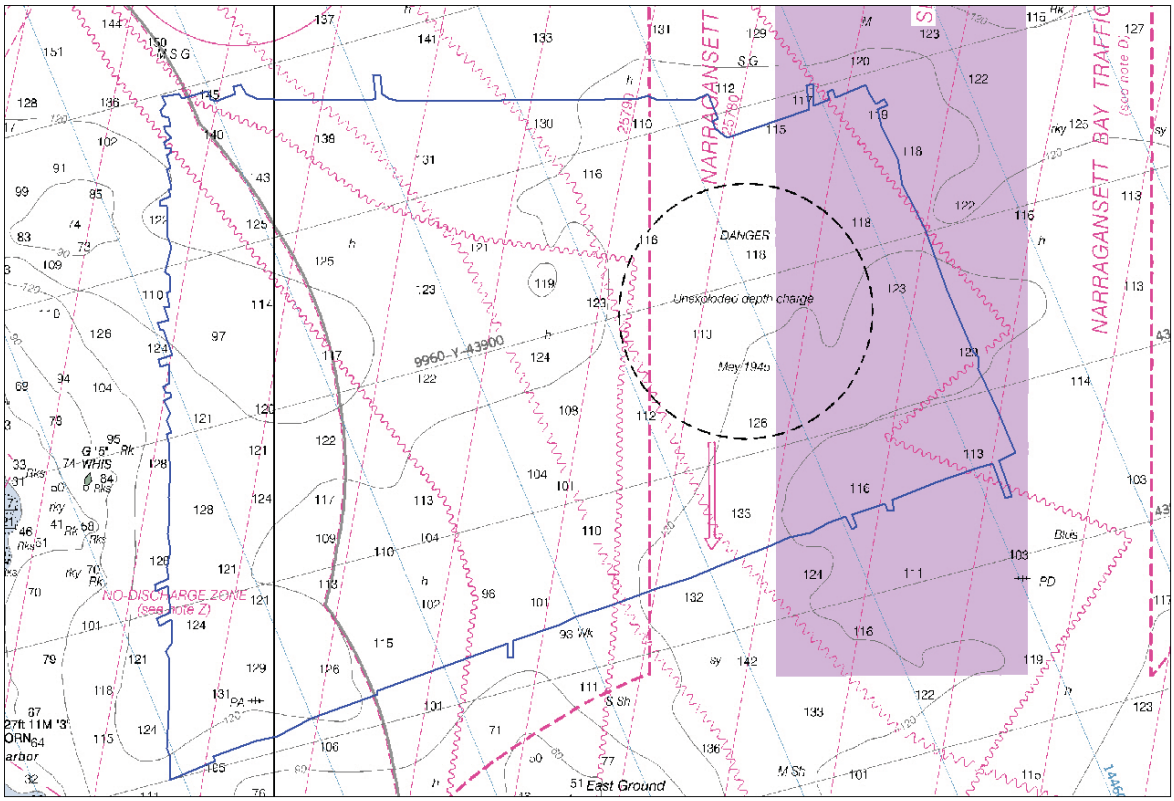
Office Notes

Concur. Recommend retaining charted Danger circle and related text "DANGER, Unexploded depth charge, May 1945."

Appendix III

Progress

Sketch



NOAA Ship THOMAS JEFFERSON

FY 2009 Project Statistics

Project	Location	Month/ Year	LNM YBES		LNM MB		LNM SSS		LNM Combo *		Combo Type ^		Items Investigated	Tide Gauges Installed / Removed	Bottom Samples
			Ship	Launch	Ship	Launch	Ship	Launch	Ship	Launch	Ship	Launch			
CY 2008															
Total for CY			0	0	332	528	58	208	0	0			0	0	40
CY 2009															
OPR-B363	Block Island Sound	May-09	0	0	508	37	0	0	0	0	0	0	6	0	6

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

May 27, 2009

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

FROM: CDR P. Tod Schattgen, 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

NOAA Thomas Jefferson
439 West York Street
Norfolk, VA 23510
ATTN: Commanding Officer

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

Project No.:	OPR-B363-TJ-09
Registry No.:	H12009
State:	Rhode Island
Locality:	Block Island Sound
Sublocality:	7NM East 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
MOA/TJ

Subject: smooth tides request, B363, H12009
From: "jasper schaer" <jasper.schaer@noaa.gov>
Date: Tue, 26 May 2009 21:20:05 -0400
To: smooth.tides@noaa.gov
CC: tod schattgen <Tod.Schattgen@noaa.gov>, shep.smith@noaa.gov, Jeremy McHugh <Jeremy.McHugh@noaa.gov>, Mark Blankenship <Mark.Blankenship@noaa.gov>

See attached.

r-js

H12009_smooth tides request.zip	**Content-Type:** application/x-zip-compressed **Content-Encoding:** base64

Year_DOY	Min Time	Max Time
2009_128	03:01:09	07:35:39
2009_134	21:04:17	23:55:27
2009_135	00:19:10	23:59:36
2009_136	00:14:20	04:17:07
2009_138	01:05:26	23:57:40
2009_139	00:37:41	18:35:23

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : June 22, 2009

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-B363-TJ-2009
HYDROGRAPHIC SHEET: H12009

LOCALITY: 7NM East of Block Island, Block Island, RI
TIME PERIOD: May 8 - 19, 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

REMARKS: RECOMMENDED GRID

Please use the TCARI grid "H12009.tc" as the final grid for project OPR-B363-TJ-2009, H12009, during the time period between May 8 - 19, 2009.

Refer to attachments for grid information.

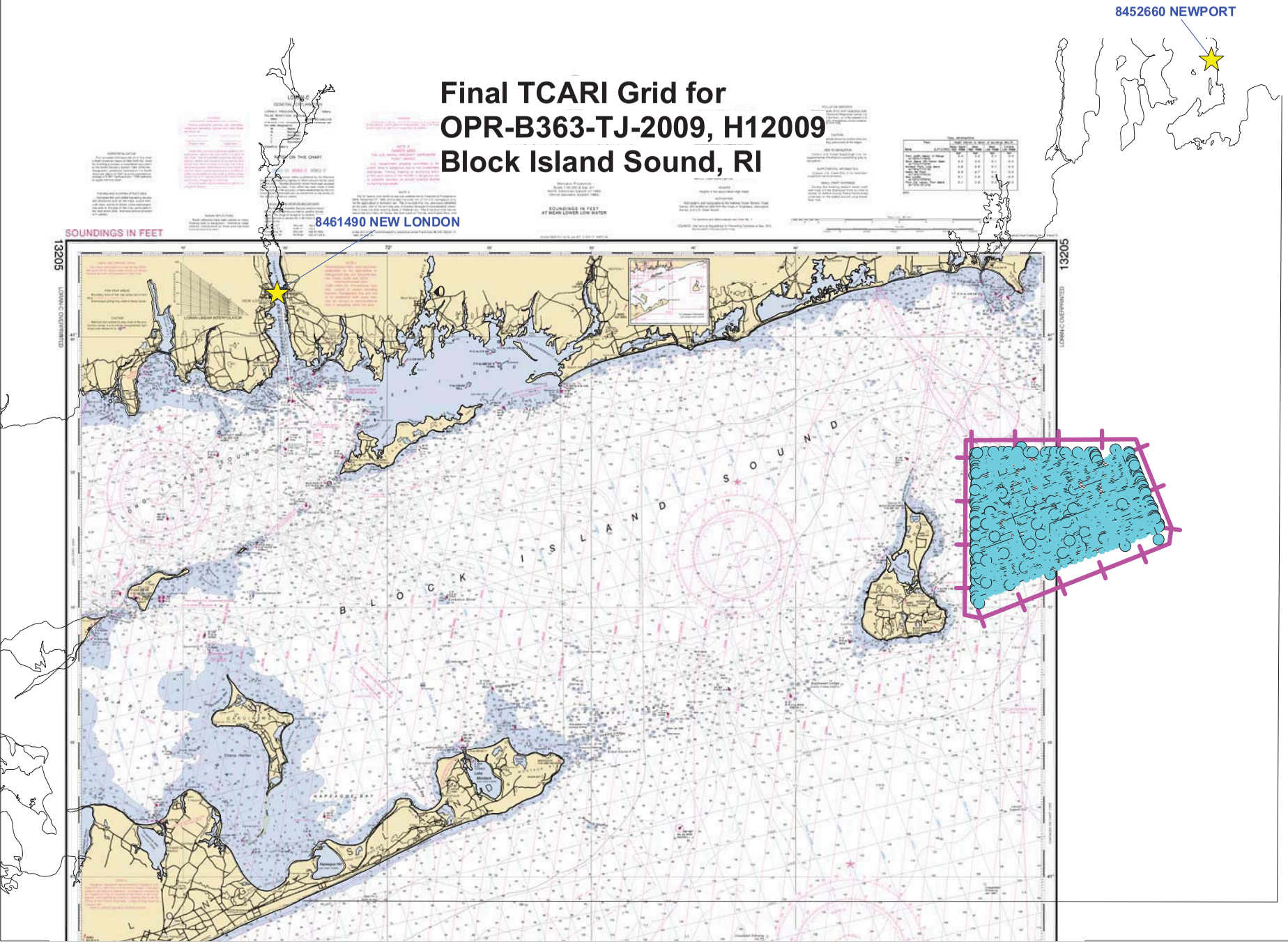
Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

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: 2009.06.23 14:46:49 -04'00'

CHIEF, OCEANOGRAPHIC DIVISION

Final TCARI Grid for OPR-B363-TJ-2009, H12009 Block Island Sound, RI



Appendix V

Supplemental Survey Records & Correspondence

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>
Atlantic Hydrographic Branch
NOAA OCS

Subject: H12009, charted PA
From: "jasper schaer" <jasper.schaer@noaa.gov>
Date: Wed, 13 May 2009 09:22:21 -0400
To: Jeremy McHugh <Jeremy.McHugh@noaa.gov>

Jeremy-

About to start B363, H12009. I noticed there is a PA wreck, but no AWOIS history on it. Any ideas on this one?

r-js

LT.Jasper Schaer <jasper.schaer@noaa.gov>
Field Operations Officer
NOAA Ship THOMAS JEFFERSON
NOAA Office of Marine and Aviation Operations

chartedPA_H12009.pdf	**Content-Type:** application/pdf **Content-Encoding:** base64

Subject: Re: H12009, charted PA
From: Jeremy McHugh <Jeremy.McHugh@noaa.gov>
Date: Wed, 13 May 2009 10:53:42 -0400
To: jasper schaer <jasper.schaer@noaa.gov>

Hi Jasper,

That item was overlooked when the project was planned. Here is an updated AWOIS database for you to use that includes this item. I do not have a source for it, but have assigned it as a full investigation item requiring a 500 m search radius for disproval.

Let me know if you need anything else,

Jeremy

jasper schaer wrote, On 5/13/2009 9:22 AM:

> Jeremy-
>
> About to start B363, H12009. I noticed there is a PA wreck, but no AWOIS history on it. Any ideas on this one?
>
> r-js

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

BlockIslandAWOIS.mdb	**Content-Type:** application/msaccess **Content-Encoding:** base64

U-853

Type	IXC/40	
Ordered	5 Jun 1941	
Laid down	21 Aug 1942	**AG Weser, Bremen** (werk 1059)
Launched	11 Mar 1943	
Commissioned	25 Jun 1943	Kptlt. Helmut Sommer
Commanders	25 Jun 1943 - 9 Jul 1944 Kptlt. **Helmut Sommer** 18 Jun 1944 - 9 Jul 1944 Oblt. **Helmut Frömsdorf** 10 Jul 1944 - 31 Aug 1944 Oblt. **Otto Wermuth** 24 Aug 1944 - 15 Oct 1944 KrvKpt. **Günter Kuhnke** (Knights Cross) 1 Sep 1944 - 6 May 1945 Oblt. **Helmut Frömsdorf**	
Career	**3 patrols**	25 Jun 1943 - 31 Mar 1944 **4. Flottille** (training) 1 Apr 1944 - 1 Oct 1944 **10. Flottille** (front boat) 1 Oct 1944 - 6 May 1945 **33. Flottille** (front boat)
Successes	1 ship sunk for a total of 5,353 GRT 1 warship sunk for a total of 430 tons	
Fate	Sunk 6 May, 1945 in the North Atlantic **south-east of New London**, in position 41.13N, 71.27W, by depth charges from the US destroyer escort **USS Atherton** and the US patrol frigate **USS Moberly**. 55 dead (all hands lost).	

Some sources state that the destroyer **USS John D. Ericsson** (DD-440) is also credited with the sinking of the boat. My own sources disagree and what I consider the best source does not mention the destroyer as responsible. However, she was certainly in the area and dropped depth charges on or near the boat so she should probably have some credit for its loss.

Location of the wreck

She is reported to be lying at 41 12 40N 71 25 20W, in 125/130 feet of water (this is about 4 miles west of the official sinking location).

Attacks on this boat

25 May 1944

U-853 was attacked with rockets by three Swordfish aircraft from the British MAC-ships HMS Ancylus and HMS Empire MacKendrick, escorting the convoy ON-237. The boat fought off the attack with AA fire and escaped undamaged. All aircraft were hit during the attack and the Swordfish "M3" from HMS Empire MacKendrick was so badly damaged that it was jettisoned upon return to the carrier.

17 Jun 1944

Two Wildcat aircraft from the US escort carrier USS Croatan made repeated strafing attacks on U-853, about 30 miles south of the carrier. The boat dived and escaped before the Avengers arrived, but had to abort the patrol due to the many casualties: 2 men were killed and 12 wounded [Bootsmann Kurt Schweichler, Maschinengefreiter Karl-Heinz Löffler]

2 recorded attacks on this boat.

General notes on this boat

In August 1944 Korvkpt. Kuhnke was Commander of the 10th flotilla. He went back to Germany with **U-853** (left Lorient, France on 27 August, 1944 and reached Flensburg on 14 October 1944). Then he took over command of the 33rd Flotilla.

Schnorchel-fitted U-boat

This boat was fitted with a Schnorchel underwater-breathing apparatus in July 1944. Read more about the **Schnorchel** and see list of **fitted boats**.

Men lost from the boat

17 Jun 1944

Aircraft from the US escort carrier USS Croatan made repeated attacks on the boat. 2 men were killed and 12 wounded in these attacks. [Bootsmann Kurt Schweichler, Maschinengefreiter Karl-Heinz Löffler]

On Final Attack
The Story of the U853

By Michael Salvarezza and Christopher Weaver
Image: Courtesy National Archives
zoom image

East Coast Diving | Shipwreck Corner | Shipwreck Gallery

It was May 5th, 1945, and the long and tragic world war in Europe was finally reaching its conclusion. Adolf Hitler, having just committed suicide, had been replaced by Admiral Karl Doenitz of the German Navy. In a New York Times story, Doenitz is quoted as telling his Nazi forces that, "the struggle against the Western Powers has become senseless." In a United Press International article, Doenitz is said to have issued orders to all U-boat commanders to "cease hostilities" at once and to return home immediately. It appeared as if the terrifying siege against allied shipping along the Atlantic coast of the United States was finally over.

Or was it?

A few miles Northeast of Block Island, a small spit of land lying east of New York's Long Island (technically part of the state of Rhode Island) the U-853, commanded by Oberleutnant Helmut Froemsdorf, lay in waiting in the murky waters of the Atlantic.

Built in 1943 by Deschimag, in Bremen, German, the U-853 had been a recent addition to the German Navy. She was a IX-C class submarine, running 252 feet in length with a 22.7 foot beam. Constructed of steel, the U-853 displaced 1,120 gross tons. The armament she carried included two twin 20mm anti-aircraft guns, one 37mm anti-aircraft gun, one 105mm deck gun and six torpedo tubes. She was nicknamed Der Seiltaenzer (Tightrope Walker) by her crew and had reached her operating position off of New England late in the month of April 1945.

During this time, a Collier (bulk cargo carrier) named the S.S. Black Point was completing an uneventful voyage from Newport News, Virginia to Weymouth, Massachusetts. She was loaded with a cargo of 7,500 tons of soft coal. This cruise would be her last and the Black Point would soon become the last American Flag merchant ship to be sunk by German submarines. What makes this sinking so tragic is that it occurred after Donitz's orders were given to cease hostilities and only a few hours before the official end to the war.

The Black Point had left its coastal convoy at the approach to New York Harbor, as these waters were considered to be free of enemy submarines. As she entered the western end of Rhode Island Sound, four miles Southeast of Point Judith, Rhode Island, a huge explosion ripped a 40 feet opening in her stern section. Within 15 minutes, the Black Point had capsized and was laid to rest in 95 feet of water. Twelve men lost their lives in the sinking, while 34 crew members were rescued by ships that soon converged upon the area. One of these ships, the S. S. Kamen, immediately sent an SOS report of the torpedoing and the hunt for the U-853 began.

Black Point Image: Courtesy National Archives
zoom image

At 1742 hours, the radio operator of the Moberly, a Coast Guard frigate traveling with two Navy destroyer escorts (Amick and Atherton), picked up the signal from the Kamen. These ships were 30 miles from the scene and arrived in the vicinity of the sinking at 1930 (7:30 p.m.) hours. Taking stations 3,000 feet apart, they began their search.

For the remainder of the evening, a series of attacks on the U-853 ensued. Each time the vessels believed they had dealt a mortal blow to the German ship, sonar would reveal its movement as it attempted to escape. The struggle was a perilous one. In fact, shortly after midnight on May 6, the Moberly and the Atherton both damaged themselves by failing to avoid the explosions of their own depth charges. Eventually, as the evening wore on, the attacks were halted until 0530 the following morning, when the sun began to rise on the final day in the life of the U-853.

Two blimps, K-16 and K-58 from Lakehurst, New Jersey, joined the attack with the arrival of daylight. They were directed to assist in locating and identifying oil slicks and to help mark the location of the submarine with smoke and dye markers. The U-boat was believed to be heavily damaged and appeared to be bleeding large amounts of air and oil.

The K-16 blimp dropped a sonar buoy on a spot where oil was still rising to the surface. The sonar operators in both blimps then heard the sounds of metallic hammering coming from the submarine. About ten minutes later, a long shrill shriek was heard. Attacks were then made on this spot using the blimp's 7.2" rocket bombs. At 1045 hours, the U-853 was declared sunk and on the bottom 7.7 miles east of Block Island.

Ship Specifications

Date Sunk:	May 6, 1945
Date Commissioned:	June 25, 1943
	252 feet
Length:	22.7 feet
Beam:	
Draft:	1,120 gross tons
Displacement:	IX-C
Type of vessel:	Steel
Hull Construction:	130 feet
Depth of Water:	Intact
Condition:	Upright, slight list (left)
Bottom Orientation:	Advanced
Skill Level:	25776.1 - 43824.8
Loran C Position:	41° 00' 13.31" (N) / 071° 00' 24.85" (W)
Latitude/Longitude:	
Notes:	

Today, decades after the sinking of the U-853, mystery still surrounds this wreck. Why did she attack and sink the Black Point one day after the cease fire order had been given by the acting Fuhrer? Did the U-853 receive and then ignore the order, or was the order never received? Several theories persist regarding the "true" nature of the U-853's mission. Some say that she was designed to be Hitler's private escape craft.

Others maintain that she was transporting millions of dollars worth of mercury, cash and gold. In fact, several salvage attempts have been made on the vessel, none of which have ever resulted in the recovery of treasure. Indeed, in 1961, a full scale salvage attempt was seriously considered which would have attempted to raise the U-853 from the bottom. This project never proceeded further than the planning stages.

AHB COMPILATION LOG

General Survey Information	
REGISTRY No.	H12009
PROJECT No.	OPR-B363-TJ-09
FIELD UNIT	NOAA SHIP THOMAS JEFFERSON
DATE OF SURVEY	20090508 - 20090519
LARGEST SCALE CHART	***13215, edition 18, 20040801, 1:40,000***
ADDITIONAL CHARTS	***13218, edition 41, 20091001, 1:80,000***
SOUNDING UNITS	**feet**
COMPILER	Kolleen McKenzie

Source Grids	**File Name** H:\Compilation\H12009_B363_TJ\AHB_H12009\SAR Final Products\GRIDS
	H12009_AWOIS_1824_1m_Final.csar **H12009_AWOIS_1833_1m_Final.csar** **H12009_AWOIS_1841_1m_Final.csar** **H12009_AWOIS_WKPA_1m_Final.csar** **H12009_East_Cube_NOAA_2m_Final.csar** **H12009_NW_Cube_NOAA_2m_Final.csar** **H12009_SW_Cube_NOAA_2m_Final.csar** **H12009_WK_01_1m_Final.csar**
Surfaces	**File Name** H:\Compilation\H12009_B363_TJ\AHB_H12009\COMPILE\Working
Combined	**H12009_4m_Combined.csar**
Interpolated TIN	**\Interpolated TIN\H12009_8m_InterpTIN.csar**
Shifted Interpolated TIN	**\Shifted Surface\H12009_8m_InterpTIN_Shifted.csar**
Final HOBs	**File Name** H:\Compilation\H12009_B363_TJ\AHB_H12009\COMPILE\Working\HOB's
Survey Scale Soundings	**H12009_SS_Soundings.hob**
Chart Scale Soundings	**H12009_CS_Soundings.hob**
Contour Layer	**H12009_Contours.hob**
Feature Layer	**H12009_Features.hob**
Meta-Objects Layer	**H12009_MetaObjects.hob**
Blue Notes	**H12009_BlueNotes.hob**
ENC Retain Soundings	**H12009_ENC_Retain_Soundings.hob**

Meta-Objects Attribution	
Acronym	**Value**
M_COVR	
CATCOV	1 – coverage available
SORDAT	20090519
SORIND	US,US,graph,H12009
M_QUAL	
CATZOC	6 – zone of confidence U (data not assessed)
INFORM	NOAA Ship Thomas Jefferson
POSACC	10.0 m
SORDAT	20090519
SORIND	US,US,graph,H12009

SUREND	20090519
SURSTA	20090508
DEPARE	
DRVALV 1	29.642 m
DRVALV2	44.742 m
SORDAT	20090519
SORIND	US,US,graph,H12009
M_CSCL	
CSCALE	80000, 15000
SORDAT	20090519
SORIND	US,US,graph,H12009

SPECIFICATIONS:

I. COMBINED SURFACE:
- a. Number of ESAR Final Grids: 8
- b. Resolution of Combined (m): 4 m

II. SURVEY SCALE SOUNDINGS (SS):
- a. Attribute Name: Depth
- b. Selection criteria: Radius, Shoal bias
- c. Radius value is: mm at map scale
  - i. Use single-defined radius: X.XX
  - ii. Or use radius table file: H12009_SS_SSR_40k.txt [*XXk = chart scale*]

    27.4320 36.57601.3

    36.5761 45.72001.4
- d. Queried Depth of All Soundings
  - i. Minimum: 29.642 m
  - ii. Maximum: 44.742 m

III. INTERPOLATED TIN SURFACE:
- a. Resolution (m): 8 m
- b. Interpolation method: Natural Neighbor
- c. Shift value: -0.75 ft [*only include applicable shift values*] [*-0.75 feet* (and/or) *-0.75 fathoms*]

IV. CONTOURS:
- a. Attribute Name: Depth
- b. Use a Depth List: H12009_depth_contours.txt
- c. Output Options: Create contour lines
  - i. Line Object: DEPCNT
  - ii. Value Attribute: VALDCO

V. FEATURES:
- a. Number of Chart Features: 6
- b. Number of Non-Chart Features: 2

VI. CHART SURVEY SOUNDINGS (CS):
- a. Number of ENC CS Soundings: 58
- b. Attribute Name: Depth
- c. Selection criteria: Radius, Shoal bias
- d. Radius value is: Distance on the ground (m)

i. Use single-defined radius: X.XX m

ii. Or use radius table file: H12009_CS_40k_Spacing.txt

27.4320	36.5759	550
36.5760	45.7200	650

H12009_CS_80k_Spacing.txt [*XXk = chart scale*]

0.0000	36.5759	1200
36.5760	45.7200	1400

e. Enable Filter: Interpolated != 1

f. Number Survey CS Soundings: 114

VII. NOTES:

[*Type text*]

ATLANTIC HYDROGRAPHIC BRANCH
H-CELL REPORT to ACCOMPANY
SURVEY H12009 (2009)

This H-Cell 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.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 five 1m development grids with three 2m mainscheme coverage grids at a combined resolution of 4 meters.. Survey scale soundings were created from the combined surface using a sounding space range file for the affected chart scale of 1:40,000 and a depth radius table with minimum value of one millimeter at chart scale for the affected chart scale of 1:80,000. 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 650 m on the ground for the affected chart scale of 1:40,000 and 1400 m on the ground for the affected chart scale of 1:80,000.

Depth contours were created from a shifted interpolated TIN surface of 8 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, OBSTRN, DMPGRD), Meta objects (M_COVR, M_QUAL, M_CSCL), 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 (H12009_CS.000), and one that contains the survey scale sounding selection and depth contours (H12009_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.

H12009 CARIS H-Cell final deliverables include the following products:

H12009_CS.000	1:40,000 Scale	H12009 H-Cell with Chart Scale Selected Soundings
H12009_SS.000	1:20,000 Scale	H12009 Survey Scale Soundings

B.2.4 Junctions

Survey H12009 junctions with H12010 (2009) to the west. Present survey soundings compare within one foot of the junction survey. Charted soundings in the north, west and south also agree to within one foot of the present survey.

B.4 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
PYDRO 9.10

C. VERTICAL AND 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.

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 H12009. 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 26 May 2009 in accordance with the FPM and project letter instructions.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

12315 (18th Edition, Aug./04)
Block Island Sound
Point Judith to Montauk Point
Corrected through NM 12/05/2009
Corrected through LNM 12/05/2009
Scale 1:40,000

12318 (41st Edition, Oct./09)
Martha's Vineyard to Block Island
Corrected through NM 12/05/2009
Corrected through LNM 12/05/2009
Scale 1:80,000

ENC Comparison

US4MA23M
Martha's Vineyard to Block Island
Edition 20
Application Date 2010-08-16
Issue Date 2010-08-16
Chart 13218

US5RI10M
Block Island Sound
Point Judith to Montauk Point
Edition 3
Application Date 2010-07-06
Issue Date 2010-03-02
Chart 13215

D.2 ADDITIONAL RESULTS

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.6 MISCELLANEOUS

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

D.7 ADEQUACY OF SURVEY

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

APPROVAL SHEET
H12009

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 disproval 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.

Kolleen McKenzie

Digitally signed by Kolleen McKenzie
DN: cn=Kolleen McKenzie, o=NOAA, ou=AHB, email=kolleen.mckenzie@noaa.gov, c=US
Date: 2010.09.30 10:26:17 -04'00'

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.

Richard T. Brennan
2010.09.30 15:57:58 -04'00'

Approved: _____

Richard T. Brennan
Commander, NOAA
Chief, Atlantic Hydrographic Branch

Paul Turner
AWOIS & SURF Check
2010.10.18 11:40:45
-04'00'