

**F00522**

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

**DESCRIPTIVE REPORT**

*Type of Survey* **Hydrographic**

*Registry No.* **F00522**

**LOCALITY**

*State* **Rhode Island**

*General Locality* **Narragansett Bay**

*Sub-locality* **Anchorage in East Passage**

**2006**

CHIEF OF PARTY

**LT Jasper D. Schaer, NOAA**

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DATE

**HYDROGRAPHIC TITLE SHEET**

**F00522**

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: **Narragansett Bay**

Sub-Locality: **Anchorage in East Passage**

Scale: **1:10,000** Date of Survey: **07/03/06 to 07/11/06**

Instructions Dated: **07/03/06** Project Number: **OPR-B301-NRT5-06**

Vessel: **NOAA Survey Boat S-3002**

Chief of Party: **LT Jasper D. Schaer, NOAA**

Surveyed by: **NOAA Navigation Response Team 5 Personnel**

Soundings by: **Inner Space 455i single beam echo sounder**  
**Kongsberg Simrad EM3000 Multi beam echo sounder**

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 Personnel**

Soundings in: **Meters at MLLW**

Remarks: *Notes in red, bold, italic were made during office processing.*

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

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**DESCRIPTIVE REPORT**

to accompany  
HYDROGRAPHIC SURVEY OPR-B301-NRT5-06  
F00522

Scale of Survey: 1:10,000

Year of Survey: 2006

NOAA Navigation Response Team 5  
LT Jasper D. Schaer, Team Leader

**A. AREA SURVEYED**

This hydrographic survey was conducted in accordance with Hydrographic Survey Letter Instructions for Field Examination OPR-B301-NRT5-06, F00522, Narragansett Bay, RI. The original instructions are dated July 03, 2006.

Narragansett Bay and the approaches to Newport, RI are identified as critical survey areas in the Office of Coast Survey's National Survey Plan. It is also the location of U.S. Naval Station Newport, commercial fishing vessels, a large recreational boating community, and numerous yacht manufacturers that all rely on accurate NOAA chart products.

Multibeam survey operations in Newport Harbor occurred without incident. All anchorages were frequented by numerous passing vessels both commercial and recreational. Anchorage A has a side scan image of a passing fishing boat with nets deployed, and numerous lobster traps were also noted in Anchorage A, B, B2, and D. During the survey of Anchorage B (Priority 3), a charted area labeled "Numerous Floats rep 1984" was confirmed. Location of charted floats is still accurate as of July 2006, and the area was not surveyed due to the floats' location. Anchorage B was surveyed completely up to the edge of the floats. No change to the charted location of the float area is recommended, but the date of the reported sighting needs to be updated to 2006 or remove the text "rep 1984."

Side scan operations within Anchorage A, B, and D (priority 2, 3, and 1 respectively) occurred without incident. Prior to surveying Anchorage B2 (priority 4), the Klein slip ring located within the winch assembly failed; preventing any data transmission and power to be transmitted between the towfish and Klein TPU. The survey of Anchorage B2 continued without side scan sonar operations, and was completed with 200% multibeam coverage as dictated within the FPM. All mosaics submitted include only Anchorages A, B, and D. The slip ring was replaced in August.

Aside from these occurrences during survey operation, no unusual events occurred to affect any data gathered in the survey area.

For complete survey limits, see the chartlet on the following page.

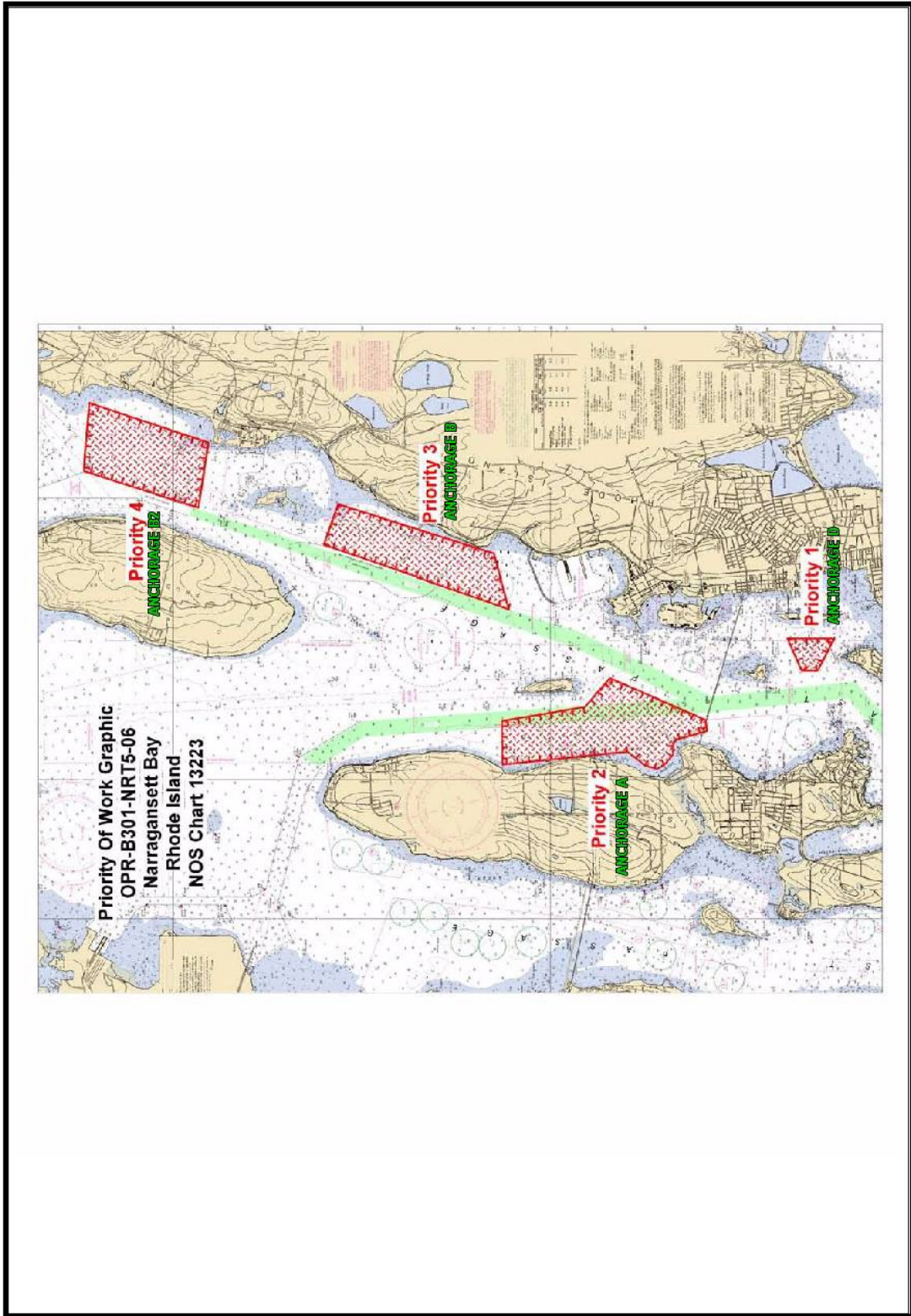


Figure 1: Complete Survey Limits & Data Coverage

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

### **EQUIPMENT**

Data were acquired by NOAA Survey boat S3002, which is a 10-meter hydrographic survey vessel with an average transducer draft of 1.3 meters

NOAA Survey boat S3002 acquired data with a Multi Beam Echo Sounder (MBES)-Kongsberg Simrad EM3000, a Single Beam Echo Sounder (SBES)-INNERSPACE 455i, and with Side Scan Sonar (SSS) data with a towed KLEIN 3000.

NOAA Survey boat S3002 positioning and attitude data were determined with a TSS POS/MV 3.20 Version 4, a DGPS/GPS-aided inertial navigation system.

Refer to the Data Acquisition and Processing Report (DAPR-FY06) for detailed equipment and vessel configuration information.

### **QUALITY CONTROL**

#### **Side Scan Sonar Quality Control**

Daily confidence checks were made by observing the outer ranges of the side scan sonar images. No unusual problems were encountered.

200% SSS bottom coverage was collected for this survey project at 75 m range scale.

#### **Shallow Water Multibeam Quality Control**

There were no faults with the SWMB system which affected data integrity. Refer to this project's DAPR for detailed discussion of SWMB system calibrations, data acquisition, and data processing.

#### **BASE Surfaces**

CARIS HIPS BASE (*Bathymetry Associated with Statistical Error*) surfaces, which incorporate each sounding's total propagated error (TPE), were created according to depth intervals. Each finalized BASE surface contains seven layers: depth, uncertainty (using the "greater of the two" option), density, mean, standard deviation, shoal, and deep.

Overall depths are contained in a series of seven finalized 0.75-meter resolution BASE surfaces (contained within fieldsheets of the same name):

F00522\_p75\_Final

One BASE surface was “combined” into a single 0.75-meter BASE surface that is the source of the soundings in this survey’s PSS weighted grid bathy layer, which was excessed using the character over-plot method with an over-plot removal character size of 3.0 and an over-plot removal scale of 1:5,000.

Refer to this project’s DAPR for detailed discussion of MBES system calibrations, data acquisition, and data processing.

### **Single Beam Quality Control**

There were no unusual events associated with the collection of the Single Beam data for this project. Due to the presence of high density bathymetry data from MBES, SBES data was not processed or analyzed for F00522.

Refer to this project’s DAPR for detailed discussion of SBES system calibrations, data acquisition, and data processing.

### Crosslines

NOAA Survey boat S3002 collected MBES data with Checklines totaling 15.76nm, roughly 11.6% of the 135.22 nm of mainscheme MBES data. Overall, the crosslines have excellent agreement with respective data sets.

### Junctions

There are no junctions for this survey.

### Prior Surveys

Not applicable for this survey.

## **CORRECTIONS TO ECHO SOUNDING**

All methods or instruments used were as described in the project DAPR. The positions of sound velocity casts are loaded into the survey’s PSS as individual “generic position” features (GP’s), with the depth versus sound velocity information contained in the remarks.



## **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 at Newport, RI (845-2660) served as datum control for the survey.

The preliminary zones and correctors used for this survey are as follows:

**Table 1: Preliminary Tide Zones & Correctors**

<b>ZONE NAME</b>	<b>CORRECTOR (min)</b>	<b>RATIO</b>	<b>REFERENCE</b>
NAR2	0	X1.01	845-2660
NAR4	0	X1.07	845-2660
NAR5	0	X1.13	845-2660

A Request for Approved Tides letter was sent to N/OPS1 on July 13, 2006. (Appendix IV). Verified water levels from the N/OPS1 CO-OPS website were downloaded periodically throughout the survey, and applied to all sounding data. Refer to the DAPR for a summary of the methods used to determine, evaluate, and apply tide corrections to sounding data.

### **HORIZONTAL CONTROL**

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

Horizontal position was determined using the Global Positioning System (GPS) corrected by U.S. Coast Guard differential GPS (DGPS) beacon stations. Beacons are selected by automatic range mode by the Trimble DSM212L DGPS system. No horizontal control stations were established for this survey.

Horizontal dilution of precision (HDOP) was monitored daily. The observed HDOP values did not exceed 4.00.

## **D. RESULTS AND RECOMMENDATIONS** *See also Section the Evaluation Report*

### **CHART COMPARISON**

There are three charts affected by this survey:

**Table 2: Affected Charts**

<u>Chart Number</u>	<u>Edition</u>	<u>Edition Date</u>	<u>Next Planned Edition*</u>
13223	38 <sup>th</sup>	04/01/05	8/1/2007
13221	55 <sup>th</sup>	12/18/04	N/A
13218	39 <sup>th</sup>	06/12/04	N/A

### **General Agreement with Charted Soundings**

The overall survey soundings agreed with the charted depths. Any variations are attributed to changes in substrate and/or the advance of Echo Sounding technology over previous collection. *Concur.*

### **Dangers to Navigation (Dton's)**

There are no Dton's for this survey (Appendix I). *Concur.*

### **AWOIS Items**

There were two AWOIS items assigned for this survey (Appendix II-a). *Concur.*

### **Significant Uncharted Features**

There ~~is one~~ *are four* significant uncharted features for this survey (Appendix II-b). *Concur with conditions.*

### **Non-AWOIS Charted Features & Notes**

There ~~were two~~ *is one* Non-AWOIS charted features identified ((Appendix II-e).

## **ADDITIONAL RESULTS**

### **Prior Surveys**

No Prior surveys of this area. *Concur*

### **Aids to Navigation and Other Detached Positions**

All identified floating aids to navigation within the survey area are consistent with the chart and serve their intended purpose. The positions of the lighted floating aids to navigation are consistent with the positions published in the *Light List*. *Concur with conditions. See Section D.2.1. of the Evaluation Report.*

**Bridges and Overhead Cables**

There is one bridge in the survey area, just below Anchorage A in the East Passage of Newport Harbor. Newport Bridge connects the Newport Naval Station with Conanicut Island. Though the bridge was not directly over surveyed areas, its supports do appear in the side scan record of Anchorage A. *Concur*

**Ferry Routes**

There were no ferry routes in the area. *Concur*

**Submarine Cables and Pipelines**

There were cable and pipeline areas within and around the surveyed anchorages, but no observable features were noted. *Concur*

**Shoreline**

No Shoreline data “GPs” was collected for this survey. *Concur*

## **APPENDIX I: DTON REPORTS**

F00522 has no DtoN's.

**APPENDIX II: SURVEY FEATURE REPORT**

# F00522 Pydro Report

**Registry Number:** F-00522  
**State:** Rhode Island  
**Locality:** Narragansett Bay  
**Sub-locality:** Anchorages in East Passage  
**Project Number:** OPR-B301-NRT5-06  
**Survey Dates:** 06/27/2006 - 07/06/2006

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13223	39th	07/01/2007	1:20,000 (13223_1)	USCG LNM: 07/31/2007 (09/11/2007) CHS NTM: None (08/31/2007) NGA NTM: 11/15/2003 (09/22/2007)
13226	6th	01/01/2004	1:20,000 (13226_1)	USCG LNM: 04/22/2008 (04/22/2008) CHS NTM: None (01/25/2008) NGA NTM: 11/02/2002 (04/26/2008)
13221	56th	06/01/2006	1:40,000 (13221_1)	USCG LNM: 07/31/2007 (09/11/2007) CHS NTM: None (08/31/2007) NGA NTM: 11/15/2003 (09/22/2007)
13221	55th	12/01/2004	1:40,000 (13221_2)	[L]NTM: ?
13218	39th	06/01/2004	1:80,000 (13218_1)	USCG LNM: 08/14/2007 (09/11/2007) CHS NTM: None (08/31/2007) NGA NTM: 11/15/2003 (09/22/2007)
12300	45th	03/01/2005	1:400,000 (12300_1)	[L]NTM: ?
13006	32nd	02/01/2005	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	48th	10/01/2004	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	36 foot rock (north fowler rks contact)	Rock	10.96 m	41° 32' 06.2" N	071° 21' 39.7" W	---
1.2	24 ft rock (south fowlers rock contact)	Rock	7.53 m	41° 31' 50.5" N	071° 21' 37.5" W	---
1.3	AWOIS Item 13838 (47 ft obstn)	Obstruction	14.36 m	41° 29' 17.2" N	071° 20' 06.2" W	---

1.4	AWOIS 13839 (50 ft depth)	Depth	15.28 m	41° 29' 11.7" N	071° 20' 08.6" W	--
1.5	37 foot obstruction	Obstruction	11.24 m	41° 33' 40.0" N	071° 18' 26.5" W	---
1.6	38 foot obstruction	Obstruction	11.62 m	41° 29' 20.8" N	071° 20' 17.2" W	---
1.7	27 foot obstruction	Obstruction	8.16 m	41° 36' 53.5" N	071° 17' 01.0" W	---

## **1 - New Features**



## 1.1) Profile/Beam - 15021/7 from newport\_06 / 3002\_mbes / 2006-184 / 400\_1945

### Survey Summary

**Survey Position:** 41° 32' 06.2" N, 071° 21' 39.7" W  
**Least Depth:** 10.96 m (= 35.95 ft = 5.992 fm = 5 fm 5.95 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 1.139$  m ; TVU (TPEv)  $\pm 0.183$  m  
**Timestamp:** 2006-184.20:37:39.013 (07/03/2006)  
**Survey Line:** newport\_06 / 3002\_mbes / 2006-184 / 400\_1945  
**Profile/Beam:** 15021/7  
**Charts Affected:** 13223\_1, 13221\_1, 13221\_2, 13218\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

Area has a rocky bottom type, covered with SSS MBES. However, this 36ft sounding on rock is found in between 41ft 50ft sounding and bounded in between the 30 and 60 bathymetric curve.-BH

### Feature Correlation

Address	Feature	Range	Azimuth	Status
newport_06/3002_mbes/2006-184/400_1945	15021/7	0.00	000.0	Primary
newport_06/3002sss500k/2006-191/sonar_data060710154000	0002	2.72	199.1	Secondary

### Hydrographer Recommendations

The Hydrographer recommends charting a rock at 41°32'06.212"N , -071°21'39.684"W, with a depth of 35ft..

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

36ft (13223\_1, 13221\_1, 13221\_2, 13218\_1)

6fm (12300\_1, 13006\_1, 13003\_1)

11.0m (5161\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** INFORM - North Fowler Rocks contact  
 OBJNAM - Dangerous submerged rock  
 QUASOU - 1:depth known

RECDAT - 20060711  
SORDAT - 20060711  
SORIND - us,us,survey,F00522  
STATUS - 1:permanent  
TECSOU - 3:found by multi-beam  
VALSOU - 10.959 m  
VERDAT - 12:Mean lower low water  
WATLEV - 3:always under water/submerged

### **Office Notes**

Concur. Chart a 36 foot dangerous submerged rock.

### Feature Images

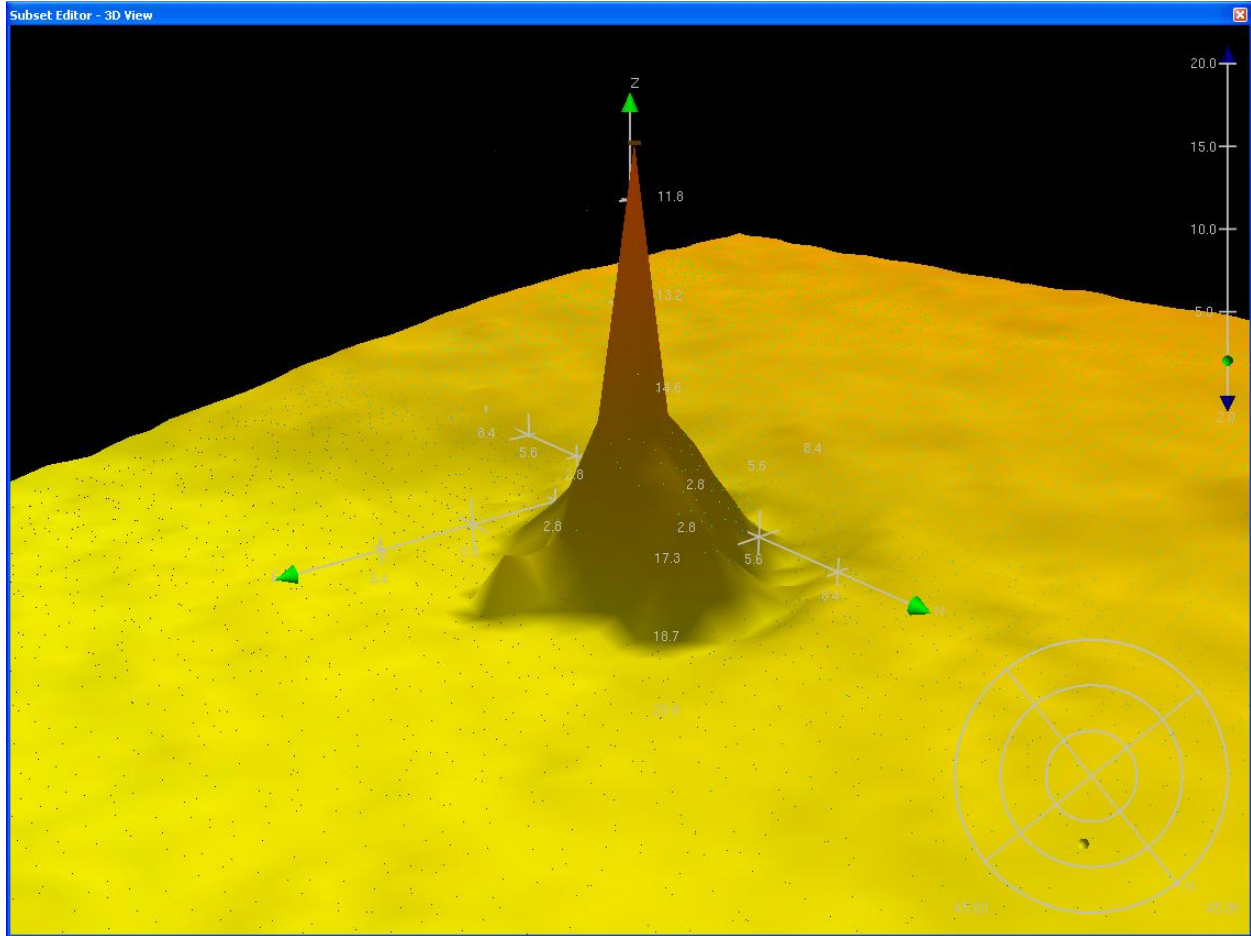


Figure 1.1.1

[Image file h:/compilation/f00522\_b301-nrt5/ahb/pss/photos/sonar\_da0002\_m.tif does not exist.]

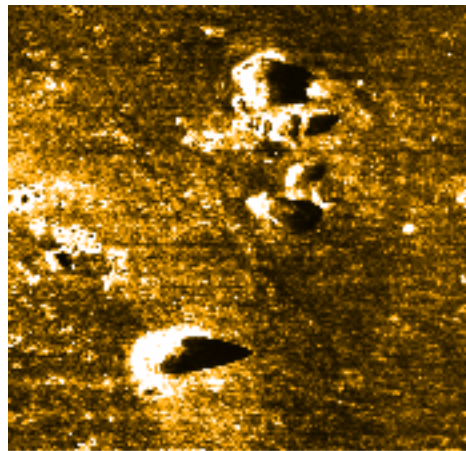


Figure 1.1.2

**1.2) Profile/Beam - 3595/17 from newport\_06 / 3002\_mbes / 2006-184 / 523\_1755**

**Survey Summary**

**Survey Position:** 41° 31' 50.5" N, 071° 21' 37.5" W  
**Least Depth:** 7.53 m (= 24.69 ft = 4.116 fm = 4 fm 0.69 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.131$  m ; **TVU (TPEv)**  $\pm 0.144$  m  
**Timestamp:** 2006-184.18:02:45.573 (07/03/2006)  
**Survey Line:** newport\_06 / 3002\_mbes / 2006-184 / 523\_1755  
**Profile/Beam:** 3595/17  
**Charts Affected:** 13223\_1, 13221\_1, 13221\_2, 13218\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

**Remarks:**

rock near shore, covered with SSS MBES. Rock located in between 18ft curve and 30 ft curve.-BH

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
newport_06/3002_mbes/2006-184/523_1755	3595/17	0.00	000.0	Primary

**Hydrographer Recommendations**

The Hydrographer has no charting recommendations.

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

24ft (13223\_1, 13221\_1, 13221\_2, 13218\_1)

4fm (12300\_1, 13006\_1, 13003\_1)

7.5m (5161\_1)

**S-57 Data**

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

**Attributes:** INFORM - 24 ft submerged rock

OBJNAM - south fowlers rock

QUASOU - 1:depth known

RECDAT - 20080904

SORDAT - 20060711

SORIND - us,us,nsurf,F00522

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 7.527 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Chart a 24 foot dangerous submerged rocks in the present survey locaiton. Draw the danger curve to cover both 24 ft depths.

### Feature Images

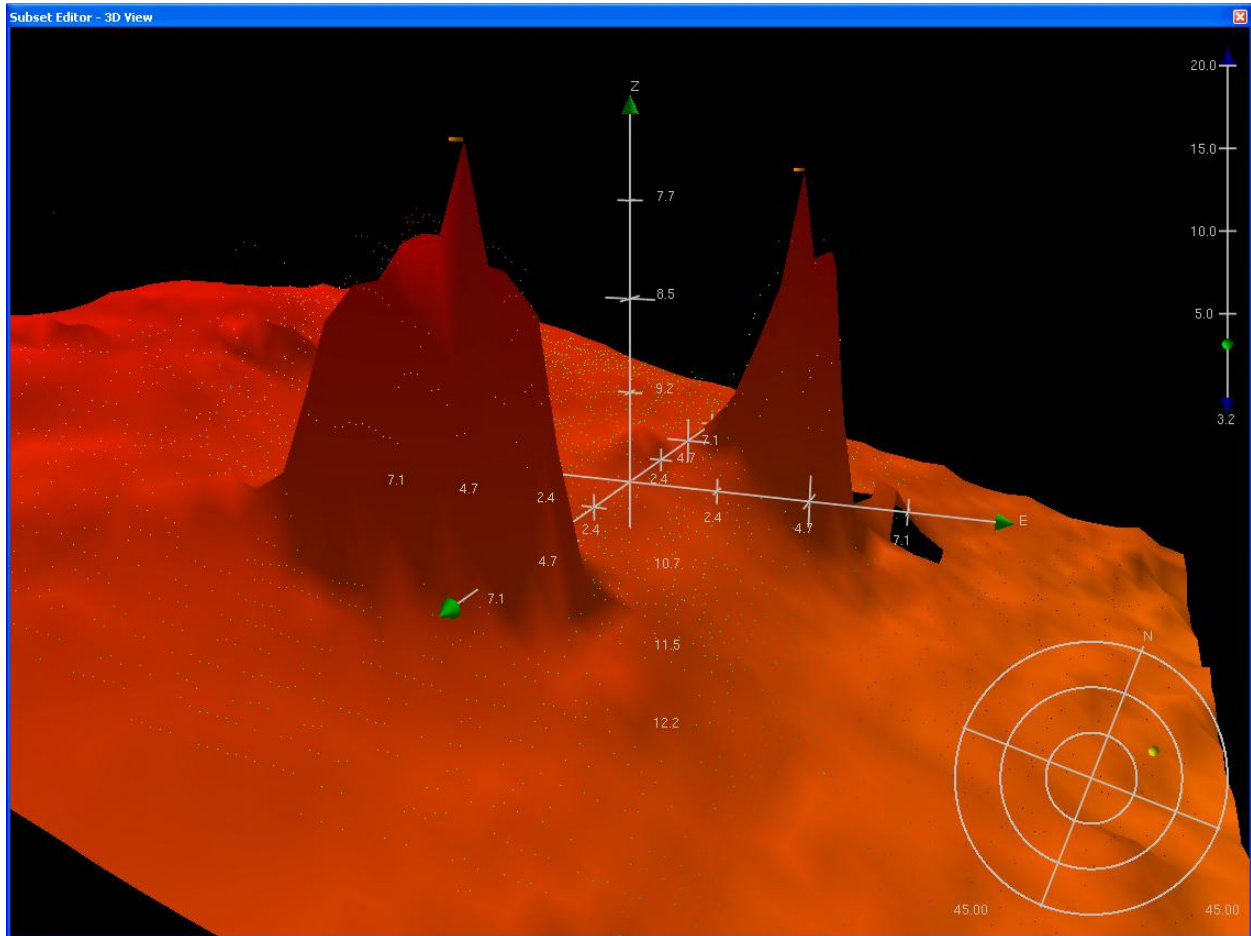


Figure 1.2.1

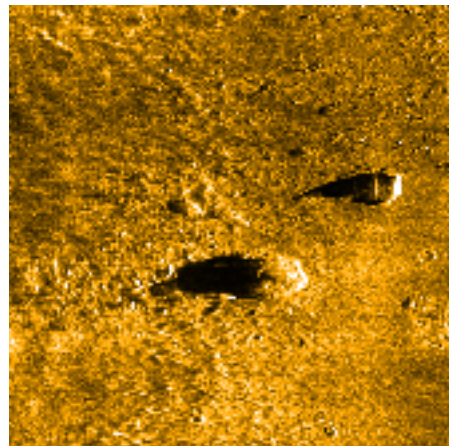


Figure 1.2.2

**1.3) Profile/Beam - 998/30 from newport\_06 / 3002\_mbes / 2006-178 / 018\_1435**

**Survey Summary**

**Survey Position:** 41° 29' 17.2" N, 071° 20' 06.2" W  
**Least Depth:** 14.36 m (= 47.10 ft = 7.849 fm = 7 fm 5.10 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.137$  m ; **TVU (TPEv)**  $\pm 0.146$  m  
**Timestamp:** 2006-178.14:37:52.031 (06/27/2006)  
**Survey Line:** newport\_06 / 3002\_mbes / 2006-178 / 018\_1435  
**Profile/Beam:** 998/30  
**Charts Affected:** 13223\_1, 13221\_1, 13221\_2, 13218\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

**Remarks:**

Charted 46 ft dangerous Obstn. 47 ft. obstn found by present survey.

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
newport_06/3002_mbes/2006-178/018_1435	998/30	0.00	000.0	Primary

**Hydrographer Recommendations**

Revise charted 46 ft dangerous obstn to present survey location and depth.

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

47ft (13223\_1, 13221\_1, 13221\_2, 13218\_1)

7 ¾fm (12300\_1, 13006\_1, 13003\_1)

14.4m (5161\_1)

**S-57 Data**

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** INFORM - obstruction  
 OBJNAM - 47 foot dangerous obstruction  
 QUASOU - 1:depth known  
 RECDAT - 20060711  
 SORDAT - 20060711

SORIND - us,us,survy,F00522

TECSOU - 3:found by multi-beam

VALSOU - 14.355 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Concur. Delete charted 46 foot dangerous obstn and chart 47 foot dangerous obstn in present survey location.



**1.4) Profile/Beam - 743/34 from newport\_06 / 3002\_mbes / 2006-178 / 020\_1444**

**Survey Summary**

**Survey Position:** 41° 29' 11.7" N, 071° 20' 08.6" W  
**Least Depth:** 15.28 m (= 50.14 ft = 8.357 fm = 8 fm 2.14 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.135$  m ; **TVU (TPEv)**  $\pm 0.145$  m  
**Timestamp:** 2006-178.14:46:54.061 (06/27/2006)  
**Survey Line:** newport\_06 / 3002\_mbes / 2006-178 / 020\_1444  
**Profile/Beam:** 743/34  
**Charts Affected:** 13223\_1, 13221\_1, 13221\_2, 13218\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

**Remarks:**

[None]

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
newport_06/3002_mbes/2006-178/020_1444	743/34	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

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

50ft (13223\_1, 13221\_1, 13221\_2, 13218\_1)  
 8 ¼fm (12300\_1, 13006\_1, 13003\_1)  
 15.3m (5161\_1)

**S-57 Data**

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** INFORM - 50 ft obstruction  
 OBJNAM - AWOIS 13839  
 QUASOU - 1:depth known  
 SORDAT - 20060711  
 SORIND - us,us,nsurf,F00522

TECSOU - 3:found by multi-beam

VALSOU - 15.283 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Delete Obsn PA (rep 2005). 50 foot feature found but surrounding depths are also 50 feet. This is not a danger. Chart the present survey depths in this area.

## 1.5) Profile/Beam - 2414/59 from newport\_06 / 3002\_mbes / 2006-186 / 604\_1700

### Survey Summary

**Survey Position:** 41° 33' 40.0" N, 071° 18' 26.5" W  
**Least Depth:** 11.24 m (= 36.89 ft = 6.148 fm = 6 fm 0.89 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.154$  m ; **TVU (TPEv)**  $\pm 0.145$  m  
**Timestamp:** 2006-186.17:05:25.622 (07/05/2006)  
**Survey Line:** newport\_06 / 3002\_mbes / 2006-186 / 604\_1700  
**Profile/Beam:** 2414/59  
**Charts Affected:** 13223\_1, 13221\_1, 13221\_2, 13218\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

[None]

### Feature Correlation

Address	Feature	Range	Azimuth	Status
newport_06/3002_mbes/2006-186/604_1700	2414/59	0.00	000.0	Primary

### Hydrographer Recommendations

[None]

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

37ft (13223\_1, 13221\_1, 13221\_2, 13218\_1)

6fm (12300\_1, 13006\_1, 13003\_1)

11.2m (5161\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** INFORM - Obstructions  
 OBJNAM - 37 ft Obstructions  
 QUASOU - 1:depth known  
 SORDAT - 2006-711  
 SORIND - us,us,nsurf,F00522

TECSOU - 3:found by multi-beam

VALSOU - 11.244 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Two 37 foot depths no side scan data associated with it but it looks like two hits on the same feature. Add 37 ft dangerous submerged obstruction.

**1.6) Profile/Beam - 465/23 from newport\_06 / 3002\_mbes / 2006-178 / 027\_1516**

**Survey Summary**

**Survey Position:** 41° 29' 20.8" N, 071° 20' 17.2" W  
**Least Depth:** 11.62 m (= 38.11 ft = 6.351 fm = 6 fm 2.11 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.121$  m ; **TVU (TPEv)**  $\pm 0.146$  m  
**Timestamp:** 2006-178.15:17:21.127 (06/27/2006)  
**Survey Line:** newport\_06 / 3002\_mbes / 2006-178 / 027\_1516  
**Profile/Beam:** 465/23  
**Charts Affected:** 13223\_1, 13221\_1, 13221\_2, 13218\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

**Remarks:**

[None]

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
newport_06/3002_mbes/2006-178/027_1516	465/23	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

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

38ft (13223\_1, 13221\_1, 13221\_2, 13218\_1)

6 ¼fm (12300\_1, 13006\_1, 13003\_1)

11.6m (5161\_1)

**S-57 Data**

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** INFORM - New feature  
 OBJNAM - 38 foot obstruction  
 QUASOU - 1:depth known  
 SORDAT - 20060711  
 SORIND - us,us,nsurf,F00522

TECSOU - 3:found by multi-beam

VALSOU - 11.615 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Chart a 38 foot obstruction.

**1.7) Profile/Beam - 434/18 from newport\_06 / 3002\_mbes / 2006-187 / 728\_1933**

**Survey Summary**

**Survey Position:** 41° 36' 53.5" N, 071° 17' 01.0" W  
**Least Depth:** 8.16 m (= 26.78 ft = 4.463 fm = 4 fm 2.78 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.144$  m ; **TVU (TPEv)**  $\pm 0.146$  m  
**Timestamp:** 2006-187.19:34:18.884 (07/06/2006)  
**Survey Line:** newport\_06 / 3002\_mbes / 2006-187 / 728\_1933  
**Profile/Beam:** 434/18  
**Charts Affected:** 13223\_1, 13226\_1, 13221\_1, 13221\_2, 13218\_1, 13006\_1, 5161\_1, 13003\_1

**Remarks:**

[None]

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
newport_06/3002_mbes/2006-187/728_1933	434/18	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

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

27ft (13223\_1, 13226\_1, 13221\_1, 13221\_2, 13218\_1)

4 ½fm (13006\_1, 13003\_1)

8.2m (5161\_1)

**S-57 Data**

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** INFORM - OBSTRUCTION  
 OBJNAM - 27 FOOT OBSTRUCTION  
 QUASOU - 1:depth known  
 SORDAT - 20060711  
 SORIND - US,US,SURVY,F00522

TECSOU - 3:found by multi-beam

VALSOU - 8.162 m

VERDAT - 12:Mean lower low water

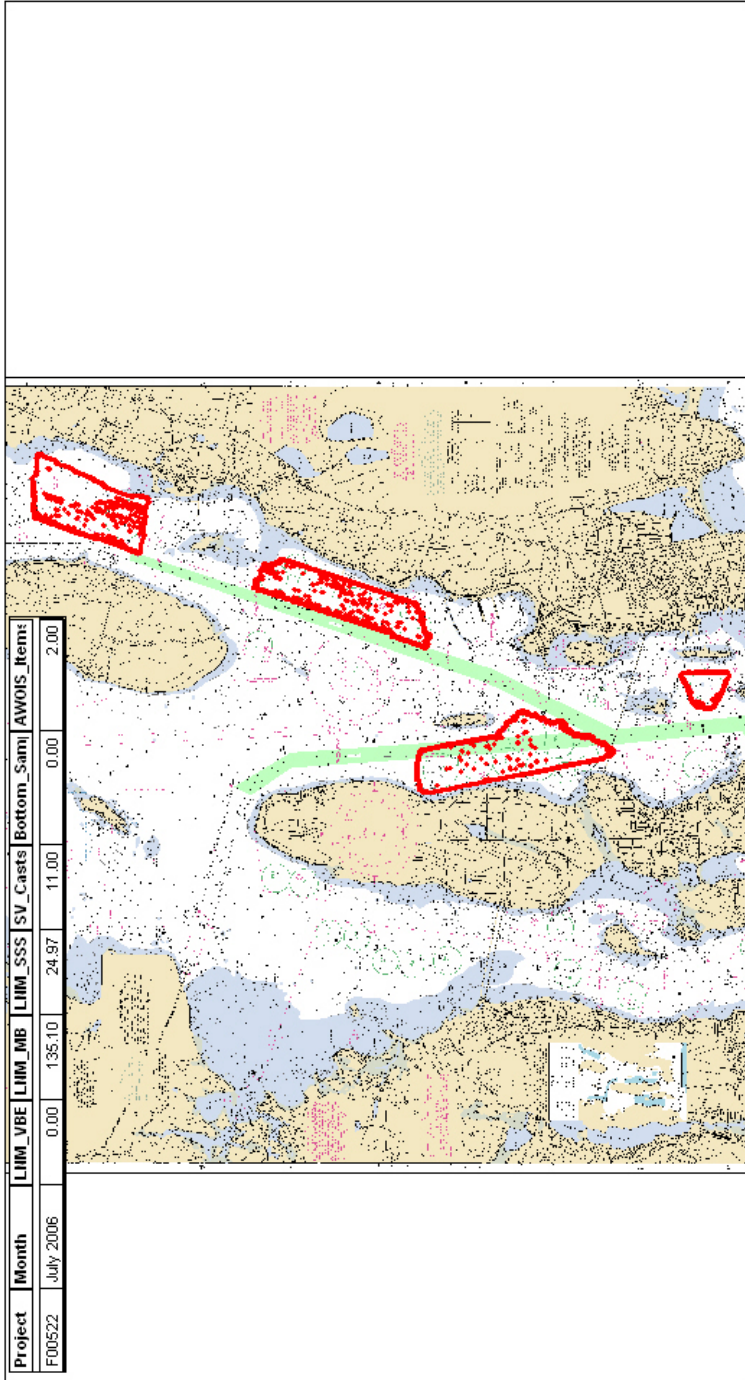
WATLEV - 3:always under water/submerged

## Office Notes

Revise charted 28 foot dangerous submerged obstruction to present survey 27 foot dangerous obstruction IN  
PRESENT SURVEY LOCATION



**APPENDIX III: PROGRESS SKETCH**



**Chartlet 1 of 1**  
 CHART 13223\_1  
 Preliminary data subject to office review. Soundings corrected using preliminary observed tides.  
 Data reflects state of sea floor in existence on day and at time the survey was conducted.

This chartlet has been corrected through  
 Notice to Mariners dated April 23, 2005  
 NOT FOR NAVIGATION

	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE	Project: OPR-B301-NR75-06 Survey: F00522-Newport Harbor State: Rhode Island Locality: Narragansett Bay Sub-locality: Anchorage in East Passage Survey Scale: 1:10,000	Sounding Units: Feet Sounding Datum: MLLW Horizontal Datum: NAD 83 Projection: UTM 19 Central Meridian: 069° 00 00 Scale Factor: 0.9996	NOAA NRT-5 Jasper Schaefer Commanding July 3 to July 11, 2006
	NOAA NRT-5 Jasper Schaefer Commanding July 3 to July 11, 2006			

**APPENDIX IV: TIDES AND WATER LEVELS**

1) Field Tide Note

N/A

2) Smooth Tide Request

- Submitted July 13, 2006

3) Times of Hydrography

4) Final Tide Note

N/A

## Time of Hydrography for F00522

Year_DOY	Min Time	Max Time
2006_178	14:06:59	15:55:12
2006_184	12:50:59	20:43:01
2006_186	12:16:15	18:02:39
2006_187	13:19:18	21:11:47
2006_188	12:50:27	16:11:11

**APPENDIX V: SUPPLEMENTAL RECORDS &  
CORRESPONDENCES**

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

No updates and recommendations submitted for this survey.

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

No bottom samples were acquired during this survey.

**V.3. NONFLOATING AIDS OR LANDMARKS FOR CHARTS, NOAA  
FORM 76-40**

No non-floating aids or landmarks were positioned during this survey.

**E. APPROVAL SHEET**

**OPR-B301-NRT5-06**  
**Anchorage in East Passage, Newport, RI**  
**Narragansett Bay, Rhode Island**  
**Survey Registry No. F00522**

Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy. All bathymetry 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:

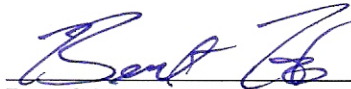
- SEPARATES TO ACCOMPANY PROJECT OPR-B301-NRT5-06, F00522
- OPR-B301-NRT5-06, HORIZONTAL AND VERTICAL CONTROL REPORT (*to be submitted 12/30/06*)
- JAN-DEC 06 DATA ACQUISITION AND PROCESSING REPORT (*to be submitted 12/30/06*)

Respectfully Submitted:



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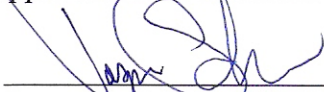
Vitad Pradith  
Physical Science Technician



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Bert S Ho  
Physical Science Technician

Approved and Forwarded:



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Jasper D. Schaer, LT/NOAA  
Team Leader

**ATLANTIC HYDROGRAPHIC BRANCH  
EVALUATION REPORT to Accompany  
Survey F00522 (2006)**

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 8.7 r2368-1  
CARIS HIPS/SIPS version 6.1 SP1 HF 1-6  
CARIS Bathy Manager version 2.1 SP 1 -7  
CARIS S57 Composer version 2.0  
CARIS HOM version 3.3.

**B.2. QUALITY CONTROL**

**B.2.1. H-Cell**

The AHB source depth grid for the survey's nautical chart update product entailed the use of the generated 2 meter grid made during the office processing ESAR review, combined at 75 centimeter resolution, then using them to create a product surface grid with a resolution of 5m. The survey scale selected soundings were extracted from the 4m product surface. The selected sounding set is approximately 10 times the number of charted depths. The chart scale selected soundings are a subset of the survey scale selected soundings. The surface model referenced when selecting the chart scale soundings, to ensure that the selected soundings portrayed the bathymetry within the common area.

Depth contours were hand drawn and are submitted with this survey.

The SAHOB files included depth contours (DEPCNT), depth areas (DEPARE), sounding selections (SOUNDG), features (OBSTRNS, UWTRC), Meta objects (M\_COVR, M\_QUAL), ENC (SBDARE) and cartographic Blue Notes. The individual SAHOB files were inserted into one BASE Manager feature layer and exported to S57 format in order to create the H-Cell deliverable.

The pre-compilation products or components (Stand Alone HOB files (SAHOB)) are detailed in the Pre-Compile Process Log

The completed H-Cells were 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 (H-Cells US500522\_CS.000 and US500522\_SS.000) with all values measured in feet 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 F00522 CARIS H-Cell final deliverables include the following products:

US500522_CS.000	1: <u>20,000</u> Scale	F00522 H-Cell with Chart Scale Selected Soundings
US500522_SS.000	1: <u>10,000</u> Scale	F00522 Selected Soundings (Survey Scale)
US500522_BlueNotes.000	1: <u>20,000</u> Scale	F00522 Cartographic Notes

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

Survey F00522 (2006) does not junction with any contemporary surveys. Present survey depths are in harmony with the charted hydrography.

## **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 F00522. Sounding datum is Mean Lower Low Water (MLLW). Vertical datum is Mean High Water (MHW)

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.

## **D. RESULTS AND RECOMMENDATIONS**

### **D.1 CHART COMPARISON**

13223 (37th Edition, DEC/06)  
Corrected through NM 07/14/2007  
Corrected through LNM 07/10/2007  
Scale 1:20,000

### **ENC Comparison**

US5RI22M  
Narragansett Bay Including  
Newport Harbor RI  
Edition 8  
Update Application Date 2008-05-06  
Issue Date 2008-09-22  
References: Chart 13223

#### **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 2 of the Descriptive Report. The following exceptions are noted:

1. AWOIS Item 13839, a *dangerous Obstrn PA (rep 2005)* depth unknown, charted in Latitude 41° 29' 11.7"N, 71°20'08.6"W was disproved by the present survey. The least depth in the area is 50 feet but there are several 50 foot depths in the vicinity of



the item. It is recommended that the *dangerous Obstrn PA (rep 2005)* depth unknown be removed from the chart and the chart be updated to reflect present survey findings.

2. Bottom samples were not collected during this survey. Bottom samples have been brought forward from the ENC to be retained as charted.

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

### **D.2.1. Aids to Navigation**

There are two floating aids to navigation within the limits of the present survey. They appear to be serving their intended purpose. No changes or recommendations are necessary.

## **D.3. MISCELLANEOUS**

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

## **D.4. ADEQUACY OF SURVEY**

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

This Document is for Office Process use only and is intended to supplement, not supersede or replace, information/recommendations in the Descriptive or Evaluation Reports

## AHB PRE-COMPILATION PROCESS

REGISTRY No.	F00522
PROJECT No.	OPR-B301-NRT5-06
FIELD UNIT	NOAA Survey Boat S-3002
PRE-COMPILER	BLAND
LARGEST SCALE CHART	#13223, edition #39, 20070707
CHART SCALE	1: 20,000
SURVEY SCALE	1: 10,000
DATE OF SURVEY	20060711
CONTENT REVIEW DATE	20080908

Components	File Names
<i>Product Surface</i>	PS_F00522_10K_50mrad_5mres.hns
<i>Shifted Surface</i>	
<i>Contour Layer</i>	F00522_hand_drawn_Contours.hob
<i>Survey Scale Soundings</i>	F00522_SS_Soundings.hob
<i>Chart Scale Soundings</i>	F00522_CS_Soundings.hob
<i>ENC Retain Soundings</i>	
<i>Feature Layer</i>	F00522_Features.hob
<i>Meta-Objects Layer</i>	F00522_MetaObjects.hob
<i>Blue Notes</i>	F00522_BlueNotes.hob

### SPECIFICATIONS:

- I. COMBINED SURFACE:
  - a. File name: F00522\_20k\_75cmres\_Combined\_AHB.hns
  - b. Resolution: 75 cm
  - c. Final Grid Location: H:\compilation\F00522\_b301-NRT5\AHB\E-SAR Final Products\Grids
- II. PRODUCT SURFACE (SOUNDINGS):
  - a. Scale: 1:10000
  - b. Radius: 50 m
  - c. Resolution: 5 m
  - d. Depth
    - i. Minimum: \_\_\_\_\_ m
    - ii. Maximum: \_\_\_\_\_ m
 PRODUCT SURFACE (CONTOURS): N/A
  - a. Scale: 1: \_\_\_\_\_
  - b. Radius: \_\_\_\_\_ m
  - c. Resolution: \_\_\_\_\_ m
- III. SHIFTED SURFACE: N/A
 

Single Shift Value: \_\_\_\_\_ [-0.229m (feet), ( $\leq$  10 fathoms)]  
[-1.372m (fathoms), ( $>$  10 fathoms)]
- IV. CONTOUR LAYER: N/A
  - a. Use a Depth List: XXXXXX\_NOAA\_depth\_curves\_list.txt  
 Depth List:

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- b. Output Options:
  - i. Create contour lines:
    - 1. Line Object: DEPCNT
    - 2. Value Attribute: VALDCO

- V. SOUNDING SELECTION:
  - a. Selection Criteria:
    - i. Radius
    - ii. Shoal biased
    - iii. Use Single-Defined Radius:     distance on ground (m)
    - iv. Filter: Generalized !=1

- VI. FEATURES:
  - a. Brought in from Survey  
Total No. 6
  - b. Brought in from ENC  
ENC: # USRI22M  
Total No. 30

- VII. META-OBJECTS:
  - a. M\_COVR attributes

Acronym	Value
SORDAT	<b>20060711</b>
CATCOV	<b>coverage available</b>
SORIND	<b>US,US,SURVY,F00522</b>

- b. M\_QUAL attributes

Acronym	Value
CATZOC	<b>zone of confidence U (data not assessed)</b>
INFORM	<b>F00522, OPR-B301-NRT5-06. S-3002</b>
POSACC	<b>10</b>
SORDAT	<b>20060711</b>
SORIND	<b>Us,us,survey,F00522</b>
SUREND	<b>20060711</b>
SURSTA	<b>20060702</b>
TECSOU	<b>1,2,3</b>

- c. DEPART attributes

Acronym	Value
DRVALV 1	<b>38.107 ft</b>
DRVALV2	<b>103.163 ft</b>
SORDAT	<b>20060711</b>
SORIND	<b>Us,us,nsurf,F00522</b>

- d. DEPART attributes

Acronym	Value
DRVALV 1	<b>16.312 ft</b>
DRVALV2	<b>126.237 ft</b>
SORDAT	<b>20060711</b>
SORIND	<b>Us,us,nsurf,F00522</b>

Version 1.0

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e. DEPARE attributes

Acronym	Value
DRVALV 1	<b>14.577 ft</b>
DRVALV2	<b>89.088</b>
SORDAT	<b>20060711</b>
SORIND	<b>Us,us,nsurf,F00522</b>

f. DEPARE attributes

Acronym	Value
DRVALV 1	<b>20.932 ft</b>
DRVALV2	<b>100.951 ft</b>
SORDAT	<b>20060711</b>
SORIND	<b>Us,us,nsurf,F00522</b>

g. M\_CSCL attributes

Acronym	Value
CSCALE	
SORDAT	
SORIND	

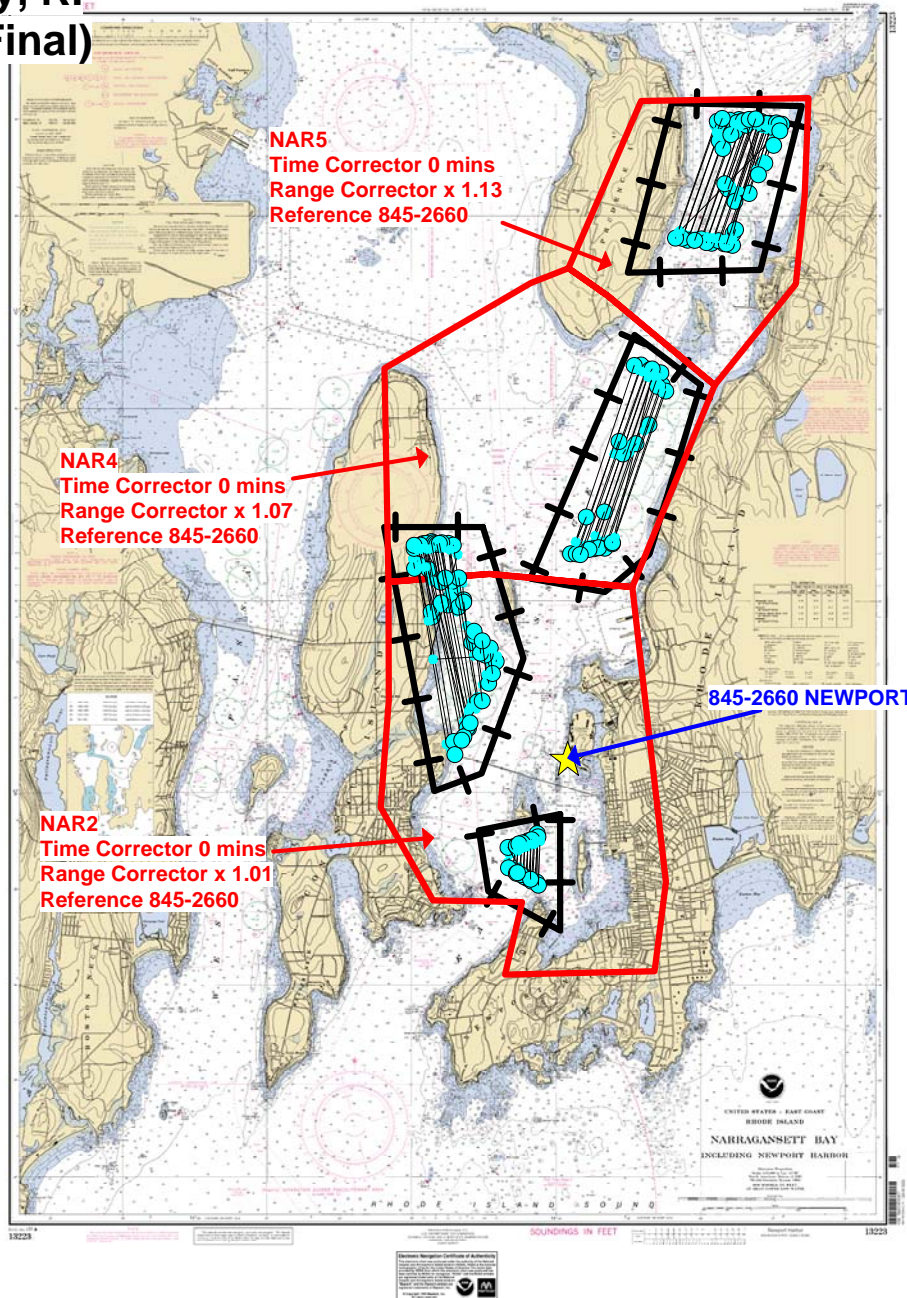
VIII. NOTES:



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



**Final Tidal Zoning  
for OPR-B301-NRT5-2006, F00522  
Narragansett Bay, RI  
(Preliminary As Final)**



**APPROVAL SHEET**  
**F00522**

**Initial Approvals:**

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, representation 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.

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**Deborah A. Bland**  
Cartographer  
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved: \_\_\_\_\_

**Shepard Smith**  
Lieutenant Commander, NOAA  
Chief, Atlantic Hydrographic Branch