

H11071A

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 No. **H11071A**

LOCALITY

State South Carolina

General Locality North Atlantic Ocean

Sub-locality Blake Plateau, Charleston
Bump

2003

CHIEF OF PARTY
CDR Steven R. Barnum, NOAA

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DATE

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

REGISTRY NUMBER:

H11071A

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NUMBER: N/A

State: **South Carolina**

General Locality: ~~**Blake Plateau, Carolina Bight (110 NM offshore Charleston)**~~
North Atlantic Ocean

Sub-Locality: *Blake Plateau, Charleston Bump*

Scale: **1:80,000** Date of Survey: **06/15/03 to 06/21/03**

Instructions Dated: **27 Feb 2003** Project Number: **S-G900-LH-03**

Vessel: **NOAA Ship LITTLEHALES, S222**

Chief of Party: **CDR Steven R. Barnum, NOAA**

Surveyed by: **LITTLEHALES Personnel**

Soundings by: **Kongsberg Simrad EM1002 multibeam sonar**

Graphic record scaled by: **LITTLEHALES Personnel**

Graphic record checked by: **LITTLEHALES Personnel**
Hewlett Packard Design Jet 2500 CP (office)

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

Verification by: **Atlantic Hydrographic Branch *Personnel***

Soundings in: ***F*** ~~**Meters**~~ 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 17.*

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DESCRIPTIVE REPORT
to accompany
HYDROGRAPHIC SURVEY H11071A

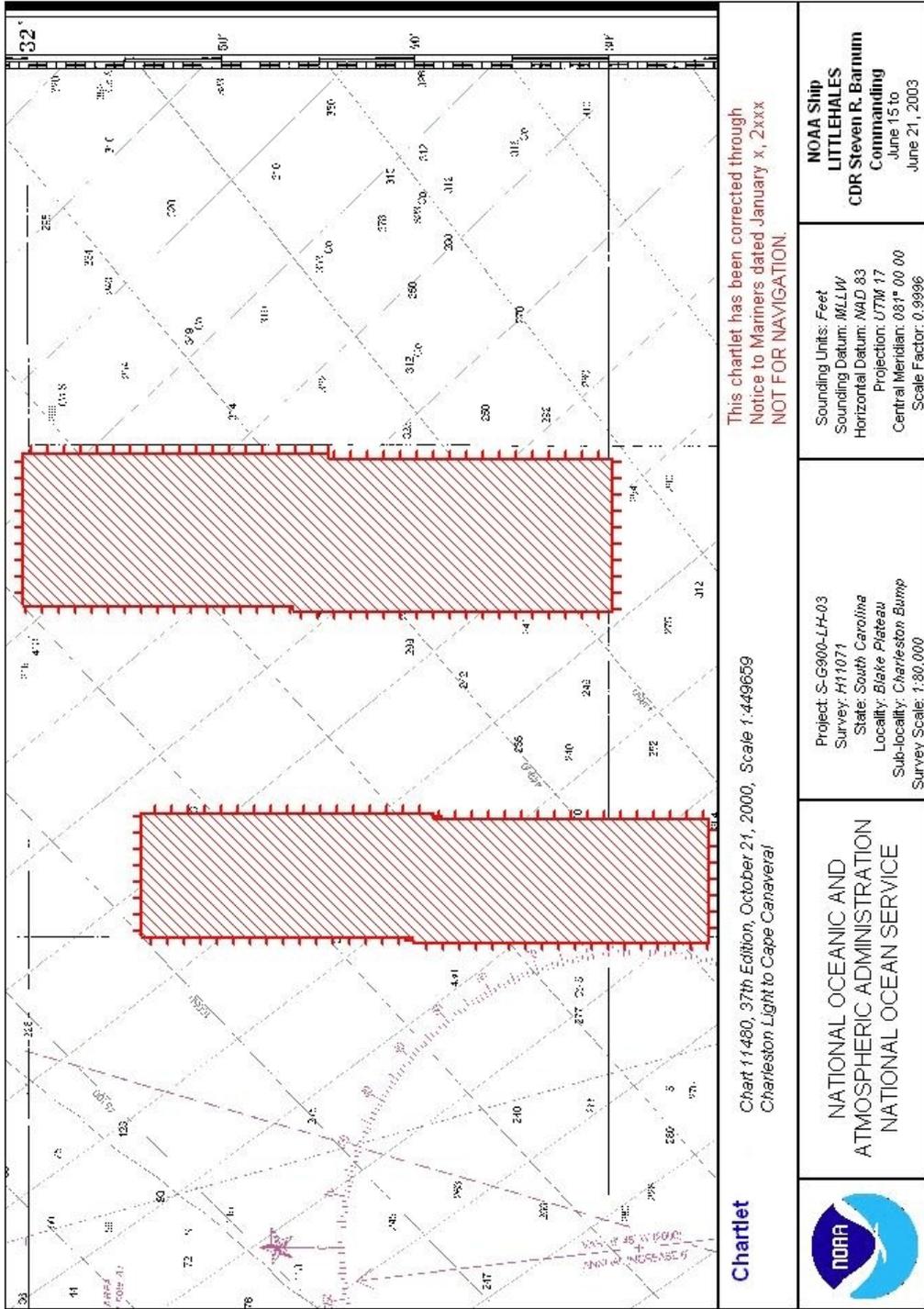
Scale of Survey: 1:80,000
Year of Survey: 2003
NOAA Ship LITTLEHALES
CDR Steven R. Barnum, Commanding

A. AREA SURVEYED

This hydrographic survey was conducted in accordance with Hydrographic Survey Letter Instructions for project S-G900-LH-03, Charleston Bump, South Carolina. The original project instructions are dated February 7, 2003. The registry number changed from H11071 to H11071A on December 9, 2003 (Appendix V*). * *Data filed with the original field records.*

This Descriptive Report pertains to sheet "A" of project S-G900-LH-03, which includes Charleston Bump. The assigned registry number for this sheet is H11071A.

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



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

EQUIPMENT

Data were acquired by NOAA Ship LITTLEHALES, a 208' (63.41m) ship with a mean draft of 14' (4.26m).

NOAA Ship LITTLEHALES acquired multibeam echosounder (MBES) hydrographic data using a Kongsberg Simrad EM1002 multibeam echosounder system. Ship's positioning and attitude were determined with a TSS POS/MV 320 (v 3.3) GPS-aided inertial navigation system. Sound velocity casts were conducted with a SeaBird SBE19 CTD profiler.

No unusual vessel configurations or problems were encountered. Refer to the Spring Data Acquisition and Processing Report (DAPR*), dated April to July 2003, for detailed equipment and vessel configuration information.

QUALITY CONTROL

Mid Water Multibeam Quality Control

There were no faults with the MBES system which affected data integrity. Refer to this project's DAPR* for detailed discussion of MBES system calibrations, data acquisition, and data processing. *Data filed at Atlantic Hydrographic Branch (AHB).*

Crosslines

Thirteen crosslines totalling 117.7 linear nautical miles (lnm) were acquired, equivalent to 17.3% of the total 683.70 LNM of mainscheme data. Mainscheme data for this survey is defined to be 100% MBES coverage over the Charleston Bump.

Data Analysis *See also the Evaluation Report.*

Data were processed with *CARIS/HIPS 5.3*. Total Propagated Error (TPE) and BASE Surface products (standard deviation of bathymetry, mean depth, coverage density, and shoal-biased depth) used for item investigation and data processing were computed in *CARIS/HIPS 5.4 Beta*, a test version of the normal processing suite. Standard deviation products in particular were used to identify fliers and assist in item investigations. Crossline and mainscheme MBES data were analyzed in a *CARIS/HIPS 5.3* workfile (see project DAPR*). Crossline data agreed with 95% to 100% of mainscheme data, based on ** Data filed with the original field records.*

International Hydrographic Organization (IHO) statistical standards used in the *CARIS* Quality Control Report (See Separate V*).

Junctions *See also the Evaluation Report.*

Hydrographic surveys S-G900-WH-99, S-G900-WH-00, and S-G900-WH-01 were conducted by NOAA Ship Whiting in 1999, 2000, and 2001. These surveys cover the area between the 2003 acquisition regions and were all conducted using low-frequency vertical-beam echosounder (VBES) data as the primary data acquisition platform. Agreement of depth soundings between the multibeam and vertical beam acquisitions varies between 0 and 20m from first returns of the multibeam and first returns of the vertical beam, a difference of at most 4% of the overall water depth in the survey region. This difference varies between VBES and MBES lines and also within the survey lines themselves, suggestion natural variation in bathymetry as the cause. Differences in depth between VBES and MBES soundings can also be attributed to the difference in beam footprint of the two systems. *Concur.*

CORRECTIONS TO ECHO SOUNDING

All methods or instruments used were as described in the project DAPR. A table detailing all sound velocity casts is located in Separate III*.

**Data filed with the original field records.*

C. VERTICAL AND HORIZONTAL CONTROL

VERTICAL CONTROL

The tidal datum for this project is Mean Lower Low Water (MLLW). The operating tide station at Charleston, SC (866-5530) served as control for datum determination. No other tide gauges were used. Tidal zoning for this survey is consistent with the Letter Instructions. Tide zones with respect to the survey area are shown in Chartlet 3. The zoning used for this survey is as follows:

Zone	CORRECTOR (min)	RATIO	REFERENCE
<i>SA118</i>	<i>-30</i>	<i>x0.82</i>	<i>866-5530</i>
<i>SA119</i>	<i>-30</i>	<i>x0.85</i>	<i>866-5330</i>
<i>SA135</i>	<i>-24</i>	<i>x0.87</i>	<i>866-5530</i>
<i>SA139</i>	<i>-24</i>	<i>x0.89</i>	<i>866-5530</i>
<i>SA140</i>	<i>-24</i>	<i>x0.85</i>	<i>866-5530</i>
<i>SA141</i>	<i>-24</i>	<i>x0.82</i>	<i>866-5530</i>

A Request for Approved Tides letter was sent to N/OPS1 on January 28, 2004 (Appendix IV*). Verified tides from the N/OPS1 CO-OPS website were downloaded on December 15, 2003 and applied to all sounding data. **Data filed with the original field records.*

HORIZONTAL CONTROL

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 17. *Concur.*

Sounding positional control was determined using 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 Charleston, South Carolina (# 808). No horizontal control stations were established for this survey. *Verified tides using final tidal zoning were applied by AHB.*

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

CHART COMPARISON

There are three charts affected by this survey:

11480	38 th edition, May 1, 2003; scale 1:449659
11009	36 th edition, October 20, 2001; scale 1:1200000
411	49 th edition, March 1, 2003; 1:2160000

General Agreement with Charted Soundings *See also the Evaluation Report.*

Sounding data agreed well with charted depths. Discrete differences are addressed in the Appendix I (DTON, Features, and Item Investigation Report)*.

AWOIS Items and Significant Contacts *See also the Evaluation Report.*

There were three AWOIS items listed as “information only” within the survey limits. One of these items was detected in MBES data. While there is 100% MBES coverage for the other two items, both are listed as old shipwrecks, and both are located in areas of high natural bathymetric variability. Thus the items are not detectable in the data.

Dangers to Navigation

The survey area is entirely offshore, with no dangers to surface navigation present.

Concur.

Charted Features

There are no wire drag items, or any other charted features, that need bathymetric detail on this survey. *Concur.*

Charting Recommendations

Much of the bathymetric detail in the acquisition area has never been charted. Since this is an area of importance to recreational and commercial fishing as well as an area of scientific interest, the hydrographer recommends charting such that the bathymetric features of the Charleston Bump are best preserved. *Concur.*

**Appended to this Report.*

ADDITIONAL RESULTS

Aids to Navigation and Other Detached Positions

There are no floating aids to navigation or features requiring detached positions in the survey area. *Concur.*

Bridges and Overhead Cables

There are no bridges or overhead cables in the survey area. *Concur.*

Submerged Cables and Pipelines

There are no submerged cables or pipelines charted in the survey area, nor were any detected in MBES data. *Concur.*

E. APPROVAL SHEET

**S-G900-LH-03
Blake Plateau
Offshore South Carolina**

**Charleston Bump
Survey Registry No. H11071A**

Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy. All field sheets, this Descriptive Report, and all accompanying records and data are approved.

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

Respectfully,

Submitted:

 3/5/04

Helen F. Stewart
Hydrographer

Approved and Forwarded:

FOR:
 3/5/04
LCDR Douglas D. Baird
Field Operations Officer

 LCDR/NOAA
FOR CDR Steven R. Barnum
Commanding Officer

H11071A AWOIS Item Report

Registry Number: H11071A
State: South Carolina
Locality: North Atlantic Ocean
Sub-locality: Charleston Bump
Project Number: S-G900-LH-03
Survey Date: 06/17/2003

Three AWOIS items were included in the survey region. MBES bathymetry data and standard deviation of MBES bathymetry were used to search for the items. One item was found and is addressed below. The remaining items were not located. In one instance, there is insufficient MBES coverage of the region, and in the other instance the MBES resolution is insufficient to resolve a small contact given the water depth. Both unresolved contacts are located in areas of high natural variability and thus using standard deviation of bathymetry is inappropriate. Should further searches for these items be required, the hydrographer recommends using ROV or deep side-scan sonar rather than surface MBES.

Charts Affected

Number	Version	Date	Scale
11480	38th Ed.	05/01/03	1:449659
11009	36th Ed.	10/20/01	1:1200000
411	49th Ed.	03/01/03	1:2160000

Features

Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
AWOIS	510.11 m	31.74847287° N	78.66784909° W	---
AWOIS	[no data]	[no data]	[no data]	---
AWOIS	[no data]	[no data]	[no data]	---

1 - AWOIS Database Items

1.1) AWOIS 488 from database S-G900-03_awois

Primary Survey Feature is Profile/Beam - 493/59 from h11071a / s222_mb / 2003-168 / 0114_20030617_023032_raw

Search Position: 31.75020833, -78.66640556
Historical Depth: [None]
Search Radius: 0
Search Technique: [None]
Technique Notes: [None]

History Notes:

DESCRIPTION 01 DATED 1920 24 NO.8812; CARGO; SUNK 1/26/20 BY MARINE CASUALTY; 5596 GT

Survey Summary

Survey Position: 31.74847287° N, 78.66784909° W
Least Depth: 510.11 m
Timestamp: 2003-168.02:53:13.303 (06/17/2003)
Survey Line: h11071a / s222_mb / 2003-168 / 0114_20030617_023032_raw
Profile/Beam: 493/59
Charts Affected: 11480_1, 11009_1, 411_1

Remarks:

AWOIS Item # 488 MELERO located using MBES data.

Feature Correlation

Line	Feature	Range	Azimuth	Status
h:/hdcs_data/h11071a/s222_mb/2003-168/0114_20030617_023032_raw	493/59	0.00	000.0	Primary
S-G900-03_awois	AWOIS # 488	236.41	215.2	Secondary (grouped)

Hydrographer Recommendations

Chart as per MBES data.

Feature Images

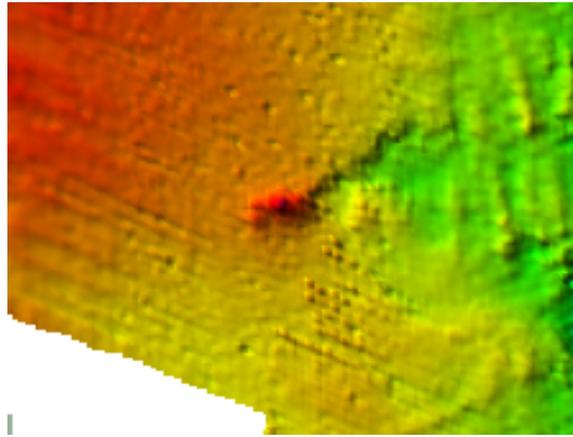


Figure 1.1.1

1.2) AWOIS 495 from database S-G900-03_awois

Search Position: 31.63354722, -78.86641389

Historical Depth: [None]

Search Radius: 0

Search Technique: [None]

Technique Notes: [None]

History Notes:

HISTORY H10947/99-00--S-G900-WH; THIS SINGLE BEAM ECHOSOUNDER, 1:80,000 SCALE SURVEY IS COMMON TO THIS ITEM. THIS ITEM WAS PROVIDED IN THE PROJECT PACKAGE AS AN INFORMATION ITEM. NO INDICATIONS OF THIS WRECK WERE FOUND DURING THIS SURVEY. NO CHANGE IN CHARTING STATUS WAS RECOMMENDED. (UPDATED 8/01 BY MBH) DESCRIPTION 01 1922 24 NO.8822; CARGO; 100 GT,SUNK 2/7/22 BY MARINE CASUALTY; GP DOUBTFUL

Survey Summary

Charts Affected: 11480_1, 11009_1, 411_1

Remarks:

AWOIS Item #495 (Alpha) was not located using MBES data. There is less 100% MBES coverage in a 1 nm search radius around the item, and where there is MBES bathymetry coverage, resolution at this depth of water is insufficient to either conclusively locate or disprove the contact. Standard deviation of MBES data was not useful as the item is located in an area of high natural variability.

Feature Correlation

Line	Feature	Range	Azimuth	Status
S-G900-03_awois	AWOIS # 495	0.00	000.0	Primary

Hydrographer Recommendations

If further information about this item is desired, the hydrographer recommends surveying the search radius with an ROV or deep-tow sidescan sonar.

Feature Images

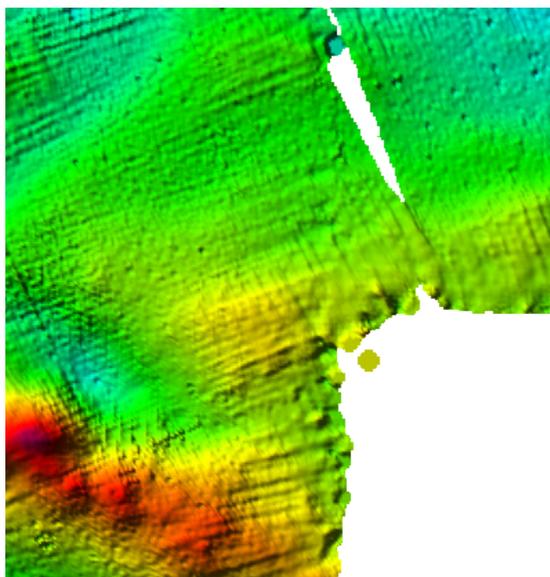


Figure 1.2.1

1.3) AWOIS 487 from database S-G900-03_awois

Search Position: 31.55021389, -78.96641944

Historical Depth: [None]

Search Radius: 0

Search Technique: [None]

Technique Notes: [None]

History Notes:

DESCRIPTION 24 NO.846; TANKER, 10195 GT, SUNK 7/2/43 BY SUBMARINE; POS. ACCURACY 1-3 MILES 61 7/2/43

Survey Summary

Charts Affected: 11480_1, 11009_1, 411_1

Remarks:

AWOIS Item # 487 (BLOODY MARSH) was not located in MBES data. The MBES bathymetry resolution at this depth of water is insufficient to either conclusively locate or disprove the contact. Standard deviation of MBES data was not useful as the item is located in an area of high natural variability.

Feature Correlation

Line	Feature	Range	Azimuth	Status
S-G900-03_awois	AWOIS # 487	0.00	000.0	Primary

Hydrographer Recommendations

If further information about this item is desired, the hydrographer recommends surveying the search radius with an ROV or deep-tow sidescan sonar.

Feature Images

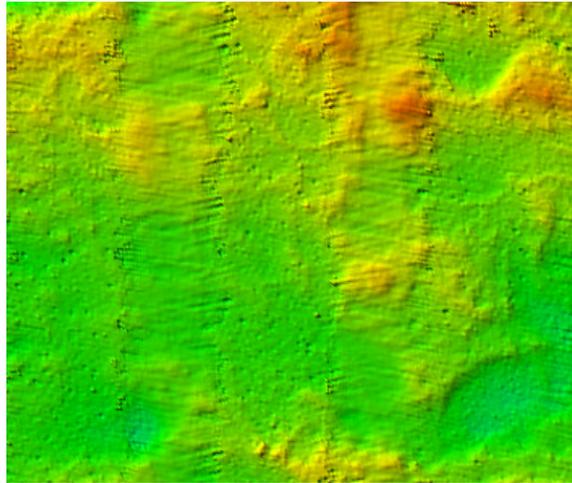


Figure 1.3.1



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: August 9, 2004

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: S-G900-LH-2003
HYDROGRAPHIC SHEET: H11071

LOCALITY: Blake Plateau, South Carolina
TIME PERIOD: June 15 - 20, 2003

TIDE STATION USED: 866-5530 Charleston, SC
Lat. 32° 46.9'N Lon. 79° 55.5'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.648 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SA118, SA119, SA135, SA139, SA140, & SA141.

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 new 1983-2001 National Tidal Datum Epoch (NTDE).

FA 

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION



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**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H11071A (2003)**

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. AUTOMATED DATA ACQUISITION AND PROCESSING

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

MapInfo, version 6.5
MicroStation J, version 7.01.04.16
IRAS B, version 07.01.000.18
CARIS HIPS/SIPS Ver 5.4
PYDRO, version 3.7.2

The smooth sheet was plotted using a Hewlett Packard Design Jet 2500CP plotter.

B.2 QUALITY CONTROL

Junctions

H10947 (1999-2000) to the east
H11071 (2001) to the west

A standard junction could not be effected with the surveys H10947 (1999-2000) and H11071 (2001). The surveys are archived at National Ocean Survey headquarters, Silver Spring, Maryland. In this case the note "ADJOINS" has been shown on the present survey smooth sheet. There are no depth curves in the junctional area. There are no junctional surveys to the north or south. Present survey depths are in harmony with the charted hydrography to the north and south.

D. RESULTS AND RECOMMENDATIONS

CHART COMPARISONS 11480 (38th Edition, May 1/03)

General Agreement with Charted Soundings

Sounding data does not agree with charted depths. Differences are seen ranging from 64 meters shoaler to 29 meters deeper. It is recommended to supersede the charted hydrography with present survey soundings.

AWOIS Items and Significant Contacts

1. Automated Wreck and Information System (AWOIS) Item #488, is a charted Wreck in Latitude 31°44'54.50"N, Longitude 78°40'04.26"W. The wreck was located by the current survey in Latitude 31°44'54.02"N, Longitude 78°40'04.52"W. It is recommended the Wreck symbol be deleted from the chart and a 276 Wreck be charted.

2. AWOIS Item #487, a charted sunken Wreck in Latitude 31°33'00.77"N, Longitude 78°57'59.11"W, was not conclusively located by the Hydrographer. No change to the chart is recommended.

3. AWOIS Item #495, an uncharted Wreck in Latitude 31°38'00.77"N, Longitude 78°51'59.09"W, was not conclusively located by the Hydrographer. No change to the chart is recommended.

ADEQUACY OF SURVEY

This is an adequate hydrographic/multibeam survey. No additional field work is recommended

MISCELLANEOUS**Data Analysis**

Artifacts existed within the multibeam data set and were not addressed by the hydrographer. No sound velocity corrections were made by the hydrographer as mentioned in the DR and referenced to in the DAPR. Application of sound velocity correction by AHB personnel in HIPS did not correct the situation. Data was filtered and cleaned to correct for the sound velocity artifacts and errors, then re-excessed in Pydro and exported to Microstation for smooth sheet creation.

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:

11480 (38th Edition, May 01/03)
Corrected by NM May 10/03
Corrected by LNM Apr. 22/03

Bryan Chauveau

Bryan Chauveau
Contract Hydrographer
Verification of Data
Evaluation and Analysis

Jeremy
Mchugh

AWOIS and SURF check
complete
HSD, Operations Branch
2004.10.07 11:04:06 -
04'00'



Jeremy McHugh

Digitally signed by
Jeremy McHugh
DN: cn=Jeremy
McHugh, ou=HSD
Operations, c=US
Date: 2004.10.12
13:11:07 -05'00'

APPROVAL SHEET
H11071A (2003)

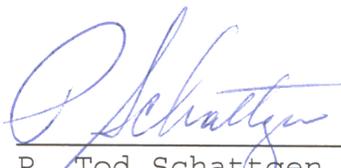
The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproof of charted data. All revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.



Richard H. Whittfield
Cartographer,
Atlantic Hydrographic Branch

Date: SEPT 02, 2004

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Approved: 

P. Tod Schattgen
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

Date: SEPT 16, 2004

