H12489

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:	H12489

LOCALITY

State:	Connecticut
General Locality:	Long Island Sound
Sub-locality:	Cedar Pt to Frost Pt

2012

CHIEF OF PARTY
CDR Lawrence T. Krepp

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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		**H12489**

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:	**Connecticut**
General Locality:	**Long Island Sound**
Sub-Locality:	**Cedar Pt to Frost Pt**
Scale:	**10000**
Dates of Survey:	**09/10/2012 to 09/27/2012**
Instructions Dated:	**05/08/2012**
Project Number:	**OPR-B340-TJ-12**
Field Unit:	**NOAA Ship *Thomas Jefferson***
Chief of Party:	**CDR Lawrence T. Krepp**
Soundings by:	**Multibeam Echo Sounder Singlebeam Echo Sounder**
Imagery by:	**Multibeam Echo Sounder Backscatter Side Scan Sonar**
Verification by:	**Atlantic Hydrographic Branch**
Soundings Acquired in:	**meters at Mean Lower Low Water**
H-Cell Compilation Units:	***meters at Mean Lower Low Water***

Remarks:

The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Geophysical Data Center (NGDC) and can be retrieved via http://www.ngdc.noaa.gov/.

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Descriptive Report to Accompany Survey H12489

Project: OPR-B340-TJ-12

Locality: Long Island Sound

Sublocality: Cedar Pt to Frost Pt

Scale: 1:10000

September 2012 - September 2012

NOAA Ship *Thomas Jefferson*

Chief of Party: CDR Lawrence T. Krepp

A. Area Surveyed

This hydrographic survey (registry number H12489) covers an area approximately 12 square nautical miles in Long Island Sound from Cedar Point to Frost Point, CT. Coverage requirements as per Hydrographic Survey Letter Instructions OPR-B350-TJ-12 Long Island Sound Change 1, dated 8 May 2012, were met using object detection multibeam echosounder, multibeam backscatter, side scan sonar, and single beam echosounder data collected in accordance with the National Ocean Service Hydrographic Surveys Specifications and Deliverables Manual (HSSD), dated April 2012.

A.1 Survey Limits

Data was acquired within the following survey limits:

Northeast Limit	Southwest Limit
41.1185 N 73.3033333333 W	41.0256666667 N 73.3535 W

Table 1: Survey Limits

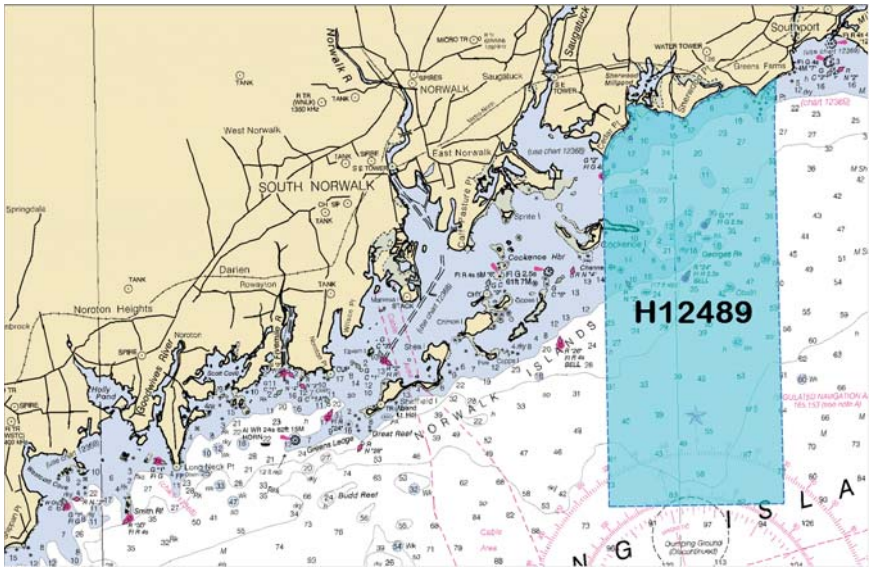

Figure 1: H12489 survey limits

Survey Limits were acquired in accordance with the requirements in the Project Instructions and the HSSD.

A.2 Survey Purpose

This project is being conducted in support of NOAA's Office of Coast Survey to provide contemporary hydrographic data in order to update the nautical charting products and reduce the survey backlog within the area. In addition, data from this project will support the Long Island Sound Seafloor Mapping Initiative for the States of Connecticut and New York. This project also responds to the Coast Guard proposal to establish six anchorage grounds in Long Island Sound to increase safety for vessels through enhanced voyage planning and also by clearly indicating the location of anchorage grounds for ships proceeding to ports in New York. The USCG is requesting that NOAA confirm that their underwater surveys of Long Island Sound did not detect any wrecks at all in the locations being proposed for the anchorage areas. Data acquired for this project will be used by partners for species and habitat identification, infrastructure projects, ocean mapping, coastal hazards and geology. Partners include the US Environmental Protection Agency, Connecticut Department of Environmental Protection, the University of Connecticut Marine Science Department, New York Department of Environmental Quality, and other organizations.This project will cover approximately 206 SNM of which 165 SNM are critical survey areas as designated in the NOAA Hydrographic Survey Priorities, 2010 edition.

A.3 Survey Quality

The entire survey is adequate to supersede previous data.

This hydrographic survey was completed as specified by 'Hydrographic Survey Letter Instructions OPR-B340-TJ-12 Long Island Sound, NY Change 1', dated 8 May 2012. No additional work is needed to complete this survey. It is recommended that this survey receive normal processing priority.

A.4 Survey Coverage

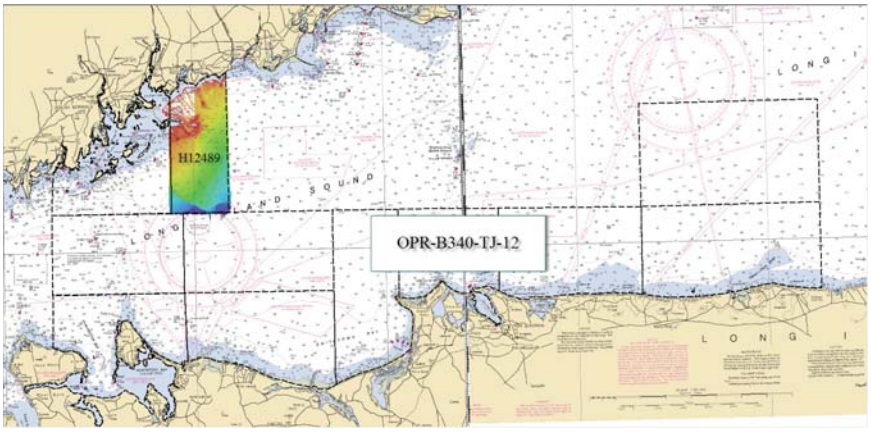

Figure 2: H12489 Survey Coverage

Survey Coverage was in accordance with the requirements in the Project Instructions and the HSSD.

A.5 Survey Statistics

The following table lists the mainscheme and crossline acquisition mileage for this survey:

	HULL ID	*S-222*	*3101*	*3102*	*Total*
LNM	**SBES Mainscheme**	0	0	0	0
	MBES Mainscheme	354.3	263.3	173.8	791.4
	Lidar Mainscheme	0	0	0	0
	SSS Mainscheme	0	0	0	0
	SBES/MBES Combo Mainscheme	0	0	0	0
	SBES/SSS Combo Mainscheme	0	76.4	0	76.4
	MBES/SSS Combo Mainscheme	0	0	0	0
	SBES/MBES Combo Crosslines	0	15.7	16.7	25.5
	Lidar Crosslines	0	0	0	0
Number of Bottom Samples					16
Number of DPs					1
Number of Items Items Investigated by Dive Ops					0
Total Number of SNM					12

Table 2: Hydrographic Survey Statistics

The following table lists the specific dates of data acquisition for this survey:

Survey Dates
09/10/2012
09/12/2012
09/13/2012
09/19/2012
09/20/2012
09/21/2012
09/22/2012
09/23/2012
09/24/2012
09/25/2012
09/26/2012
09/27/2012

Table 3: Dates of Hydrography

A.6 Shoreline

Shoreline was investigated in accordance with the Project Instructions and the HSSD.

A.7 Bottom Samples

Bottom Samples were acquired in accordance with the Project Instructions or the HSSD.

B. Data Acquisition and Processing

B.1 Equipment and Vessels

Refer to the 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 discussed in the following sections.

B.1.1 Vessels

The following vessels were used for data acquisition during this survey:

Hull ID	***S-222***	***3101***	***3102***
LOA	208 feet	31 feet	31 feet
Draft	4.6 meters	0.8 meters	0.8 meters

Table 4: Vessels Used

Data were acquired by NOAA Ship Thomas Jefferson, S-222, and her two hydrographic survey launches, 3101 and 3102. All three platforms acquired Reson 7125 MBES soundings and sound speed profiles. 3101 also collected Klein 5000 SSS imagery with concurrent Odom Vessel configurations, equipment operation, and data acquisition and processing were consistent with specifications described in the DAPR.

B.1.2 Equipment

The following major systems were used for data acquisition during this survey:

Manufacturer	**Model**	**Type**
Applanix	POS/MV	Positioning and Attitude System
Seabird	Seacat 19+	Sound Speed System
Brook Ocean Technology	MVP 100	Sound Speed System
Klein	5000	SSS
Reson	7125 ROV	MBES
Reson	7125 SV1	MBES
Odom	CV200	SBES

Table 5: Major Systems Used

Due to the failure of a Reson 7125 SV1 TPU, concurrent SSS/VBES was acquired.

B.2 Quality Control

B.2.1 Crosslines

To meet the requirements of section 5.2.4.3 of the HSSD the quality control check was done using the standard deviation layer of the survey's combined surface. Areas of unusually high standard deviation

were investigated and resolved in processing. Except where caused by areas of high bathymetric relief or features. After all of the surfaces were combined, the standard deviation layer was filters to include only those values between 0.25m and 0.97m (the highest value on the sheet). In total, there were 159 nodes that ranged between 0.25m and 0.97m. There were a total of 2,364,904 nodes within the survey with a mean of 2.1cm and a standard deviation of 1.9cm. Of those 159 nodes that fell between 0.25m and 0.97m, they either occurred as the result of noise that did not affect the surface or occurred on features.

B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

Measured	Zoning
0meters	0meters
0.102meters	0meters

Table 6: Survey Specific Tide TPU Values

Hull ID	Measured - CTD	Measured - MVP	Surface
3101	4meters/second	N/Ameters/second	0.2meters/second
3102	4meters/second	N/Ameters/second	0.2meters/second
S222	4meters/second	1meters/second	0.2meters/second

Table 7: Survey Specific Sound Speed TPU Values

The first set of tide uncertainty values are used on lines that have TCARI tides applied. The second set are applied to lines that have GPS tides applied.

Total Propagated Uncertainty values for survey H12489 were derived from a combination of fixed values for equipment and vessel characteristics, as well as field assigned values for water level and sound speed uncertainties. Uncertainty stemming from survey equipment and vessel configuration were set by the field unit in accordance with the NOAA Field Procedure Manual (ed 2011), Appendix 4, table 4.9. Sound speed uncertainty was based on the frequency and location of CDT casts, in accordance with the guidance set by Appendix 4 of the FPM. Tidal uncertainties were provided by NOAA's Center for Operational Oceanographic Products and Services (CO-OPS),and were applied to depth soundings using a Tidal Constituent and Residual Interpolator (TCARI) grid. TCARI automatically calculates the error associated with water level interpolation, which is then included in the CARIS HDCS lines. For this reason, no Tidal Uncertainties values were entered into the Tide Value section of the CARIS Compute TPU function.

During post processing TCARI data was overwritten by IAPPK smoothed best estimate of trajectory (SBET) solution. Several days and several individual lines had problems with the vertical component of the SBET. For those lines, final reduction to MLLW was performed using TCARI or a modified SBET. For further information refer to the H12489_DLQ_with_Problem_Lines.xlsx spreadsheet found in Appendix V. This spreadsheet has three tabs. The first is the full Detailed Line Query. The second tab shows all files that have had a different SBET than the original that was created using the standard SmartBase values. In most cases,

these different SBETs have different control and primary stations, though in some instances the SBET was created using PPP. The third tab shows all lines that were reduced to MLLW using TCARI.

TPU is calculated and written to each line's HDCS file (CARIS processed data format). When surfaces are created, an uncertainty child layer is created. This child layer represents the amount of uncertainty for individual nodes in the surface based on a combination of a priori values from equipment vendors, values determined from environmental observation in the field, and from automated empirical analysis of data in real-time. Once all investigated features have been reviewed and least depths have been designated, surfaces are finalized. In finalization, the standard deviation for each node in the surface is multiplied by 1.96 to provide the 95% (2-sigma) confidence value for the node. This 2-sigma standard deviation is compared to the computed Total Vertical Uncertainty (TVU) for each node. The larger of the two values is retained as the finalized Uncertainty for each node. Uncertainty is reported in meters.

IHO has established allowable TVU values for each order of survey. This survey meets IHO Order I TVU requirements in 98% of nodes in the final surface. Statistical distribution of nodes that meet or exceed the IHO TVU requirements (Zero and Positive values indicate that IHO Order 1 requirements were met).

B.2.3 Junctions

The following junctions were made with this survey.

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H11045	1:20000	2003	NOAA Ship Rude	E
H12411	1:10000	2012	NOAA Ship THOMAS JEFFERSON	W
H12412	1:10000	2012	NOAA Ship THOMAS JEFFERSON	SW
H12415	1:10000	2012	NOAA Ship THOMAS JEFFERSON	SE

Table 8: Junctioning Surveys

H11045

Digital data for this junction was provided as a JPG instead of as a BAG or CSAR. Since the associated file had no depth information, no comparison was made beyond the chart comparison.

H12411

The difference in soundings between the two surveys is no greater than 1 foot.

H12412

The difference in soundings between the two surveys is no greater than 1 foot.

H12415

The difference in soundings between the two surveys is no greater than 1 foot.

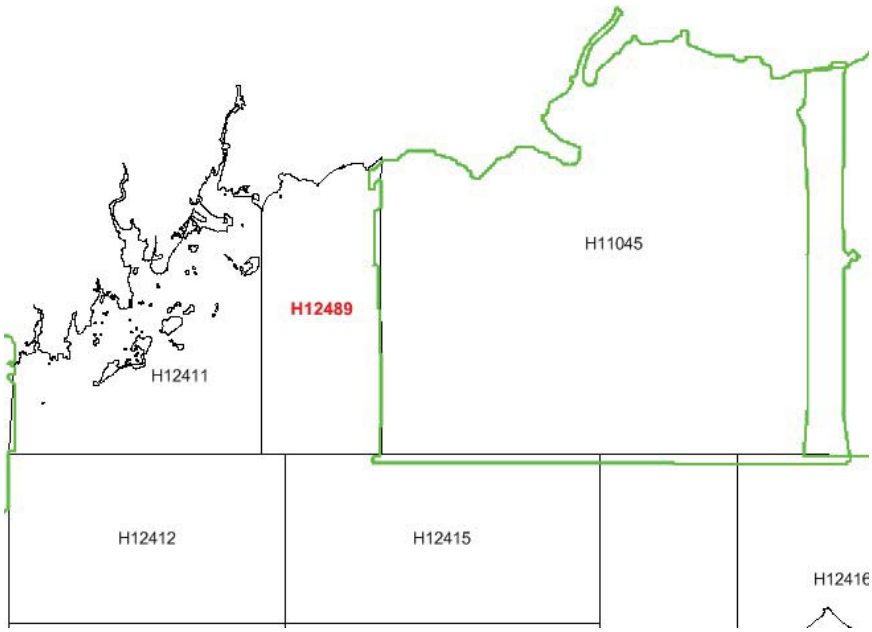

Figure 3: H12489 Junctions

B.2.4 Sonar QC Checks

Sonar system quality control checks were conducted as detailed in the quality control section of the DAPR.

B.2.5 Equipment Effectiveness

B.2.5.1 Loss of a Reson 7125 SV1 TPU

During acquisition, one of our Reson 7125 SV1 TPU's failed. As a result, one of the launches was shifted to concurrent VBES/SSS instead of the object detection MBES. Data for this section met the specifications for a VBES/SSS survey.

B.2.5.1 Beam-Forming Failure in Ship's 7125 ROV

An issue with the ship's 7125 ROV data was discovered during the course of review of this survey. Processed data present with an unusual signature (Figure 4). Initially, it appears as a roll offset over a sand

wave area, however the fact that every line presents with a frown to one side and a smile to the other makes that possibility unrealistic. To determine if the data was caused by a failure in the HIPS processing, data was processed within Hypack. Data processed through Hypack also showed the same characteristic. To confirm that this signature was within the raw data, data were processed within Excel assuming no refraction. Data showed the same signature within Excel (Figure 5). Based on this anecdotal evidence, it appears that beam forming was not being performed properly within the ship's 7125 ROV. This characteristic was not seen on other surveys and it was not discovered during the course of acquisition. A look at the data shows that, in general, gaps between lines caused by this improper beam forming did not exceed 15cm and the surface does not present with "stair steps" even on higher exaggeration.

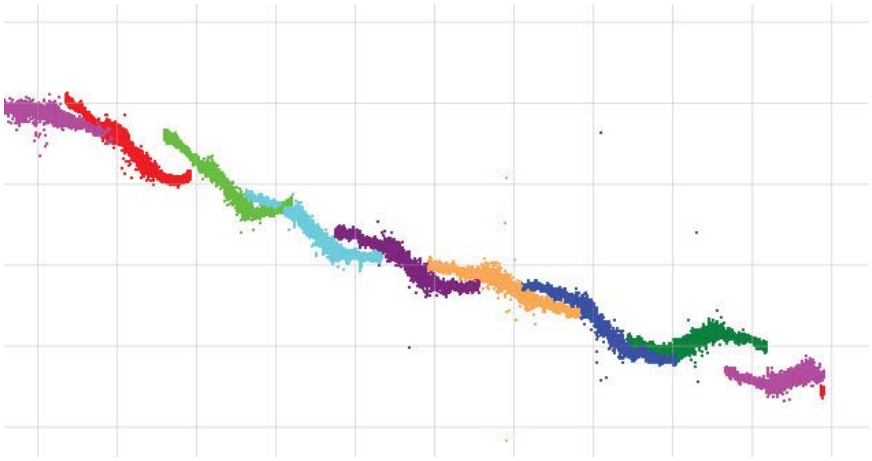

Figure 4: S222 7125 Processed Data

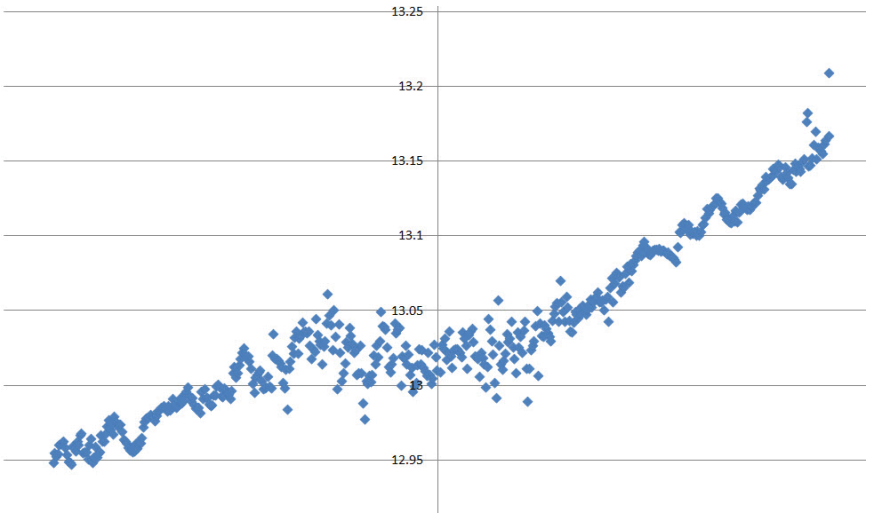

Figure 5: Excel Processed Data

B.2.6 Factors Affecting Soundings

B.2.6.1 None Exist

There were no other factors that affected corrections to soundings.

B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: MVP casts were taken by the ship approximately every thirty minutes. 3101 and 3102 took CTDs about every 4 hours.

No sound speed zoning was required for this survey.

B.2.8 Coverage Equipment and Methods

All equipment and survey methods were used as detailed in the DAPR.

B.3 Echo Sounding Corrections

B.3.1 Corrections to Echo Soundings

All data reduction procedures conform to those detailed in the DAPR.

B.3.2 Calibrations

All sounding systems were calibrated as detailed in the DAPR.

B.4 Backscatter

Backscatter was logged as a 7k file and submitted to the IOCM processing center and/or directly to NGDC, and is not included with the data submitted to the Branch.

B.5 Data Processing

B.5.1 Software Updates

There were no software configuration changes after the DAPR was submitted.

The following Feature Object Catalog was used: NOAA ProfileField.XML v. 5.2

B.5.2 Surfaces

The following CARIS surfaces were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12489_50cm_CUBE_MLLW_Final	CUBE	0.5 meters	0.94 meters - 20 meters	NOAA_0.5m	Object Detection
H12489_2m	CUBE	2 meters	18 meters - 29.25 meters	NOAA_2m	Complete MBES
H12489_VB_Uncert_4m_Final	BASE Uncertainty	4 meters	2.90 meters - 9.21 meters	N/A	MBES TracklineSBES Set Line Spacing
H12489_2m_CUBE_MLLW_ Final_Combined	CUBE	2 meters	0.94 meters - 29.25 meters	N/A	Complete MBES
H12489_SSS_100_Mosaic	SSS Mosaic	1 meters	0 meters - 0 meters	N/A	100% SSS
H12489_SSS_200_Mosaic	SSS Mosaic	1 meters	0 meters - 0 meters	N/A	200% SSS

Table 9: CARIS Surfaces

B.5.3 Vertical offset problems

Vertical offsets are present on the west side. The value does not exceed 0.3 meters.

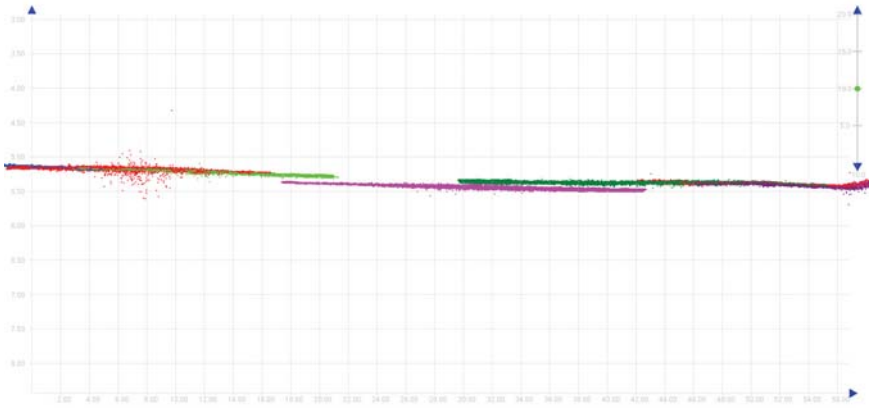

Figure 6: H12489 Vertical Offset

B.5.4 Roll Offset on DN 268 and 270

It would appear that on DN 268 and DN 270, 3101's MBES arm was not fully extended. This presented itself as a roll offset in the data. However, this was not a static offset. When the arm is not fully extended, it is not locked in place and the arm can vibrate. Because of this, a single value was not able to be used. The day's worth of data was looked at and appropriate values were placed in the HVF to attempt to correct for this offset.

C. Vertical and Horizontal Control

Additional information discussing the vertical or horizontal control for this survey can be found in the accompanying HVCR.

C.1 Vertical Control

The vertical datum for this project is Mean Lower Low Water.

Standard Vertical Control Methods Used:

TCARI

The following National Water Level Observation Network (NWLON) stations served as datum control for this survey:

Station Name	Station ID
New Haven, CT	8465705
Bridgeport, Ct	8467150
Kings Point, NY	8516945

Table 10: NWLON Tide Stations

File Name	Status
8465705.tid	Final Approved
8467150.tid	Final Approved
8516945.tid	Final Approved

Table 11: Water Level Files (.tid)

File Name	Status
B340TJ2012_Rev.tc	Final

Table 12: Tide Correctors (.zdf or .tc)

A request for final approved tides was sent to N/OPS1 on 10/05/2012. The final tide note was received on 10/12/2012.

Preliminary zoning was accepted as final.

Non-Standard Vertical Control Methods Used:

VDatum

Ellipsoid to Chart Datum Separation File:

2012_B340_VDatum_Ellip_MLLW.txt

C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD83).

The following PPK methods were used for horizontal control:

Smart Base
Single Base

The following CORS Stations were used for horizontal control:

HVCR Site ID	Base Station ID
CTGU	CTGU
NYRH	NYRH
NYQN	NYQN
ZNY1	ZNY1
NYCI	NYCI
CTDA	CTDA
LAMT	LAMT
HYVH	HYVH
DEDO	DEDO
CTGR	CTGR
NYBR	NYBR
CTBR	CTBR
MOR5	MOR5

Table 13: CORS Base Stations

PPP was used where it presented the best vertical solution as evidenced by conformity by surrounding lines.

For the majority of this survey, Moriches (the closest station) was transmitting on reduced power. The DGPS beacon was switch to Acushnet. Sandy Hook was the second closest station, however with Long Island between us and the station, we were not able to receive the signal.

The following DGPS Stations were used for horizontal control:

DGPS Stations
Moriches, NY (293kHz)
Acushnet, MA (306kHz)

Table 14: USCG DGPS Stations

D. Results and Recommendations

D.1 Chart Comparison

D.1.1 Raster Charts

The following are the largest scale raster charts, which cover the survey area:

Chart	Scale	Edition	Edition Date	LNM Date	NM Date
12368	1:20000	27	06/2006	05/30/2006	06/10/2006
12369	1:20000	26	06/2005	06/07/2005	06/11/2005
12364	1:40000	39	09/2012	03/26/2013	04/06/2013

Table 15: Largest Scale Raster Charts

12368

In general the soundings agree within one to two feet. On the east side there are soundings up to ten feet deeper than the charted depths where it has dredged (Figure 7). On the southern side of the sheet, soundings are generally shoaler by 4 feet (Figure 8).

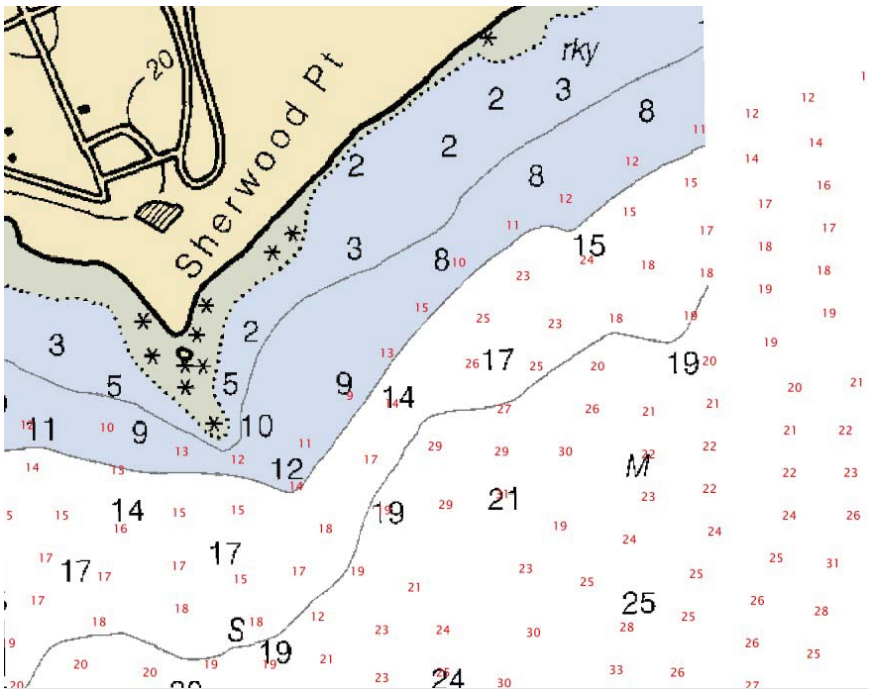

Figure 7: H12489 Deeper Soundings

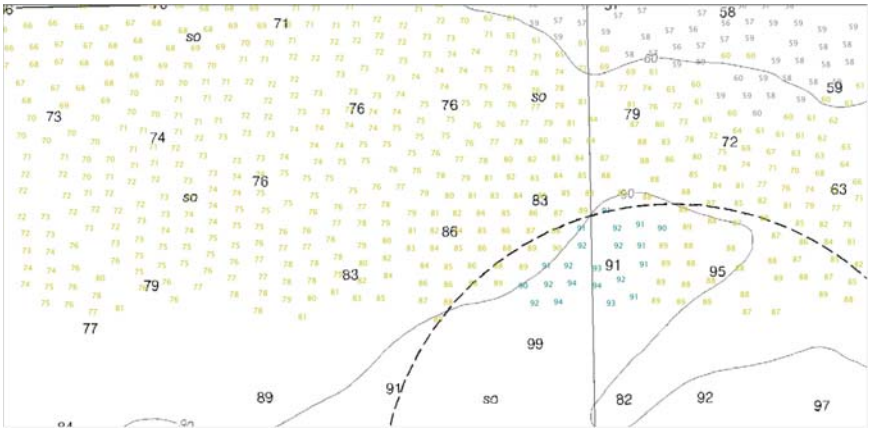

Figure 8: H12489 Shoaler Soundings

12369

In general the soundings agree within one to two feet. On the west side there are soundings up to ten feet deeper than the charted depths where it was dredged.

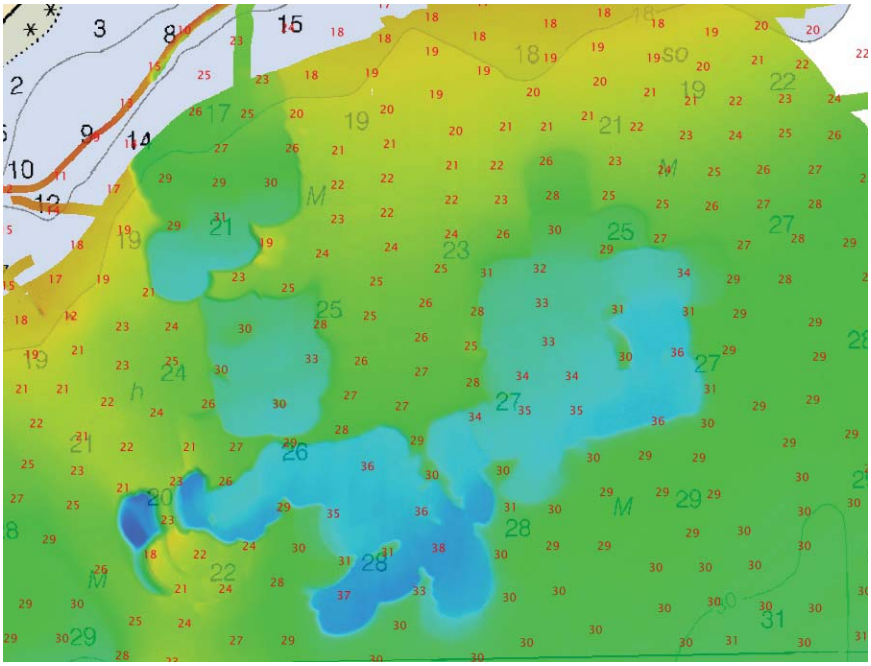

Figure 9: H12489 Dredged Area

12364

Chart 12364 is the largest scale chart for only the SE corner of the sheet. Soundings agree within 1 to 2 feet.

D.1.2 Electronic Navigational Charts

The following are the largest scale ENCs, which cover the survey area:

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US5CN11M	1:20000	8	06/12/2008	06/12/2008	NO
US4NY13M	1:80000	7	09/21/2007	09/21/2007	NO

Table 16: Largest Scale ENCs

US5CN11M

In general the soundings agree within one meter. Data from chart 12368 and 12369 matches data from this ENC. Refer to comparison of 12368 and 12369 for more detail.

US4NY13M

In general the soundings agree within one meter. This ENC touches the deep area on the southeast side.

D.1.3 AWOIS Items

Number of AWOIS Items Addressed: 3
Number of AWOIS Items Not Addressed: 0

Consult the H12489_FFF.hob for information about the AWOIS items in the survey area.

D.1.4 Charted Features

Consult the H12489_FFF.hob for information about the charted features in the survey area.

D.1.5 Uncharted Features

Consult the H12489_FFF.hob for information about the uncharted features in the survey area.

D.1.6 Dangers to Navigation

No Danger to Navigation Reports were submitted for this survey.

D.1.7 Shoal and Hazardous Features

There are rocky areas in the survey area.

D.1.8 Channels

In the north west there are some channels that was not investigated due to them being beyond the 12 foot curve limit and having depths less than that.

D.2 Additional Results

D.2.1 Shoreline

Shoreline was not assigned in the Hydrographic Survey Project Instructions or Statement of Work.

D.2.2 Prior Surveys

Prior survey comparisons exist for this survey, but were not investigated.

D.2.3 Aids to Navigation

All ATONS were found to be on station and serving their intended purpose.

D.2.4 Overhead Features

Overhead features do not exist for this survey.

D.2.5 Submarine Features

Submarine features do not exist for this survey.

D.2.6 Ferry Routes and Terminals

No ferry routes or terminals exist for this survey.

D.2.7 Platforms

No platforms exist for this survey.

D.2.8 Significant Features

No significant features exist for this survey.

D.2 Construction and Dredging

There is no present or planned construction or dredging within the survey limits. In the northern area there is an area that has already been dredged and has soundings that are deeper than what is currently charted.

E. Approval Sheet

As Chief of Party, Field operations for this hydrographic survey were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports.

All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and all HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required with the exception of deficiencies noted in the Descriptive Report.

Approver Name	Approver Title	Approval Date	Signature
CDR Lawrence T. Krep	Commanding Officer	04/08/2013	
LT William Winner	Field Operations Officer	04/08/2013	

F. Table of Acronyms

Acronym	Definition
AFF	Assigned Features File
AHB	Atlantic Hydrographic Branch
AST	Assistant Survey Technician
ATON	Aid to Navigation
AWOIS	Automated Wreck and Obstruction Information System
BAG	Bathymetric Attributed Grid
BASE	Bathymetry Associated with Statistical Error
CO	Commanding Officer
CO-OPS	Center for Operational Products and Services
CORS	Continually Operating Reference Staiton
CTD	Conductivity Temperature Depth
CEF	Chart Evaluation File
CSF	Composite Source File
CST	Chief Survey Technician
CUBE	Combined Uncertainty and Bathymetry Estimator
DAPR	Data Acquisition and Processing Report
DGPS	Differential Global Positioning System
DP	Detached Position
DR	Descriptive Report
DTON	Danger to Navigation
ENC	Electronic Navigational Chart
ERS	Ellipsoidal Referenced Survey
ERZT	Ellipsoidally Referenced Zoned Tides
FOO	Field Operations Officer
FPM	Field Procedures Manual
GAMS	GPS Azimuth Measurement Subsystem
GC	Geographic Cell
GPS	Global Positioning System
HIPS	Hydrographic Information Processing System
HSD	Hydrographic Surveys Division
HSSDM	Hydrographic Survey Specifications and Deliverables Manual

Acronym	Definition
HSTP	Hydrographic Systems Technology Programs
HSX	Hypack Hysweep File Format
HTD	Hydrographic Surveys Technical Directive
HVCR	Horizontal and Vertical Control Report
HVF	HIPS Vessel File
IHO	International Hydrographic Organization
IMU	Inertial Motion Unit
ITRF	International Terrestrial Reference Frame
LNM	Local Notice to Mariners
LNM	Linear Nautical Miles
MCD	Marine Chart Division
MHW	Mean High Water
MLLW	Mean Lower Low Water
NAD 83	North American Datum of 1983
NAIP	National Agriculture and Imagery Program
NALL	Navigable Area Limit Line
NM	Notice to Mariners
NMEA	National Marine Electronics Association
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NRT	Navigation Response Team
NSD	Navigation Services Division
OCS	Office of Coast Survey
OMAO	Office of Marine and Aviation Operations (NOAA)
OPS	Operations Branch
MBES	Multibeam Echosounder
NWLON	National Water Level Observation Network
PDBS	Phase Differencing Bathymetric Sonar
PHB	Pacific Hydrographic Branch
POS/MV	Position and Orientation System for Marine Vessels
PPK	Post Processed Kinematic
PPP	Precise Point Positioning
PPS	Pulse per second

Acronym	Definition
PRF	Project Reference File
PS	Physical Scientist
PST	Physical Science Technician
RNC	Raster Navigational Chart
RTK	Real Time Kinematic
SBES	Singlebeam Echosounder
SBET	Smooth Best Estimate and Trajectory
SNM	Square Nautical Miles
SSS	Side Scan Sonar
ST	Survey Technician
SVP	Sound Velocity Profiler
TCARI	Tidal Constituent And Residual Interpolation
TPU	Total Porpagated Error
TPU	Topside Processing Unit
USACE	United States Army Corps of Engineers
USCG	United Stated Coast Guard
UTM	Universal Transverse Mercator
XO	Exectutive Officer
ZDA	Global Positiong System timing message
ZDF	Zone Definition File

APPENDIX I

TIDES AND WATER LEVELS

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE

APPENDIX III

SURVEY FEATURES REPORT

Five AWOIS Items
Two Wrecks

H12489 AWOIS

Registry Number: H12489
State: Connecticut
Locality: Long Island Sound
Sub-locality: Cedar Pt to Frost Pt
Project Number: OPR-B340-TJ-12
Survey Dates: 09/10/2012 - 09/27/2012

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12369	26th	06/01/2005	1:20,000 (12369_1)	[L]NTM: ?
12368	27th	06/01/2006	1:20,000 (12368_1)	[L]NTM: ?
12364	38th	07/01/2008	1:40,000 (12364_8)	[L]NTM: ?
12363	40th	06/01/2005	1:80,000 (12363_1)	[L]NTM: ?
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13006	34th	05/01/2007	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	49th	04/01/2007	1:1,200,000 (13003_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	AWOIS #6807	GP	[None]	41° 04' 21.1" N	073° 20' 30.9" W	6807
1.2	AWOIS #6808	Wreck	9.65 m	41° 05' 03.3" N	073° 19' 27.3" W	6808
1.3	AAWOIS #6912	Wreck	12.93 m	41° 03' 39.0" N	073° 18' 57.8" W	6912
1.4	AWOIS #6913	Wreck	12.58 m	41° 04' 44.5" N	073° 18' 25.1" W	6913
1.5	AWOIS #7701	Rock	10.67 m	41° 04' 23.1" N	073° 19' 05.9" W	7701

1.1) AWOIS #6807

Primary Feature for AWOIS Item #6807

Search Position: 41° 04' 20.8" N, 073° 20' 30.4" W
Historical Depth: [None]
Search Radius: 1000
Search Technique: SD, S2, SWMB, DI
Technique Notes: [None]

History Notes:

HISTORY
NM34/68--SUNKEN SAILBOAT WITH 4 FT OF MAST VISIBLE AT HIGH ì
WATER MARKED BY LTD BUOY IN PA LAT 41-04-20.5N, LONG 73-20-32W.
NM23/69--BUOY MARKING WK IS DISCONTINUED; WK REMAINS; 17 FT OF ì
WATER OVER IT. (ENT 5/88 MSM)

Survey Summary

Survey Position: 41° 04' 21.1" N, 073° 20' 30.9" W
Least Depth: [None]
TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp: 1981-001.00:00:00.000 (01/01/1981)
Dataset: H12489_PydroExport.000
FOID: 0_ 0000629703 00001(FFFE00099BC70001)
Charts Affected: 12368_1, 12364_8, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12489_PydroExport.000	0_ 0000629703 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 6807	13.75	305.4	Secondary (grouped)

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

SAR: AWOIS #6807 not present in data. Remove charted wreck.

COMPILE: Delete AWOIS #6807,charted dangerous sunken wreck, 17 ft rep and updating the area based on present survey data .

1.2) AWOIS #6808

Primary Feature for AWOIS Item #6808

Search Position:	41° 05' 02.3" N, 073° 19' 26.4" W
Historical Depth:	[None]
Search Radius:	250
Search Technique:	[None]
Technique Notes:	[None]

History Notes:

HISTORY
LNM51/70--3RD CGD; 40 FT CABIN CRUISER REPORTED SUNK IN ABOUT ì
32 FT OF WATER IN PA LAT 41-05-02N, LONG 73-19-28W.
CL763/82--USPS; PER JACK SZYMKUC, 197 CONN AVE #36, NORWALK, ì
CT. 06854 (203-866-5723) NORWALK POLICE MARINE DIVISION DO WEEKLY ì
SCUBA DIVING RESCUE EXERCISES AND HAVE EXTENSIVELY DIVED AROUND ì
WK; THEY REPORT WK IS ROTTED AND HULL HAS DISINTEGRATED AND POSES ì
NO FURTHER DANGER TO NAVIGATION; WK ORIGINALLY DELETED FROM CHART ì
12368 THRU THIS SOURCE; RESTORED THRU INSPECTION AS ED IN 1988. ì
(ENT 5/88 MSM)

Survey Summary

Survey Position:	41° 05' 03.3" N, 073° 19' 27.3" W
Least Depth:	9.65 m (= 31.66 ft = 5.276 fm = 5 fm 1.66 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-271.00:00:00.000 (09/27/2012)
Dataset:	H12489_PydroExport.000
FOID:	0_ 0000629699 00001(FFFE00099BC30001)
Charts Affected:	12368_1, 12369_1, 12364_8, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: AWOIS #6808. New position and depth of charted wreck.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12489_PydroExport.000	0_ 0000629699 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 6808	36.79	323.9	Secondary (grouped)

Hydrographer Recommendations

Chart new position of wreck.

Cartographically-Rounded Depth (Affected Charts):

31ft (12368_1, 12369_1, 12364_8, 12363_1)

5 ¼fm (12300_1, 13006_1, 13003_1)

9.6m (5161_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes:

CATWRK - 3:distributed remains of wreck

NINFOM - Chart wreck

QUASOU - 6:least depth known

SORDAT - 20120927

SORIND - US,US,graph,H12489

TECSOU - 3:found by multi-beam

VALSOU - 9.649 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: New position of charted wreck and AWOIS item found during office review. Data does not clearly identify the feature as a wreck. AWOIS description describes the feature as disintegrated wreck; data point cloud can be interpreted as a deteriorated wreck.

COMPILE: Delete charted dangerous sunken wreck, PA. Chart 31.7ft wreck at survey position.

Feature Images

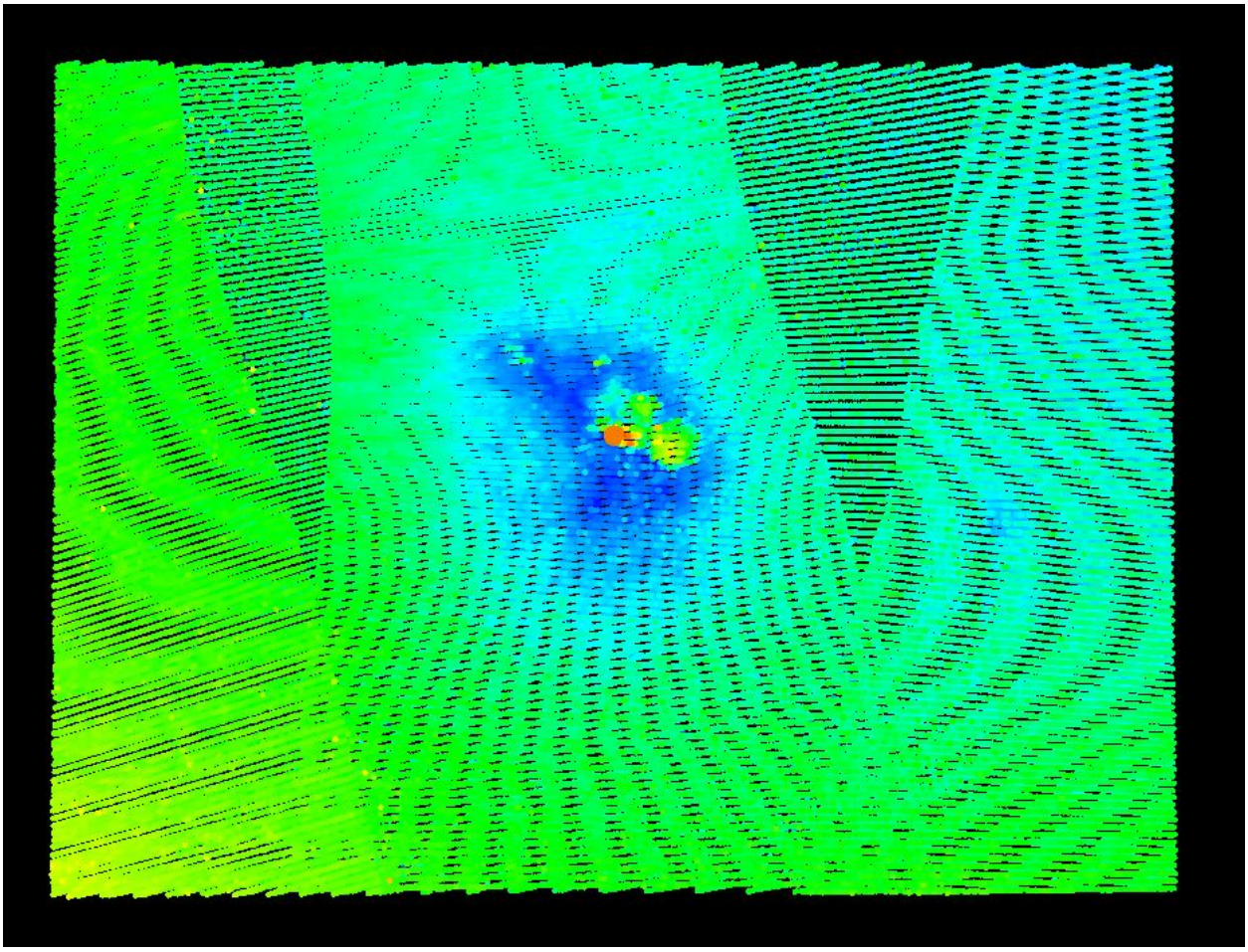

Figure 1.2.1

1.3) AAWOIS #6912

Primary Feature for AWOIS Item #6912

Search Position:	41° 03' 38.9" N, 073° 18' 57.5" W
Historical Depth:	12.80 m
Search Radius:	0
Search Technique:	[None]
Technique Notes:	[None]

History Notes:

HISTORY
H5219/32WD--44 FT. SOUNDING TAKEN ON WRECKAGE IN LAT ì
41-03-38.9N, LONG 73-18-59.1W (NAD27); CLEARED BY 42 FT; CHARTED AS 44 ì
FT. SOUNDING.
CL338/43--CGS; POLICY MEMO STATING THAT ALL SOUNDINGS CHARTED ì
FROM SPECIFIC WIRE DRAG SHEETS NOW BE CHARTED AS CLEARED DEPTHS ì
WITH BASKETS AND APPROPRIATE NOTATIONS; 44 FT. SOUNDING REVISED TO ì
42 CLEARED DEPTH. (ENTERED MSM 10/88)
FE323SS/89--OPR-B660-HE-89; ONE CONTACT FOUND IN LAT ì
41-03-38.86N, LONG 73-18-57.54W (NAD83); DIVER INVESTIGATION ì
FOUND WRECKAGE OF WHAT APPEARS TO BE A BARGE, WHICH HAS SUNK INTO ì
THE MUDDY BOTTOM, AND NUMEROUS SCATTERED BARRELS OR KEGS; BARRELS ì
ARE MADE OF METAL AND SHOW SIGNS OF RUST AND FAIRLY HEAVY BARNACLE ì
GROWTH, BUT THEIR CONTENTS ARE UNKNOWN; WRECK IS APPROXIMATELY 6M ì
X 20M; LEAST DEPTH OF 42 FT. TAKEN ON THE LARGEST PILE OF ì
CONTAINERS; LORAN C RATES: 9960-W 15222.6, 9960-X 26756.1, 9960-Y ì
43996.9, 9960-Z 60058.1; HYDROGRAPHER AND EVALUATOR RECOMMENDED ì
CHARTING A 42 WK AND DELETING CHARTED CLEARED SOUNDING. (UPDATED ì
MSM 7/90)

Survey Summary

Survey Position:	41° 03' 39.0" N, 073° 18' 57.8" W
Least Depth:	12.93 m (= 42.43 ft = 7.071 fm = 7 fm 0.43 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-271.00:00:00.000 (09/27/2012)

Dataset: H12489_PydroExport.000

FOID: 0_ 0000629700 00001(FFFE00099BC40001)

Charts Affected: 12369_1, 12364_8, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: AWOIS #6912, wreck found by MBES, soundings collected to the Ellipsoid and reduced to MLLW by VDATUM.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12489_PydroExport.000	0_ 0000629700 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 6912	7.61	301.7	Secondary (grouped)

Hydrographer Recommendations

Update wreck.

Cartographically-Rounded Depth (Affected Charts):

42ft (12369_1, 12364_8, 12363_1)

7fm (12300_1, 13006_1, 13003_1)

12.9m (5161_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes:

CATWRK - 2:dangerous wreck

NINFOM - Chart wreck

QUASOU - 6:least depth known

SORDAT - 20120927

SORIND - US,US,graph,H12489

TECSOU - 3:found by multi-beam

VALSOU - 12.932 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Depth and position confirmed with MBES. AWOIS item was for information only.

COMPILE: Delete the charted dangerous 42 foot wreck and Chart 42.4ft wreck at survey position.

Feature Images

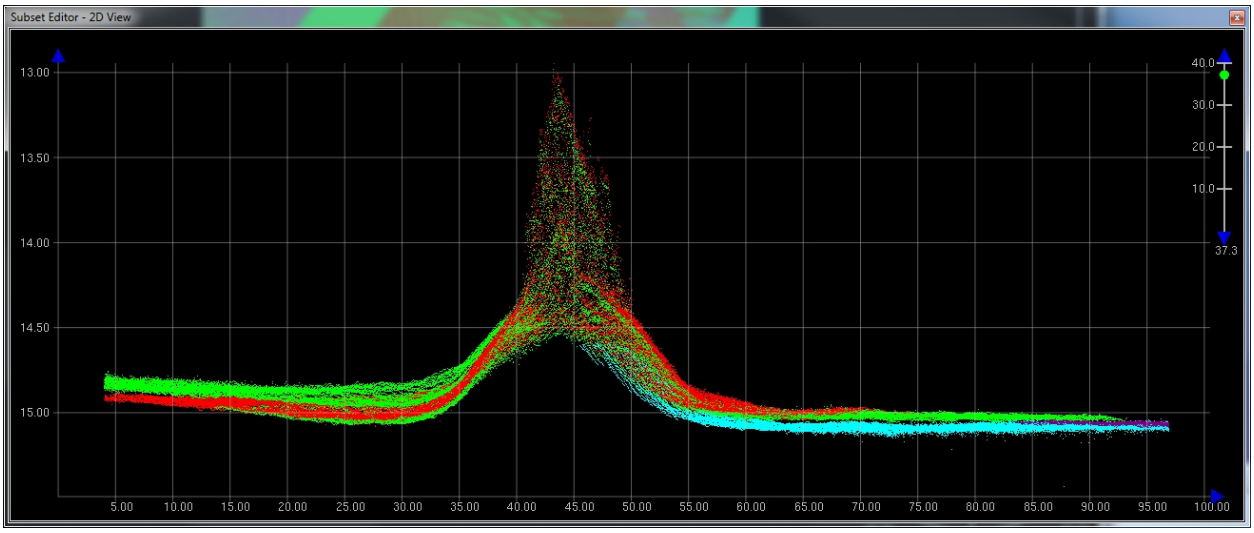

Figure 1.3.1

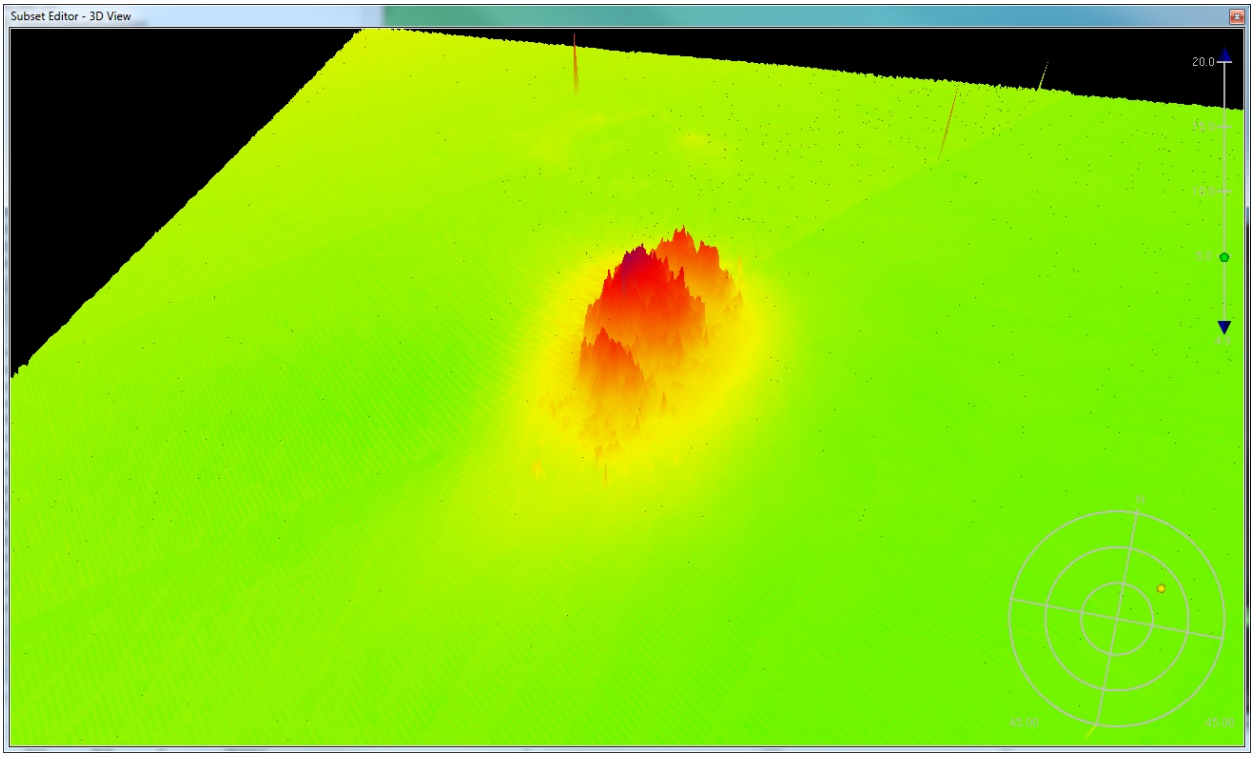

Figure 1.3.2

1.4) AWOIS #6913

Primary Feature for AWOIS Item #6913

Search Position:	41° 04' 44.4" N, 073° 18' 25.1" W
Historical Depth:	11.89 m
Search Radius:	0
Search Technique:	[None]
Technique Notes:	[None]

History Notes:

HISTORY
CL821/32--CGS; PRELIMINARY LIST OF SHOALS AND WIRE DRAG HANGS; ì
34 FT. SOUNDING TAKEN ON WRECKAGE IN LAT 41-04-44.5N, LONG ì
73-18-26.1W (NAD27); CLEARED BY 31 FT.; CHARTED AS 34 FT. SOUNDING.
CL338/43--CGS; POLICY MEMO STATING THAT ALL SOUNDINGS CHARTED ì
FROM WIRE DRAG SURVEYS BE REVISED TO CLEARED DEPTHS WITH BASKETS ì
AND APPROPRIATE NOTATIONS; 34 FT. SOUNDING REVISED TO 31 FT. ì
CLEARED DEPTH WITH NOTE WRECKAGE. (ENTERED MSM 10/88)
FE320SS/88--OPR-B660-RU-88; 200% SIDE SCAN SONAR FOR 200% ì
RADIUS; HYDROGRAPHER STATES THERE WERE NO SIGNIFICANT CONTACTS, ì
HOWEVER DURING OFFICE PROCESSING A TARGET WAS NOTED AND ASSIGNED ì
FOR FURTHER INVESTIGATION ON A SUBSEQUENT SURVEY (REF. FE323SS/89); ì
LOCATED IN LAT 41-04-44.43N, LONG 73-18-25.15W WITH AN ECHOSOUNDER ì
LEAST DEPTH OF 42FT. IN SURVEY DEPTHS OF 45 FT.; SEE FE323SS/89 ì
FOR FURTHER INFORMATION, ITEM DESCRIPTION AND CHARTING ì
RECOMMENDATION. (UPDATED MSM 5/90)
FE323SS/89--OPR-B660-HE-89; DIVERS INVESTIGATION FOUND ì
WRECKAGE, WHICH APPEARS TO BE A WOODEN COAL BARGE WHICH HAS SUNK ì
INTO THE MUDDY BOTTOM; STARBOARD SHEER STRAKE PROTRUDES FROM THE ì
SEA FLOOR ALONG MOST OF THE BARGE'S LENGTH; STEM AND THE ì
UPPERMOST END OF THE PROW ARE EXPOSED AND RISE 2 FT. ABOVE THE ì
SEA BOTTOM; EXPOSED FROMES RUN THE LENGTH OF THE EXPOSED SHEER ì
STRAKE; CLUMPS OF COAL SURROUND THE WRECK BECOMING NUMEROUS ì
NEARER THE WRECK; A MOUND OF COAL RISING ABOVE THE SEA FLOOR ì
FOLLOWS THE PROBABLE OUTLINE OF THE BARGE; COAL MOUND APPEARS TO ì

HAVE SPILLED OVER THE PORT SIDE OF THE BARGE; LEAST DEPTH OF 39 ì
FT. TAKEN ON TOP OF THE COAL PILE; WRECK'S DIMENSIONS WERE SCALED ì
AS 15M X 35M FROM SONARGRAMS AND VERIFIED BY DIVERS; LAT ì
41-04-44.43N, LONG 73-18-25.07W (NAD83); HYDROGRAPHER AND ì
EVALUATOR RECOMMENDED CHARTING A 39 WK. (UPDATED MSM 7/90)

Survey Summary

Survey Position:	41° 04' 44.5" N, 073° 18' 25.1" W
Least Depth:	12.58 m (= 41.26 ft = 6.877 fm = 6 fm 5.26 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-271.00:00:00.000 (09/27/2012)
Dataset:	H12489_PydroExport.000
FOID:	0_ 0000629702 00001(FFFE00099BC60001)
Charts Affected:	12369_1, 12364_8, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: AWOIS #6913. Charted wreck found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with Vdatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12489_PydroExport.000	0_ 0000629702 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 6913	1.66	298.1	Secondary (grouped)

Hydrographer Recommendations

Retain charted wreck and update least depth.

Cartographically-Rounded Depth (Affected Charts):

41ft (12369_1, 12364_8, 12363_1)

6 ¾fm (12300_1, 13006_1, 13003_1)

12.6m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck

NINFOM - Chart wreck

QUASOU - 6:least depth known

SORDAT - 20120927

SORIND - US,US,graph,H12489

TECSOU - 3:found by multi-beam

VALSOU - 12.577 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Depth and position confirmed with MBES. AWOIS item was for information only.

COMPILE: Delete charted 33 foot dangerous wreck. Chart 41.2ft wreck at survey position.

Feature Images

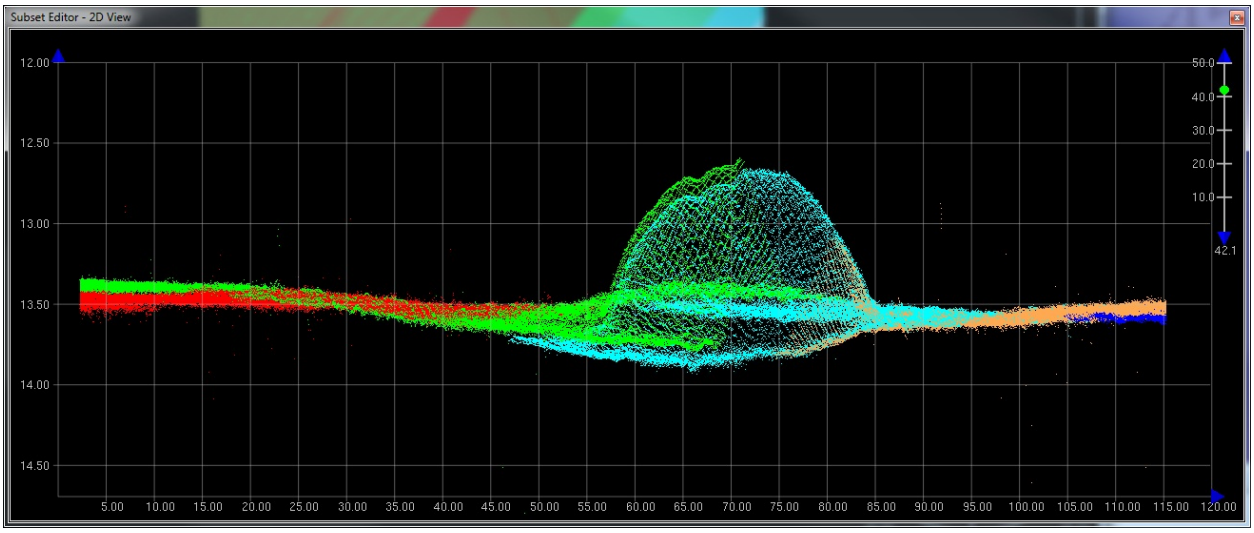

Figure 1.4.1

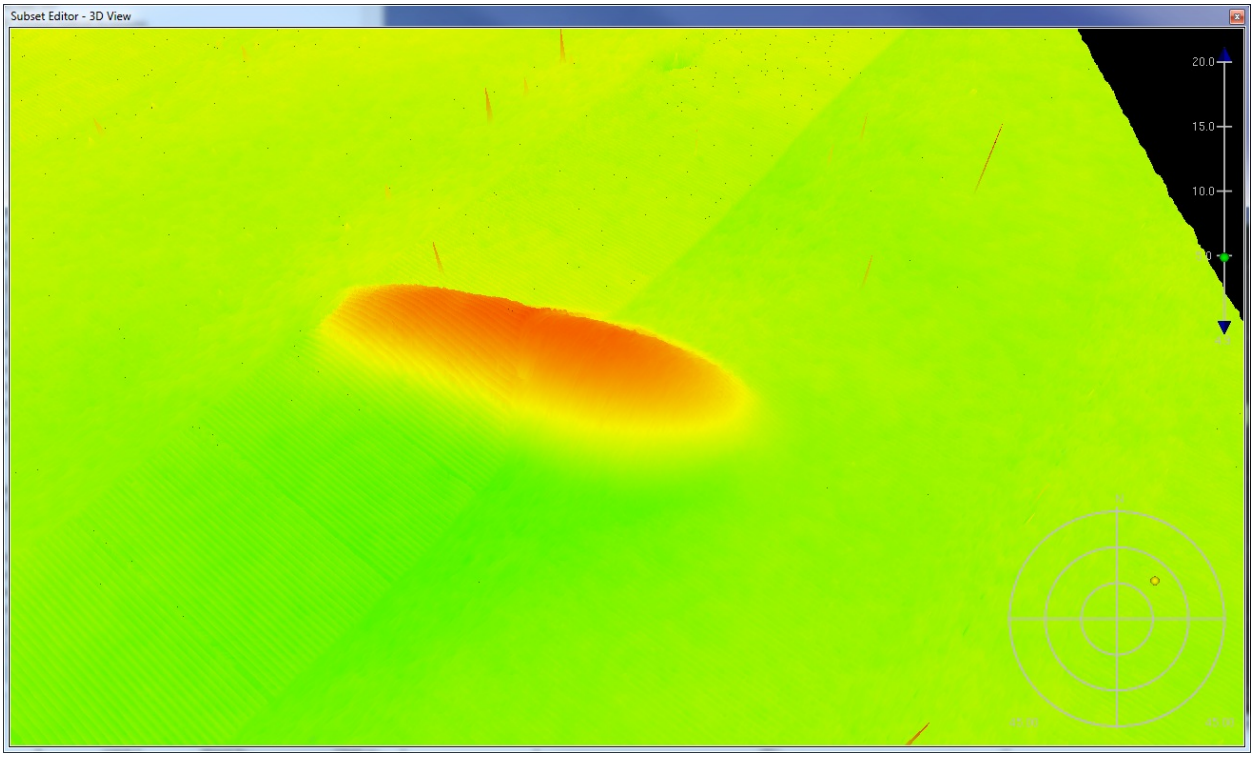

Figure 1.4.2

1.5) AWOIS 7701: Dangerous Rocks covered 34 feet

Primary Feature for AWOIS Item #7701

Search Position:	41° 04' 23.1" N, 073° 19' 05.9" W
Historical Depth:	10.67 m
Search Radius:	0
Search Technique:	[None]
Technique Notes:	[None]

History Notes:

HISTORY
D-95/89--OPR-B660-HE-89; RECONNAISSANCE HYDROGRAPHY; CONTACT ì
NOTED ON FATHOGRAM AND INVESTIGATION DOCUMENTED IN FE325SS/89.
FE325SS/89--OPR-B660-HE-89; DIVER INVESTIGATION FOUND WHAT ì
APPEARED TO BE A PILE OF SCRAP METAL THAT PERHAPS A HOPPER ì
DUMPED; THERE WERE NUMEROUS SHARP OBJECTS STICKING OUT OF THE ì
PILE BUT OVERALL THE PILE WAS VERY FLAT ON THE TOP; NEAR THE ì
CONTACT THE VISIBILITY WAS VERY POOR; WATER WAS BROWN FROM THE ì
FERROUS OXIDE FROM THE RUSTING METAL; TOP SEEMED TO HAVE A ì
UNIFORM LEAST DEPTH OF 35 FT; LAT 41-04-23.15N, LONG ì
73-19-05.88W; HYDROGRAPHER AND EVALUATOR RECOMMENDED CHARTING A ì
SUBMERGED DANGEROUS OBSTRUCTION WITH A KNOWN DEPTH: 35 OBSTN ì
(SCRAP METAL). (ENTERED MSM 4/90)

Survey Summary

Survey Position:	41° 04' 23.2" N, 073° 19' 06.9" W
Least Depth:	10.56 m (= 34.64 ft = 5.773 fm = 5 fm 4.64 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-271.00:00:00.000 (09/27/2012)
Dataset:	H12489_features_for_pydro.000
FOID:	0_ 0001223495 00001(FFFE0012AB470001)
Charts Affected:	12369_1, 12364_8, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: AWOIS #7701. Soundings collected to the Ellipsoid and reduced to MLLW by VDATUM.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12489_features_for_pydro.000	0_ 0001223495 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 7701	24.47	270.2	Secondary (grouped)

Hydrographer Recommendations

Chart rock.

Cartographically-Rounded Depth (Affected Charts):

34ft (12369_1, 12364_8, 12363_1)

5 ¾fm (12300_1, 13006_1, 13003_1)

10.6m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes:

NINFOM - Add Rock

QUASOU - 6:least depth known

SORDAT - 20120927

SORIND - US,US,graph,H12489

TECSOU - 3:found by multi-beam

VALSOU - 10.558 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Position and depth have been confirmed in MBES. Use new position of charted obstruction. AWOIS item was for information only.

COMPILE: Concur with conditions. Delete charted dangerous obstruction least depth 35 feet. Add dangerous rocks, covered 34.6ft in the present survey position. Label Rocks.

Feature Images

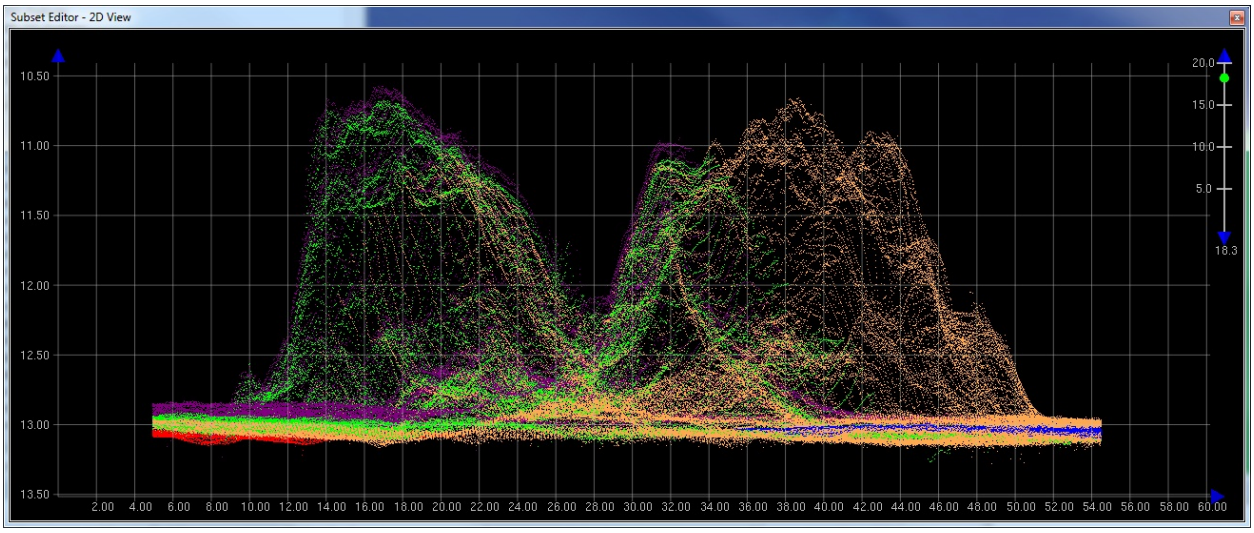

Figure 1.2.1

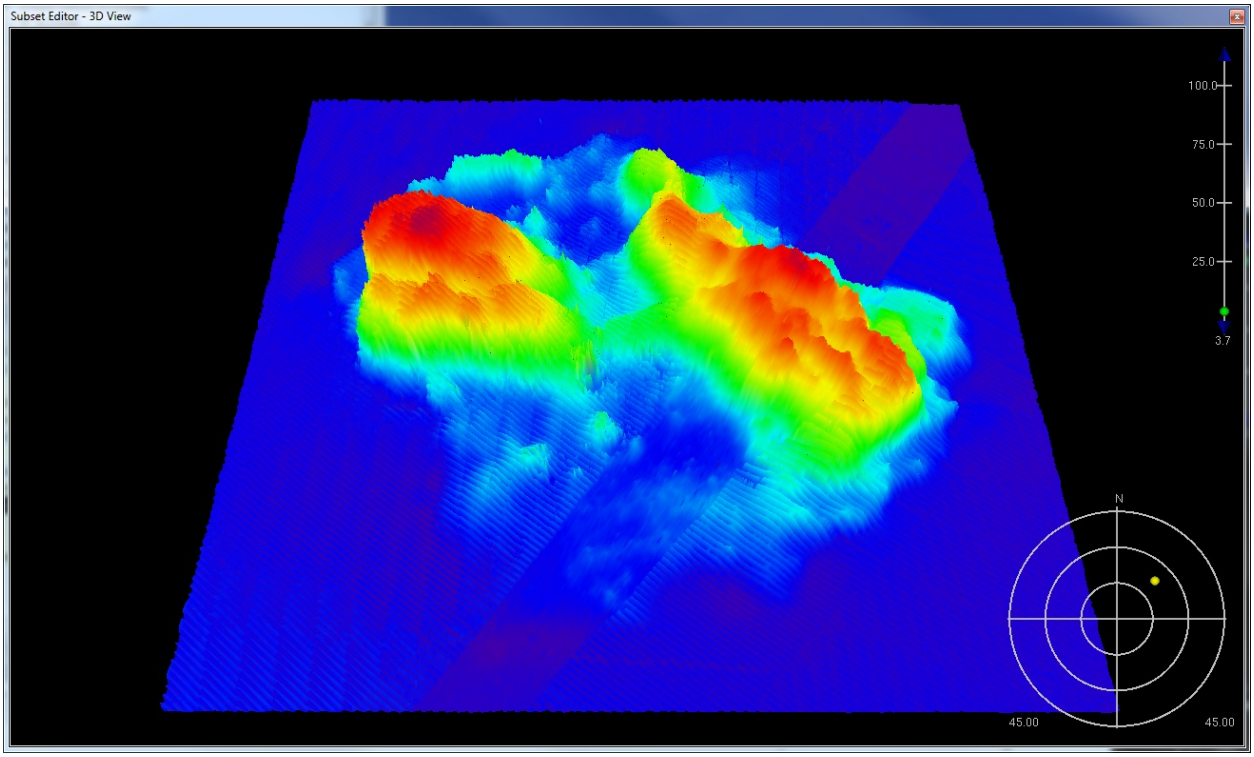

Figure 1.2.2

H12489 Wrecks

Registry Number: H12489
State: Connecticut
Locality: Long Island Sound
Sub-locality: Cedar Pt to Frost Pt
Project Number: OPR-B340-TJ-12
Survey Date: 09/10/2012-09/27/2012

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12369	26th	06/01/2005	1:20,000 (12369_1)	[L]NTM: ?
12368	27th	06/01/2006	1:20,000 (12368_1)	[L]NTM: ?
12364	38th	07/01/2008	1:40,000 (12364_8)	[L]NTM: ?
12363	40th	06/01/2005	1:80,000 (12363_1)	[L]NTM: ?
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13006	34th	05/01/2007	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	49th	04/01/2007	1:1,200,000 (13003_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	30 ft Wreck	Wreck	9.12 m	41° 05' 15.4" N	073° 19' 14.5" W	---
1.2	62 ft Wreck	Wreck	18.90 m	41° 02' 24.8" N	073° 18' 24.5" W	---

1.1) 30 ft Wreck

Survey Summary

Survey Position:	41° 05' 15.4" N, 073° 19' 14.5" W
Least Depth:	9.12 m (= 29.91 ft = 4.985 fm = 4 fm 5.91 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-271.00:00:00.000 (09/27/2012)
Dataset:	H12489_PydroExport.000
FOID:	0_ 0000629698 00001(FFFE00099BC20001)
Charts Affected:	12368_1, 12369_1, 12364_8, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Wreck found by MBES. Soundings collected to the Ellipsoid and reduced to MLLW by VDATUM.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12489_PydroExport.000	0_ 0000629698 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart wreck.

Cartographically-Rounded Depth (Affected Charts):

30ft (12368_1, 12369_1, 12364_8, 12363_1)

5fm (12300_1, 13006_1, 13003_1)

9.1m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	NINFOM - Chart wreck
	QUASOU - 6:least depth known
	SORDAT - 20120927
	SORIND - US,US,graph,H12489

TECSOU - 3:found by multi-beam

VALSOU - 9.116 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Depth and position confirmed with MBES.

COMPILE: Chart 29.9ft wreck at survey position.

Feature Images

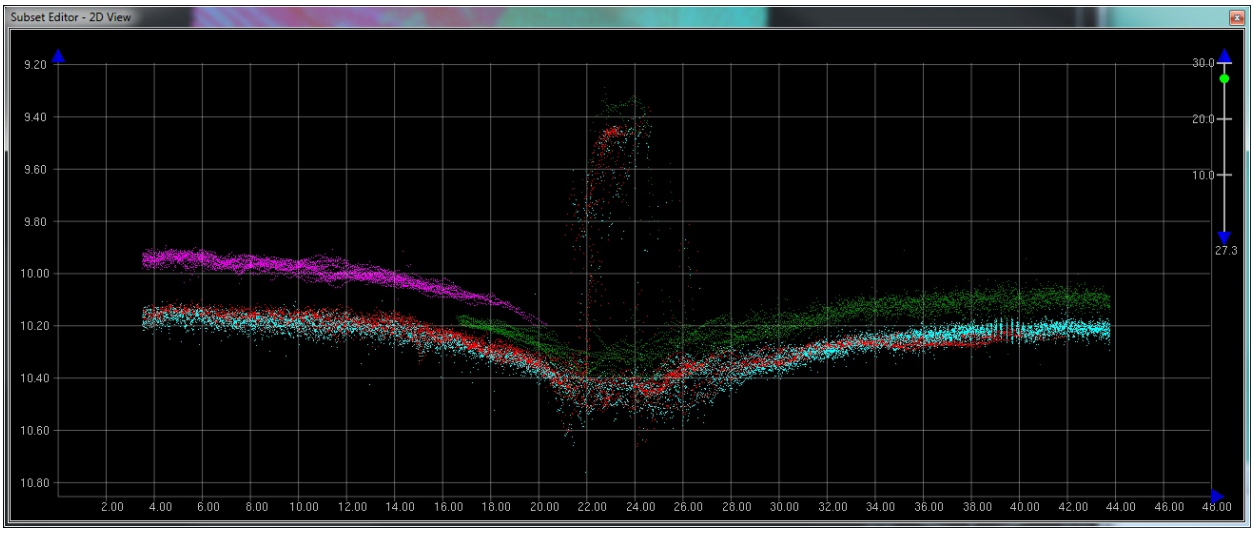

Figure 1.1.1

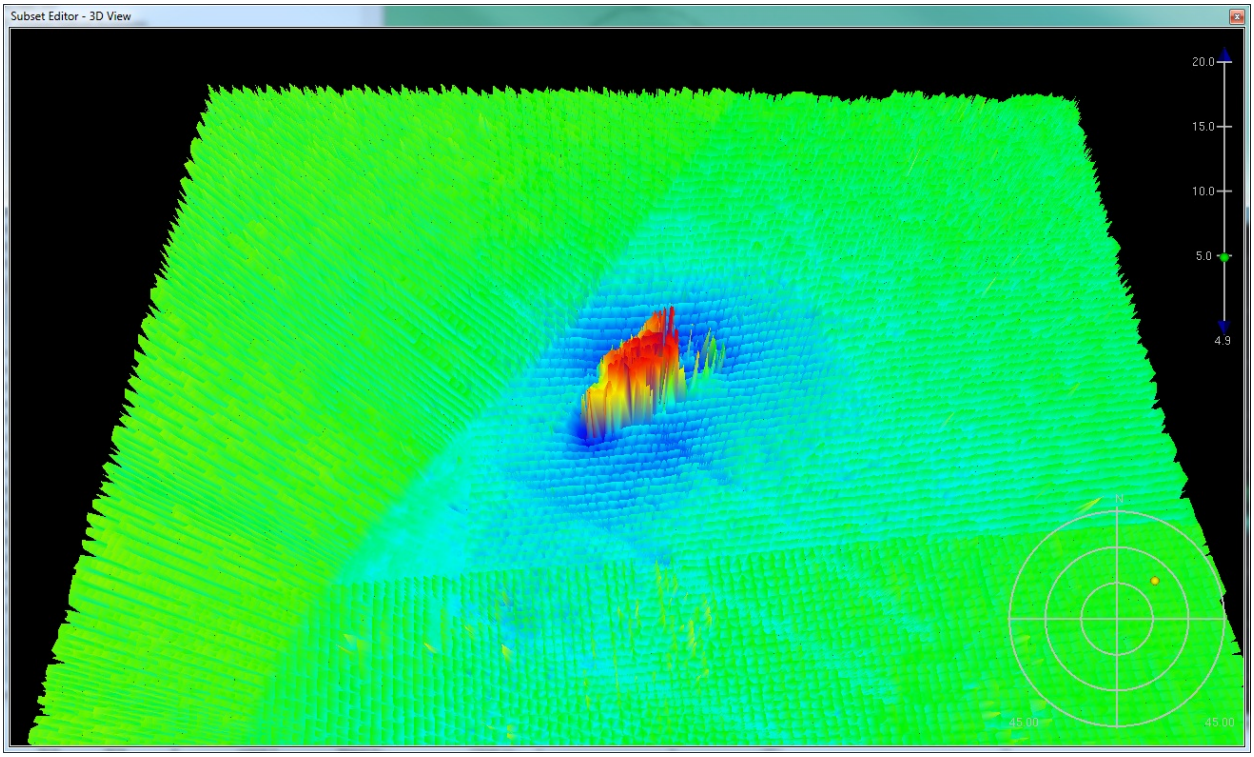

Figure 1.1.2

1.2) 62 ft Wreck

Survey Summary

Survey Position:	41° 02' 24.8" N, 073° 18' 24.5" W
Least Depth:	18.90 m (= 61.99 ft = 10.332 fm = 10 fm 1.99 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-271.00:00:00.000 (09/27/2012)
Dataset:	H12489_PydroExport.000
FOID:	0_ 0000629701 00001(FFFE00099BC50001)
Charts Affected:	12369_1, 12364_8, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Wreck found by MBES. Wreck appears to be a small flat-bottomed boat that has flipped. Soundings collected to the Ellipsoid and reduced to MLLW by VDATUM.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12489_PydroExport.000	0_ 0000629701 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart wreck.

Cartographically-Rounded Depth (Affected Charts):

62ft (12369_1, 12364_8, 12363_1)

10 ¼fm (12300_1, 13006_1, 13003_1)

18.9m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	NINFOM - Chart wreck
	QUASOU - 6:least depth known
	SORDAT - 20120927
	SORIND - US,US,graph,H12489

TECSOU - 3:found by multi-beam

VALSOU - 18.895 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Feature class is not clear, may be an obstruction or wreck. Defer final disposition as wreck or obstruction to AHB compiler.

COMPILE: Chart 62 ft wreck at survey position.

Feature Images

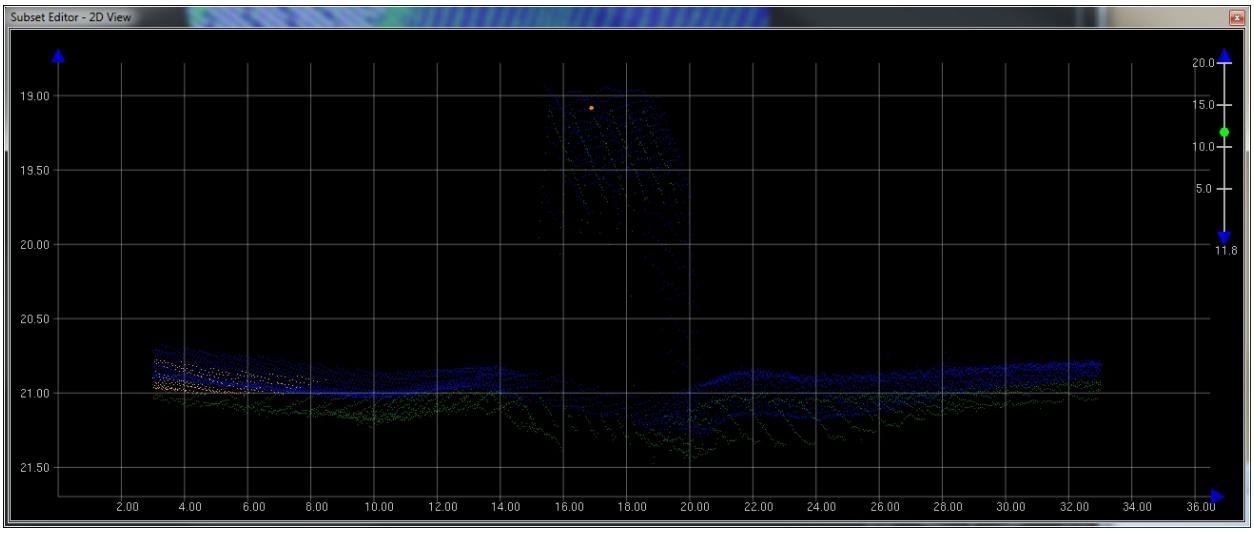

Figure 1.2.1

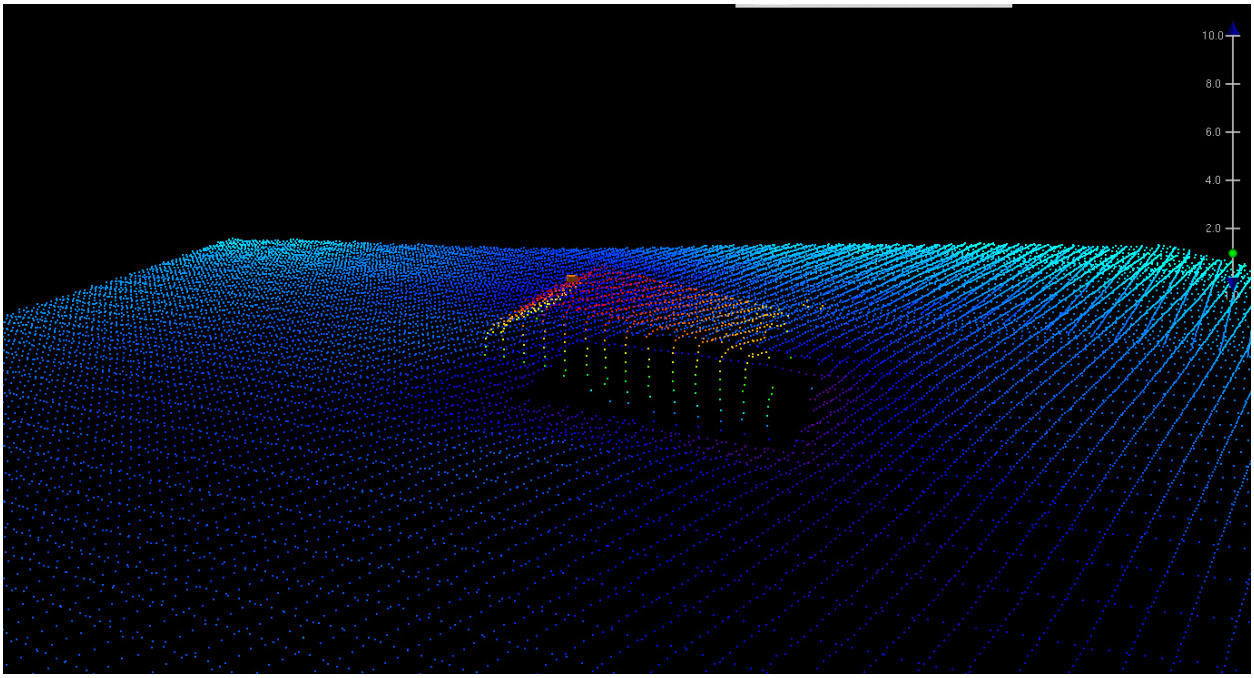

Figure 1.2.2

APPROVAL PAGE

H12489

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NGDC for archive

- H12489_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12489_GeoImage.pdf

The survey evaluation and verification has been conducted according current OCS Specifications, and the survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Digitally signed by HIGGINS.ABIGAIL.SARAH.1267671750
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=NOAA, cn=HIGGINS.ABIGAIL.SARAH.1267671750
Date: 2014.02.26 17:39:58 -05'00'

Approved:_____

LCDR Abigail Higgins, NOAA
Chief, Atlantic Hydrographic Branch