

H11514

<p>NOAA FORM 76-35A</p> <p>U.S. DEPARTMENT OF COMMERCE          NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION          NATIONAL OCEAN SURVEY</p> <p><b>DESCRIPTIVE REPORT</b></p>	
<i>Type of Survey:</i>	<b>Basic Navigable Area</b>
<i>Registry Number:</i>	<b>H11514</b>
<b>LOCALITY</b>	
<i>State:</i>	Mississippi
<i>General Locality:</i>	Gulfport
<i>Sub-locality:</i>	Offshore Ship Island Pass
<p><b>2005</b></p> <p>CHIEF OF PARTY  <b>CAPT Emily B. Christman, NOAA</b></p>	
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NOAA FORM 77-28  
(11-72)

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

REGISTRY NUMBER:

**HYDROGRAPHIC TITLE SHEET**

**H11514**

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: **Mississippi**

General Locality: **Gulfport, MS**

Sub-Locality: **Offshore Ship Island Pass**

Scale: **1:10,000** Date of Survey: **10/17/05 to 11/03/05**

Instructions Dated: **09/07/05** Project Number: **OPR-J323-TJ-05**

Change No.1 Dated: **09/0705**

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

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

Surveyed by: **THOMAS JEFFERSON Personnel**

Soundings by: **Klein 5000 side scan sonar**  
**Reson SeaBat 8101 multibeam sonar, ODOM Echotrac vertical beam echosounder**

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

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

Verification by: **Atlantic Hydrographic Branch Personnel**

Soundings in: ***Feet* Meters at MLLW**

Remarks: ***Red, bold, italic notes in descriptive report were made during office processing.***

- 1) All Times are UTC.***
- 2) Basic Hydrographic Survey under Navigable Concept.***
- 3) Projection is NAD83 UTM Zone 16.***
- 4) Part of NOAA's Hurricane Katrina Response Effort.***

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*\*Data Filed with original field records.*

**DESCRIPTIVE REPORT**

To Accompany

Hydrographic Survey H11514

Scale of Survey: 1:10,000

Year of Survey: 2005

NOAA Ship THOMAS JEFFERSON S222

CAPT Emily B. Christman, Commanding

**A. AREA SURVEYED**

This hydrographic survey was conducted in accordance with Hydrographic Survey Letter Instructions\* for project OPR-J323-TJ-05, Approaches to Gulfport, Mississippi and includes Offshore Ship Island Pass. The assigned registry number for this sheet is H11514, as prescribed in the Letter Instructions. The original instructions are dated September 07, 2005. *Concur.*

One modification to the original Letter Instructions was the coverage requirements. Due to damage to Launch 3101, it was not possible to obtain complete multibeam echo sounder (MBES) coverage for the entire survey area. Permission to deviate from the Letter Instructions was obtained via a phone call to HSD. In those areas without complete MBES coverage, a second set of 100% side scan SONAR (SSS) was acquired, as well as feature developments.

This survey is part of NOAA’s response efforts to Hurricane Katrina. The approaches to Gulfport, MS are critical for shipment of fuel and supplies to support the relief efforts in the areas most impacted by the hurricane. This survey used MBES and SSS to search for obstructions, shoaling, and other dangers to navigation that would hinder marine transportation to Gulfport.

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

*\*Data Filed with original field records.*

**A.1. Statistics**

The following table represents all data acquired in hydrographic survey area H11514.

<b>Line Type</b>	<b>Distance NM</b>
S222 VBES	176.17
S222 Klein 5000 side scan sonar 200%	77.16
HSL 3102 Klein 5000 side scan sonar 100%	149.72
HSL 3102 Klein 5000 side scan sonar 200%	43.44
HSL 3102 RESON 8101 MBES	327.00
HSL 3102 RESON 8101 MBES developments	21.32
S222 VBES crosslines	15.84
HSL 3102 RESON 8101 MBES crosslines	11.68
Total lineal nautical mileage	822.32



## B. DATA ACQUISITION AND PROCESSING

### B.1 EQUIPMENT *See also the Evaluation Report.*

Data were acquired by NOAA Ship THOMAS JEFFERSON, and Hydrographic Survey Launch (HSL) 3102.

NOAA Ship THOMAS JEFFERSON is a 263-foot long hydrographic survey ship with a transducer draft of 15 feet 3 inches. THOMAS JEFFERSON acquired side scan sonar (SSS) imagery, vertical-beam echosounder (VBES) soundings, and water column sound speed data. Imagery was acquired with a stern-towed Klein 5000 towfish. Soundings were acquired with an ODOM Echotrac DF3200 MK II VBES. Sound velocity profiles were acquired using a Sea-Bird Electronics SBE 19 Conductivity Temperature Depth (CTD) probe. Positioning and attitude correctors were acquired with a POS/MV 320 v.3 GPS-aided inertial navigation system. A Caris HIPS vessel configuration file has been created for each sonar device with the draft from the waterline to the transducer head clearly defined.

HSL 3102 is a 31 foot (~10 meter) aluminum hull craft with an overall draft of 3 feet 5 inches. HSL 3102 acquired imagery, multibeam echosounder soundings, and sound velocity profiles. Imagery was acquired with a hull-mounted Klein 5000 side scan sonar towfish. Soundings were acquired with a Reson SeaBat 8101 MBES. Sound velocity profiles were acquired using Sea-Bird Electronics SBE19+ CTD. All positioning and attitude were determined with Applanix TSS POS/MV 2100 (version 2) GPS-aided inertial navigation system. A Caris HIPS vessel configuration file has been created for each sonar device with the draft from the waterline to the transducer head clearly defined.

No unusual vessel configurations or problems were encountered. Refer to the Fall Data Acquisition and Processing Report (DAPR\*) dated 26 July 2005 for detailed equipment and vessel configuration information. *\*Data filed with original field records.*

### B.2 QUALITY CONTROL

#### B.2.1 Vertical Beam Echosounder Quality Control

VBES soundings were acquired as the primary source of bathymetry outside of the Ship Island Pass Channel and southeast of the Ship Island Pass sea buoy. No unusual problems or faults were encountered during VBES acquisition or processing. Refer to the 2005 Fall DAPR for a detailed description of VBES acquisition and processing. *Concur.*

#### B.2.2 Multibeam Echosounder Quality Control

Complete MBES soundings were acquired as the primary source of bathymetry in the Ship Island Pass Channel and eastern approaches to the channel. Skunk-striped MBES soundings were acquired outside the channel in the northwestern area of the sheet, to the extreme far

southeast of the sheet, and the southern region of the sheet south of the channel. Refer to Figure 1 for further detail in regions of MBES coverage. Developments over significant objects were acquired by HSL 3102.

A systematic sound velocity error is present in the MBES data in the eastern region of Complete MBES coverage. This error is generally less than 30cm in magnitude, which is in specification.

A systematic acquisition error was observed in RESON 8101 data. Energy from the sonar penetrated extremely deeply into soft bottom sediments (“rattails”), particularly at nadir, causing undulation of the navigation surface. The magnitude of this error was found to be on the order of 40cm, outside specification. This data was edited in CARIS Subset Editor to remove the rattails from the nadir beams. Following editing, the magnitude of this error was reduced to 20cm, which meets IHO Order I specification. *Concur.*

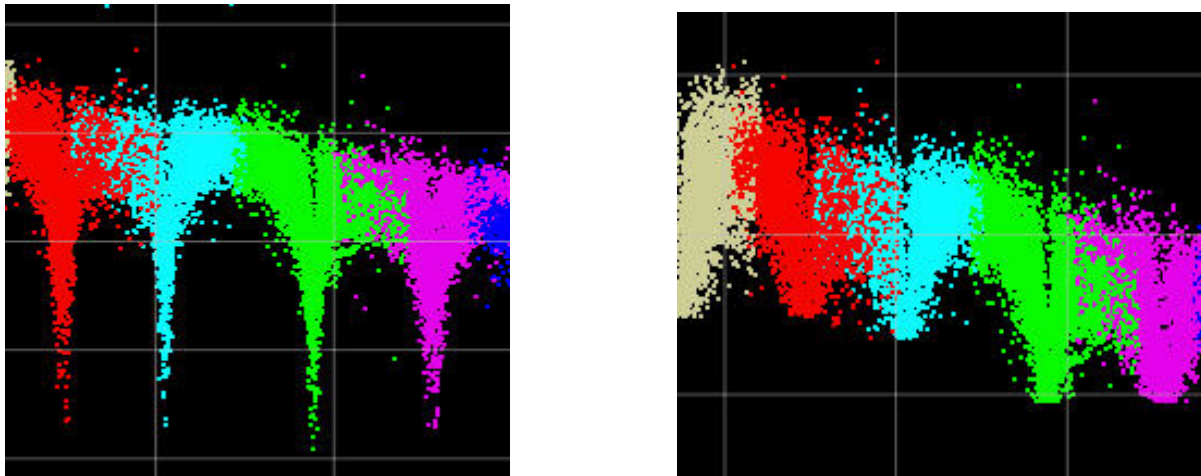


Figure 2: MBES “Rattails,” before and after editing.

### B.2.3 Side Scan Sonar Quality Control

Daily confidence checks were made by observing the outer ranges of the SSS images. A good check consisted of distinguishing contacts or sand waves across the entire range of the side scan trace. Refraction error ranged from mild to moderate, with no lines requiring rejection due to severe refraction error. No other unusual problems or errors were encountered. *Concur*

### B.2.4 Cross-lines

Twenty-six crosslines were acquired in this sheet totaling 27.52 nautical miles. This value is equal to 5.47% of the main scheme MBES lines. The crossline data, in total, agrees with main scheme lines. A crossline-to-grid QC report was performed in CARIS 6.0 to test whether the surface met IHO Order I specification. The test results were satisfactory. Test results are included in Separate II\*. *Concur. \*Data filed with original field records.*

### B.2.5 Fieldsheets and Navigation Surfaces

The following fieldsheets were generated as deliverables for Survey H11514:

FIELDSHEET NAME	SURFACE NAME	TYPE	PURPOSE	RESOLUTION
11514_1	2m_1_Final	Uncertainty, IHO-1	Coverage	2m
11514_2	2m_2_Final	Uncertainty, IHO-1	Coverage	2m
11514_3	2m_3_Final	Uncertainty, IHO-1	Coverage	2m
11514_4	2m_4_Final	Uncertainty, IHO-1	Coverage	2m
11514_5	2m_5_Final	Uncertainty, IHO-1	Coverage	2m
H11514_Combined	11514_comb_2m	Combined Finalized BASE	Combined Coverage	2m
H11514_100	2m_100	Mosaic	100% Coverage	2m
H11514_200	2m_200	Mosaic	200% Coverage	2m

### B.2.6 Junctions

This survey junctions with survey H11513 to the north. Soundings agreed within 1 foot of survey H11513. *See the Evaluation Report.*

### B.3 CORRECTIONS TO ECHO SOUNDING

All methods or instruments used were as described in the project DAPR. All sound velocity data is located in the data package provided with this descriptive report. *Concur.*



## C. VERTICAL AND HORIZONTAL CONTROL

### C.1 VERTICAL CONTROL

The tidal datum for this project is Mean Lower Low Water (MLLW). The operating tide station Dauphin Island, AL (873-5180) was originally proposed to serve as control for datum determination. Due to hurricane damage at this station, a subordinate tide gauge was installed at Gulfport Harbor, MS (874-5557) by CO-Ops to provide tidal data. A Request for Approved Tides letter was sent to N/OPS1 on November 13, 2005 (a copy is included in Appendix III\*).

*\*Data filed with original field records.*

Final tide zoning was received from Co-Ops on 03 March 2006. Approved water levels with final tide zoning were applied to all sounding data. **Concur.**

Tidal zoning for this survey is consistent with the Letter Instructions. The zones used for this survey were as follows:

Zone Station	Time Corrector (min)	Range Ratio	Predicted Reference
CGM68	-6	x1.01	8745557
CGM69	0	x1.01	8745557

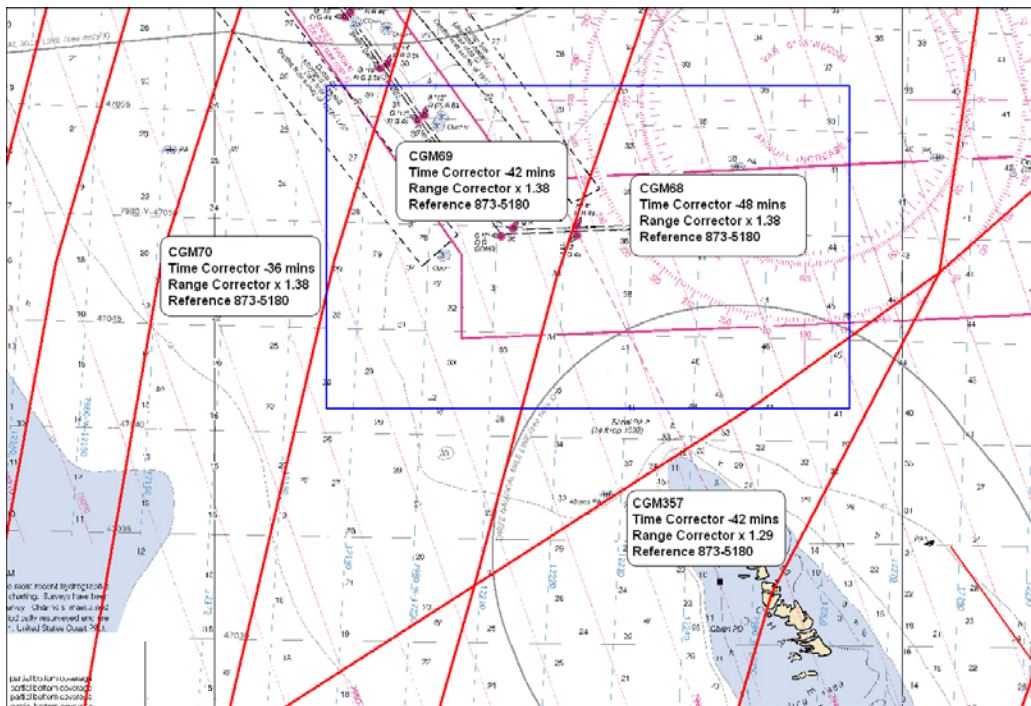


Figure 3: Tide Zones

## C.2 HORIZONTAL CONTROL

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 16. *Concur.*

Sounding positional control was determined using the Global Positioning System (GPS) corrected by U.S. Coast Guard differential GPS (DGPS) beacon stations. The two DGPS beacons used for this survey were MOBILE POINT, AL (Refsta ID=26/27, Freq=300) and ENGLISH TURN, LA. (Refsta ID=28/29, Freq=293). No horizontal control stations were established for this survey.

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

### D.1 CHART COMPARISON

There is one chart affected by this survey:

11373, 45<sup>th</sup> edition, February 2006, scale 1:80,000 & *ENC US4MS12E*

#### D.1.1 General Agreement with Charted soundings

With the exception of the Ship Island Pass channel and far northwestern corner of the sheet, present survey soundings range from 3 to 8 feet deeper than charted soundings. The area was last surveyed between 1900 and 1939. The variation in depth is likely due to natural subsidence of the Gulf of Mexico. Soundings agree within 1 foot of charted depths in the far northwestern region of the sheet. The hydrographer recommends charting present survey soundings in all common areas outside the Ship Island Pass Channel. *Concur.*

There is evidence of shoaling in the Ship Island Pass channel from the present survey, particularly landward of charted Green "9" buoy. The controlling depth landward of Green "9" is 36 feet. Survey depths through this reach are typically 35 feet at MLLW. The Army Corps of Engineers dredge vessel McFarland arrived in Gulfport on November 3 to begin maintenance dredging of the Gulfport Channel and Ship Island Bar Channel. In a conversation on November 4, officials of the Mississippi State Port Authority at Gulfport indicated dredging is conducted every 16 months and takes about 3 months to complete. Dredging of the Ship Island Pass Channel is expected to negate present survey findings within approximately 4 months of the start of dredge operations (February 2006). The hydrographer recommends obtaining soundings from current surveys from the USACOE for charting purposes. *Concur, most recent edition of the chart has the latest USACE channel depths.*

### **D.1.2 Dangers to Navigation**

One Danger to Navigation (DTON) was identified during Survey H11514. This DTON was submitted on July 29<sup>th</sup>, 2006. Refer to Appendix I for a detailed description of this DTON. *Do not concur. Item was never submitted as a Dton to MCD. See also Appendix II.*

### **D.1.3 Non-AWOIS Charted Features**

There are no non-AWOIS charted features in the survey limits of H11514. *Concur.*

### **D.1.4 AWOIS Items and Significant Contacts**

Six AWOIS items within the survey limits of sheet H11514 were assigned for investigation. Refer to Appendix II for a detailed description of all AWOIS items for Survey H11514. *Concur.*

### **D.1.5 Charting Recommendations**

The hydrographer recommends obtaining updated dredge surveys for the Ship Island Pass Channel. Otherwise, this survey is adequate to supersede charting soundings in common areas. *Concur.*

## **D.2 ADDITIONAL RESULTS**

### **D.2.1 Shoreline**

There is no shoreline for Survey H11514. *Concur.*

### **D.2.2 Aids to Navigation and Other Detached Positions**

The field party observed that temporary buoys, installed after the passage of Hurricane Katrina, were demarcating the Ship Island Pass Channel for this survey. No positions were acquired on these temporary buoys. Defer recommendations on temporary buoys to MCD Update Services Division. Otherwise, there were no detached positions acquired during Survey H11514. *Concur.*

### **D.2.3 Bridges and Overhead Cables**

No overhead structures were present at this survey site. *Concur.*

### **D.2.4 Submarine Cables and Pipelines**

There were no submarine cables or pipelines in the survey area. *Concur.*

**D.2.5 Prior Surveys**

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

**D.2.6 Drilling Structures, Production Platforms, and Well heads**

No drilling structures, production platforms, or wellheads were observed in the survey area.  
*Concur.*

E. APPROVAL SHEET

**OPR-J323-TJ-05  
Mississippi  
Approaches to Gulfport**

**Offshore Ship Island Pass  
Survey Registry # H11514**


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, 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:


- OPR-J323-TJ-05 Horizontal and Vertical Control Report (*submitted 26 July 2005*)
- 2005 Hydrographic Systems Certification Report (*submitted 26 July 2005*)
- 2005 Data Acquisition and Processing Report (*submitted 26 July 2005*)

Respectfully Submitted:

  
 \_\_\_\_\_  
 Ensign Madeleine Adler  
 Junior Officer

Approved and Forwarded:

  
 \_\_\_\_\_  
 LT Marc Moser, NOAA  
 Field Operations Officer

  
 \_\_\_\_\_  
 CAPT Emily B. Christman, NOAA  
 Commanding Officer

OPR-J323-TJ-05

H11514

NOAA Ship THOMAS JEFFERSON, S-222

**APPENDIX I**

DTON

# H11514 DtoN

**Registry Number:** H11514  
**State:** Mississippi  
**Locality:** Gulfport  
**Sub-locality:** Offshore-Ship Island Pass  
**Project Number:** OPR-J323-TJ-05  
**Survey Date:** 10/31/2005

## Charts Affected

Number	Version	Date	Scale
11373	44th Ed.	01/01/2005	1:80000
11366	9th Ed.	03/01/2005	1:250000
1115A	41st Ed.	03/01/2005	1:456394
11360	41st Ed.	03/01/2005	1:456394
11006	31st Ed.	09/01/2003	1:875000
411	49th Ed.	03/01/2003	1:2160000

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Obstruction 2813/95	Obstruction	9.76 m	030° 07' 13.640" N	88° 55' 56.167" W	---

## 1.1) Obstruction 2813/95

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 030° 07' 13.640" N, 88° 55' 56.167" W  
**Least Depth:** 9.76 m  
**Timestamp:** 2005-304.19:45:47.867 (10/31/2005)  
**Survey Line:** h11514 / tj\_3102\_reson8101 / 2005-304 / 704\_1941  
**Profile/Beam:** 2813/95  
**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

#### Remarks:

Possible abandoned buoy block observed in side scan sonar data. Investigated with MBES.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11514/tj_3102_reson8101/2005-304/704_1941	2813/95	0.00	000.0	Primary
h11514/tj_3102_klein5000_sss100/2005-289/124_1555	0003	4.20	025.6	Secondary
h11514/s222_200/2005-303/245_2047fx	0004	9.04	066.7	Secondary
h11514/tj_3102_reson8101/2005-305/182_2010	225/80	51.37	081.0	Secondary (grouped)

#### Hydrographer Recommendations

Chart obstruction per digital data.

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

32ft (11373\_1)

5 ¼fm (1115A\_1, 11360\_1, 11006\_1, 411\_1)

5fm 2ft (11366\_1)

#### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** QUASOU - 6:least depth known  
 STATUS - 1:permanent



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TECSOU - 3:found by multi-beam  
VALSOU - 9.763 m  
VERDAT - 12:Mean lower low water  
WATLEV - 3:always under water/submerged

### **Office Notes**

*The feature is an obstruction, possibly an abandoned buoy block, located in the Ship Island Pass Channel. Soundings were acquired by RESON 8101 MBES and corrected to MLLW using approved water levels and final tide zoning.*

*This feature was submitted as a Danger to Navigation on July 29th, 2006.*

## **APPENDIX II**

### **ITEM INVESTIGATIONS**

# H11514 Feature Report

**Registry Number:** H11514  
**State:** Mississippi  
**Locality:** Gulfport  
**Sub-locality:** Offshore-Ship Island Pass  
**Project Number:** OPR-J323-TJ-05  
**Survey Dates:** 10/31/2005 - 03/15/2006

## Charts Affected

Number	Version	Date	Scale
11373	44th Ed.	01/01/2005	1:80000
11366	9th Ed.	03/01/2005	1:250000
1115A	41st Ed.	03/01/2005	1:456394
11360	41st Ed.	03/01/2005	1:456394
11006	31st Ed.	09/01/2003	1:875000
411	49th Ed.	03/01/2003	1:2160000

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	#1 Obstruction 103/20	Obstruction	9.28 m	30° 08' 47.741" N	88° 57' 19.292" W	---
1.2	#2 Obstruction 401/30	Obstruction	9.98 m	30° 08' 22.257" N	88° 56' 44.739" W	---
1.3	#3 Obstruction 242/15	Obstruction	9.49 m	30° 05' 44.910" N	88° 55' 58.203" W	---
1.4	#4 Obstruction 260/9	Obstruction	9.41 m	30° 08' 26.576" N	88° 57' 04.384" W	---
1.5	#5 Obstruction 2813/95	Obstruction	9.76 m	30° 07' 13.640" N	88° 55' 56.167" W	---
2.1	AWOIS 8618	Obstruction	9.92 m	30° 08' 30.52" N	88° 56' 43.50" W	8618
2.2	AWOIS 13335	Sounding	10.05 m	30° 06' 47.74" N	88° 56' 39.62" W	13335
2.3	AWOIS 8616	AWOIS	[no data]	30° 08' 21.92" N	88° 56' 44.33" W	8616
2.4	AWOIS 8617	AWOIS	[no data]	30° 08' 19.93" N	88° 56' 45.08" W	8617
2.5	AWOIS 13336	AWOIS	[no data]	30° 07' 53.83" N	88° 52' 23.34" W	13336
2.6	AWOIS 7070	AWOIS	[no data]	30° 07' 18.63" N	88° 56' 46.20" W	7070

## **1 - New Features**

## 1.1) #1 Obstruction 103/20

### Survey Summary

**Survey Position:** 30° 08' 47.741" N, 088° 57' 19.292" W  
**Least Depth:** 9.28 m  
**Timestamp:** 2005-305.22:19:14.126 (11/01/2005)  
**Survey Line:** h11514 / tj\_3102\_reson8101 / 2005-305 / 170\_2219  
**Profile/Beam:** 103/20  
**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

#### Remarks:

Rock observed in side scan and MBES data.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11514/tj_3102_reson8101/2005-305/170_2219	103/20	0.00	000.0	Primary
h11514/tj_3102_klein5000_sss100/2005-288/141_2027	0003	1.60	125.6	Secondary
h11514/tj_3102_reson8101/2005-301/208_2040	10385/22	167.46	164.3	Secondary (grouped)

### Hydrographer Recommendations

Chart rock per digital data.

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

30ft (11373\_1)

5fm (1115A\_1, 11360\_1, 11006\_1, 411\_1)

5fm 0ft (11366\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** QUASOU - 6:least depth known  
 STATUS - 1:permanent  
 TECSOU - 3:found by multi-beam  
 VALSOU - 9.280 m  
 VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Concur with clarification. Chart a dangerous Obstn with a depth of 30 ft. in Latitude 30°08'47.75" N Longitude 88°57'19.32" W.

## 1.2) #2 Obstruction 401/30

### Survey Summary

**Survey Position:** 30° 08' 22.257" N, 088° 56' 44.739" W  
**Least Depth:** 9.98 m  
**Timestamp:** 2005-305.21:01:25.104 (11/01/2005)  
**Survey Line:** h11514 / tj\_3102\_reson8101 / 2005-305 / 742\_2100  
**Profile/Beam:** 401/30  
**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

#### Remarks:

Single item matching (part of) description for AWOIS 8617 observed in side scan and MBES data.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11514/tj_3102_reson8101/2005-305/742_2100	401/30	0.00	000.0	Primary
h11514/tj_3102_klein5000_sss200/2005-301/206_2134	0001	1.27	300.3	Secondary
h11514/tj_3102_klein5000_sss100/2005-288/143_2056	0002	2.25	053.7	Secondary
h11514/tj_3102_klein5000_sss200/2005-301/207_2059	0001	3.31	055.0	Secondary

### Hydrographer Recommendations

Chart Obstruction per digital data.

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

32ft (11373\_1)

5 ½fm (1115A\_1, 11360\_1, 11006\_1, 411\_1)

5fm 2ft (11366\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** QUASOU - 6:least depth known  
 STATUS - 1:permanent  
 TECSOU - 3:found by multi-beam  
 VALSOU - 9.979 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

AWOIS Items #8616 and 8617 -- Chart a dangerous Obstrn with a least depth of 32 ft. in Latitude 30°08'22.26" N, Longitude 88°56'44.74" W.



### 1.3) #3 Obsrtuction 242/15

#### Survey Summary

**Survey Position:** 30° 05' 44.910" N, 088° 55' 58.203" W  
**Least Depth:** 9.49 m  
**Timestamp:** 2005-305.16:45:00.815 (11/01/2005)  
**Survey Line:** h11514 / tj\_3102\_reson8101 / 2005-305 / 859\_1644  
**Profile/Beam:** 242/15  
**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

#### Remarks:

Manmade object detected with side scan sonar and MBES developments.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11514/tj_3102_reson8101/2005-305/859_1644	242/15	0.00	000.0	Primary
h11514/tj_3102_klein5000_sss100/2005-290/101_1851	0001	5.19	198.4	Secondary
h11514/s222_200/2005-304/223_1554	0001	15.65	259.4	Secondary

#### Hydrographer Recommendations

Chart obstruction per digital data.

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

31ft (11373\_1)

5fm (1115A\_1, 11360\_1, 11006\_1, 411\_1)

5fm 1ft (11366\_1)

#### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** QUASOU - 6:least depth known  
 STATUS - 1:permanent  
 TECSOU - 3:found by multi-beam  
 VALSOU - 9.486 m  
 VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## **Office Notes**

Concur with clarification. Chart a dangerous Obstn with a least depth of 31 ft. in Latitude 30°05'44.91" N, Longitude 88°55'58.20" W.

## 1.4) #4 Obstruction 260/9

### Survey Summary

**Survey Position:** 30° 08' 26.576" N, 088° 57' 04.384" W  
**Least Depth:** 9.41 m  
**Timestamp:** 2005-305.21:38:24.666 (11/01/2005)  
**Survey Line:** h11514 / tj\_3102\_reson8101 / 2005-305 / 887\_2137  
**Profile/Beam:** 260/9  
**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

#### Remarks:

Feature observed in side scan and MBES data.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11514/tj_3102_reson8101/2005-305/887_2137	260/9	0.00	000.0	Primary
h11514/tj_3102_klein5000_sss200/2005-301/209_1960	0002	1.67	046.4	Secondary
h11514/tj_3102_klein5000_sss100/2005-288/140_2012	0001	2.99	354.8	Secondary

### Hydrographer Recommendations

Chart obstruction per digital data.

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

31ft (11373\_1)

5fm (1115A\_1, 11360\_1, 11006\_1, 411\_1)

5fm 1ft (11366\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** QUASOU - 6:least depth known  
 STATUS - 1:permanent  
 TECSOU - 3:found by multi-beam  
 VALSOU - 9.413 m  
 VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Concur w/clarification. Chart a dangerous Obstrn with a least depth of 31 ft. in Latitude 30°08'26.58" N, Longitude 88°57'04.38" W.

## 1.5) #5 Obstruction 2813/95

### Survey Summary

**Survey Position:** 30° 07' 13.640" N, 088° 55' 56.167" W  
**Least Depth:** 9.76 m  
**Timestamp:** 2005-304.19:45:47.867 (10/31/2005)  
**Survey Line:** h11514 / tj\_3102\_reson8101 / 2005-304 / 704\_1941  
**Profile/Beam:** 2813/95  
**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

#### Remarks:

Possible abandoned buoy block observed in side scan sonar data. Investigated with MBES.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11514/tj_3102_reson8101/2005-304/704_1941	2813/95	0.00	000.0	Primary
h11514/tj_3102_klein5000_sss100/2005-289/124_1555	0003	4.20	025.6	Secondary
h11514/s222_200/2005-303/245_2047fx	0004	9.04	066.7	Secondary
h11514/tj_3102_reson8101/2005-305/182_2010	225/80	51.37	081.0	Secondary (grouped)

### Hydrographer Recommendations

Chart obstruction per digital data.

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

32ft (11373\_1)

5 ¼fm (1115A\_1, 11360\_1, 11006\_1, 411\_1)

5fm 2ft (11366\_1)

### S-57 Data

[None]

## Office Notes

Do not concur. Dredging by the US Army Corps of Engineers (USACE) has occurred since the end of survey operations. Per a telephone conversation with NOAA/NRB Navigation Manager Tim Osborn on 10-10-2007, it was confirmed that item does not exist. No changes in charting are recommended.

## **2 - AWOIS Features**

## 2.1) AWOIS 8618

### Primary Feature for AWOIS Item #8618

**Search Position:** 30° 08' 30.400" N, 088° 56' 42.820" W  
**Historical Depth:** 9.72 m  
**Search Radius:** 200  
**Search Technique:** S2, MB, ES, SD, DI  
**Technique Notes:** [None]

#### History Notes:

HISTORY FE335/89-- OPR-J433-RU; WHILE SEARCHING FOR AWOIS NO. 4754, AN OBSTRUCTION WAS LOCATED BY SIDE SCAN SONAR (CONTACT # 5401.19S). DIVERS DESCRIBED A 6 IN. DIA. STEEL PIPE AND SCATTERED DEBRIS. LD ON PIPE 31.9 FEET (PNEUMATIC DEPTH GAUGE), PROJECTING 2 FEET OFF THE BOTTOM IN LAT. 30-08-30.40N, LONG. 88-56-42.82W. LORAN-C RATES (7980 CHAIN): W = 12200.4; X = 29392.1; Y = 47054.9; Z = 164059.9. HYDROGRAPHER CONSIDERS THE DEBRIS TO BE THAT OF THE VESSEL DESCRIBED AS AWOIS ITEM NO 4754. EVALUATOR DOES NOT CONCUR AND CONSIDERS NO. 4754 TO BE DISPROVED. DELETE FROM CHARTS. FISH NET, ANOTHER PIPE BURIED IN THE MUD NEXT TO PROTRUDING PIPE, AND LENGTHS OF ANGLE IRON WERE ALSO IN THE AREA. (ENT 7/1/93, SJV)

### Survey Summary

**Survey Position:** 30° 08' 30.523" N, 088° 56' 43.505" W  
**Least Depth:** 9.92 m  
**Timestamp:** 2005-305.21:08:30.849 (11/01/2005)  
**Survey Line:** h11514 / tj\_3102\_reson8101 / 2005-305 / 747\_2107  
**Profile/Beam:** 227/84  
**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

#### Remarks:

Contact matching description for AWOIS 8618 observed and side scan and MBES data.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11514/tj_3102_reson8101/2005-305/747_2107	227/84	0.00	000.0	Primary
h11514/tj_3102_klein5000_sss200/2005-301/205_2148	0002	0.95	195.7	Secondary
h11514/tj_3102_klein5000_sss100/2005-288/145_2125	0001	2.58	198.0	Secondary
OPR-J323	AWOIS # 8618	18.72	281.7	Secondary



h11514/tj_3102_klein5000_sss200/2005-301/204_2204	0001	67.50	236.8	Secondary (grouped)
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## Hydrographer Recommendations

Chart Obstruction per digital data.

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** QUASOU - 6:least depth known  
STATUS - 1:permanent  
TECSOU - 3:found by multi-beam  
VALSOU - 9.923 m  
VERDAT - 12:Mean lower low water

### Office Notes

Concur w/clarification. Revise AWOIS Item #8618, a charted dangerous Obstn with a least depth of 31 ft., to a dangerous Obstn with a least depth of 32 ft. in Latitude 30°08'30.52" N, Longitude 88°56'43.50" W.

## 2.2) AWOIS 13335

### Primary Feature for AWOIS Item #13335

**Search Position:** 30° 06' 46.800" N, 088° 56' 39.800" W  
**Historical Depth:** [None]  
**Search Radius:** 250  
**Search Technique:** S2, MB, ES, SD, DI  
**Technique Notes:** [None]

#### History Notes:

\*\*\*\*\*SOURCE UNKNOWN

### Survey Summary

**Survey Position:** 30° 06' 47.738" N, 088° 56' 39.622" W  
**Least Depth:** 10.05 m  
**Timestamp:** 2005-307.17:03:19.032 (11/03/2005)  
**Survey Line:** h11514 / tj\_3102\_reson8101 / 2005-307 / 873\_1702  
**Profile/Beam:** 296/30  
**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

#### Remarks:

Feature identified in side scan and MBES data within search radius for AWOIS 13335. No historical description for AWOIS item available.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11514/tj_3102_reson8101/2005-307/873_1702	296/30	0.00	000.0	Primary
h11514/tj_3102_klein5000_sss100/2005-288/156_1810	0001	1.68	085.7	Secondary
OPR-J323	AWOIS # 13335	29.38	009.3	Secondary
h11514/tj_3102_klein5000_sss200/2005-300/221_2149	0001	64.29	065.6	Secondary (grouped)

### Hydrographer Recommendations

Chart obstruction per digital data.

## **S-57 Data**

[None]

## **Office Notes**

Do not concur. Feature height is only 0.42m, or 1.4 ft, so feature is insignificant. Delete the charted dangerous 31 Obstn. AWOIS 13335 has been disproved, update status in the AWOIS database, chart present survey soundings in the common area.

## 2.3) AWOIS #8616

### Primary Feature for AWOIS Item #8616

**Search Position:** 30° 08' 21.920" N, 088° 56' 44.330" W  
**Historical Depth:** 9.54 m  
**Search Radius:** 200  
**Search Technique:** S2, MB, ES, DI, SD  
**Technique Notes:** [None]

**History Notes:**

HISTORY FE335/89-- OPR-J433-RU; WHILE SEARCHING FOR AWOIS ITEM 4754, WHAT APPEARED TO BE A SUNKEN NAVIGATION BUOY WAS FOUND BY SIDE SCAN SONAR. DIVERS DESCRIBED A STEEL CYLINDER, 5 FEET IN DIA., 6 FEET LONG, PROTRUDING 2 FEET ABOVE THE BOTTOM WITH A LD (PNEUMATIC DEPTH GAUGE) OF 31.3 FEET. IN LAT. 30-08-21.92N, LONG. 88-56-44.33W. LORAN-C RATES (7980 CHAIN): W=12200.2, X=29391.3, Y=47054.4, Z=64060.0. EVALUATOR RECOMMENDS CHARTING A DANGEROUS SUBMERGED OBSTRUCTION AS SURVEYED. NOTE: THE CHARTED DEPTHS SURROUNDING THIS OBSTRUCTION ARE SHOALER THAN THE LD OBTAINED (GENERALLY 0-4 FEET SHOALER THAN THE DEPTHS OBTAINED BY THIS FE). (ENT 7/1/93, SJV)

### Survey Summary

**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

**Remarks:**

[None]

### Feature Correlation

Address	Feature	Range	Azimuth	Status
OPR-J323	AWOIS # 8616	0.00	000.0	Primary

### Hydrographer Recommendations

[None]

### S-57 Data

[None]

## Office Notes

Concur w/clarification. A dangerous obstruction was located within search radii of AWOIS Item numbers 8616 & 8617. It is recommended that the surveyed position of the current feature should be referenced to both AWOIS Items 8616 & 8617 since a distinction between the two AWOIS items could not be discerned. Refer to Appendix II, Item #2 Obstruction 401/30 in this report for charting recommendation for AWOIS Item #8616.

**2.4) AWOIS #8617**

**Primary Feature for AWOIS Item #8617**

**Search Position:** 30° 08' 19.930" N, 088° 56' 45.080" W  
**Historical Depth:** 9.81 m  
**Search Radius:** 200  
**Search Technique:** S2, MB, ES, SD, VS, DI  
**Technique Notes:** [None]

**History Notes:**

HISTORY FE335/89-- OPR-J433-RU; WHILE SEARCHING FOR AWOIS NO. 4754, AN OBSTRUCTION WAS LOCATED (CONTACT #5469.00P). DIVERS DESCRIBE 2 LARGE (5 X 5 X 5 FOOT) CONCRETE BLOCKS CONNECTED BY CHAIN. LD (PNEUMATIC DEPTH GAUGE) OF 32.2 FEET IN LAT. 30-08-19.93N, LONG. 188-56-45.08W. LORAN RATES (7980 CHAIN): W = 12200.1; X = 29391.0; Y = 47054.2; Z = 64060.1. OBJECT IS SIMILAR TO A COAST GUARD BUOY SINKER. CHARTED DEPTHS 0 - 4 FEET SHOALER THAN SURVEY DEPTHS. (ENT 7/1/93, SJV)

**Survey Summary**

**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

**Remarks:**

[None]

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
OPR-J323	AWOIS # 8617	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**S-57 Data**

[None]

## Office Notes

Concur w/clarification. A dangerous obstruction was located within search radii of AWOIS Item numbers 8616 & 8617. It is recommended that the surveyed position of the current feature should be referenced to both AWOIS Items 8616 & 8617 since a distinction between the two AWOIS items could not be discerned. Delete AWOIS Item #8617, a dangerous obstruction with a least depth of 31 ft. Refer to Appendix II, Item #2 Obstruction 401/30 in this report for charting recommendation for AWOIS Item #8617.

## 2.5) AWOIS 13336

### Primary Feature for AWOIS Item #13336

**Search Position:** 30° 07' 54.000" N, 088° 52' 24.000" W  
**Historical Depth:** [None]  
**Search Radius:** 200  
**Search Technique:** S2, MB, ES, SD, DI  
**Technique Notes:** [None]

#### History Notes:

LNM41/2001--8TH CGD-- THE SUNKEN FISHING VESSEL JD2 OF 40 FEET WAS CHARTED AS A DANGEROUS WRECK IN APPROXIMATE POSITION LAT. 30/07/54N LONG. 88/52/24W (NAD 83). ENTERED 9/07/05 BY JCA

### Survey Summary

**Survey Position:** 30° 07' 53.833" N, 088° 52' 23.336" W  
**Least Depth:** [None]  
**Timestamp:** 2006-074.09:58:19 (03/15/2006)  
**GP Dataset:** ChartGPs - Digitized  
**GP No.:** 2  
**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

#### Remarks:

AWOIS #13336 radius covered with 100% side scan sonar and complete MBES coverage. No significant feature matching AWOIS description detected.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	2	0.00	000.0	Primary
h11514/tj_3102_klein5000_sss100/2005-289/151_1348	0001	6.83	350.6	Secondary (grouped)
OPR-J323	AWOIS # 13336	18.51	106.2	Secondary (grouped)

### Hydrographer Recommendations

Delete Charted Wreck PA and chart soundings per digital data.



## **S-57 Data**

[None]

## **Office Notes**

Concur with clarification. Delete the charted dangerous Wreck PA. AWOIS 13336 has been disproved, update status in the AWOIS database, chart present survey soundings in the common area.

## 2.6) AWOIS 7070

### Primary Feature for AWOIS Item #7070

**Search Position:** 30° 07' 18.720" N, 088° 56' 46.100" W  
**Historical Depth:** [None]  
**Search Radius:** 200  
**Search Technique:** S4, DI, SD, MB, ES  
**Technique Notes:** [None]

#### History Notes:

HISTORY CL516/74-- NOAA SHIP HECK TO CGD8, 5/1/74; OBSTRUCTION, METAL OBJECT, LOCATED IN LAT. 30-07.2N, LONG. 88-56.68W. BEARING 279 DEGS., .68NM FROM SHIP ISLAND PASS LIGHTED WHISTLE BUOY "1". COVERED BY APPROX. 26 FEET. LNM19/74-- OBSTRUCTION, METAL OBJECT, CLEARED TO A DEPTH OF 26 FEET BELOW MLW, LOCATED IN LAT. 30-07-18N, LONG. 88-56-46W. LNM20/74-- CORRECTS POSITION TO LAT. 30-07-12N, LONG. 88-56-40.8W. NM22/74-- REPEATS ABOVE INFO. FE309WD/74--OPR-479-R/H-74; (FORMERLY H-9420WD/74); HUNG AT 29 FEET IN LAT. 30-07-14.3N, LONG. 88-56-40.5W; CLEARED IN ONE DIRECTION BY 21 FEET. DIVERS DESCRIBE IRON OBJECT 20 FEET LONG PROTRUDING 4 FEET OFF BOTTOM. 26 FOOT LD IS UNSUPPORTED. EVALUATOR RECOMMENDS CHARTING A DANGEROUS SUBMERGED OBSTRUCTION (CLEARED TO 21 FEET, 1974). ADDITIONAL FIELD WORK RECOMMENDED TO OBTAIN LD. (UP 3/15/89, SJV) FE-335/89-- OPR-J433-89; EVALUATOR CONSIDERS ITEM DISPROVED. RECOMMENDS DELETING FROM CHART. (UP 7/1/93, SJV)

### Survey Summary

**Survey Position:** 30° 07' 18.634" N, 088° 56' 46.201" W  
**Least Depth:** [None]  
**Timestamp:** 2006-074.10:14:01 (03/15/2006)  
**GP Dataset:** ChartGPs - Digitized  
**GP No.:** 3  
**Charts Affected:** 11373\_1, 11366\_1, 1115A\_1, 11360\_1, 11006\_1, 411\_1

#### Remarks:

AWOIS #7070 covered by 200% side scan sonar and MBES developments. No significant feature identified.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	3	0.00	000.0	Primary
OPR-J323	AWOIS # 7070	3.78	225.5	Secondary (grouped)

## Hydrographer Recommendations

Chart soundings per digital data.

### S-57 Data

[None]

### Office Notes

Concur with clarification, AWOIS 7070 has been disproved, update status in the AWOIS database, chart present survey soundings in the common area.

# **ATLANTIC HYDROGRAPHIC BRANCH EVALUATION REPORT FOR H11514 (2005)**

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

## **B. DATA ACQUISITION AND PROCESSING**

### **B.1 Equipment**

The following software was used to process and review data at the Atlantic Hydrographic Branch (AHB):

- CARIS HIPS/SIPS version 6.0 service pack 2
- CARIS BASE Editor 1.0
- CARIS HOM 3.3 service pack 3
- PYDRO, version 6.4.9
- dKart Inspector 5.0 build 707

### **B.2 HOM Processing**

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

### **H-Cells**

Two H-cells were created, the first covering the entire survey area for chart 11373 at a 1:80,000 chart scale. A second sounding only H-cell was created at the 1:10,000 survey scale.

H-cell layers in CARIS HOM are organized as follows:

Layer 100	Sounding Objects, survey scale
Layer 200	Skin of the Earth
Layer 300	Obstructions
Layer 500	Seabed area (Bottom Descriptions or Characteristics)
Layer 600	Metadata Objects

Attributes:

Inform: H11514, OPR-J323-TJ-05, NOAA Ship Thomas Jefferson, Capt. Emily B. Christman

SorDat: 20051103

SorInd: US,US,surve,H11514 (features) or US,US,nsurf,H11514 (soundings)

In the office, using CARIS HIPS, a 5m combined finalized BASE surface was created from the multibeam and singlebeam data at the 1:10000 survey scale. In CARIS BASE Editor a 1:10000 survey scale product surface was generated, sourced from the combined 5m BASE Surface, at a radius of 100m and a resolution of 5m. The survey scale sounding data set was extracted from the survey scale product surface with a sounding spacing of 5mm at 1:10000 scale using a defined radius of 5m. Shoal biased chart scale sounding compilation was accomplished through the CARIS HOM sounding suppression routine using the table (0,100, 80m). Soundings were then checked for conflicts, corrected to remove conflicts, and edited to allow for proper sounding compilation placement with respect to existing charted depths outside the survey area.

Office processing used CARIS BASE Editor to create the contours for this survey. A 1:80000 chart scale product surface was generated from the combined 5m BASE surface, at a radius of 800m and a 40m resolution. Preliminary contours were generated from the chart scale product surface using standard NOAA metric contour values (detailed below), which were then finalized by hand.

One seabed area (seafloor characteristic) was transferred to the H-cell from the raster chart 11373. The bottom sample was classified a seabed area with the acronym NATQUA (nature of surface - qualifying term, soft) and NATSUR (nature of surface, unknown was used) but is NOT visible in the H-cell as a separate S-57 object, thus you do not know where an area is classified soft in the H-cell visually.

### **Contour and Depth Area Feature Objects**

Charted curve values, listed below, were specified in a metric depth contour list of standard feet curve-equivalents found in OCS H-Cell Specifications 1.1. Upon completion of H-Cell compilation, and prior to conversion to chart units, false values replace the generalized metric values, such that, upon conversion, standard NOAA chart equivalents will result, as indicated in the following table.

H-Cell Depth Contours		(standard metric curve values)	(NOAA chart contour values)
Depth Curve	Created at:	(m =*.75 ft)	(m =*.0 ft)
18	18.75	5.715	5.486
30	30.75	9.373	9.144
60	60.75	18.517	18.288

These values are the metric equivalent of the standard NOAA chart contour values. The 18 and 60 ft depth curves were only used as closing value to define depth areas, there are no 18 or 60 ft. contours in the common survey area of the chart or the ENC .

Before the HOM file was exported to S-57 format, the file was converted from metric to NOAA chart values. This conversion renames the DRVAL1 and DRVAL2 attributes (for depth areas) and VALDCO attributes (for the contours) from the metric equivalent values to the standard NOAA chart contour values to accommodate NOAA traditional rounding standards on charts. This renaming convention assures all soundings fall on the shoal side of the properly charted contour.

Soundings during HOM processing were selected with the CARIS GIS Environmental Variable set to a metric scale (-1,-1,T) to accommodate millimeter precision of the sounding value. This environmental variable was reset to NOAA standard charting values (0,0,N) to convert the metric sounding values to whole feet.

The completed H-Cell was exported as a Base Cell File (ENC.000) in S-57 format with all values in metric units. The metric equivalent ENC.000 file was then converted to NOAA chart values (ENC\_CU.000) with all values measured in feet.

### **dKart Inspector**

The final ENC\_CU.000 file was examined using dKart Inspector. Warnings received were all inconsequential. The DSPM.HUNI and DSPM.DUNI were reported to have illegal values, but these errors were expected as originating during ENC conversion to NOAA chart values, so they also can be ignored. The seabed area created an inconsistent qualifier warning between natsur and natqua, as detailed above and can be ignored. The Obstruction near the US Army Corps of Engineers controlled channel provided the expected warning of being shallower than the surrounding depth area. These warnings can be ignored.

## **C. VERTICAL AND HORIZONTAL CONTROL**

Office processing of this survey as an ENC required translating the datum to meet S-57 ENC requirements. During CARIS HOM processing the horizontal geodetic datum was translated from the survey datum (NAD83, UTM Zone 16) to Latitude and Longitude (LLDG) World Geodetic System-84 (WGS-84) prior to exporting the HOM file to the S-57 format. The S-57 ENC format serves as the exchange file submitted to the Marine Chart Division.

Final tides were applied by the field before survey submittal.

## **D. RESULTS AND RECOMMENDATIONS**

### **D.1. CHART COMPARISONS**

11373 45<sup>th</sup> Ed., Feb. /06

Corrected through NM Feb. 04/06

Corrected through LNM Jan. 24/06

ENC US4MS12E

### **Hydrography**

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in Section D. of the Descriptive Report. The following should be noted:

#### **Comparison with Prior Surveys**

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

#### **Junctions**

Survey H11514 junctioned with survey H11513 to the north. The hydrographer noted depths agreed between surveys within one foot. However, survey H11513 was collected using multi-beam data while survey H11514 was collected using vertical beam data in all areas except the Ship Island Bar Channel. Historical evidence has shown multi-beam data will provide shoaler soundings than vertical beam data. Survey H11514 shows a 30-40 cm difference in depths (deeper) than H11513.

#### **Adequacy of Survey**

Except as noted above, the present survey is adequate to supersede the charted hydrography within the common area. This is an adequate hydrographic/multibeam/side scan sonar survey. No additional field work is recommended.

*Bryan Chauveau*

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Bryan Chauveau  
Physical Scientist  
Verification of Data  
Evaluation and Analysis Report



**APPROVAL SHEET**  
**H11514**

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

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Bryan Chauveau  
Physical Scientist,  
Atlantic Hydrographic Branch

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

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Edward Owens  
Physical Scientist or Cartographer,  
Atlantic Hydrographic Branch

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

Approved: \_\_\_\_\_  
Lt. Commander Shepard M. Smith, NOAA  
Chief, Atlantic Hydrographic Branch