H10813

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic/Side Scan Sonar

Field No. WH-10-7-98

Registry No. H10813

LOCALITY

State Florida

General Locality North Atlantic Ocean

Locality Approaches to Saint Marys River

1998

CHIEF OF PARTY
LCDR J.W. Humphery

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DATE SEP 7 1998

NOAA FORM 77-28
(-72)

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

REGISTRY NUMBER:

H10813

HYDROGRAPHIC TITLE SHEET

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

FIELD NUMBER:
WH-10-7-98

State: Florida

General locality: North Atlantic Ocean

Locality: Approaches to ~~Jacksonville~~ SAINT MARY'S RIVER

Scale: 1: 10,000 Date of survey: May 21 - June 11, 1998

Instructions dated: March 20, 1998 Project Number: OPR-G354-WH

Vessel: NOAA Ship WHITING

Chief of Party: LCDR John W. Humphery

Surveyed by: LCDR John W. Humphery, LT J.S. Verlaque, LT(jg) T.A. Haupt, M.J. Annis, R. Corson, F.R. Cruz, U.L. Gardner, P.G. Lewit, K.B. Shaver

Soundings taken by echo sounder, hand lead-line, or pole: DSF 6000N fathometer

aphic record scaled by: WHITING Personnel

Graphic record checked by: WHITING Personnel

Protracted by: N/A Automated plot by: ~~HP 750~~ HEWLETT PACKARD DESIGNJET 350C

Verification by: Hydrographic Surveys Branch PERSONNEL

Soundings in: Feet: ~~F~~ Fathoms: ___ Meters: (*) at MLW: ___ MLLW: (*):

Remarks: **Time Zone Used, 0 (UTC)**

Basic Hydrographic and 200% Side Scan Sonar

NOTES IN DESCRIPTIVE REPORT WERE MADE IN RED DURING OFFICE PROCESSING.

AWOIS/SURF ✓ 9/3/98 SJT

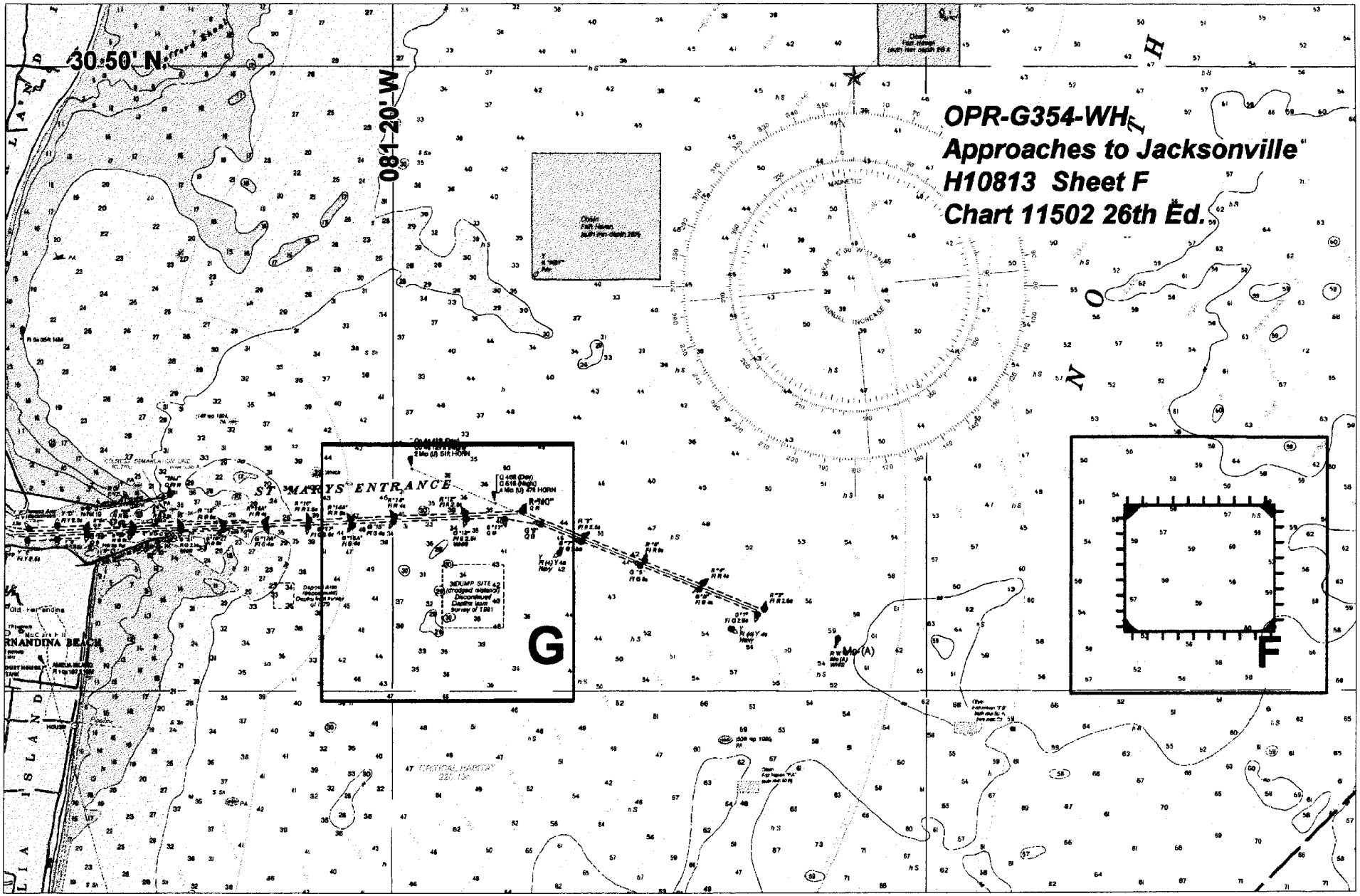

30°50' N.
081°20' W
OPR-G354-WH
Approaches to Jacksonville
H10813 Sheet F
Chart 11502 26th Ed.
NORTH
ST MARYS ENTRANCE
G
F
FERNANDINA BEACH
Old Fernandina
AMELIA ISLAND

TABLE OF CONTENTS

A. PROJECT

A.1 This survey was conducted in accordance with Hydrographic Project Instructions OPR-G354-WH, basic hydrographic survey, Atlantic Ocean, Approaches to Jacksonville, Florida.

A.2 The original instructions are dated March 20, 1998.

A.3 There have been no changes to the original instructions.

A.4 This Descriptive Report covers H10813 (sheet "F") of OPR-G354-WH. H10813 lies 18.0 nautical miles east of Fernandina Beach, Florida. See section B.2 for exact survey boundaries.

A.5 Project OPR-G354-WH responds to requests from the Jacksonville Waterway Management Council. The council is concerned that enhancement and construction of artificial reefs in the approaches to St. Johns River will reduce detail on NOS charts covering the area. This area is host to U.S. Naval vessels, commercial deep-draft vessels and tugs engaged in towing operations.

B. AREA SURVEYED

B.1 This survey covers the navigable area of the Approaches to Jacksonville, Florida. It is bounded on the west by approximate longitude 81°07'W, and on the east by approximate longitude 81°02'W. The northern and southern approximate limits are latitudes 30°44'N and 30°40'N, respectfully.

B.2 The survey comprises one sheet with the following boundaries, starting at the SE corner and proceeding clockwise:

Sheet "F":

1. 30°40'56"N 081°03'29"W
2. 30°40'56"N 081°06'18"W
3. 30°42'59"N 081°06'18"W
4. 30°42'59"N 081°03'29"W

B.3 Data collection for this survey began on May 21, 1998 (DN 141). Data collection ended on June 11, 1998 (DN 162).

C. SURVEY VESSELS

C.1 The following vessels were used during this survey:

Vessel	EDP Number	Primary Function
NOAA Ship Whiting	2930(WTEW)	Hydrography and Side Scan Operations
NOAA Launch WH-2	2932(1014)	Hydrography and Side Scan Operations
NOAA Launch WH-1	2931(1015)	Hydrography and Side Scan Operations

C.2 No unusual vessel configurations were used during this survey.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

See also Evaluation Report

D.1 All software used for data aquisition and processing are contained on the **HYDROSOFT 8.2 (plus updates as of 4/22/98)** compact disc provided by Atlantic Hydrographic Branch (N/CS33). The following is a list of software used from this disc:

HYPACK for Windows version 7.1a
HSD Utilities
Hydrographic Processing System
HPTools

D.2 The SEABIRD SBE-19 sound velocity profile unit was utilized with **SEASOFT 3.3M** and **SEACAT 2.0** software. The program **VELOCITY** (Version 3.1, February 1998) was used to process the collected data and calculate velocity corrections.

E. SONAR EQUIPMENT

E.1 The WHITING and its launches conducted all side scan sonar operations using an EG&G Model 260 image-corrected side scan sonar recorder and a 100 kHz Model 272-T towfish.

E.2 The towfish was configured with a 20° beam depression, which is the normal setting and yields the optimum beam correction.

E.3 The 100 kHz frequency was used throughout the survey.

E.4 a. During survey preparation, it was determined that the depth of water in the survey area would require only one range scale to cover the entire sheet. A range scale 100 meters was used with a line spacing of 80 meters. This range scale was used to obtain complete (200%) area coverage and provide optimal contact resolution. The line spacing is in accordance with the value specified in section 7.3.2.1 of the Field Procedures Manual (FPM). Data collected with an EPE of 30 or greater was rejected or smoothed during post-processing, so the maximum line spacing was never exceeded.

E.4 b. Confidence checks were obtained during passes by bottom features such as sand waves, scours and substrate density changes. These features were annotated on the sonargram.

E.4 c. Any holidays with a length of 200 meters or less not covered with 200% side scan sonar were covered with 100% side scan sonar. In all other areas, two hundred percent side scan coverage was completed. All side scan coverage was checked with swath plots to ensure proper overlap between adjoining lines. All relevant and questionable contacts were investigated using a reduced side scan range scale (either 50 or 75-meter range scale, dependent on depth).

E.4 d. There were no degraded data returns collected during this survey.

E.4 e. On NOAA Ship WHITING, the SSS towfish was deployed from a Reuland winch using one of two armored cables in conjunction with an A-frame on the stern. The armored cable was connected to the SSS recorder by a slip-ring assembly. On launches 1014 and 1015 the SSS towfish was deployed using a Superwinch in conjunction with an adjustable davit arm on the stern. The SSS towfish was towed with a vinyl-coated Kevlar cable and was connected to the recorder by a slip-ring assembly.

E.5 Significant side scan sonar contacts were investigated using side scan sonar at a reduced range scale. Singlebeam echosounder was also utilized for contact investigation with a line spacing of 10 meters. Development survey lines were routinely run with side scan sonar at 50 and 75-meter range scale. Detailed descriptions of all AWOIS items and investigated contacts falling within the Navigable Area are addressed in the ITEM INVESTIGATION REPORTS found in section N.

E.6 All overlap was checked and holidays identified during post processing using **HPS_MI**, a MapBasic program provided by Hydrographic Surveys Division (N/CS32) to accompany **MapInfo** software **version 4.5.**

F. SOUNDING EQUIPMENT

F.1 All hydrographic soundings were acquired using a Raytheon Model 6000N Digital Survey Echosounder.

F.2 No other sounding equipment was used.

F.3 There were no faults in sounding equipment that affected the accuracy or quality of the data.

F.4 Both high (100 kHz) and low (24 kHz) frequency sounding data were recorded during data acquisition. Only high frequency soundings were plotted.

G. CORRECTIONS TO SOUNDINGS

G.1 a. Sound Velocity Correctors

The velocity of sound through water was measured using a Sea-Bird SBE 19 Seacat Profiler (s/n 196093-1060). Seacat Data Quality Assurance Tests were conducted after each respective velocity cast to ensure that the unit was operating within tolerance.

All sound velocity data were processed using program **VELOCITY.** Computed velocity correctors were entered into the HPS sound velocity table and re-applied during post-processing to both high and low frequency soundings.

The following is a list of sound velocity casts performed for H10813:

Cast Number	Day No.	Vessel Covered	Position of Cast		Days Covered
			Latitude	Longitude	
51	141	WHITING	30°42'18"N	081°04'12"W	141-142
52		Launches			
53	147	WHITING	30°42'26"N	081°04'41"W	147-152
54		Launches			
79	159	WHITING	30°42'46"N	081°04'59"W	159-162
80		Launches			

d. Leadline Comparison

Dual leadline comparisons with the DSF-6000N were conducted for WHITING during OPR-G354-WH (H10813) on:

DN 148 at 30°41'06"N and 081°06'36"W (45 ft depths)

Weather and sea conditions were calm and proved ideal for performing the leadline comparison. No corrections to soundings were needed. Leadlines used were calibrated on February 11, 1997, and the calibration confirmed that the leadline error was negligible. See the fathometer record on the above listed days for actual DSF 6000N readings.

A leadline comparison was performed for the launches on:

DN 133 at 30°23'42"N and 081°22'48"W (15 ft depths)
DN 150 at 30°24'15"N and 081°24'26"W (15 ft depths)
DN 151 at 30°42'21"N and 081°18'22"W (45 ft depths)

Weather and sea conditions were fair and proved satisfactory for performing the leadline comparisons. No corrections to soundings were needed. Copies of the leadline check data are included in the Separates, section IV. DATA FILED WITH FIELD RECORDS

The **DAILYDQA** program used in conjunction with the ship's barometer was used to assure that the MOD III Diver Least Depth Gauge was working properly. Daily results fell within specified operating ranges. CTD casts were used in the **SMLGAUGE** program (v3.1) to calculate least depth measurements.

f. Static Draft

The static draft correction for launches 1014 and 1015 is 0.55 meters, and was measured on July 28, 1993. The corrector was entered into HPS Offset Tables 2 and 1,* respectively. The correction for static draft for WHITING is 3.2 meters, a historical value which WHITING divers confirmed with a MOD III Diver Least Depth Gauge on May 11, 1995. The corrector was entered into Offset Table 9.* Static draft correctors were applied during data processing for each survey platform.

g. Dynamic Draft (Settlement and Squat Correctors)

Settlement and squat values for launch 1014 were determined on March 16, 1998, and were entered into HPS Offset Table 2.* Settlement and squat values for launch 1015 were determined on March 16, 1998, and were entered into HPS Offset Table 1.* Settlement and squat values for WHITING were determined on March 26, 1996, and were entered into HPS Offset Table 9.* The settlement and squat correctors were applied to the sounding data in real time for each survey platform. Refer to Separate IV* for data records.

h. Heave, Roll, and Pitch Correctors

Heave correctors for data acquired by WHITING, launch 1014, and launch 1015 were determined by a TSS Dynamic Motion Sensor DMS-05. Heave correctors were collected during data acquisition and applied to raw data during the **HPTools** conversion process. Serial numbers for these sensors were as follows:

Vessel	Serial Number
2930	2066
2931	2062
2932	2068

G.2 The WHITING and its launches employed no unusual or unique methods or instruments to correct echo soundings.

G.6 Tide Correctors

a. The tidal datums for this project are Mean Lower Low Water (MLLW) and Mean High Water(MHW). Soundings are referenced to MLLW. Heights of bridges and cables are referenced to MHW. The operating tide station at Fernandina Beach, Florida (872-0030) served as control for datum determination.

* DATA FILED WITH FIELD RECORDS

b. Tidal zones are controlled by one primary gauge, Fernandina Beach, Florida (872-0030). Due to the limitations of HPS and for ease of data processing, zone SEC209 correctors were applied to all H10813 data using the predicted tides utility in HPS. All proper zones will be applied through HPS upon receipt of smooth tides from N/OES234. See following page for location of zone SEC209.

c. All sounding correctors were applied to both the narrow (100 kHz) and wide (24 kHz) DSF-6000N beams. Zoning for this project is consistent with the project instructions.

Smooth tides for H10813 were requested from N/OES234 in a letter mailed and dated June 29, 1998.

APPROVED TIDES AND ZONES WERE APPLIED DURING OFFICE PROCESSING.

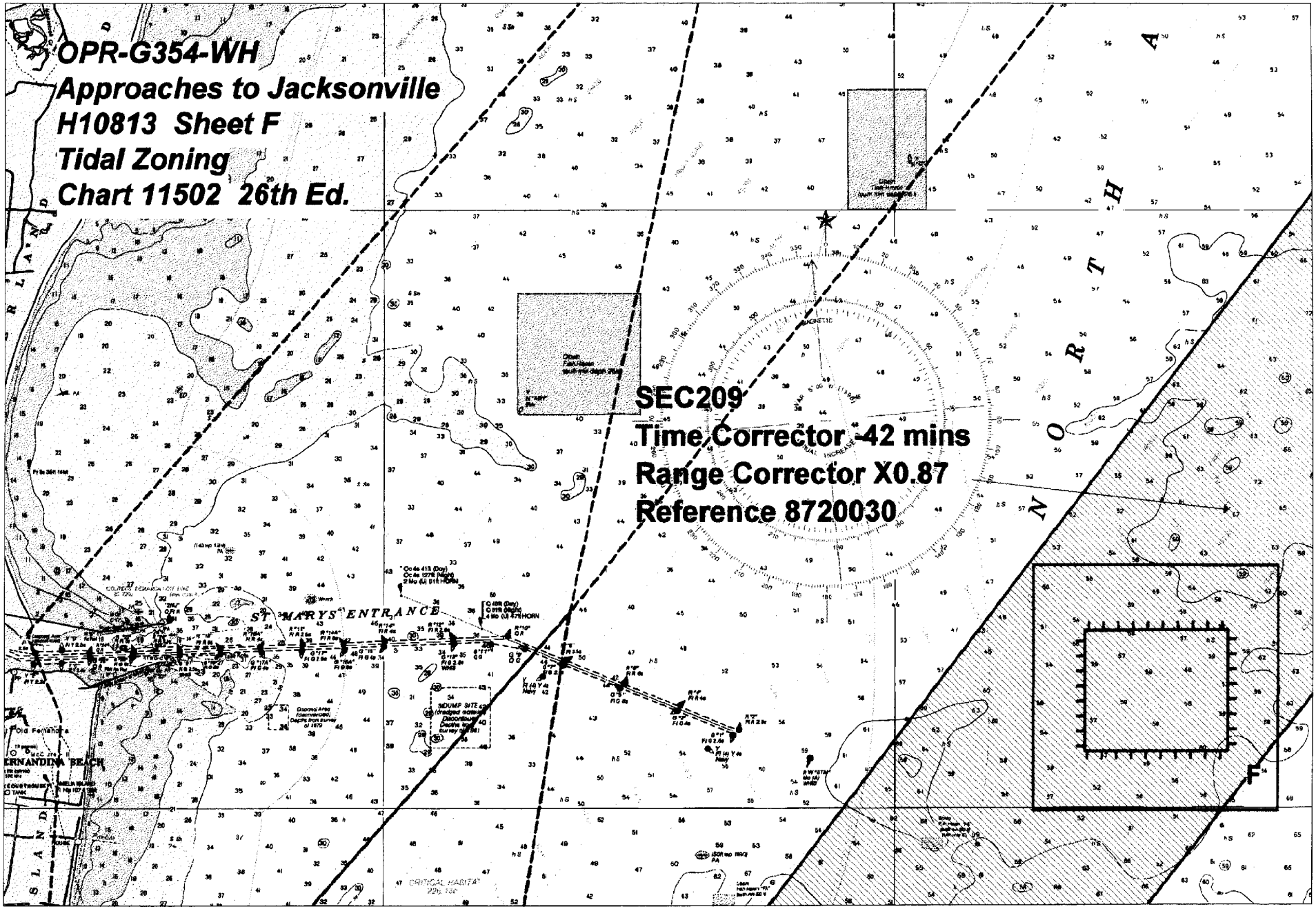
H. CONTROL STATIONS SEE ALSO EVALUATION REPORT

The horizontal datum for this survey is the North American Datum of 1983 (NAD 83). No horizontal control stations were established for this survey.

I. HYDROGRAPHIC POSITION CONTROL

I.1 This survey was conducted using the Global Positioning System (GPS) corrected by the U.S. Coast Guard (USCG) Differential GPS reference station network. The launches and the ship used an Ashtech Sensor GPS receiver with a CSI MBX1 beacon receiver supplying USCG correctors for DGPS navigation. Ashtech receivers were automatically initialized by HSDutils and the CSI MBX1 units were preset to the appropriate station and frequency.

I.2 Accuracy requirements were met as specified by the Hydrographic Manual and Field Procedures Manual (FPM). The Horizontal Dilution of Precision (HDOP) and Expected Position Error (EPE) specified by the FPM were monitored during on-line data collection. If the positioning degraded beyond the acceptable limits while on-line, the data were either smoothed or rejected.


OPR-G354-WH
Approaches to Jacksonville
H10813 Sheet F
Tidal Zoning
Chart 11502 26th Ed.
SEC209
Time Corrector -42 mins
Range Corrector X0.87
Reference 8720030
ST MARYS ENTRANCE
F

I.3 Differential GPS Equipment:

The serial numbers of the Ashtech Sensor and CSI MBX1 receivers on the data acquisition platforms are as follows:

Vessel	Device	Serial Number
2930 (WTEW)	Ashtech Sensors	700417B1203 (system A) 700417B1191 (system B)
	CSI MBX1	X-1318 (system A) X-1081 (system B)
2931 (1015)	Ashtech Sensor	700417B1194
	CSI MBX1	X-1088
2932 (1014)	Ashtech Sensor	700417B1055
	CSI MBX1	X-1079

I.4 Correctors were received from the Cape Canaveral, FL, and Charleston, SC radiobeacons.

I.5 a. DGPS performance checks on NOAA Ship WHITING were determined by using Shipboard Data Integrity Monitor program ("**SHIPDIM**", Version 2.1), according to section 3.4.5 of the FPM. The position determined using correctors from the Charleston, SC DGPS tower was compared to the position determined using correctors from the Cape Canaveral, FL DGPS beacon using two independent DGPS systems. SHIPDIM routinely showed the positions given by the two systems to be within 2-4 meters of each other.

I.5 b. DGPS performance checks for launch 1014 and launch 1015 were conducted while secured in the WHITING davits using correctors from the Charleston, SC DGPS tower. Simultaneous HYPACK positions were compared with WHITING. An offset in distance and azimuth was then calculated between the ship and launch system. A summary of the DGPS performance checks is included in the Separates, section III.* All DGPS performance checks confirmed that the equipment was working properly.

I.7 a. There were no unusual methods used to operate or calibrate electronic positioning equipment.

I.7 b. There were no equipment malfunctions.

I.7 c. No unusual atmospheric conditions affected data quality.

* Data Filed with Field Records

I.7 d. No systematic errors were detected which required adjustments.

I.7 e. The maximum allowed HDOP value of 4.0 was never exceeded.

I.8 f. DGPS antenna offsets were measured on March 19, 1993, for WHITING. Offsets and laybacks were measured using the high frequency echosounder transducer as the reference. Correctors were entered into Offset Table 9.* The DGPS antennae were installed on launches 1014 and 1015 on April 2, 1996, directly over the echosounder transducer. Antenna height was also measured on the same respective dates shown above, using the water line as the reference. Correctors were entered into Offset Table 1* for launch 1015 and Table 2* for launch 1014. A minimum of four satellites were used during survey H10813 providing altitude unconstrained positioning.

I.9.g. Offset, layback and height corrections for the launches aft towing boom were measured on July 28, 1993, verified on April 5, 1994, and applied by HPS during post processing. Correctors were entered into Offset Table 1* for launch 1015 and Table 2* for launch 1014. Offset, layback and height for WHITING's A-frame was measured on March 18, 1998, using the forward high frequency transducer as the reference. Correctors were entered into Offset Table 9.*

These offsets, along with the cable length, towfish height, and depth of water, were used by the HPS system to compute the position of the towfish. Copies of HPS Offset Tables 1, 2 and 9 are contained in Separate III.*

J. SHORELINE

No shoreline is contained within the boundaries of this survey.

K. CROSSLINES

A combined total of 14.78 linear nautical miles of crosslines were acquired for this survey representing 8.9% of the 165.54 linear nautical miles of mainscheme hydrography.

* DATA FILED WITH FIELD RECORDS

A plot of all main scheme soundings in feet, superimposed with cross lines, was used to conduct main scheme-to-cross line comparisons. Soundings at intersections were compared to all other soundings within a 5-mm (50-meter) radius. Based on this procedure, agreement between main scheme and cross line soundings was found to be excellent. The majority of compared soundings fell within 1 foot of each other, with only an occasional difference of 2 feet noted along contour lines.

L. JUNCTIONS

SEE ALSO EVALUATION REPORT

H10813 does not junction with any other survey.

M. COMPARISON WITH PRIOR SURVEYS

SEE ALSO EVALUATION REPORT

A comparison with prior surveys is not required for this survey, due to completion of 200% side scan sonar coverage.

N. ITEM INVESTIGATION REPORTS

CONTACT NO: 43016.7

Item Description: Concrete Culvert

Source: H10813

AWOIS Position:

Required Investigation: None **Radius:** None

Charts Affected: 11502

INVESTIGATION

Date(s): 11 June 1998 (DN 162)

Position Numbers: 49

Investigation Used: DI, ES, SSS

Surveyed Position: Lat. 30°42'27.800"N Lon. 081°03'56.269"W

Position Determined By: Differential GPS

Investigation Summary: During mainscheme hydrography, contact 43016.7 was found. During an investigation of 43016.7, divers found a culvert pile on the sandy bottom. A least depth, corrected with ~~predicted~~ APPROVED tides, of ~~47.8~~ 49 feet (~~14.6~~ 15.1 meters) was taken on the top of the pile.

CHARTING RECOMMENDATION

Recommendation: Based on the results of this survey, the hydrographer recommends charting an "obstruction, least depth known" with a least depth (corrected with ~~predicted~~ APPROVED tides) of ~~47.8~~ 49 feet at the surveyed position.

Concur

CHART 49 Obstns

SEE ALSO SECTION O. OF EVALUATION REPORT

CONTACT 45154.5

Item Description: Concrete Culvert

Source: H10813

AWOIS Position: None

Required Investigation: None **Radius:** None

Charts Affected: 11502

INVESTIGATION

Date(s): 9 June 1998 (DN 160)

Position Numbers: 1

Investigation Used: DI, ES, SSS

Surveyed Position: Lat. 30°42'06.591"N Lon. 081°04'48.479"W

Position Determined By: Differential GPS

Investigation Summary: During mainscheme hydrography, contact 45154.5 was found. During an investigation of 45154.5, divers found about 12 culverts on the sandy bottom. A least depth, corrected with ~~predicted~~ APPROVED tides, of ~~51.5~~ 52 feet (~~15.7~~ 16.0 meters) was taken on the items.

CHARTING RECOMMENDATION

Recommendation: Based on the results of this survey, the hydrographer recommends charting an "obstruction, least depth known" with a least depth (corrected with ~~predicted~~ APPROVED tides) of ~~51.5~~ 52 feet at the surveyed position.

Concur

CHART (52) Obstns

SEE ALSO SECTION O. OF EVALUATION REPORT

CONTACT NO: 45462.2

Item Description: Concrete Culvert

Source: H10813

AWOIS Position:

Required Investigation: None **Radius:** None

Charts Affected: 11502

INVESTIGATION

Date(s): 9 June 1998 (DN 160)

Position Numbers: 5

Investigation Used: DI, ES, SSS

Surveyed Position: Lat. 30°42'06.675"N Lon. 081°04'43.769"W

Position Determined By: Differential GPS

Investigation Summary: During mainscheme hydrography, contact 45462.2 was found. During an investigation of 45462.2, divers found a culvert pile on the sandy bottom. A least depth, corrected with ~~predicted~~ Approved tides, of ~~58.0~~ 59 feet (~~17.7~~ 18.0 meters) was taken on the top of the pile.

CHARTING RECOMMENDATION

Recommendation: Based on the results of this survey, the hydrographer recommends no charting change due to the surrounding depths in the area.

Concur

O. COMPARISON WITH THE CHART

SEE ALSO EVALUATION REPORT

O.1 Two charts are affected by this survey (H10813):

Chart 11480
"Charleston Light to Cape Canaveral"
35th Ed. 9 May 1998
Scale: 1:449,659

Chart 11502
"Doboy Sound to Fernandina"
26th Ed. 6 July 1996
Scale: 1:80,000

O.2 One Danger to Navigation report was submitted for this survey.

Description	Latitude	Longitude	Position Number
Obstn (48')	30°42'27.~~799~~800"N	81°03'56.26~~8~~9"W	49
Obstn (51')	30°42'06.59~~2~~1"N	81°04'48.479"W	1

See appendix A for complete danger to navigation report.

O.3 a. Overall, the soundings collected for this survey correlated well with charted depths. Survey depths were converted from meters to feet and overlaid on the largest scale chart of the area using MapInfo software. Depths generally showed minor deepening when compared to charted soundings.

O.3 b. In general, survey depths were deeper than charted depths. Differences of 1 to 3 feet were common, with and occasional difference of 4 feet.

P. ADEQUACY OF SURVEY

SEE ALSO EVALUATION REPORT

This survey is complete and fully adequate to supersede prior survey data within common areas.

Q. AIDS TO NAVIGATION

Q.2 The survey limits for sheet H10813 contain no aids to navigation.

R. STATISTICS

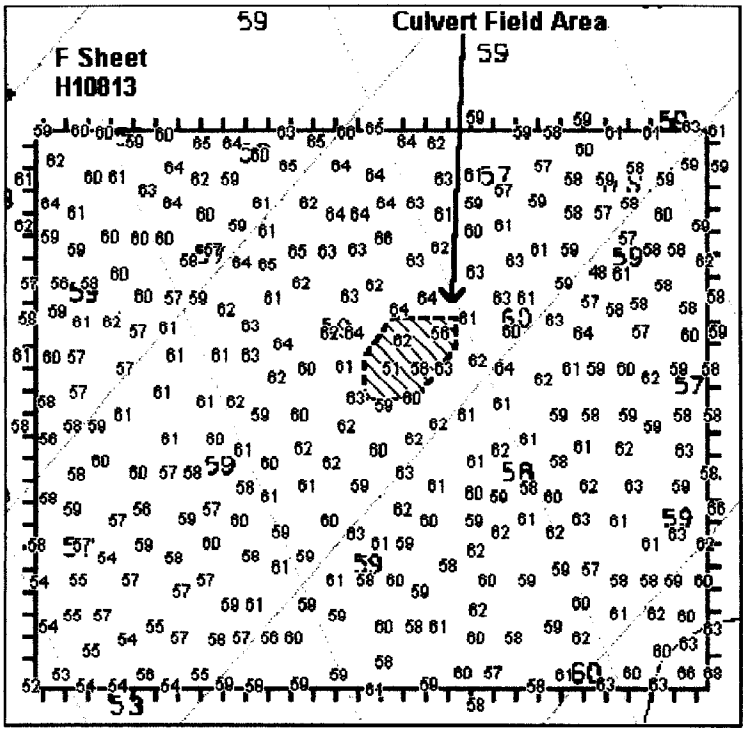
R.1	a. Number of Non-Rejected Positions	6431
	b. Linear Nautical Miles of Sounding Lines:	
	Nautical Miles of Side Scan Sonar	121.35
	Nautical Miles Hydrography	44.10
R.2	a. Square Nautical Miles of Hydrography	4.9
	b. Days of Production	9
	c. Detached Positions	3
	d. Bottom Samples	9
	e. Tide Stations.	1
	g. Velocity Casts	4

S. MISCELLANEOUS SEE ALSO EVALUATION REPORT

S.2 Bottom samples were taken at 2000-meter intervals. Samples were examined for composition and consistency, then stored in plastic bags and sent to the Smithsonian Institution.

T. RECOMMENDATIONS

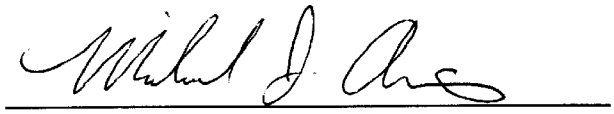
T.1 During mainscheme side scan sonar and diver investigations on H10813, many contacts were found and identified as concrete culverts. The geographic limits of these contacts were defined with side scan sonar. A singlebeam echosounder development was planned at a line spacing of 10 meters or less to cover the extent of the "culvert field". Upon development, numerous questionable echosounder spikes were found, none of which could be confirmed with side scan sonar. Due to the extensive amount of debris in the area, it is recommended that this "culvert field" be developed with multibeam sonar to accurately define depths in the area. See the following page for boundaries of the contact area. Concur



U. REFERRAL TO REPORTS

No reports or data are referred to in this Descriptive Report that are not included with this survey.

This report and the accompanying field sheets are respectfully submitted.



Michael J. Annis
Physical Scientist
Atlantic Hydrographic Branch

APPENDIX III

LIST OF HORIZONTAL CONTROL STATIONS

No horizontal control stations were needed for this survey since differential GPS employed exclusively for all positioning control. The geographic positions for the two differential GPS radio beacons used during this survey are as follows:

Charleston, SC	Lat. 32° 45.5 N
298 KHz	Long. 079° 50.6 W
Cape Canaveral, FL	Lat. 28° 27.6 N
289 KHz	Long. 080° 32.6 W

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship WHITING S-329
439 W. York Street
Norfolk, VA 23510-1114

July 10, 1998

Commander(oan)
Seventh Coast Guard District
Brickell Plaza Building
909 SE 1st Avenue
Miami, Florida 33131-3050

Dear Sir,

While undergoing hydrographic survey operations at the entrance to St. Marys River, Kings Bay Naval Station, Ferandina Harbor, Florida, (project OPR-G354-WH-98, registry H10813) the NOAA Ship WHITING discovered two items identified as hazards to navigation. I recommend that these items be included in the next Local Notice to Mariners. These items were located using Differential GPS and are based on NAD83 datum. The soundings have been reduced to Mean Lower Low Water (MLLW) using predicted tides. All depth data is preliminary pending actual tides.

	Geographic Position	
Depth	Latitude	Longitude
47'	30°42'27.799"N	081°03'56.268"W
51'	30°42'06.592"N	081°04'48.479"W

Affected Nautical Charts:

Chart Number	Edition Number	Date	Horizontal Datum
11480	35th	5/09/98	NAD 83
11502	26th	7/06/96	NAD 83
11009	34th	1/23/93	NAD 83

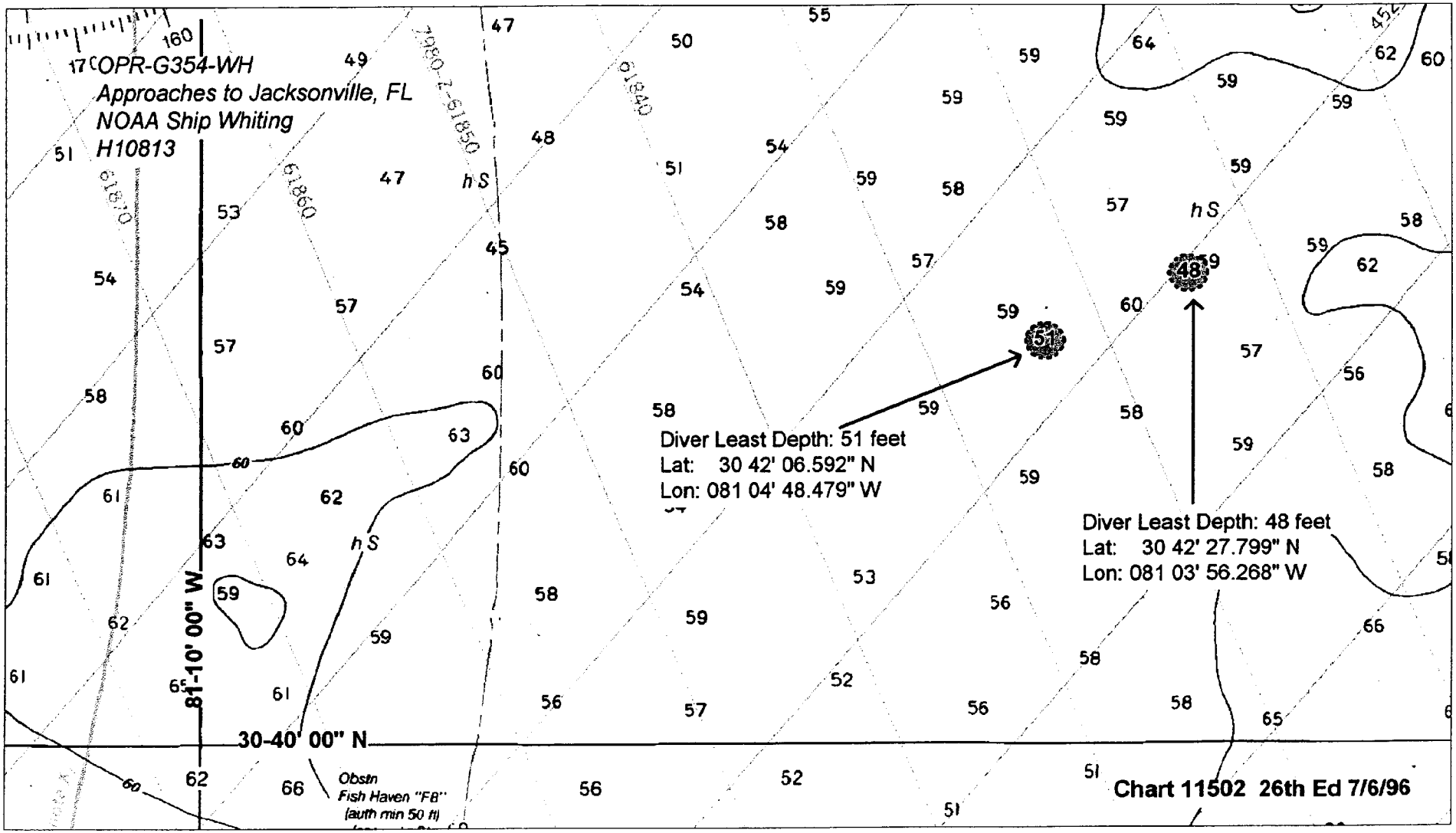
The attached chartlet depicts the position of depths to be added.

Questions concerning this report should be directed to the Atlantic Hydrographic Branch by calling 757-441-6746.

Sincerely,

John W. Humphrey, LCDR, NOAA
Commanding Officer, NOAA Ship Whiting

Attachment
cc: NIMA-NIS
N/CS26
N/CS31
NAVSTA Mayport
NAVSTA Kings Bay


OPR-G354-WH
Approaches to Jacksonville, FL
NOAA Ship Whiting
H10813
Diver Least Depth: 51 feet
Lat: 30 42' 06.592" N
Lon: 081 04' 48.479" W
Diver Least Depth: 48 feet
Lat: 30 42' 27.799" N
Lon: 081 03' 56.268" W
81-10' 00" W
30-40' 00" N
Obstn
Fish Haven "FB"
(auth min 50 ft)
Chart 11502 26th Ed 7/6/96

APPENDIX VII

APPROVAL SHEET

LETTER OF APPROVAL

REGISTRY NO. H10813

Field operations contributing to the accomplishment of this basic hydrographic survey were conducted under my direct supervision with frequent personal checks of progress and adequacy. All field sheets and reports were reviewed in their entirety and all supporting records were checked as well.

This survey is more than adequate to supersede ALL prior surveys in common areas. This survey is considered complete and adequate for nautical charting.

John W. Humphrey, LCDR, NOAA
Commanding Officer
NOAA Ship WHITING

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: August 10, 1998

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-G354-WH

HYDROGRAPHIC SHEET: H-10813

LOCALITY: Atlantic Ocean, Approaches to Jacksonville, FL

TIME PERIOD: May 21 - June 11, 1998

TIDE STATION USED: 872-0587 St. Augustine Beach, FL
Lat. 29° 51.4'N Lon. 81° 15.8'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.466 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SEC185 & SEC209

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (Meters), relative to MLLW and on Greenwich Mean Time.

CHIEF, OPERATIONAL ANALYSIS BRANCH

NOAA FORM 76-155 (11-72)

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

SURVEY NUMBER

H-10813

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 11502	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
FLORIDA (title)	X		X							1
NORTH ATLANTIC OCEAN	X		X							2
ST MARYS RIVER (title)	X		X							3
										4
										5
										6
										7
										8
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										25

Approved:

Dennis J. Ponesly [signature]

Chief Geographer AUG 13 1998

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 61-29
(12-71)

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

REFERENCE NO.

NCS33-77-98

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY *(Check)*:

☐ ORDINARY MAIL ☐ AIR MAIL

☐ REGISTERED MAIL ☒ EXPRESS

☐ GBL *(Give number)* _____

TO:

NOAA / National Ocean Service
Chief, Data Control Group, N/CS3x1
SSMC3, Station 6100
1315 East-West Hwy.
Silver Spring, MD 20910-3282

DATE FORWARDED

9-1-98

NUMBER OF PACKAGES

ONE TUBE

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

H10813 OPR-C354-WH-98

Florida, North Atlantic Ocean
Approaches to St. Mary's River

1 Mylar Smooth Sheet

1 Mylar H-Drawing for NOS Chart 11502

1 Paper Composite Plot for NOS Chart 11502

1 Descriptive Report
1 Drawing History form 76-71 for NOS Charts 11502

FROM: *(Signature)* Maxine Fetterly

Maxine Fetterly

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

Maxine Fetterly
Atlantic Hydrographic Branch
439 W. York St.
Norfolk, VA 23510

NOAA FORM 61-29 SUPERSEDES FORM C & GS 413 WHICH MAY BE USED.

This form was electronically produced by Elite Federal Forms, Inc

09/01/98

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H10813

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	6442
NUMBER OF SOUNDINGS	6442

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	6	08/04/98
VERIFICATION OF FIELD DATA	29	08/14/98
EVALUATION AND ANALYSIS	4	
FINAL INSPECTION	2	08/13/98
COMPILATION	30.50	09/01/98
TOTAL TIME	72	

ATLANTIC HYDROGRAPHIC BRANCH APPROVAL 08/14/98

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10813 (1998)

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.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

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

Hydrographic Processing System
NADCON, version 2.10
SiteWorks, version 2.01
MicroStation 95, version 5.05
I/RAS B, version 5.01

The smooth sheet was plotted using an Hewlett Packard DesignJet 350C plotter.

H. CONTROL STATIONS

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27, move the projection lines 0.863 seconds (26.585 meters or 2.66 mm at the scale of the survey) north in latitude, and 0.707 seconds (18.814 meters or 1.88 mm at the scale of the survey) east in longitude.

L. JUNCTIONS

There are no junctional surveys to the north, south, east, or west. Present survey depths are in harmony with the charted hydrography to the north, south, east, and west.

M. 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.

O. COMPARISON WITH CHART 11502 (26th Edition, July 6/96)

Hydrography

The charted hydrography originates with the prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in sections N. and O. of the Descriptive Report. Attention is directed to the following:

The uncharted obstructions listed below were located by the field unit and described as concrete culverts:

Depth ft/m	Latitude N	Longitude W
56 (17^0)	30°42'05.57"	81°04'42.67"
52 (15^8)	30°42'30.23"	81°03'57.63"
55 (16^7)	30°42'01.84"	81°04'49.31"

Due to the scale of the chart and proximity to other obstructions noted in section N. of the Descriptive Report, it is recommended that these items not be charted.

The present survey is adequate to supersede the charted hydrography within the common area.

P. ADEQUACY OF SURVEY

This is an adequate hydrographic/side scan sonar survey. No additional work is recommended.

S. MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be

forwarded to Marine Chart Division, Silver Spring, Maryland.

The following NOS Chart was used for compilation of the present survey: 11502 (26th Edition, July 6/96)

Robert Snow

Robert Snow
Cartographic Technician
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H-10769

Initial Approvals:

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

Date: August 14, 1998

Robert G. Roberson
Chief,Atlantic Hydrographic Branch

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

Date: 14 Aug 98

Andrew L. Beaver
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

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Final Approval:

Approved: Date: Sept 3, 1998

Andrew A. Armstrong, III
Captain, NOAA
Chief, Hydrographic Surveys Division

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H10813

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
11502	8/31/98	Marvin Fetterly	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED