

H11421

<p>NOAA FORM 76-35A</p> <p>U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY</p> <p>DESCRIPTIVE REPORT</p>	
<i>Type of Survey:</i>	Basic Hydrographic Survey
<i>Registry Number:</i>	H11421
<p>LOCALITY</p> <p><i>State:</i> Massachusetts</p> <p><i>General Locality:</i> Gulf of Maine</p> <p><i>Sub-locality:</i> Wildcat Knoll</p>	
<p>2005</p> <p>CHIEF OF PARTY CAPT Emily B. Christman, NOAA</p>	
DATE	LIBRARY & ARCHIVES

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

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET**H11421**

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: **Massachusetts**

General Locality: **Boston**

Sub-Locality: **Wildcat Knoll**

Scale: **1:40,000** Date of Survey: **07/31/05 to 08/07/05**

Instructions Dated: **05/20/05** Project Number: **S-A902-TJ-05**

Change No.1 Dated: **There were no changes to the original instructions for this project**

Vessel: **NOAA Ship THOMAS JEFFERSON, S-222**

Chief of Party: **CAPT Emily B. Christman, NOAA**

Surveyed by: **THOMAS JEFFERSON Personnel**

Soundings by: **Odom Echotrac DF3200 MK II Echosounder**
KongsbergSimrad EM1002 multibeam echosounder

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

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

Verification by: **Atlantic Hydrographic Branch Personnel**

Soundings in: **Meters *Fathoms* at MLLW**

Remarks: ***Red, bold, italic notes in descriptive report were made during office processing.******1) All Times are UTC.******2) This is a Basic Hydrographic Survey.******3) Projection is UTM Zone 19.***

TABLE OF CONTENTS

A. AREA SURVEYED.....1
 CHARTLET.....2
B. DATA ACQUISITION AND PROCESSING.....3
 EQUIPMENT.....3
 QUALITY CONTROL.....3
 CORRECTIONS TO ECHO SOUNDINGS.....4
C. VERTICAL AND HORIZONTAL CONTROL.....4
 VERTICAL CONTROL.....4
 HORIZONTAL CONTROL.....5
D. RESULTS AND RECOMMENDATIONS.....6
 CHART COMPARISON.....6
 ADDITIONAL RESULTS.....7
E. APPROVAL SHEET.....8

APPENDIX *

** Included with this report.*

DESCRIPTIVE REPORT

to accompany
HYDROGRAPHIC SURVEY H11421

Scale of Survey: 1:40,000
Year of Survey: 2005
NOAA Ship THOMAS JEFFERSON S222
CAPT Emily B. Christman, Commanding

A. AREA SURVEYED

This hydrographic survey was conducted in accordance with Hydrographic Survey Letter Instructions* for project S-A902-TJ-05, Wildcat Knoll, Massachusetts. The original instructions are dated May 20th, 2005.

This Descriptive Report pertains to sheet "A" of project S-A902-TJ, which includes Wildcat Knoll, MA. The assigned registry number for this sheet is H11421, as prescribed in the Letter Instruction.

This project responds to a request from the National Marine Sanctuaries (NMS) office. The Wildcat Knoll area may be in need of marine protection in the future. Complete multibeam bathymetric coverage of the area will allow the NMS office to evaluate this need for marine protection and, if deemed necessary, also provide a basis for implementing protection for the area into the management plan of the Stellwagen Banks NMS.

Statistics

All data acquisition was conducted by NOAA Ship THOMAS JEFFERSON during this project.

- Lineal nautical miles of single beam only sounding lines – mainscheme only = **28.38**
- Lineal nautical miles of multibeam only sounding lines – mainscheme only = **590.47**
- Lineal nautical miles of side scan sonar only lines – mainscheme only = **28.95**
- Lineal nautical miles of any combination of the above techniques (**VBES & SSS**) = **28.38**
- Lineal nautical miles of crosslines = **43.54**
- Lineal nautical miles of developments = **None**
- Lineal nautical miles of shoreline/nearshore investigation = **None**
- Specific dates of data acquisition = **July 31 to August 07, 2005 (Dn. 212-219)**
- Number of bottom samples collected = **None**
- Number of items investigated either as a new development or from AWOIS = **3.0**

**Filed with original field records.*

The *approximate* survey limits are as follows:

- Northern limit: 42 29' 32.876" N
- Southern limit: 42 14' 29.407" N
- ~~Western~~ *Eastern* limit: 69 52' 55.651" W
- ~~Eastern~~ *Western* limit: 70 04' 51.076" W

B. DATA ACQUISITION AND PROCESSING *See also the Evaluation Report.*

EQUIPMENT

Data were acquired by NOAA Ship THOMAS JEFFERSON which is a 63.4 meter hydrographic survey vessel and has a typical draft of 4.51 meters at the time of this Survey. (This value was derived by computation of waterline minus the Z-value of SVP1) ($5.15 - .64 = 4.51\text{m}$).

THOMAS JEFFERSON acquired vertical beam echosounder (VBES) and multibeam data. An Odom Echotrac DF3200 MK II echosounder was used for VBES hydrography, and a EM1002 multibeam system was used for MBES hydrography. The Klein 5000 side scan sonar was towed from the stern during data acquisition. All positioning and attitude were determined with a TSS POS/MV 320 (version 3) GPS-aided inertial navigation system. Sound velocity profiles were collected using the Moving Vessel Profiler (MVP). *Concur.*

No unusual vessel configurations or problems were encountered. Refer to the Data Acquisition and Processing Report (DAPR)* for detailed equipment and vessel configuration information. *Concur.*

QUALITY CONTROL

Side Scan Sonar Quality Control

Daily confidence checks were made by observing the outer ranges of the side scan sonar images. A good check consisted of a distinguishing contact or sand waves across the entire range of the side scan trace. No unusual problems were encountered. *Concur.*

Multibeam Echosounder Quality Control

There were no faults with the ship's MBES system which affected data integrity. Confidence checks examining the internal consistency of the MBES data were made by comparing overlapping lines. Refer to this project's DAPR for detailed discussion of MBES system calibrations, data acquisition, and data processing. *Concur.*

**Filed with original field records.*

Crosslines

A total of 43.54 linear nautical miles (Inm) of MBES crosslines were run, equivalent to 7.37 % of the 590.47 nautical miles of MBES mainscheme data. Mainscheme data was defined for this survey to be both the 100% and 200% MBES coverage as well as the mainscheme VBES data in the area. Crossline HDCS data and Mainscheme base surface were compared using HIPS 6.0 QC report tool to examine the internal consistency of the data: however, since procedure compares HDCS data to a Base surface and not a Base surface to a Base surface, the results should be reviewed accordingly. There was good general agreement. *Concur.*

Junctions

No contemporary surveys were available or necessary for junction comparisons. *Concur.*

CORRECTIONS TO ECHO SOUNDING

All methods or instruments used were as described in the project DAPR.* All sound velocity casts were inserted into the Pydro PSS. *Concur.*

C. VERTICAL AND HORIZONTAL CONTROL *See also the Evaluation Report.*

VERTICAL CONTROL

The tidal datum for this project is Mean Lower Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station in Boston, MA (844-3970). served as datum control for the survey area. This station remained operational during the entire period of hydrography. *Concur.*

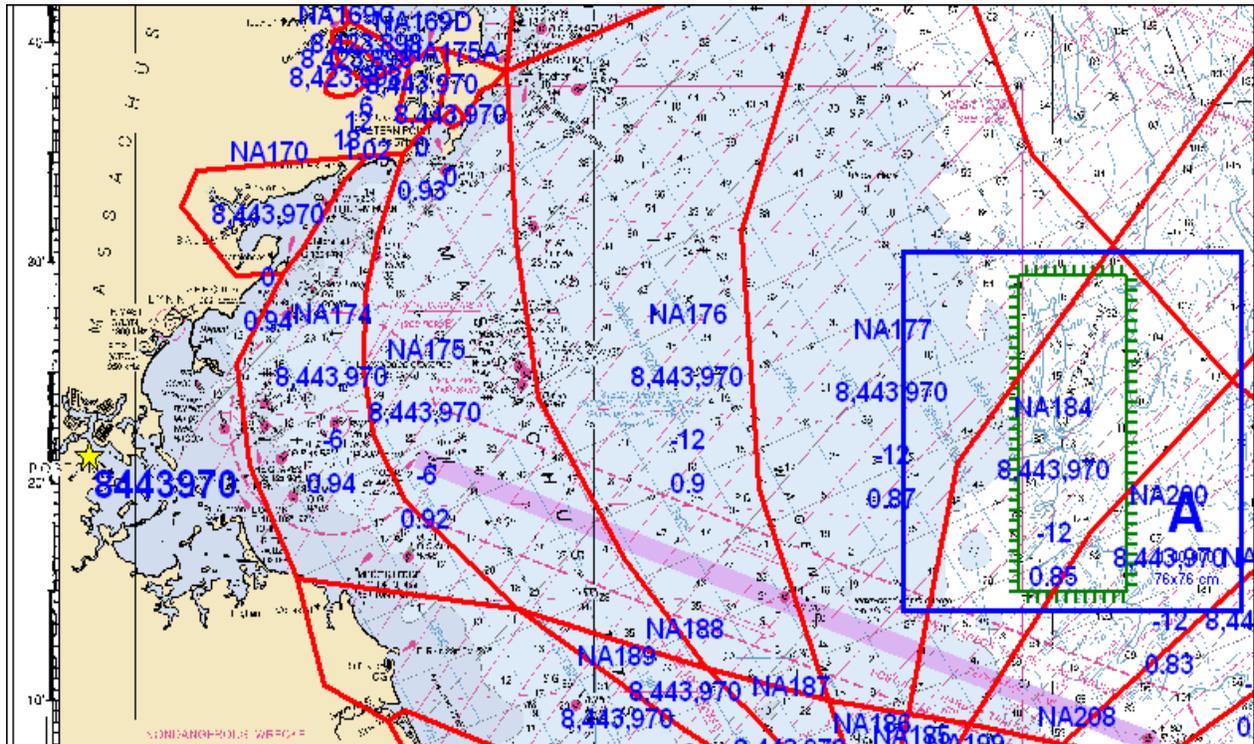
Tidal zoning for this survey is consistent with the Letter Instructions. The zoning used for this survey is as follows: *See also the Evaluation Report.*

STATION	CORRECTOR (min)	RATIO	REFERENCE
NA177	-12	x0.87	844-3970
NA184	-12	x0.85	844-3970
NA200	-12	x0.83	844-3970

Table 1: Final Tide Zones and Correctors

**Filed with original field records.*

A Request for Approved Tides letter was sent to N/OPS1 on August 07, 2005 (Appendix IV).^{*} Verified tides from the N/OPS1 CO-OPS website were downloaded on October 7th, 2005 and applied to all sounding data. *See also the Evaluation Report for Final Tide Note.*



HORIZONTAL CONTROL

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 19. *See also the Evaluation Report.*

Sounding positional control was determined using the Global Positioning System (GPS) corrected by U.S. Coast Guard differential GPS (DGPS) beacon stations. The primary and only DGPS beacon used for this survey was Acushnet, MA. No horizontal control stations were established for this survey. *Concur.*

Horizontal dilution of precision (HDOP) was monitored daily on the THOMAS JEFFERSON. That value did not exceed 5.0 and adequate satellite coverage was maintained throughout the survey period. *Concur.*

**Filed with original field records.*

D. RESULTS AND RECOMMENDATIONS *See also the Evaluation Report.***CHART COMPARISON**

There are six charts affected by this survey:

Chart Numbers	Versions	Edition Dates	Scales
13003	48 th edition	October 2004	1:1,200,000
13009	31 st edition	October 2004	1:500,000
13200	33 rd edition	January 2002	1:400,000
13006	32 nd edition	February 2005	1:675,000
13260	39 th edition	June 2003	1:378,838
5161	13 th edition	October 2003	1:1,058,400

Table 2: Affected Charts

General Agreement with Charted Soundings

Soundings agree generally with charted depths. Bathymetry in this area is steep and irregular, and contours have shifted or are better defined. This results in spots as much as 14.0 meters deeper than charted in the northern and western part of the sheet, and 31.1 meters shoaler than charted in the southern and eastern part of the sheet. At the same time, the more general views shows good agreement with the chart. *Concur.*

AWOIS Items and Significant Contacts

Both assigned AWOIS Items (13246 and 13249) were investigated and not found. Feature reports for these items are contained in Appendix I *II. * Concur.*

Dangers to Navigation

There were no Dangers to Navigation. *Concur.*

Charted Features

Two charted items for this survey were disproved (AWOIS items 13246 and 13249). Feature reports for these items are contained in Appendix I *II. * Concur.*

Prior Survey

A comparison with prior surveys was not required for this survey. *Concur.*

**Filed with original field records.*

Charting Recommendations

The Hydrographer recommends removing AWOIS items 13246 and 13249 from the chart, and updating soundings and bathymetry based on this survey. *Concur. Refer to Appendix II.*

ADDITIONAL RESULTS

NONE

E. APPROVAL SHEET

S-A902-TJ-05
Wildcat Knoll Mapping Project, MA
Survey Registry No. H11421 Sheet A

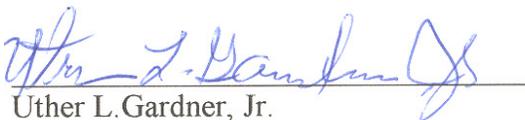
Field operations for this basic hydrographic survey were conducted under daily supervision of the Field Operations Officer with frequent checks of progress and adequacy. All bathymetric models, this Descriptive Report, and all accompanying records and data are approved.

This survey is adequate to supersede all prior surveys in common areas, and for application to the relevant NOS nautical charts.

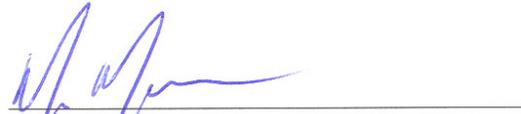
Also submitted in association with this descriptive report has been a series of reports and data:

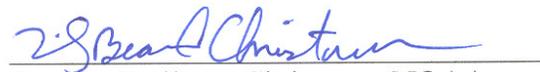
- Separates to Accompany Project OPR-S-A902-TJ-05, Sheet A, H11421
- OPR-S-A902-TJ-05 Horizontal and Vertical Control Report (submitted 9/17/05)
- Spring Hydrographic Systems Certification Report (effective date 4/10/05)
- Fall Data Acquisition and Processing Report (effective date pending)

Respectfully Submitted:


Uther L. Gardner, Jr.
Chief Survey Technician

Approved and Forwarded:


LT Marc S. Moser, NOAA
Field Operations Officer


Captain Emily B. Christman, NOAA
Commanding Officer

APPENDIX I

DANGER TO NAVIGATION

No Dangers to Navigation were submitted for this Project.

APPENDIX II

ITEM INVESTIGATIONS AND CHARTED FEATURES

Following are item investigation reports detailing one group of features:

1. H11421 contains two AWOIS Items to investigate within the limits of the Survey.

Registry Number: H11421
State: Massachusetts
Locality: Gulf of Maine
Sub-locality: Wildcat Knoll
Project Number: OPR-S-A902-TJ-05
Survey Date: 02/14/2006

Charts Affected

Number	Version	Date	Scale
13267	32nd Ed.	12/01/2004	1:80000
13260	39th Ed.	06/01/2003	1:378838
13200	33rd Ed.	01/19/2002	1:400000
13009	31st Ed.	10/01/2004	1:500000
13006	32nd Ed.	02/01/2005	1:675000
5161	13th Ed.	10/01/2003	1:1058400
13003	48th Ed.	10/01/2004	1:1200000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	AWOIS 13246 Wk PA	GP	[None]	42° 23' 01.788" N	070° 04' 00.000" W	13246

1.1) AWOIS 13246 Wk PA

Primary Feature for AWOIS Item #13246

Search Position: 42° 22' 60.000" N, 070° 04' 00.000" W
Historical Depth: [None]
Search Radius: 1000
Search Technique: MB, S2, SD
Technique Notes: [None]

History Notes:

LNM 40/98 (10/6/98) -- NON-DANGEROUS SUNKEN WRECK PA REPORTED IN POSITION 42/23/00 N, 070/04/00 W (NAD83). UPDATED 5/17/2005 JCM.

Survey Summary

Survey Position: 42° 23' 01.788" N, 070° 04' 00.000" W
Least Depth: [None]
Timestamp: 2006-045.21:09:23 (02/14/2006)
GP Dataset: ChartGPs - Digitized
GP No.: 1
Charts Affected: 13267_1, 13260_1, 13200_1, 13009_1, 13006_1, 5161_1, 13003_1

Remarks:

The item was investigated with both SSS and MBES. Item was not found.

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	1	0.00	000.0	Primary
S-A902-TJ-05_AWOIS	AWOIS # 13246	55.29	000.0	Secondary (grouped)

Hydrographer Recommendations

The hydrographer recommends that the Non-dangerous Wreck PA symbol be removed.

S-57 Data

[None]

Office Notes

Concur. Consider item disproved. Delete the charted Wreck PA (AWOIS #13246).

Registry Number: H11421
State: Massachusetts
Locality: Gulf of Maine
Sub-locality: Wildcat Knoll
Project Number: OPR-S-A902-TJ-05
Survey Date: 02/14/2006

Charts Affected

Number	Version	Date	Scale
13260	39th Ed.	06/01/2003	1:378838
13200	33rd Ed.	01/19/2002	1:400000
13009	31st Ed.	10/01/2004	1:500000
13006	32nd Ed.	02/01/2005	1:675000
5161	13th Ed.	10/01/2003	1:1058400
13003	48th Ed.	10/01/2004	1:1200000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	AWOIS 13249	GP	[None]	42° 25' 59.100" N	069° 55' 01.350" W	---

1.1) AWOIS 13249

Survey Summary

Survey Position: 42° 25' 59.100" N, 069° 55' 01.350" W
Least Depth: [None]
Timestamp: 2006-045.21:20:26 (02/14/2006)
GP Dataset: ChartGPs - Digitized
GP No.: 2
Charts Affected: 13260_1, 13200_1, 13009_1, 13006_1, 5161_1, 13003_1

Remarks:

The item was investigated with both SSS and MBES. Item was not found.

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	2	0.00	000.0	Primary
ChartGPs - Digitized	3	9.87	237.9	Secondary (grouped)
h11421/s222_mb/2005-215/0092_20050803_220243_s222	993/68	164.68	032.2	Secondary (grouped)

Hydrographer Recommendations

The hydrographer recommends that the Non-dangerous Wreck PA symbol be removed.

S-57 Data

[None]

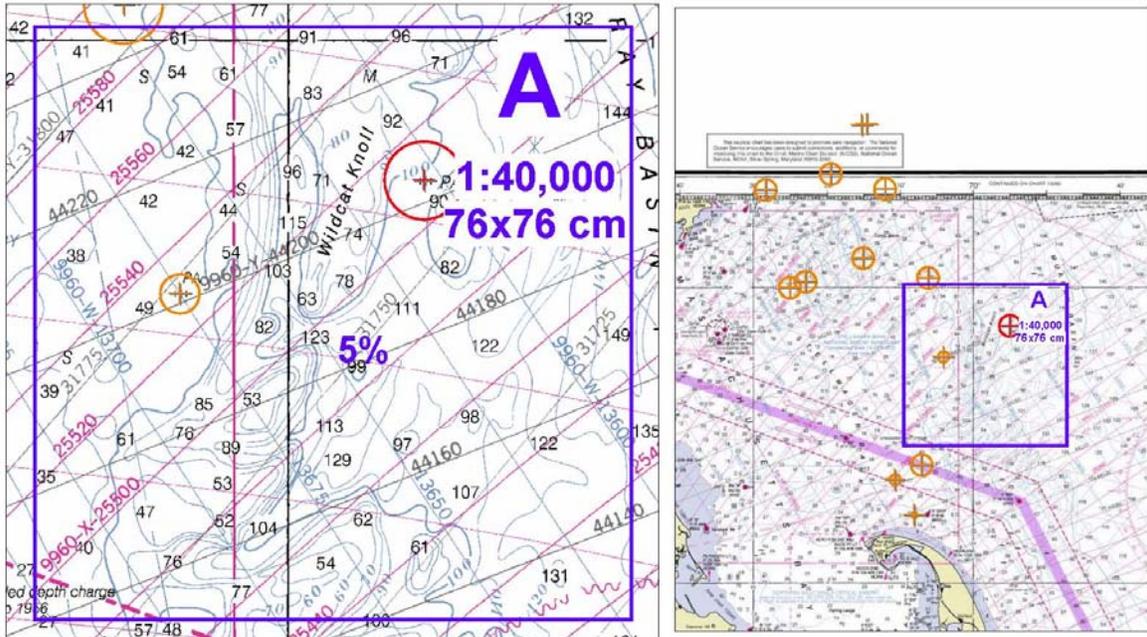
Office Notes

Concur. Consider item disproved. Delete charted non-dangerous wreck PA (AWOIS #13249) from the chart.

Although the field did not comply with AWOIS search requirements of complete MB coverage, or 200% Side Scan Sonar coverage, or salvage documentation, AHB considered the item disproved. This decision is based upon review of the submitted 100% SSS coverage and consideration of the water depth.

APPENDIX III

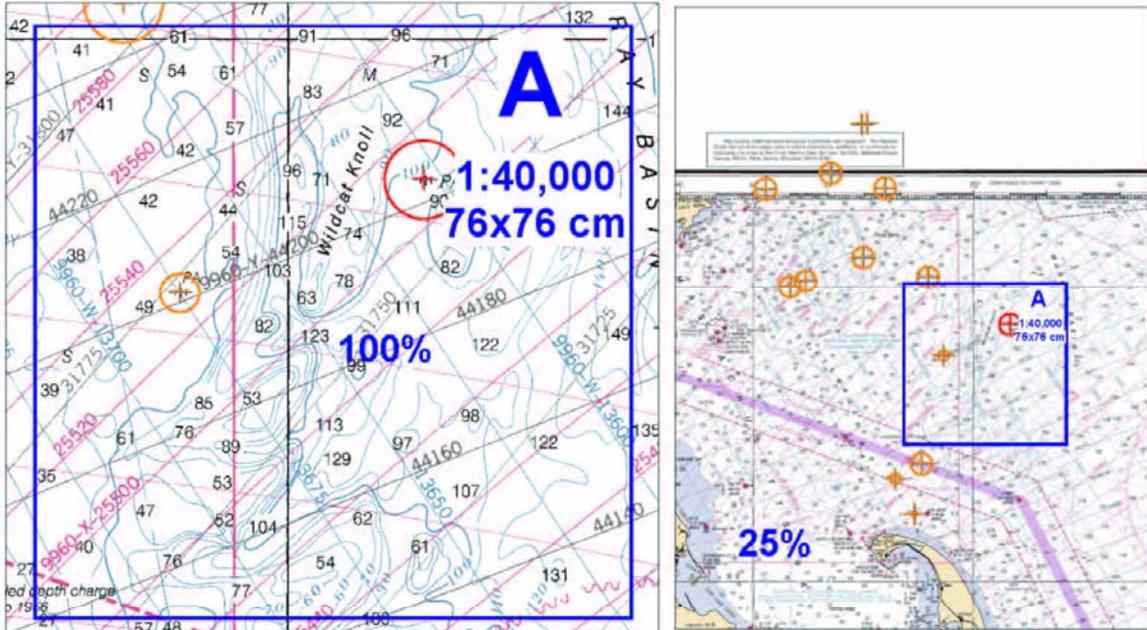
PROGRESS SKETCH



Project	Sheet Letter	H_num	HQ_Est_SNM	CumIPercCompPrev	CumIPercCompCui	SNM_CompCurf	CumSNMcom
A902	A	H11421	76	0	5	3	3
A902	no	F00508	0	0	0	0	0

Project	Month	LNM_Hydr	LNM_MB	SV_Casts	Bottom_Samp	AWOIS_Items	Tide_Guage_Inst	DAS	DTime equip_H	DTime_Weather_H	D_Time_other_H
A902	July	0.00	19.00	22.00	0.00	0.00	0.00	8.00	36.00	0.00	0.00

**Progress Sketch S-A902-TJ-05
July, 2005**



Project	Sheet_Letter	H_num	HQ_Est_SNM	CumIPercCompPrevMor	CumIPercCompCurMen	SNM_CompCurMen	CumSNMcomp
A902	A	H11421	75	3	100	63	66
A902	ne	F00609	0	0	25	6	6

Project	Month	LNH_Hydro	LNH_MB	SV_Casts	Bottom_Samp	AWOIS_Items	Tide_Guage_inst	DAS	DTime equip_H	DTime_Weather_t	D_Time_other_H
A902	July	0.00	19.00	22.00	0.00	0.00	0.00	6.00	36.00	0.00	0.00
A902	August	106.30	661.20	211.00	0.00	5.00	0.00	12.00	52.00	0.00	0.00

Progress Sketch S-A902-TJ-05
August, 2005

APPENDIX IV

TIDES AND WATER LEVELS

August 07, 2005

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

FROM: CDR Emily B. Christman, THOMAS JEFFERSON

SUBJECT: Request for Approved Tides/Water Levels

Please provide the following data:

1. Tide Note
2. Final zoning in MapInfo and .MIX format
3. Six Minute Water Level data (Co-ops web site)

Transmit data to:

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.: S-A902-TJ-05
Registry No.: H11421
State: Massachusetts
Locality: Gulf of Maine
Sublocality: Wildcat Knoll

Attachments containing:

- 1) an Abstract of Times of Hydrography,
- 2) digital MID MIF files of the track lines from pydro on CD/diskette

cc: N/CS33

Request for Approved Tides

Times of Hydrography

Year_DOY	Min Time	Max Time
2005_212	12:24:12	23:54:05
2005_213	00:24:02	23:49:10
2005_214	00:06:34	19:17:22
2005_215	12:52:52	23:58:48
2005_216	00:07:35	23:44:53
2005_217	00:14:50	23:34:19
2005_218	00:04:18	23:45:13
2005_219	00:04:54	08:13:43

APPENDIX V

SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCES

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

Subject: re: final tide zoning for S-A902-TJ-2005, H11421 & F00508
Resent-Date: Wed, 19 Oct 2005 16:14:22 GMT
Resent-From: FOO.Thomas.Jefferson@noaa.gov
Date: Wed, 19 Oct 2005 12:14:17 -0400
From: Monica Cisternelli <Monica.Cisternelli@noaa.gov>
Reply-To: Monica.Cisternelli@noaa.gov
Organization: National Ocean Service
To: _NMAO MOA FOO Thomas Jefferson <FOO.Thomas.Jefferson@noaa.gov>, Robert G Roberson <Robert.G.Roberson@noaa.gov>
CC: Michael Riddle <Michael.Riddle@noaa.gov>, Cary Wong <Cary.Wong@noaa.gov>, Doug Baird <Doug.Baird@noaa.gov>

DATE: 10/18/2005

MEMORANDUM FOR: CAPT Emily B. Christman
Commanding Officer, NOAA
Ship THOMAS JEFFERSON

FROM: Cary R. Wong
Requirements and
Development Division, N/OPS1

SUBJECT: Delivery of Tide Requirements for Hydrographic Surveys

This is notification that the preliminary zoning is accepted as the final zoning correctors for survey project S-A902-TJ-2005, registry Nos. H11421 & F00508, during the time period between July 31 and August 8, 2005. The accepted reference station for registry Nos. H11421 & F00508 is Boston, MA (844-3970).

Included with this memo are Tide Notes in .PDF format, stating the preliminary zones have been accepted as the final zoning.

V.1. COAST PILOT REPORT, NOAA FORM 77-6

NOAA Form 77-6 (Rev. 8/95)		U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	
COAST PILOT REPORT			
SUBMIT TO: NATIONAL OCEAN SERVICE, NOAA (N/CS261) 1315 EAST-WEST HIGHWAY, STATION 7317 SILVER SPRING, MD 20910-3282 FAX: 301-713-4516 INTERNET: Lynn.Preston@noaa.gov		This record of your experience and observations when traversing the coast, entering port, and/or navigating inside waters will be used to update the Coast Pilot.	
OBSERVER: NAME AND ADDRESS Commanding Officer NOAA Ship Thomas Jefferson 439 West York Street Norfolk, VA 23510 TEL. (daytime) (757) 441-6322		DATE OF OBSERVATION DATE OF SUBMISSION VESSEL NAME AND ADDRESS NOAA Ship Thomas Jefferson 439 West York Street Norfolk, VA 23510	
GEOGRAPHIC LOCATION <i>(Refer to charted objects by distance and bearing and/or include latitude/longitude, as applicable)</i>			
CHART NUMBER 13270, 13272		COAST PILOT NUMBER and EDITION NUMBER 1, 35 th Ed. 2005, Chapter 11, pages 373-290 Updated through LNM 19/05, CG01	
CHANGES TO EXISTING COAST PILOT TEXT Give recommended revised language for the book. Identify affected text by page, paragraph(s), and line number(s). State the source of the information if other than personal; observation. No changes are recommended at this time.			
(Continue on plain paper)			

REQUEST FOR SURVEYS OR CHART CHANGE

List area for which surveys and/or changes in chart format, scale, or layout are needed. Include the name and geographic position of the area, the chart number of the largest scale chart that covers the area, and the reason for the request.

None.

(Continue on plain paper)

ADDITIONAL INFORMATION FOR THE COAST PILOT

We are particularly interested in information about unusually strong currents; prominent landmarks; objects which provide particularly good radar return; sheltered anchorages (be explicit on direction of weather and type of bottom observed); drawbridge operation changes (e.g., drawbridge remains permanently in open position); change in pilot pick-up points; changes in radio frequencies monitored by pilots, marine exchanges, harbor masters, or drawbridges.

None.

(Continue on plain paper)

Public reporting burden for this collection is estimated to average thirty minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the National Ocean Service (NCS261), 1315 East-West Highway, Silver Spring, MD 20910-3282, and to the Office of Management and Budget, Paperwork Reduction Project (0648-0007), Washington, DC 20503.

V.2. BOTTOM SAMPLE, NOAA FORM 75-44

Bottom Samples were not required for this Project. ***Do Not Concur. Letter Instructions references the Standing Instructions which details sampling directions. The field did not acquire or analyze sediments samples.***

V.3. AIDS TO NAVIGATION, NOAA FORM 76-40

There were no Aids To Navigation within the Limits of this Survey. *See also the Evaluation Report.*

ATLANTIC HYDROGRAPHIC BRANCH EVALUATION REPORT FOR H11421 (2005)

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

B. DATA ACQUISITION AND PROCESSING

B.1 DATA PROCESSING

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

HSTP PYDRO version 7.3 r2239
CARIS HIPS/SIPS version 6.1 SP1 HF 1-6
CARIS Bathy Manager version 2.1 HF 1-3
CARIS HOM ENC version 3.3 SP3 HF 1-7
DKART INSPECTOR, version 5.0 Build 732

B.2 QUALITY CONTROL

B.2.1 H-CELL

The AHB source depth grid for the survey's nautical chart update product entailed using a 6m resolution combined grid model generated from 4m and 6m resolution finalized depth grids. All soundings were extracted from a 100m resolution product surface model generated at a scale of 1:40,000, generalization radius of 400m, 100m cell resolution, and defocused (H11421_40k_400mrad_100mres_DF.hns). The chart scale soundings were selected from the survey scale selections. Office personnel used the surface model as reference when selecting the chart scale soundings, ensuring that the selected soundings portray the bathymetry within the common area.

Depth curves were created from a 180m grid product surface and forwarded to MCD for reference only. The curves were utilized during sounding selection and quality assurances during processing efforts at AHB. The depth curves are incorporated into the S57 Blue Note file.

The pre-compilation products or components (Stand Alone HOB Files (SAHOB)) are detailed in the Pre-Compile Process Log attached at the end of this document. The SAHOB files included depth curves (DEPCNT), sounding selections (SOUNDG), features (SBDARE), Meta objects (M_COVR, M_QUAL, M_NSYS), and cartographic Blue Notes. The individual SAHOB files were imported into the CARIS HOM for H-Cell compilation.

The completed H-Cell was exported as a Base Cell File (ENC.000) in S-57 format with all values in metric units. The metric equivalent ENC.000 file was then converted to NOAA chart units (ENC_CU.000) with all values measured in fathoms following NOAA sounding rounding rules.

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

The H11421 CARIS H-Cell final deliverables include the following Base Cell products:

US311421_CU.000	1:378,838 Scale	H11421 H-Cell with Chart Scale Selected Soundings
US311421_SS.000	1:40,000 Scale	H11421 Survey Scale Soundings
US311421_BlueNtoes.000	1:40,000 Scale	H11421 Cartographic Notes and Depth Curves
US311421_Feature.000	Not submitted	No Group 2, Non-Skin-of-the-Earth features. Reference H11421_Features_READ-ME.txt

C. VERTICAL AND HORIZONTAL CONTROL

Final vertical correction processing was completed by the field unit with no additional correction required by Atlantic Hydrographic Branch. The field unit applied verified water levels in conjunction with the preliminary tidal zoning which was accepted and approved by N/OPSI CO-OPS as the final zoning for H11421. Vertical datum for all soundings are reference to Mean Lower Low Water (MLLW).

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 19. Office ENC processing of this survey required translating the datum to meet S-57 ENC requirements. The horizontal geodetic datum was translated to Latitude and Longitude (LLDG) World Geodetic System-84 (WGS-84) during CARIS HOM processing. The S-57 H-CELL format serves as the exchange file format submitted to Marine Chart Division.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

13260 (40th Edition, May./07)

Corrected through NM 08/11/2007

Corrected through LNM 07/31/2007

ENC Comparison

US3EC10M

Bay of Fundy to Cape Cod

Edition 15

Application Date 2007-06-22

Issue Date 2007-09-24

Chart 13260

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 of the Descriptive Report. The survey did not reveal or detail Non-Skin-of-the-Earth (Group 2) features during data verification and product generation.

The field unit did not obtain bottom samples as detailed in the Letter Instructions. All charted sea bed characteristic (SBDARE) objects were retained as charted. The spatial and feature attributes of the SBDARE point features were carried forward from the ENC (US3EC10M).

D.1.2 Junctions

No contemporary surveys exist for comparison.

D.1.3 Aids to Navigation

The current edition of chart 13260 and ENC US3EC10M portrays a navigational aid (Special Purpose Buoy Y "BD" Fl (4) Y 20s WHIS) located in Latitude 42°18'14.62"N, Longitude 071°00'22.52"W. The field stated in Appendix V, Supplemental Correspondence, that no aids to navigation were within the survey limits. Since the aid was not visually identified nor disproved, AHB recommends deferring the charting disposition of this navigational aid to Marine Chart Division, Nautical Data Branch.

D.2 COMPARISON WITH PRIOR SURVEYS

A comparison with prior surveys was not done during office processing in accordance with section 4 of the memorandum titled "Changes to Hydrographic Survey Processing", dated May 24, 1995.

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. The following NOS charts were used for compilation of the present survey:

13260 (40th Edition, May, 07) 1:378,838 Scale
Corrected through NM 08/11/2007
Corrected through LNM 07/31/2007

US3EC10M

Bay of Fundy to Cape Cod

Edition 15

Application Date 2007-06-22

Issue Date 2007-09-24

Chart 13260

D.3 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 survey requirements recommended by the hydrographer.



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : October 18, 2005

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: S-A902-TJ-2005
HYDROGRAPHIC SHEET: H11421

LOCALITY: Wildcat Knoll, Gulf of Maine, MA
TIME PERIOD: July 31 - August 7, 2005

TIDE STATION USED: 844-3970 Boston Harbor, MA
Lat. 42° 21.3.0'N Long. 71° 03.1' W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.997 meters

REMARKS: RECOMMENDED ZONING

Preliminary zoning is accepted as the final zoning for project S-A902-TJ-2005, H11421, during the time period between July 31 to August 7, 2005.

Please use the zoning file "A902TJ2005CORP" submitted with the project instructions for S-A907-TJ-2005. Zones NA177, NA183, NA184 & NA200 are the applicable zones for H11421.

Refer to attachments for zoning information.

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

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CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION



Pre-Compile Process Log

REGISTRY #: H11421
 PROJECT NUMBER: A902-TJ05
 FIELD UNIT: TJ
 Pre-Compiler: Richard Sullivan
 Content Review Date: 01/11/08

Milestones	File Name
<i>Product Surface Creation</i>	PSH11421_40k_400mrad_100mres_DF PSH11421_AWOIS_40k_400mrad_180mres
<i>Shifted Surface</i>	PS_H11421_100mres_Shifted PSH11421_AWOIS_180mres_Shifted
<i>Contour Layer</i>	H11421_100m_Contour.hob H11421_AWOIS_CONTOUR.hob
<i>Survey Scale Soundings</i>	H11421_SSSoundg.hob H11421_AWOIS_SSSoundg.hob
<i>Chart Scale Soundings</i>	H11421_CUSoundg.hob H11421_AWOIS_CUSoundg.hob
<i>Feature Layer</i>	H11421_Features.hob
<i>Meta-objects Layer</i>	H11421_META.hob
<i>Bluenotes Layer</i>	H11421_BLUENOTES

- I. Combine Surface:
 - i. Number of grids: 2
 - ii. File Name: H11421_AHB_Combined
 - iii. Depth Range: 88.9 Meters – 235.7 Meters

- II. Product Surface:
 - i. Scale: 40,000 / 40,000
 - ii. Radius: 400m / 400m
 - iii. Res.: 100m / 180m
 - iv. File Name: PS_H11652_40k_400mrad_100mres_DF
PSH11421_AWOIS_40k_400mrad_180mres

- III. Contours Creation:
 - i. Shifted File: PSH1142_100mres_Shifted
PSH11421_AWOIS_180mres_Shifted
 - ii. Contour File: H1142_100m_Contour
H11421_AWOIS_CONTOUR

- IV. Sounding Selection:
 - i. Number of affected charts: 6
 - ii. Survey Scale Soundings-
 - a. Measured Distance: ~2600m
 - b. User defined Radius: 250m / 250m
 - c. File Name: H11421_SSSoundg
H11421_AWOIS_SSSoundg
 - iii. Chart Scale:
 - a. File Name: H11421_CUSoundg
H11421_AWOIS_CUSoundg

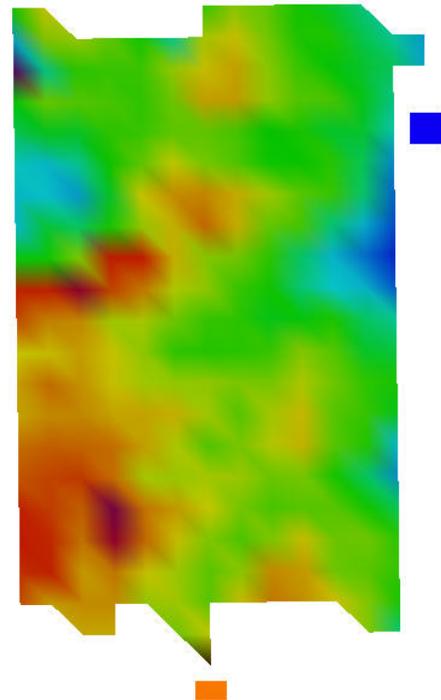
- V. Features:
 - i. Number of Features: 2
 - ii. Feature Types: SBDARE **enc** (2)

- iii. Feature Layer: H11421_Features
- VI. Meta Objects:
 - i. File Name: H11421_META
- VII. Bluenotes:
 - i. File Name: H11421_BLUENOTES
- VIII. Notes:
 - 1) The vertical beam survey east of the Wildcat Knoll survey proper is a disproval of AWOIS 13246. The VB data was spotty and Product Surface Generation yielded very coarse grids (see below). The Survey Scale Soundings were extracted from the fieldsheet H11421_AWOIS13246_3m_Final directly. The Meta data for the AWOIS was produced from PSH11421_AWOIS_40k_400mrad_180mres_Shifted and then redigitized to more closely follow the VB survey lines.
 - 2) There is an aid to navigation (Buoy Special Purpose) located within the survey at 42-18-14.623N 70-00-22.518W. The buoy is on chart 13260 ed. 40 and ENC US3EC10M, but page 14 of the DR states “there were no Aids To Navigation within the Limits of this Survey”.

H11421_40k_100mrad_100mres



H11421_40k_400mrad_180mres



APPROVAL SHEET

H11421

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development 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 NOS requirements except where noted in the Evaluation Report.

Wesley Kitt
Physical Scientist,
Atlantic Hydrographic Branch

Richard Sullivan
Hydrographic Intern
Atlantic Hydrographic Branch

All final products have undergone a comprehensive review as per the Atlantic Hydrographic Branch Processing Manual and are verified to be accurate and complete except where noted in the Evaluation Report.

Castle Eugene Parker
Physical Scientist,
Atlantic Hydrographic Branch

I have reviewed the H11421 Base Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Approved: _____
Shep Smith
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch