

H12795

U.S. Department of Commerce  
National Oceanic and Atmospheric Administration  
National Ocean Survey

**DESCRIPTIVE REPORT**

Type of Survey: Navigable Area

Registry Number: H12795

**LOCALITY**

State(s): South Carolina

General Locality: Southeast Atlantic Ocean

Sub-locality: 2 NM South of Charleston Harbor Channel Buoy

**2015**

CHIEF OF PARTY  
Shepard M. Smith, CAPT/NOAA

LIBRARY & ARCHIVES

Date:

**HYDROGRAPHIC TITLE SHEET**

**H12795**

**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(s): **South Carolina**

General Locality: **Southeast Atlantic Ocean**

Sub-Locality: **2 NM South of Charleston Harbor Channel Buoy**

Scale: **20000**

Dates of Survey: **05/15/2015 to 05/30/2015**

Instructions Dated: **05/15/2015**

Project Number: **OPR-G380-TJ-15**

Field Unit: **NOAA Ship *Thomas Jefferson***

Chief of Party: **Shepard M. Smith, CAPT/NOAA**

Soundings by: **Multibeam Echo Sounder**

Imagery by: **Side Scan Sonar**

Verification by: **Atlantic Hydrographic Branch**

Soundings Acquired in: **meters at Mean Lower Low Water**

Remarks:

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

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## Descriptive Report to Accompany Survey H12795

Project: OPR-G380-TJ-15

Locality: Southeast Atlantic Ocean

Sublocality: 2 NM South of Charleston Harbor Channel Buoy

Scale: 1:20000

May 2015 - May 2015

**NOAA Ship *Thomas Jefferson***

Chief of Party: Shepard M. Smith, CAPT/NOAA

### A. Area Surveyed

Survey H12795 was conducted in the approaches to Charleston in the vicinity of 2 NM South of Charleston Harbor Channel Buoy.

#### A.1 Survey Limits

Data were acquired within the following survey limits:

Northwest Limit	Southeast Limit
32° 37' 0.4" N 79° 36' 42.2" W	32° 32' 55.55" N 79° 30' 24.01" W

*Table 1: Survey Limits*

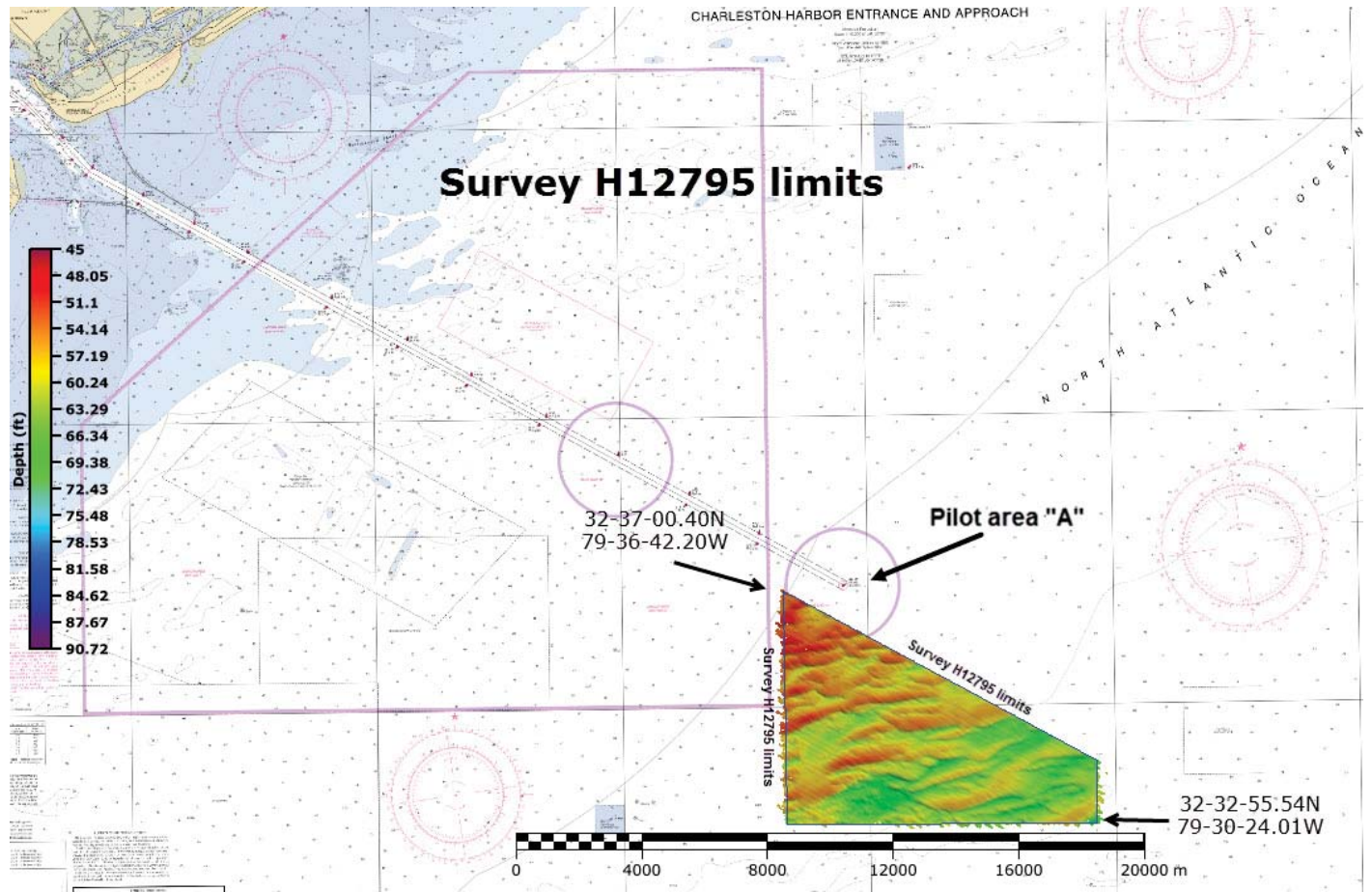


Figure 1: H12795 Survey Area



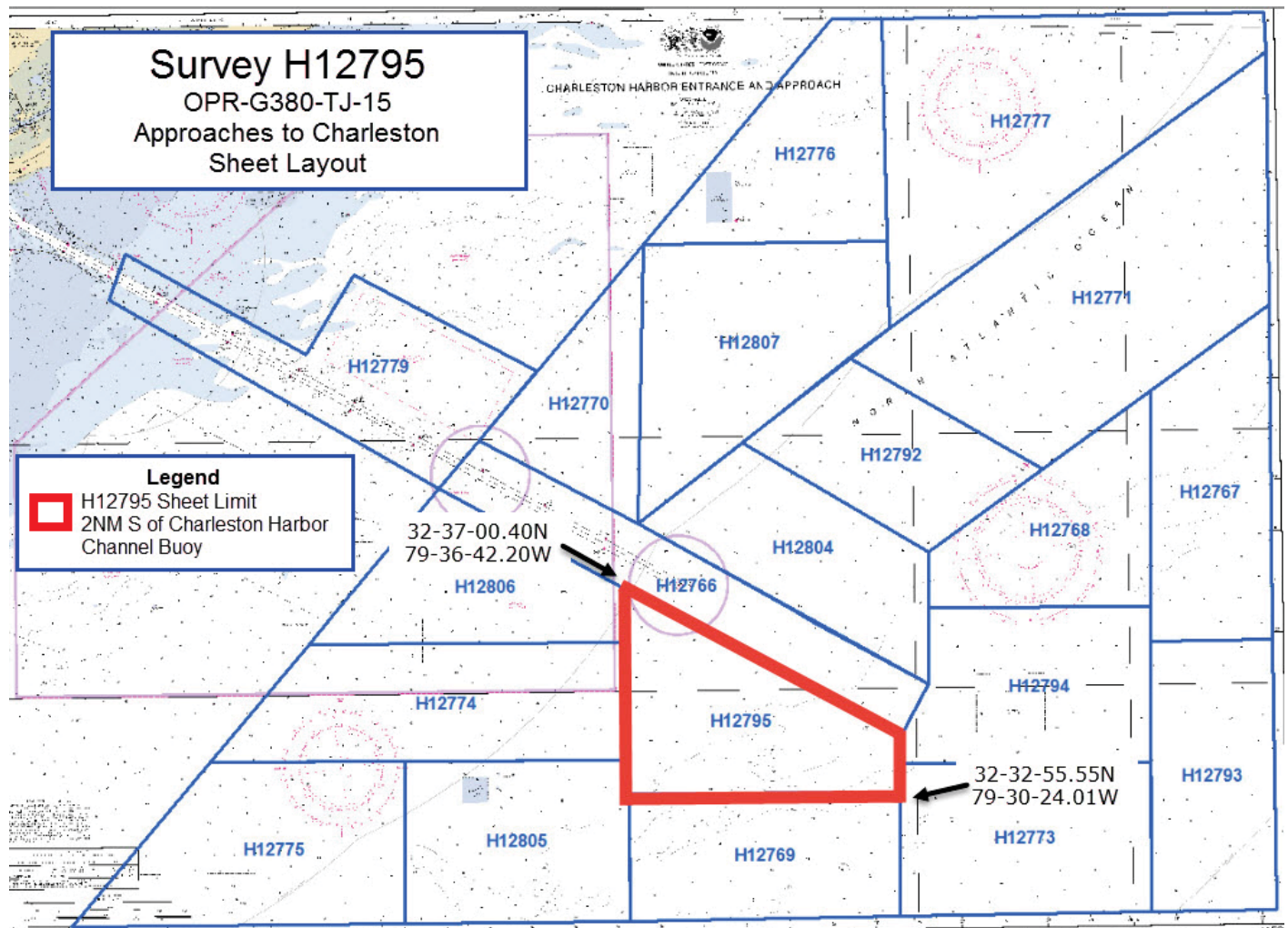


Figure 2: H12795 survey area in relation to the other sheets in project OPR-G380-TJ-15

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

## A.2 Survey Purpose

This project is being conducted in support of NOAA's Office of Coast Survey to provide contemporary hydrographic data in support of a new nautical chart in this area and in response to a Port of Charleston project. This survey was identified as priority four in the Project Instructions.

## A.3 Survey Quality

The entire survey is adequate to supersede previous data.

Two MBES holidays exist on sheet H12795. Both holidays are covered with 200% side scan imagery. At location 32-34-49.37N/079-32-21.59W there is a 241 m holiday that was the result of a day change POSPac



file that was not logged correctly during the day change. At location 32-34-44.30N/079-36-40.03W there is a 53 m holiday that was the result of a late log start during acquisition. Neither holiday was reacquired. It was determined that after a thorough review of the 200% side scan data, and surrounding soundings there existed no contacts or slopes of concern. Both holidays are located in flat areas. No further investigation was required.

There was one small holiday in the 100% side scan mosaic discovered at location 32-35-14.71N/079-33-39.61W. When SonarPro creates a new file, a one second time frame passes, equating to a 4x120 meter holiday. The overlapping 200% covers this small area. The corresponding MBES lines were investigated resulting in no significant contacts.

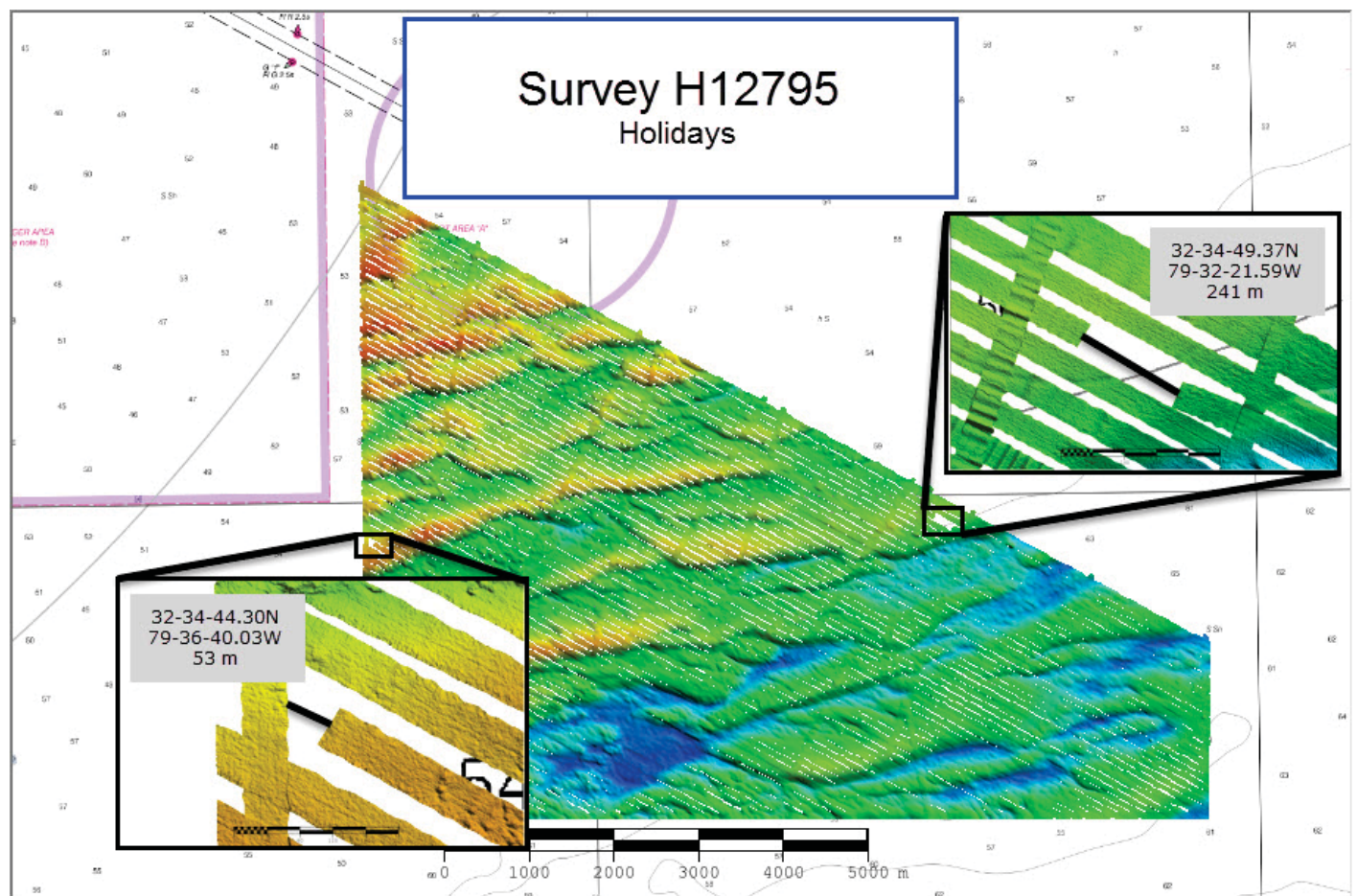


Figure 3: H12795 MBES holidays

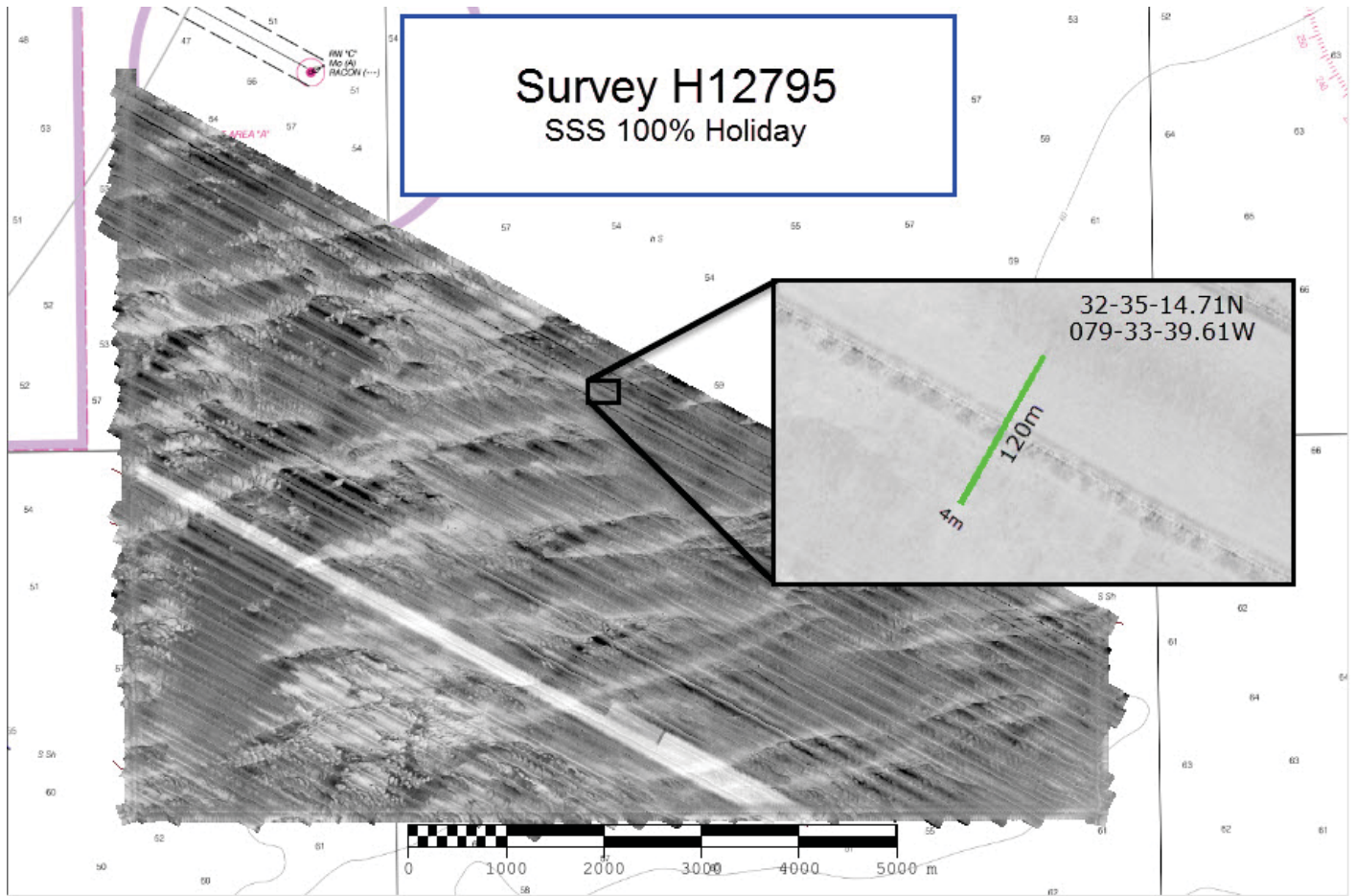


Figure 4: H12795 SSS 100% holiday

### A.4 Survey Coverage

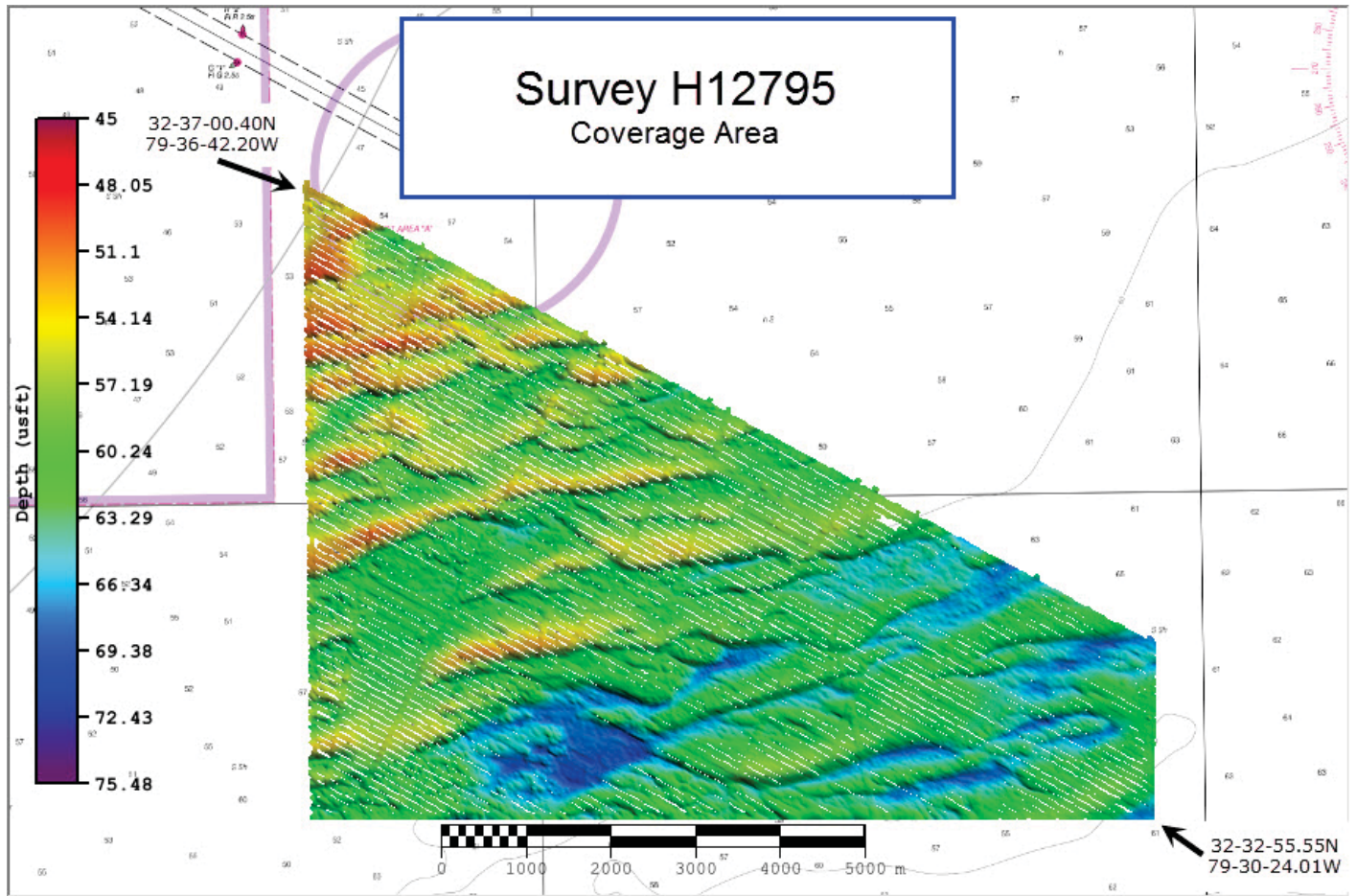
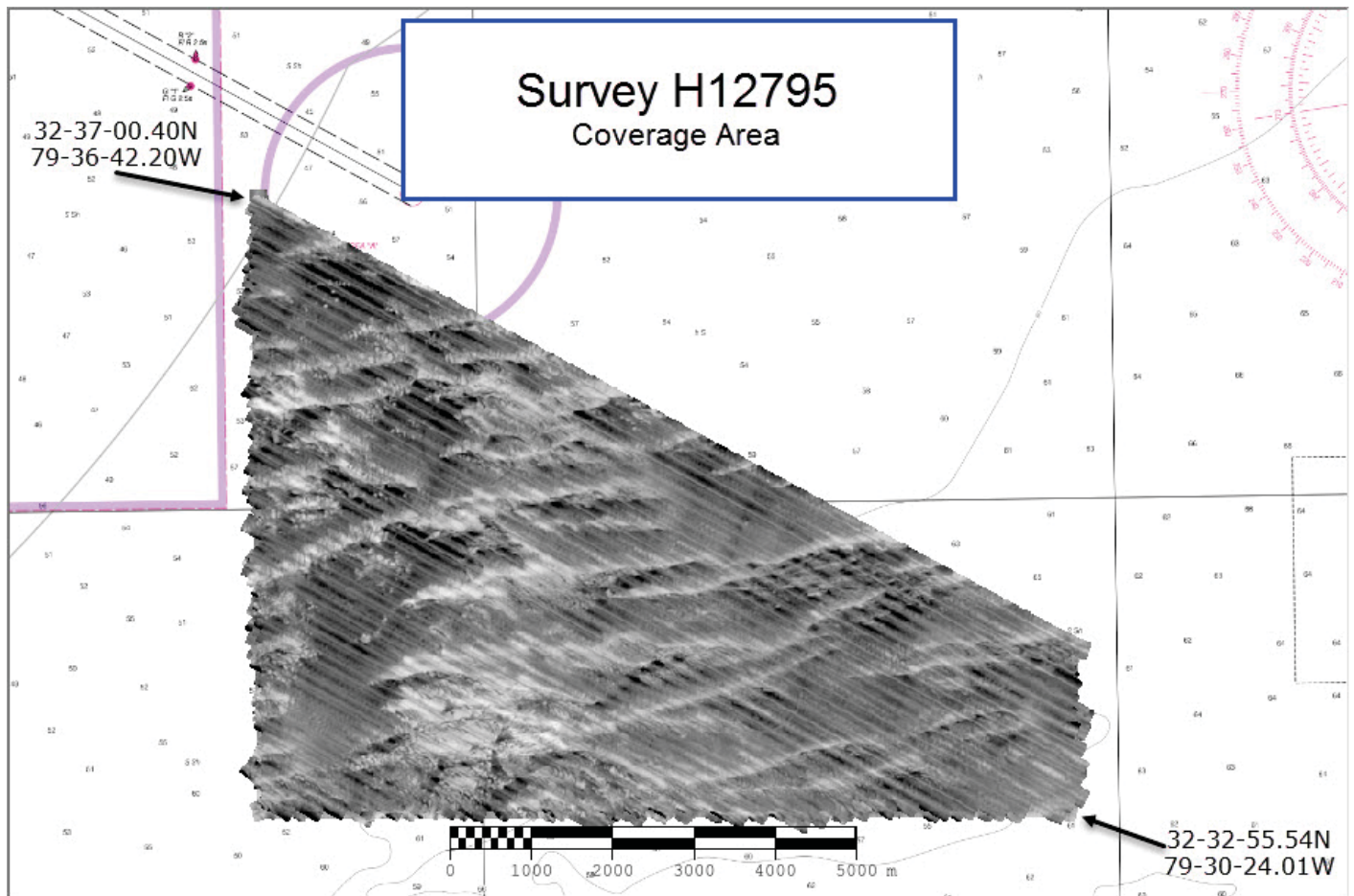


Figure 5: Survey H12795 MBES





*Figure 6: Survey H12795 SSS*

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

## **A.5 Survey Statistics**

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

	<b>HULL ID</b>	<i>S222</i>	<i>Total</i>
<b>LNM</b>	<b>SBES Mainscheme</b>	0	0
	<b>MBES Mainscheme</b>	0	0
	<b>Lidar Mainscheme</b>	0	0
	<b>SSS Mainscheme</b>	0	0
	<b>SBES/SSS Mainscheme</b>	0	0
	<b>MBES/SSS Mainscheme</b>	346.65	346.65
	<b>SBES/MBES Crosslines</b>	29.63	29.63
	<b>Lidar Crosslines</b>	0	0
<b>Number of Bottom Samples</b>			0
<b>Number of AWOIS Items Investigated</b>			0
<b>Number Maritime Boundary Points Investigated</b>			0
<b>Number of DPs</b>			0
<b>Number of Items Investigated by Dive Ops</b>			0
<b>Total SNM</b>			14.03

*Table 2: Hydrographic Survey Statistics*

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

<b>Survey Dates</b>	<b>Day of the Year</b>
05/15/2015	135
05/16/2015	136
05/17/2015	137
05/18/2015	138
05/29/2015	149
05/30/2015	150

*Table 3: Dates of Hydrography*

## **B. Data Acquisition and Processing**

### **B.1 Equipment and Vessels**

Refer to the Data Acquisition and Processing Report (DAPR) for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR are discussed in the following sections.

#### **B.1.1 Vessels**

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

<b>Hull ID</b>	<i>S222</i>
<b>LOA</b>	208 feet
<b>Draft</b>	15 feet

*Table 4: Vessels Used*

Data were acquired by NOAA Ship Thomas Jefferson. NOAA Ship Thomas Jefferson collected multibeam echosounder soundings, multibeam backscatter data; side scan sonar imagery, sound velocity profiles, surface sound velocity readings, position and attitude data.

## B.1.2 Equipment

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

<b>Manufacturer</b>	<b>Model</b>	<b>Type</b>
Applanix	POS MV v5	Positioning and Attitude System
Trimble	SPS351	Positioning System
RESON	7125 Rov	MBES
RESON	7125 SV2	MBES
RESON	SVP 70	Sound Speed System
Klein	5000 V2	SSS
Rolls Royce-Brooke Ocean Technologies	Moving Vessel Profilier 100	Sound Speed System
AML Oceanographic	AML Smart SV & P Probe	Sound Speed System

*Table 5: Major Systems Used*

## B.2 Quality Control

### B.2.1 Crosslines

Crosslines acquired for this survey totaled 9% of mainscheme acquisition.

The Thomas Jefferson collected 29.63 linear nautical miles of MBES crosslines, equating to 8.54% of mainscheme MBES data. Crosslines were compared to mainscheme by creating a difference surface in Caris BathyData Base. A 1m CUBE surface was created using strictly mainscheme lines, while a second 1m CUBE surface was created using only crosslines. The two surfaces were then differenced. The mean was 0.00 m and the standard deviation was 0.10 m. Survey H12795 complies with section 5.2.4.3 of the HSSD (2015 ed).

### B.2.2 Uncertainty

Uncertainty Standards were run through the Pydro64 Contribs "Finalized CSAR QA" script. Results are listed: H12795 has 100.00% nodes with uncertainty less than IHO error. 37,398,193 nodes passed out of 37,398,195 total nodes.



Object Detection Coverage was run through Pydro64 Contribs "Finalized CSAR QA" script. Results are listed: H12795 has 99.34% nodes with uncertainty less than IHO error. 37,150,391 nodes passed out of 37,398,195 total nodes.

Total Propagated Uncertainty values for survey H12795 were derived using a combination of real time uncertainties for vessel motion, a priori of values for equipment and vessel characteristics, assigned values for tidal datum uncertainties, and field assigned values for sound speed uncertainties. The real time uncertainties for vessel motion include roll, pitch, gyro, navigation, and elevation. The uncertainties in these measurements were recorded as part of the POSPac 5P ERS solution and were applied to the soundings via an SBET RMS file generated by Applanix POSPac per Chapter 3.4.2.1.1 of the NOAA Field Procedures Manual (2014 ed). The NOAA ship THOMAS JEFFERSON employed a subscription service, "Marinestar", to generate real-time correctors for position and vertical heights broad casted over the L-Band from a geosynchronous orbital Satellite. Uncertainties for sonar mounting and vessel speed were assigned using the a priori values found in Chapter 4 of the NOAA Field Procedures Manual (FPM) (2014 ed). These values were applied to the data via the CARIS HIPS Hydrographic Vessel File. The uncertainty associated with sound speed measurements were based on the frequency and location of CTD casts in accordance with Appendix 4 of the FPM (2014 ed).

## Uncertainty Standards

H12795\_MB\_1m\_MLLW\_dn156.csar: 100.00% nodes pass (37398193/37398195)

min=0.40, 5%=0.47, 25%=0.48, median=0.49, mode=0.49, 75%=0.49, 95%=0.50, max=1.50

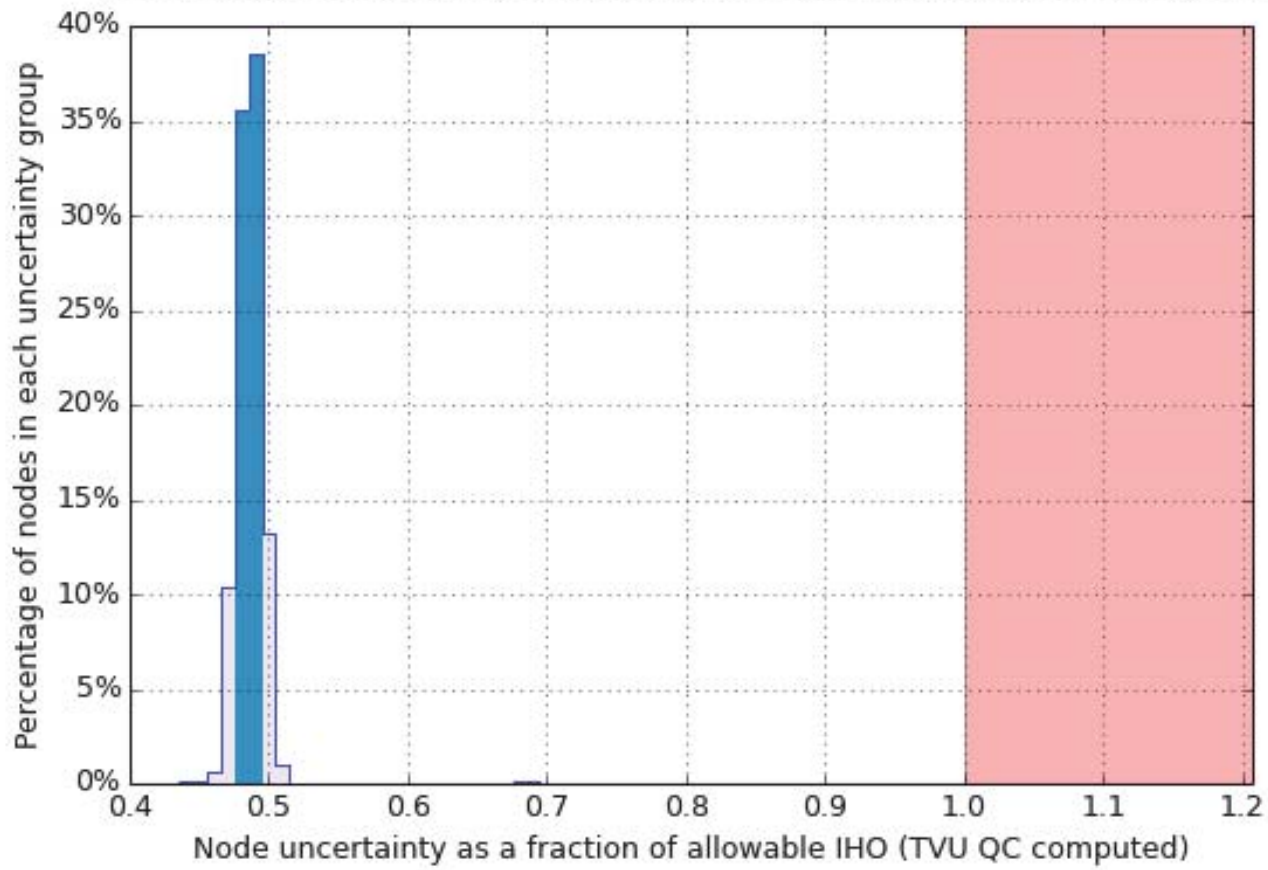
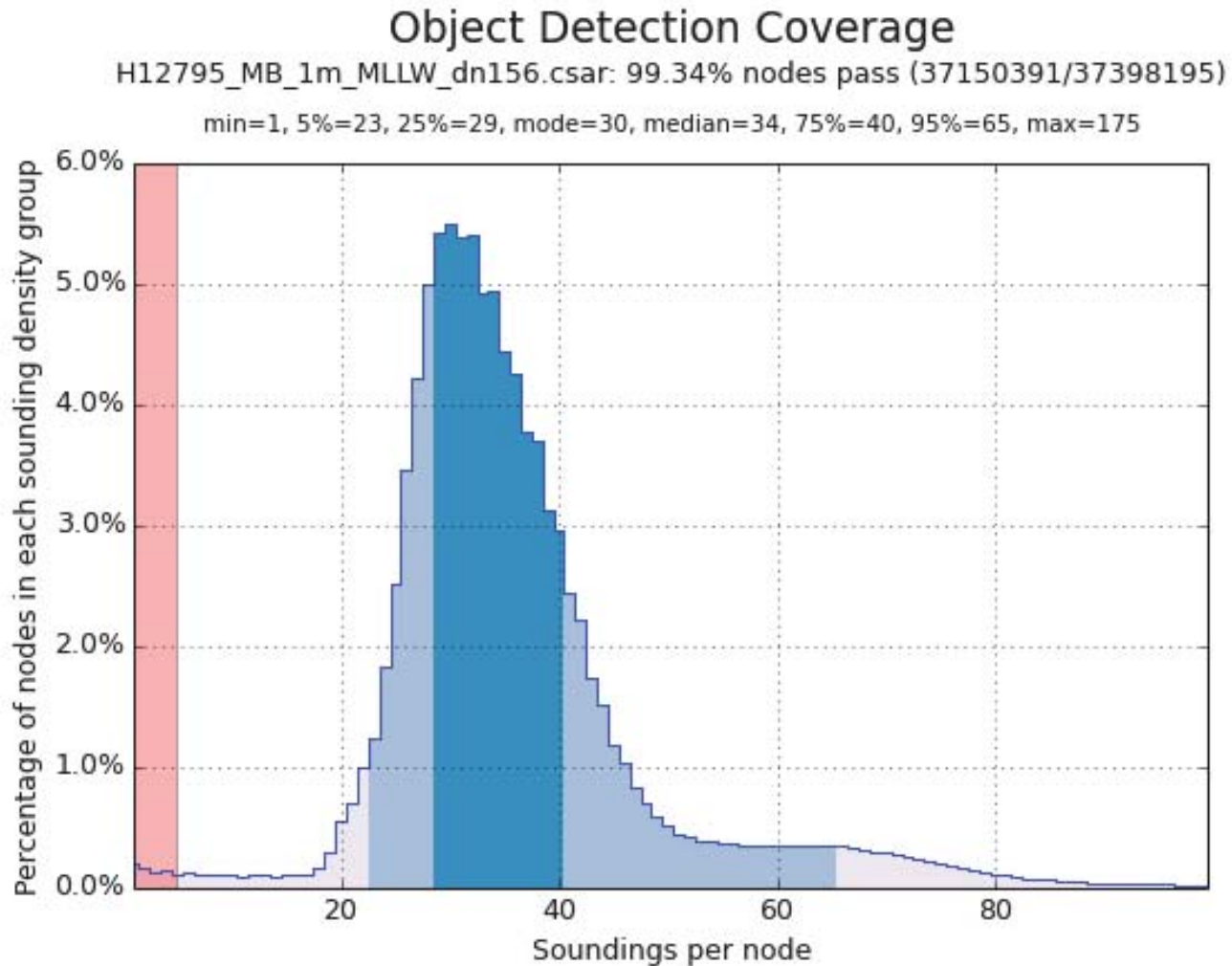


Figure 7: Uncertainty Standards



*Figure 8: Object Detection Coverage*

### B.2.3 Junctions

Two junction comparisons were completed for survey H12795. Surveys H12679 and H12766 were acquired concurrently with this survey. Depth comparisons were performed using a difference surface (at the 1-meter resolution), from which descriptive statistics were generated then exported to an Excel spreadsheet. The associated overlapping multibeam data was examined in CARIS Subset Editor, along with the cursor Tool Tip for consistency and agreement.

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H12769	1:20000	2015	NOAA Ship THOMAS JEFFERSON	S
H12766	1:20000	2015	NOAA Ship THOMAS JEFFERSON	N

Table 6: Junctioning Surveys

H12769

Survey H12769 was acquired concurrently with survey H12795 during project OPR-G380-TJ-15. On average there is 100 meters of overlap between the two surveys which spans the entire length of the junction (Figure XX). One location at the northern edge had a difference of 0.34 meters. This difference can be attributed to modifying the heave filter in Applanix MVPosView in an attempt to troubleshoot and SBET issue. This heave artifact can be seen in DN135 MS and XL and is further discussed in B.2.5 (Equipment Effectiveness). Difference surface analysis showed depth differences averaging -0.011 meters, making survey H12795 deeper, with a standard deviation of 0.077 meters.

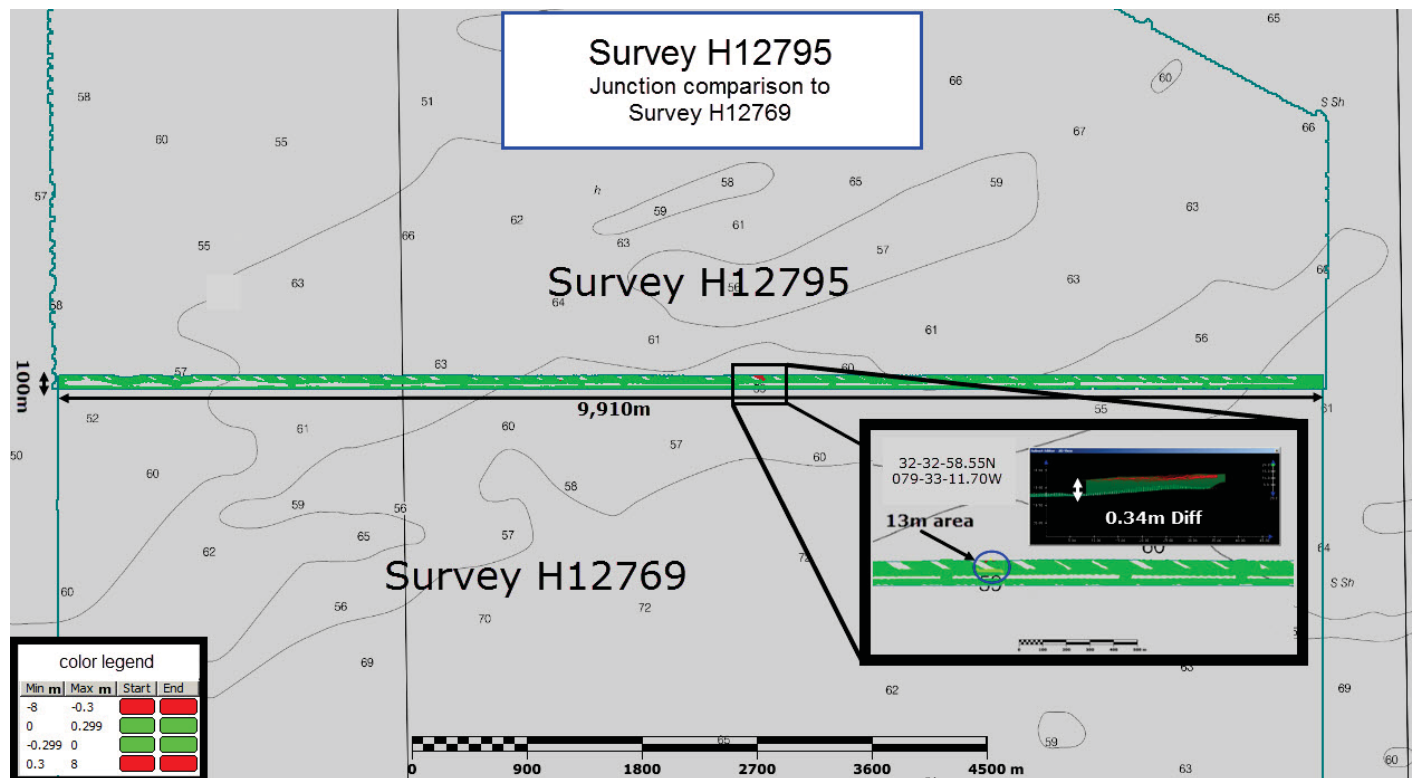


Figure 9: Junction area between survey H12795 and H12769.

H12766

Survey H12766 was acquired concurrently with survey H12795 during project OPR-G380-TJ-15. On average there is 75 meters of overlap between the two surveys which spans the entire length of the junction (Figure XX). Difference surface analysis showed depth differences averaging 0.047 meters, making survey H12795 shoaler, with a standard deviation of 0.077 meters.

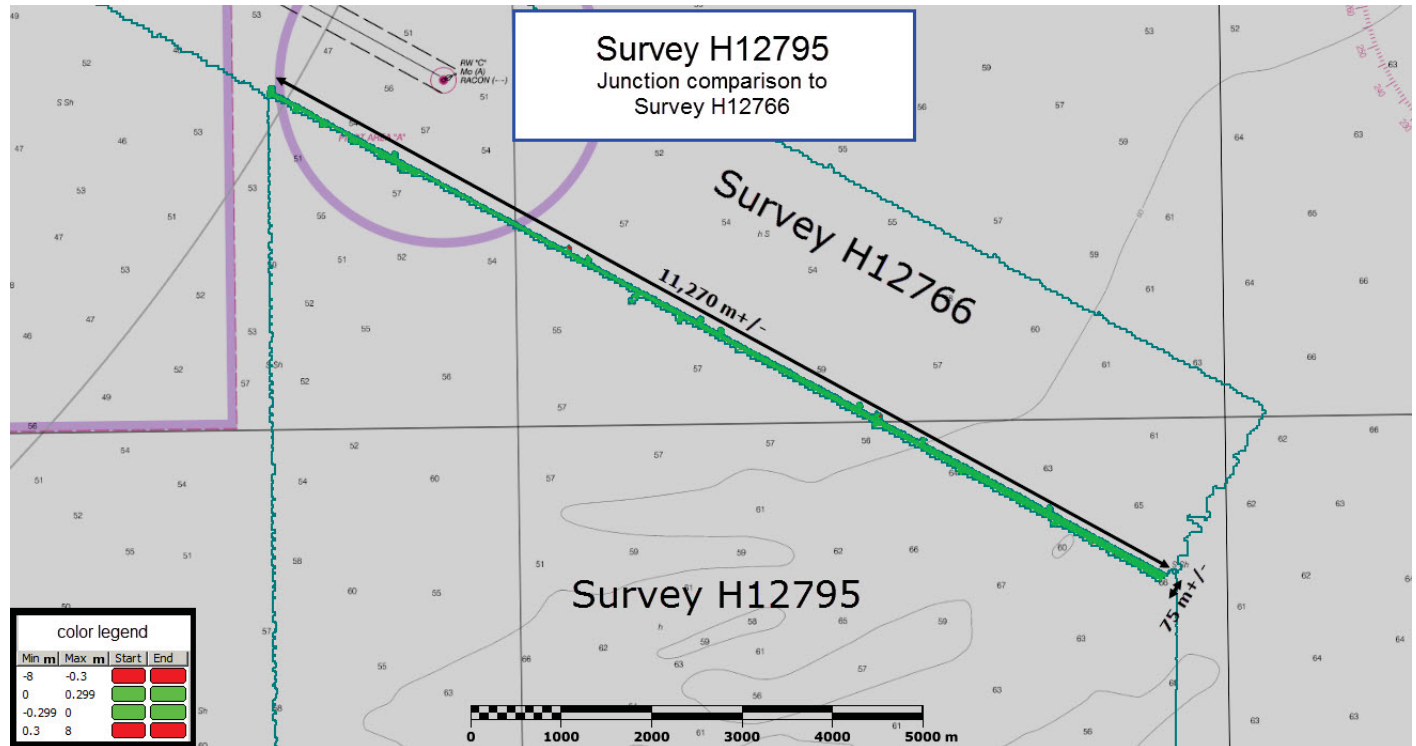


Figure 10: Junction area between survey H12795 and 12766.

### B.2.4 Sonar QC Checks

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

### B.2.5 Equipment Effectiveness

There were no conditions or deficiencies that affected equipment operational effectiveness.



## B.2.6 Factors Affecting Soundings

### Incomplete POS logging

A holiday was observed in the final grids on line 135\_139\_2346 where realtime heave would not apply to the last 241 meters of the line. Through troubleshooting, it was discovered that the issue related to the POS logging through the change of day UTC. The 200% SSS did not show any contacts in the area and the holiday covers a flat area east of a shoal represented by the final grid.

### DN135 Heave artifact

On DN135 a heave artifact was seen during acquisition produced from the frequency of the swell. Initially the heave bandwidth in the Applanix POS M/V was set to 9 seconds then reduced to 7 seconds in an attempt to eliminate the artifact. After close examination of the data acquired for DN135, the Heave band with was returned back to 9 seconds on DN138. The small heave artifact can be seen in the gridded surface as a directional ripple only for the lines acquired early on DN135. The data is well within the IHO order 1 requirements.

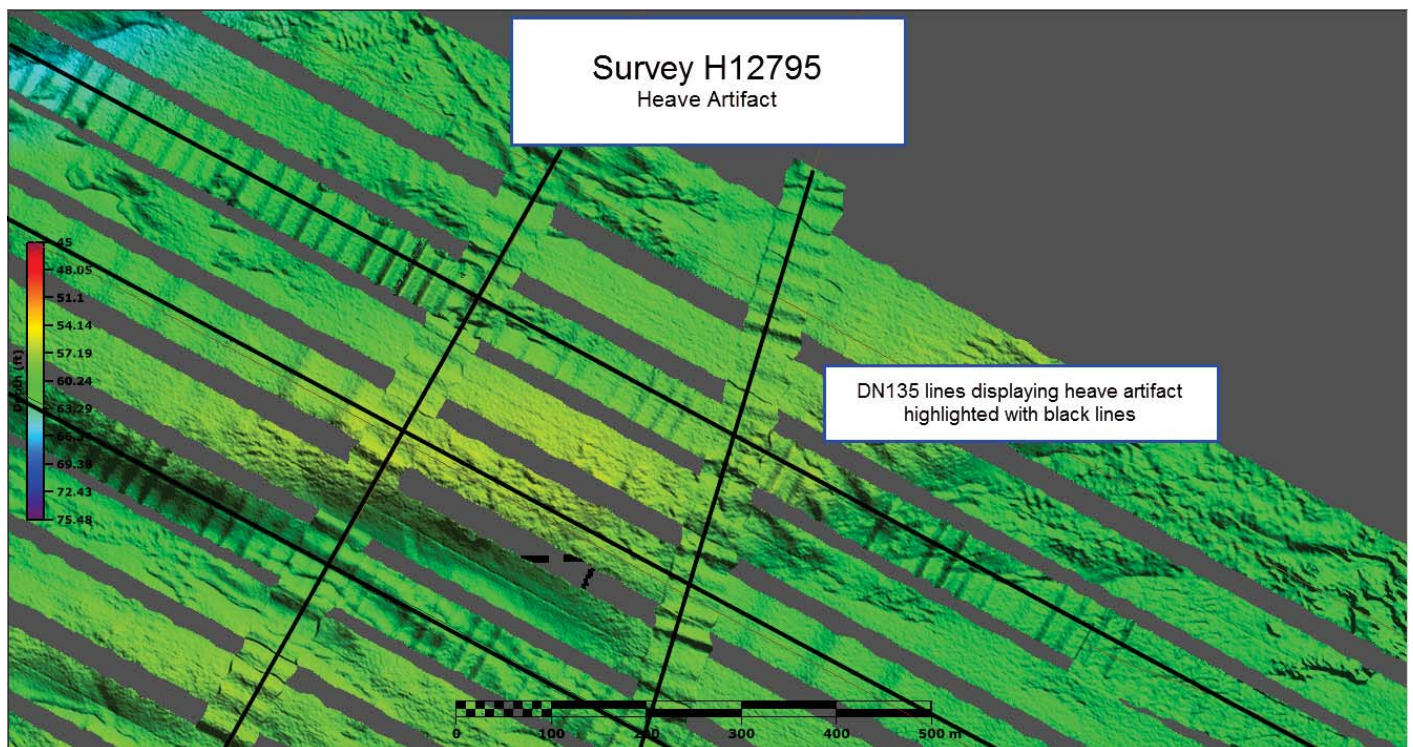
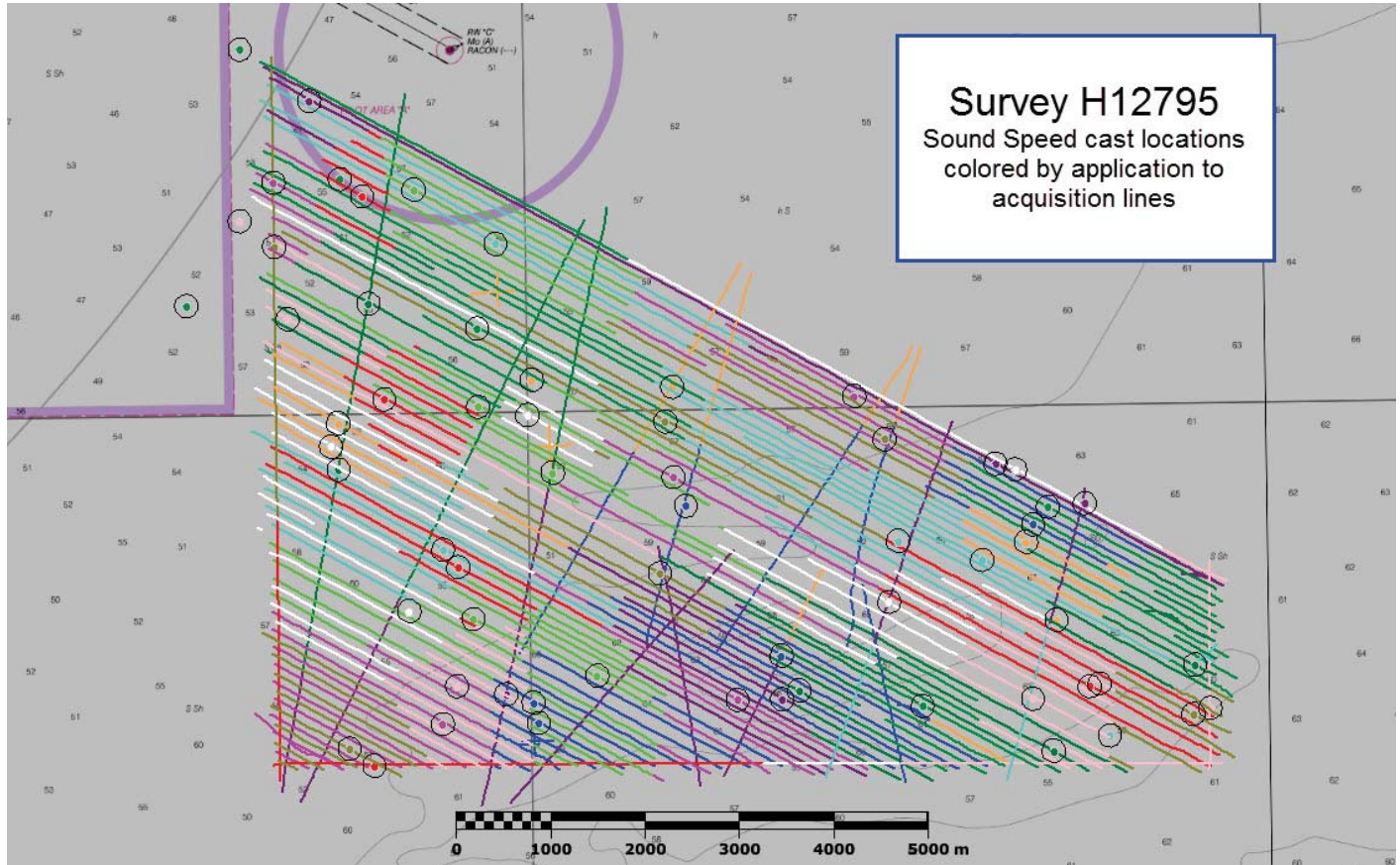


Figure 11: Heave artifact observed on DN135

## B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: Sound speed profiles were measured in accordance with the HSSD on Thomas Jefferson (S-222) using the Rolls Royce-Brooke-Ocean MVP 100 approximately every 1 to 4 hours with

efforts made to evenly distribute the casts spatially and temporally throughout the survey area. All MVP casts were collected into one survey wide concatenated file per vessel and applied to multibeam data in CARIS using nearest in distance within a time of 2 hours.



*Figure 12: Survey H12795 acquisition lines colored by the corresponding sound speed casts applied.*

## **B.2.8 Coverage Equipment and Methods**

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

## **B.3 Echo Sounding Corrections**

### **B.3.1 Corrections to Echo Soundings**

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



### B.3.2 Calibrations

All sounding systems were calibrated as detailed in the DAPR.

### B.4 Backscatter

Backscatter data was logged as 7k files and submitted to the Atlantic Hydrographic Branch for processing. One line per vessel, per day was processed aboard the Thomas Jefferson in order to assess and ensure quality.

### B.5 Data Processing

#### B.5.1 Software Updates

The following software updates occurred after the submission of the DAPR:

Manufacturer	Name	Version	Service Pack	Hotfix	Installation Date	Use
Caris	HIPS/SIPS	9.0.13, 9.0.14			04/14/2015	Processing

*Table 7: Software Updates*

The following Feature Object Catalog was used: NOAA Profile V 5.3.3

#### B.5.2 Surfaces

The following surfaces and/or BAGs were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12795_MB_1M_MLLW	CUBE	1 meters	0 meters - 22 meters	NOAA_1m	Object Detection
H12795_SSS100_1m	SSS Mosaic	1 meters	0 meters - 22 meters	N/A	100% SSS
H12795_SSS200_1m	SSS Mosaic	1 meters	0 meters - 22 meters	N/A	200% SSS

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12795_MB_1m_MLLW_Final	CUBE	1 meters	0 meters - 22 meters	NOAA_1m	Object Detection

*Table 8: Submitted Surfaces*

The Chief Hydrographer chose to exceed the specifications for object detection with set line spacing because the density requirements were met and it better represented the seafloor at a 1m resolution.

## C. Vertical and Horizontal Control

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

### C.1 Vertical Control

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

#### Non-Standard Vertical Control Methods Used:

VDatum

#### Ellipsoid to Chart Datum Separation File:

2015\_G380\_VDatum\_NAD83\_MLLW\_rev2.csar

### C.2 Horizontal Control

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

The projection used for this project is 17 north.

Additional information discussing the use of Post Processed Precise Point Positioning for this survey can be found in the accompanying DAPR.

## D. Results and Recommendations

### D.1 Chart Comparison

Chart comparison procedures were followed as outlined in section 4.5 of the FPM (2014 ed) and section 8.1.4 sub section D.1 of the HSSD (2015 ed). The ENC and RNC versions of the relevant charts were reviewed to ensure that the latest USCG Local Notice to Mariners (LNM) has been applied.

The majority of the chart comparison was performed by comparing survey H12795 finalized CUBE surface to a digital surface generated from the ENC at the same gridded resolution. A 1 meter surface was generated from a TIN that was created from the soundings. The soundings were compared to the ENC at the same scale. Contours and chart scale soundings were created from the TIN. The chart comparison was conducted by creating and reviewing the resultant difference surface in CARIS HIPS & SIPS software.

#### D.1.1 Raster Charts

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

Chart	Scale	Edition	Edition Date	LNM Date	NM Date
11528	1:40000	1	07/2014	04/21/2015	04/25/2015

*Table 9: Largest Scale Raster Charts*

#### 11528

Survey H12795 in general aligned well with the historic contours and with few isolated instances of being deeper than the charted depths by 2 feet. There were 8 instances where the center of the charted sounding lay between the MB set line spacing. Five of these charted soundings, circled in red, are shoaler than the surrounding MB coverage. There was no evidence of shoaling in the adjacent lines, and the sidescan was unremarkable. After consultation with AHB, we decided not to individually disprove the charted soundings as the survey on a whole will address them all.

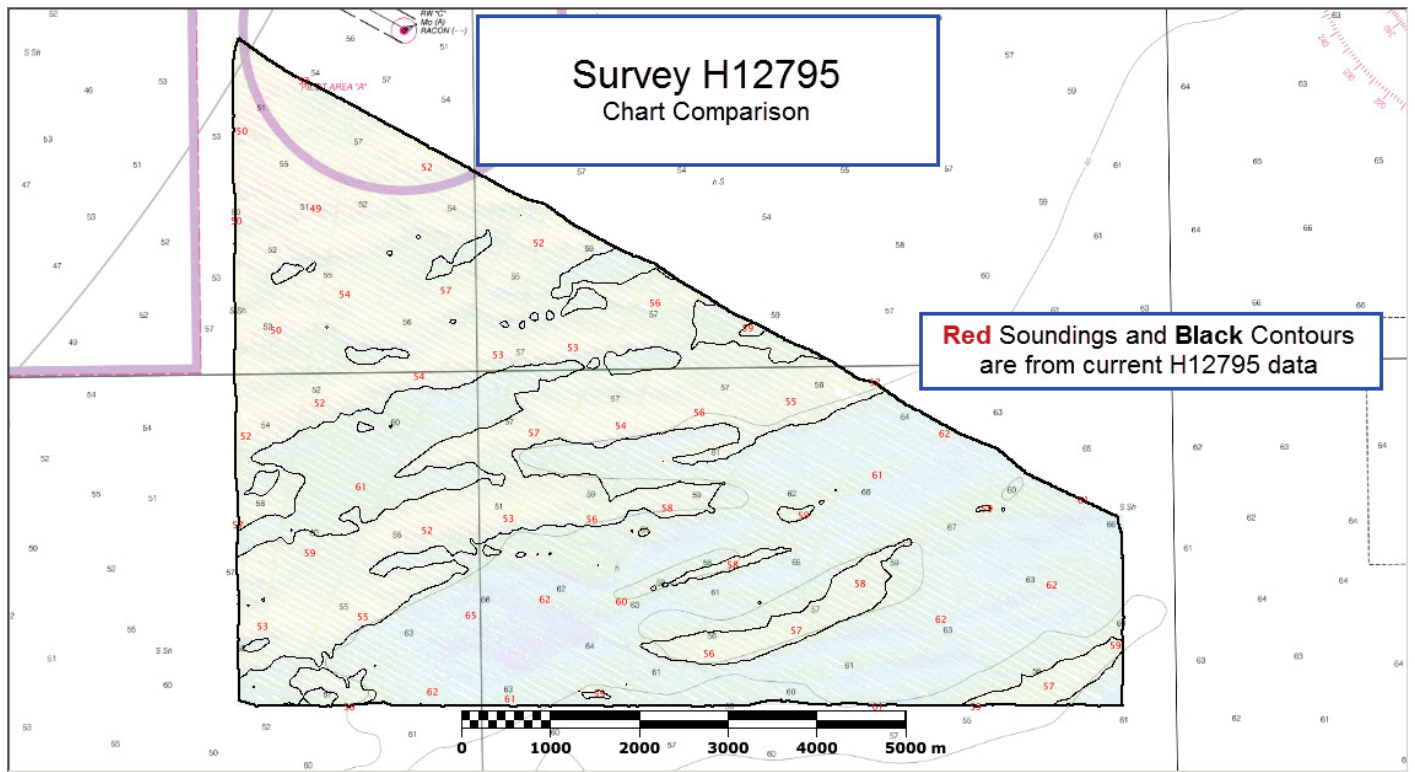


Figure 13: H12795 chart comparison

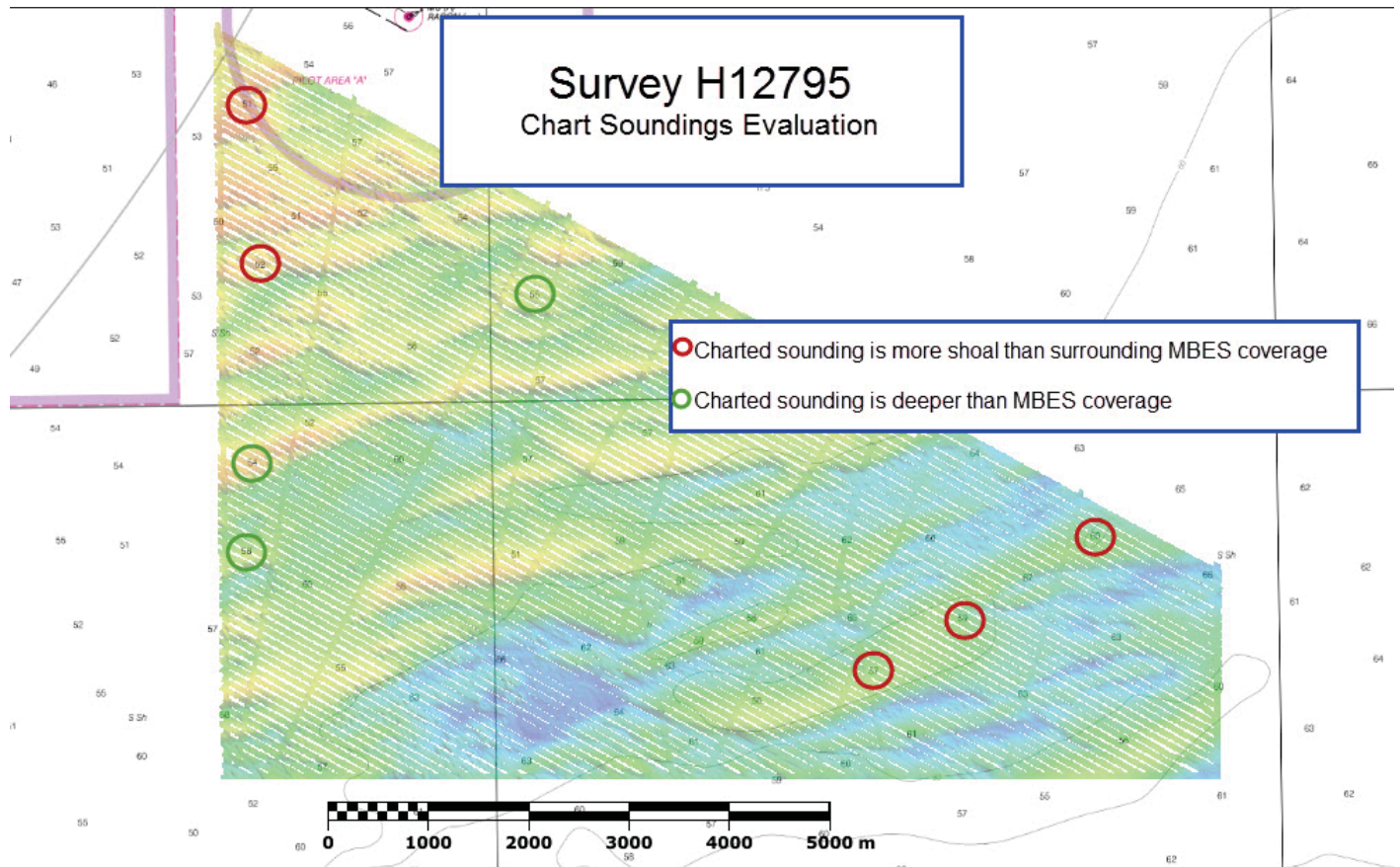


Figure 14: Charted soundings that fall between MBES lines

### D.1.2 Electronic Navigational Charts

The following are the largest scale ENC's, which cover the survey area:

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US5SC25M	1:40000	1	10/06/2014	10/06/2014	NO

Table 10: Largest Scale ENC's

#### US5SC25M

ENC US5SC25M coincides with raster chart 11528. The depths and contours on the ENC match the raster 11528. The comparison between survey H12795 and the ENC is equivalent to the preceding comparison

with Chart 11528. The Hydrographer recommends updating all contours and soundings with the digital data from survey H12795.

### **D.1.3 AWOIS Items**

No AWOIS items were assigned for this survey.

### **D.1.4 Maritime Boundary Points**

No Maritime Boundary Points were assigned for this survey.

### **D.1.5 Charted Features**

No charted features exist for this survey.

### **D.1.6 Uncharted Features**

No uncharted features exist for this survey.

### **D.1.7 Dangers to Navigation**

No Danger to Navigation Reports were submitted for this survey.

### **D.1.8 Shoal and Hazardous Features**

No shoals or potentially hazardous features exist for this survey.

### **D.1.9 Channels**

All anchorages, precautionary areas, and traffic separation schemes within the surveys of H12795 were found to be serving their intended purpose.

### **D.1.10 Bottom Samples**

No bottom samples were required for this survey.

## **D.2 Additional Results**

### **D.2.1 Shoreline**

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

### **D.2.2 Prior Surveys**

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

### **D.2.3 Aids to Navigation**

No Aids to navigation (ATONs) exist for this survey.

### **D.2.4 Overhead Features**

No overhead features exist for this survey.

### **D.2.5 Submarine Features**

No submarine features exist for this survey.

### **D.2.6 Ferry Routes and Terminals**

No ferry routes or terminals exist for this survey.

### **D.2.7 Platforms**

No platforms exist for this survey.

### **D.2.8 Significant Features**

No significant features exist for this survey.

### **D.2.9 Construction and Dredging**

No present or planned construction or dredging exist within the survey limits.



**D.2.10 New Survey Recommendation**

No new surveys or further investigations are recommended for this area.

**D.2.11 Inset Recommendation**

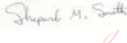


No new insets are recommended for this area.

## E. Approval Sheet

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

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

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

Approver Name	Approver Title	Approval Date	Signature
CAPT. Shepard M. Smith/NOAA	Chief of Party	06/10/2015	 Digitally signed by SMITH, SHEPARD M. 1.006778930 DN: c=US, o=U.S. Government, ou=DoD, ou=PR, ou=NOAA, cn=SMITH, SHEPARD M. 1.006778930 Date: 2015.06.10 12:25:41 -0400
Joseph K. Carrier, LT/NOAA	Field Operations Officer	06/10/2015	 Digitally signed by CARRIER, JOSEPH K. 1.1155373152 DN: c=US, o=U.S. Government, ou=DoD, ou=PR, ou=NOAA, cn=CARRIER, JOSEPH K. 1.1155373152 Date: 2015.06.10 03:35:58 Z
Jasmine Cousins, LT/NOAA	Sheet Manager	06/10/2015	 Digitally signed by COUSINS, JASMINE LYN 1.24247079 DN: c=US, o=U.S. Government, ou=DoD, ou=PR, ou=NOAA, ou=COUSINS, JASMINE LYN 1.24247079 Date: 2015.06.10 03:50:18 Z

## F. Table of Acronyms

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

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

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

APPENDIX I  
TIDES AND WATER LEVELS



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NOAA Ship THOMAS JEFFERSON (MOA-TJ)  
439 West York St  
Norfolk, VA 23510-1145

May 30, 2015

MEMORANDUM FOR: Gerald Hovis, Chief, Products and Services Branch, N/OPS3

FROM: CAPT. Shepard M. Smith, NOAA Ship THOMAS JEFFERSON (MOA-TJ)

SUBJECT: Request for Approved Tides/Water Levels

Please provide the following data:

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

Transmit data to the following:

NOAA Ship THOMAS JEFFERSON (MOA-TJ)  
439 West York St  
Norfolk, VA 23510-1145

These data are required for the processing of the following hydrographic survey:

Project No.: OPR-G380-TJ-15  
Registry No.: H12795  
State: South Carolina  
Locality: Approaches to Charleston  
Sublocality: 2 nm South of Charleston Harbor Channel buoy

Attachments containing:

- 1) an Abstract of Times of Hydrography,
- 2) digital MID MIF files of the track lines from Pydro

cc: MOA-TJ





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Year_DOY	Min Time	Max Time
2015_135	09:11:10	23:54:08
2015_136	00:15:12	23:30:56
2015_137	00:12:46	23:50:09
2015_138	00:07:06	08:43:16
2015_149	21:32:46	23:52:28
2015_150	00:48:43	04:00:40



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

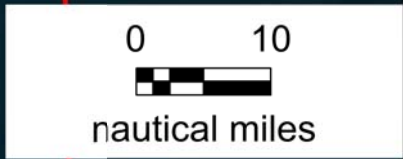


**Preliminary as Final Tidal Zoning for  
OPR-G380-TJ-2015, H12795  
2 NM South of Charleston Harbor Channel Buoy, SC**

8665530 CHARLESTON, SC



SA138  
Reference 8665530



## APPENDIX II

# SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE



Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>

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## OPR-G380-TJ-15Combined sheets

6 messages

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Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>

Sun, Jun 7, 2015 at 10:34 PM

To: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Cc: "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>

Katy,

TJ would like to modify the sheet layout to match available resources and keep the momentum we have with the early sheets. Essentially, we need to combine H12771 and H12803 because we don't have an available sheet manager. It's been great to give everyone the experience with at least one sheet but TJ feels these two sheets can be combined and managed with much less overhead; one package from TJ, one DR, one SAR, one H-cell, etc... If the weather holds and equipment stays operational, we should be able to close it out by the time we leave Charleston.

Please let us know if you have any concerns. Attached is a screen grab of the proposed sheet limits.

Very respectfully,  
Joe Carrier, LT/NOAA

Field Operation's Officer, NOAA Ship *Thomas Jefferson*  
439 West York Street  
Norfolk, VA 23510  
cell: (757) 647-0187  
voip: (301) 713-7782  
fax: (757) 512-8295  
<http://www.moc.noaa.gov/tj/>



Combined sheets.jpg  
373K

---

Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Mon, Jun 8, 2015 at 1:47 PM

To: Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>

Cc: "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>

Joe,

I dont think that will be a problem, especially if you are confident that the combined sheet will be completely surveyed by the end of the survey. I dont want to leave a sheet partially surveyed. I will work on combining those two sheets into one sheet H12771, I will cancel the other sheet H12803. Will that work?

Katy

[Quoted text hidden]

—

Kathryn Pridgen  
Physical Scientist  
NOAA-HSD OPS  
301-713-2722 ext 145  
[kathryn.pridgen@noaa.gov](mailto:kathryn.pridgen@noaa.gov)

---

**Joseph Carrier - NOAA Federal** <joseph.carrier@noaa.gov>  
To: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>  
Cc: "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>

Mon, Jun 8, 2015 at 1:50 PM

Katy,

Thank you for working with us on this one and for the quick reply. Please cancel H12803 and add the coverage area to H12771.

Joe

Very respectfully,  
Joe Carrier, LT/NOAA

Field Operation's Officer, NOAA Ship *Thomas Jefferson*  
439 West York Street  
Norfolk, VA 23510  
cell: (757) 647-0187  
voip: (301) 713-7782  
fax: (757) 512-8295  
<http://www.moc.noaa.gov/tj/>

[Quoted text hidden]

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**Kathryn Pridgen - NOAA Federal** <kathryn.pridgen@noaa.gov>  
To: Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>  
Cc: "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>

Mon, Jun 8, 2015 at 1:57 PM

Alright, its all fixed, my sheet are now identical to your graphic.  
Katy

[Quoted text hidden]

---

**Joseph Carrier - NOAA Federal** <joseph.carrier@noaa.gov>  
To: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>  
Cc: "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>

Mon, Jun 8, 2015 at 3:16 PM

Thanks Katy

Very respectfully,  
Joe Carrier, LT/NOAA

Field Operation's Officer, NOAA Ship *Thomas Jefferson*  
439 West York Street  
Norfolk, VA 23510  
cell: (757) 647-0187  
voip: (301) 713-7782  
fax: (757) 512-8295

<http://www.moc.noaa.gov/tj/>

[Quoted text hidden]

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**Kathryn Pridgen - NOAA Federal** <kathryn.pridgen@noaa.gov> Mon, Jun 8, 2015 at 3:42 PM  
To: Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>, Jacklyn James - NOAA Federal  
<jacklyn.c.james@noaa.gov>  
Cc: "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>

Joe and the rest of the TJ,  
I am getting ready to go to sea on the Rainier (I leave on Wednesday) for the remainder of the Charleston project. While I am at sea, Jacklyn James, will be the HSD contact for the rest of the Charleston Survey. For any further questions, comments, or issues please contact Jackie at HSD, [jacklyn.c.james@noaa.gov](mailto:jacklyn.c.james@noaa.gov).

Thanks!

Katy

[Quoted text hidden]





Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>

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## Re: TJ DAPR Questions

2 messages

---

**Russell Quintero - NOAA Federal** <russell.quintero@noaa.gov>

Tue, Jun 2, 2015 at 2:37 AM

To: matthew.jaskoski@noaa.gov

Cc: \_OMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>, "LTJG Matthew Forrest, NOAA" <Matthew.R.Forrest@noaa.gov>

Pulling Joe and Matt into the conversation.

On 5/30/15, Russell Quintero - NOAA Federal <[russell.quintero@noaa.gov](mailto:russell.quintero@noaa.gov)> wrote:

> Jasko,

>

> I'm helping TJ with their DAPR for this year while I'm out here  
> augmenting. We wanted to get AHB's feedback on a few things we are  
> doing a little differently.

>

> The xmlDAPR is certainly helpful, but there are parts of the  
> implementation that create far more work than is necessary, and even  
> deviate from the HSSD.

>

> The TJ DAPR is undergoing final review, but is essentially done  
> already. To facilitate the speed of composition, we have deviated from  
> the xmlDAPR while continuing to adhere to the HSSD. The specific  
> changes are:

>

> 1) We are not tracking interchangeable hardware. We obviously track  
> the serial numbers of all components of the sensor (Tpu and fish for a  
> SSS for instance), but anything that can be swapped out at will is not  
> tracked. Processing computers that are freely interchangeable with no  
> effect on the data are not tracked in the DAPR. Already hardware like  
> monitors and external hard drives that are deemed to have no effect  
> are not tracked, we are just shifting that line slightly further.

>

> 2) The xmlDAPR requires that you transcribe out of the HVF all of the  
> values used in the survey, for every sensor and vessel. It also  
> requires transcribing the output of things like the dynamic draft and  
> patch test. In contrast, the HSSD actually specify that these should  
> be in a separate appendix.

>

> Doing these as a separate appendix is actually far, far faster on the  
> ship, far easier, and less prone to error. The Vessel Editor in Caris  
> can generate a report that contains all of the relevant info with only  
> a few button clicks instead of manually transferring every single  
> value.

>

> As such, we complied with the HSSD instead of the xmlDAPR schema. To  
> make that work, we occasionally had to mark "Not Applied" to some  
> correctors, and then add an "Additional Discussion" block immediately  
> following that explained how we did those correctors and referenced  
> the appropriate appendix.

>

>

> While we are confident that we are in compliance with the HSSD, we  
> wanted to make sure the Branch wouldn't have any opposition to this



> approach.  
>  
> V/r,  
> Russ  
>  
> --  
> Lieutenant Russell Quintero, NOAA  
> DoD Liaison, Office of Coast Survey  
> 1315 East-West Highway  
> SSMC3 - 6110  
> Silver Spring, MD 20910  
>  
> 301-713-2780x152 Office  
> 970-481-2030 Mobile  
>

--  
Lieutenant Russell Quintero, NOAA  
DoD Liaison, Office of Coast Survey  
1315 East-West Highway  
SSMC3 - 6110  
Silver Spring, MD 20910

301-713-2780x152 Office  
970-481-2030 Mobile

---

**Matthew Jaskoski - NOAA Federal** <matthew.jaskoski@noaa.gov>

Tue, Jun 2, 2015 at 11:53 AM

To: Russell Quintero - NOAA Federal <russell.quintero@noaa.gov>

Cc: \_OMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>, "LTJG Matthew Forrest, NOAA" <Matthew.R.Forrest@noaa.gov>

Hey Russ,

I don't have a problem if you all want to generate a \*.pdf DAPR in the traditional manner as opposed to using the xml (as long as it meets the requirements of HSSD, of course).

I believe the xmlDAPR is in a phase of substantial re-write and I would highly recommend you email the current deficiencies to the xmlDR/DAPR folks for inclusion in the re-scheming discussion. My understanding is that in the new version the vessel offsets and inventory items will be automatically populate from the HVF and Hybase respectively, so that may be part of the different schema/stylesheet architecture.

thanks for the heads-up,  
Jasko

Lieutenant Commander Matthew Jaskoski, NOAA  
Chief, Atlantic Hydrographic Branch  
439 W. York St.  
Norfolk, VA 23510  
Office: 757-441-6746 x200  
Cell: 757-647-3356

[Quoted text hidden]



Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>

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## OPR-G380-TJ-15: Horcon Report

5 messages

---

**Joseph Carrier - NOAA Federal** <joseph.carrier@noaa.gov> Sun, Jun 7, 2015 at 8:55 PM  
To: Matthew Jaskoski - NOAA Federal <matthew.jaskoski@noaa.gov>  
Cc: Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>, "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>

LCDR Jaskoski,

Historically, TJ hasn't managed tide or base stations during survey operations and therefore didn't submit a Horcon report with surveys. Using Fugro's MarineStar we have been able to stay out of the tide gauge and base station installation business. Do you foresee a need for TJ to submit a Horcon report with these Charleston surveys using MarineStar?

Very respectfully,  
Joe Carrier, LT/NOAA

Field Operation's Officer, NOAA Ship *Thomas Jefferson*  
439 West York Street  
Norfolk, VA 23510  
cell: (757) 647-0187  
voip: (301) 713-7782  
fax: (757) 512-8295  
<http://www.moc.noaa.gov/tj/>

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**Matthew Jaskoski - NOAA Federal** <matthew.jaskoski@noaa.gov> Mon, Jun 8, 2015 at 1:09 PM  
To: Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>  
Cc: Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>, "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>

Hey Joe,  
Assuming the ship isn't generating another report about the MarineStar integration and ERS on the project (that will accompany the data to NGDC) - I think it would be a good idea to submit an HVCR since it is a project-wide element that represents a significant departure from our past-practices. I think you could use Tyanne's report on MarineStar as the bulk of your text for your HVCR. All you really need is some background information on how the MarineStar Systems works, and a brief description of the methods, adequacy of positioning, and any confidence checks that were done - to meet the intent of the HVCR. The intent is to document the positioning activities that took place as part of the project.

hope this helps,  
regards,  
Jasko

Lieutenant Commander Matthew Jaskoski, NOAA  
Chief, Atlantic Hydrographic Branch  
439 W. York St.  
Norfolk, VA 23510  
Office: 757-441-6746 x200  
Cell: 757-647-3356

[Quoted text hidden]

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**Joseph Carrier - NOAA Federal** <joseph.carrier@noaa.gov> Mon, Jun 8, 2015 at 1:48 PM  
To: Matthew Jaskoski - NOAA Federal <matthew.jaskoski@noaa.gov>  
Cc: Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>, "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>

Jasko,

Thanks for the quick reply. Since TJ has never installed tide gauges or base stations for projects in the past and I don't have any examples on our network to work from. If you have one you can share like the ERS survey from the Hassler I'd really like to take a look and see how they did their report.

Since I'm going to be using Tyanne's report as a reference, do you mind if I ask for her help on revising the HVCR to make sure it's accurate?

Regards,  
Joe

Very respectfully,  
Joe Carrier, LT/NOAA

Field Operation's Officer, NOAA Ship *Thomas Jefferson*  
439 West York Street  
Norfolk, VA 23510  
cell: (757) 647-0187  
voip: (301) 713-7782  
fax: (757) 512-8295  
<http://www.moc.noaa.gov/tj/>

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**Matthew Jaskoski - NOAA Federal** <matthew.jaskoski@noaa.gov> Mon, Jun 8, 2015 at 3:40 PM  
To: Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>  
Cc: Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>, "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>

hey Joe,

I think this got kicked back to me because of the attached DAPR pdf file sizes. did you get the earlier email? note there is a change in my recommendation regarding the HVCR

Jasko

Lieutenant Commander Matthew Jaskoski, NOAA  
Chief, Atlantic Hydrographic Branch  
439 W. York St.  
Norfolk, VA 23510  
Office: 757-441-6746 x200  
Cell: 757-647-3356

On Mon, Jun 8, 2015 at 11:35 AM, Matthew Jaskoski - NOAA Federal <matthew.jaskoski@noaa.gov> wrote:

Hey Joe,

I'm going to reverse course on my earlier recommendation that you include an HVCR. It looks like FH did not do an HVCR for the survey that they completed to the elipse, I believe they detailed everything in the DR/DAPR. This seems like a legitimate way to proceed, and considering you all did not establish any actual HorVerCon equipment the generation of a HVCR might be an unnecessary encumbrance on the ship. You could/should detail the MarineStar info in the DAPR - particularly sections A.4, B.1.4, and probably C.4-5.

from AHB's view we are content if you want to skip the HVCR and add the information about MarineStar in the DAPR (with any project specific deviations from the DAPR outlined in the appropriate DR).

Jasko

Lieutenant Commander Matthew Jaskoski, NOAA  
Chief, Atlantic Hydrographic Branch  
439 W. York St.  
Norfolk, VA 23510  
Office: 757-441-6746 x200  
Cell: 757-647-3356

[Quoted text hidden]

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**Joseph Carrier - NOAA Federal** <joseph.carrier@noaa.gov> Mon, Jun 8, 2015 at 4:49 PM  
To: Matthew Jaskoski - NOAA Federal <matthew.jaskoski@noaa.gov>  
Cc: Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>, "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>

Jasko,

Thanks for the update and thanks for reconsidering the HVCR!

Very respectfully,  
Joe Carrier, LT/NOAA

Field Operation's Officer, NOAA Ship *Thomas Jefferson*  
439 West York Street  
Norfolk, VA 23510  
cell: (757) 647-0187  
voip: (301) 713-7782  
fax: (757) 512-8295  
<http://www.moc.noaa.gov/tj/>

[Quoted text hidden]



Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>

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## OPR-G380: Soundings and Set line spacing

5 messages

---

Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>

Sat, May 30, 2015 at 11:43 PM

To: Matthew Jaskoski - NOAA Federal <matthew.jaskoski@noaa.gov>

Cc: "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>

Jasko,

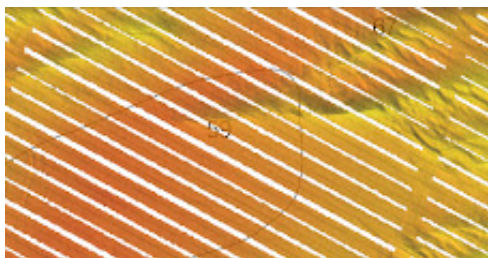
When sorting through some of the Charleston surveys where TJ is using set line spacing with concurrent 200% MB to achieve object detection. We noticed that there were a few soundings per sheet that land between the MB lines.

Section 5.2.2.3 of the 2014 HSSD says "All charted depths falling between sounding lines and shallower than adjacent surveyed soundings shall be verified or disproved."

In TJ's case, most of these soundings fall within very flat bottom areas and are 1-2 ft different on either side of the soundings (see attached). At such slight differences, it would be hard to say if it were within our estimated uncertainty or just a shoal sounding. Interested to hear what AHB's thoughts are and please don't hesitate to ask if you would like to discuss further.

Very respectfully,  
Joe Carrier, LT/NOAA

Field Operation's Officer, NOAA Ship *Thomas Jefferson*  
439 West York Street  
Norfolk, VA 23510  
cell: (757) 647-0187  
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<http://www.moc.noaa.gov/tj/>



59foot\_32\_33\_48n\_79\_32\_00W\_sounding.jpg  
470K

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Matthew Jaskoski - NOAA Federal <matthew.jaskoski@noaa.gov>

Mon, Jun 1, 2015 at 6:30 PM

To: Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>, Edward Owens - NOAA Federal <edward.owens@noaa.gov>

Cc: "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>

Hey Joe (I'm looping in Ed here for carto-perspective),

I think by the letter of the law the centroid should be ensonified to remove the charted shoal sounding with a deeper one. However, as you point out 1-2 ft is right about the TVU as well as right around the charted depth vertical uncertainty for a CATZOC A1 area as depicted on the final product.

Considering there has been little change to the seafloor, and the new depths are w/in 1-2ft of the charted depths it does seem like a waste of resources to slit these lines simply to "paint the number" I don't think we will have a

problem superseding soundings in the type of situation you described - Ed what do you think?

Jasko

Lieutenant Commander Matthew Jaskoski, NOAA  
Chief, Atlantic Hydrographic Branch  
439 W. York St.  
Norfolk, VA 23510  
Office: 757-441-6746 x200  
Cell: 757-647-3356

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**CAPT Shepard Smith** <shep.smith@noaa.gov>

Mon, Jun 1, 2015 at 7:04 PM

To: Matthew Jaskoski - NOAA Federal <matthew.jaskoski@noaa.gov>

Cc: Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>, Edward Owens - NOAA Federal <edward.owens@noaa.gov>, "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>

Also, there is no indication of anything unusual in the sidescan, and no indication of unresolved shoaling (gradient of seafloor is level on both sides of the gap).

CAPT Shepard M. Smith, NOAA

[Quoted text hidden]

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**Edward Owens - NOAA Federal** <edward.owens@noaa.gov>

Tue, Jun 2, 2015 at 3:46 PM

To: CAPT Shepard Smith <shep.smith@noaa.gov>

Cc: Matthew Jaskoski - NOAA Federal <matthew.jaskoski@noaa.gov>, Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>, "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>

CAPT, et al,

Didn't seem to get any of the graphics described in the thread...? No matter, think I get the gist. Based on Shep's last statement, that recount is the best practice we apply for shoal disprovals in set line spacing datasets. If there is an indication of shoaling or indication thereof in the SS we would question the ability to disprove that shoal sounding and apply logic of the magnitude of depth variance and nav. signif. between the surveyed and charted depths to decide the charting action. If no shoaling is indicated by those same means the shoaler charted sounding is superseded by the survey data. If this occurs on the edge of the survey (outermost line) we would typically resort to retaining the shoaler charted value. Does that hit all the notes?

Regards, Edward

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**Shep Smith - NOAA Federal** <shep.smith@noaa.gov>

Tue, Jun 2, 2015 at 4:29 PM

To: Edward Owens - NOAA Federal <edward.owens@noaa.gov>

Cc: Matthew Jaskoski - NOAA Federal <matthew.jaskoski@noaa.gov>, Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>, "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>

Ed,

Thanks, I think that answers the question, and I think is a reasonable approach. We will use this guidance in choosing when to split.

Best Regards,

Shep

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**CAPT Shepard M. Smith, NOAA**  
Commanding Officer, NOAA Ship Thomas Jefferson  
National Oceanic and Atmospheric Administration

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Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>

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## OPR-G380-TJ-15

2 messages

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**Joseph Carrier - NOAA Federal** <joseph.carrier@noaa.gov> Sun, Jun 7, 2015 at 11:06 PM  
To: Michael Gonsalves - NOAA Federal <michael.gonsalves@noaa.gov>  
Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, "CO.Thomas Jefferson - NOAA Service Account" <co.thomas.jefferson@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>

LCDR Gonsalves,

The project instructions require TJ to use HSSD 2014. TJ is requesting to use the 2015 HSSD for OPR-G380-TJ-15.

Please advise if HSD has any concerns.

Very respectfully,  
Joe Carrier, LT/NOAA

Field Operation's Officer, NOAA Ship *Thomas Jefferson*  
439 West York Street  
Norfolk, VA 23510  
cell: (757) 647-0187  
voip: (301) 713-7782  
fax: (757) 512-8295  
<http://www.moc.noaa.gov/tj/>

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**Kathryn Pridgen - NOAA Federal** <kathryn.pridgen@noaa.gov> Mon, Jun 8, 2015 at 2:00 PM  
To: Joseph Carrier - NOAA Federal <joseph.carrier@noaa.gov>

Joe,  
HSD has no issues with using HSSD 2015 instead of HSSD 2014.

Katy Pridgen  
[Quoted text hidden]  
—  
Kathryn Pridgen  
Physical Scientist  
NOAA-HSD OPS  
301-713-2722 ext 145  
[kathryn.pridgen@noaa.gov](mailto:kathryn.pridgen@noaa.gov)

APPROVAL PAGE

H12795

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

The following products will be sent to NGDC for archive

- H12795\_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12795\_GeoImage.pdf

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

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

**Lieutenant Commander Matthew Jaskoski, NOAA**  
Chief, Atlantic Hydrographic Branch