

H10809

NOAA FORM 78-35A

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-10-6-98

Registry No. H10809

LOCALITY

State Florida

General Locality North Atlantic Ocean

Locality Approches to Jacksonville

1998

CHIEF OF PARTY
LCDR J. W. Humphrey, NOAA

LIBRARY & ARCHIVES

DATE OCT 19 1998

REGISTRY NUMBER:

H10809

HYDROGRAPHIC TITLE SHEET

FIELD NUMBER:

WH-10-6-98

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: Florida

General locality: North Atlantic Ocean

Locality: Approaches to Jacksonville

Scale: 1:10,000 Date of survey: May 2 - May 20, 1998

Instructions dated: March 18, 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, 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

Graphic record scaled by: WHITING Personnel

Graphic record checked by: WHITING Personnel

Projected by: N/A Automated plot by: HP 750 (Field), Hewlett Packard Design Jet 2500CP (Office)

Verification by: Hydrographic Surveys Branch Personnel

Soundings in: Feet: 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.

ALWAYS SURF ✓ 9/29/98 SJV

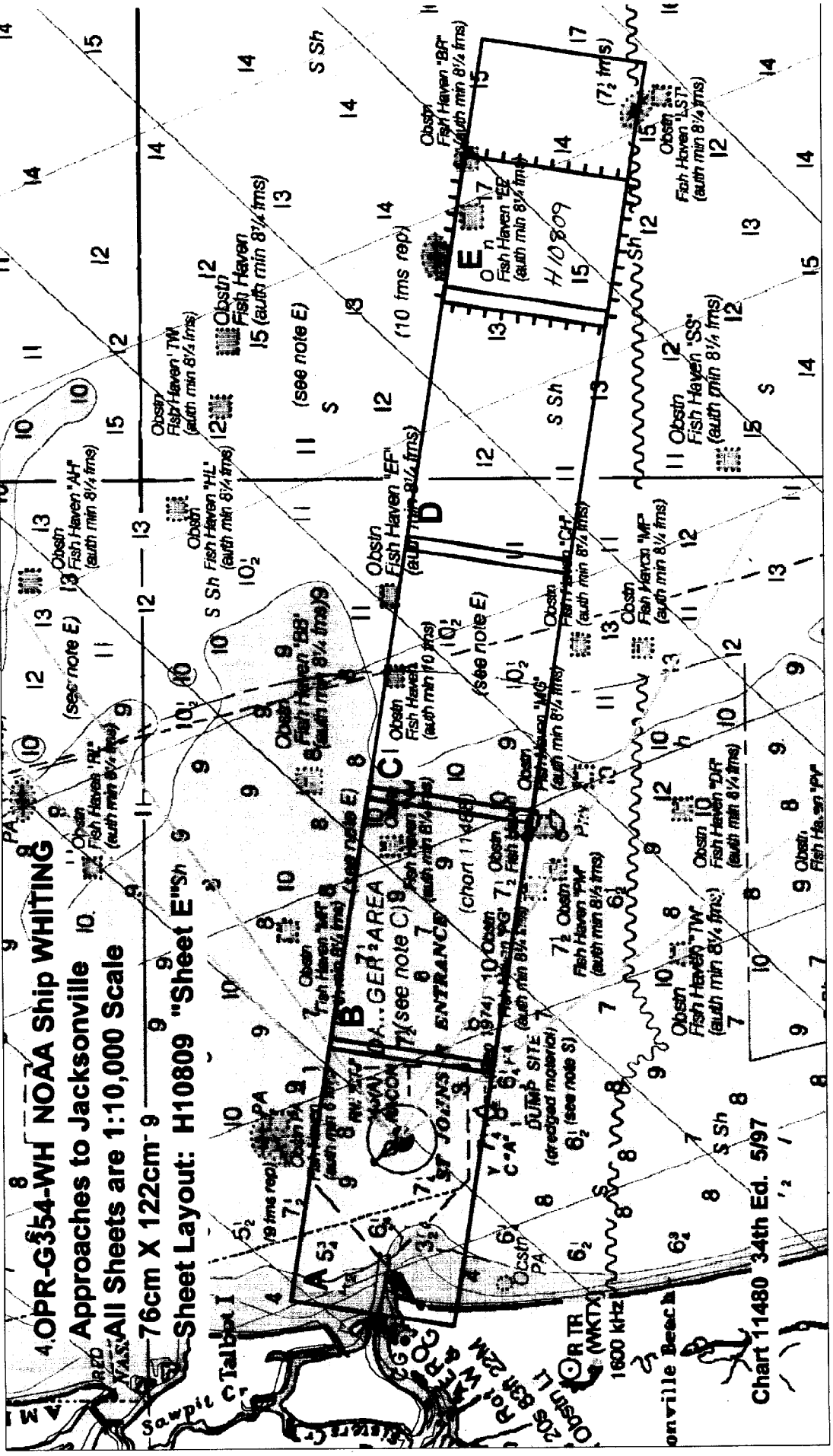
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APPENDICES *

SEPARATES *

* DATA Filed with Field Records.



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 ¹⁸~~20~~, 1998.

A.3 There ^{has} ~~have~~ been ^{one amendment} ~~no changes~~ to the original instructions.
Change #1, DATED April 30, 1998

A.4 This Descriptive Report covers H10809 (sheet "E") of OPR-G354-WH. H10809 lies 28 nautical miles east-southeast of St. Johns Point, 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 80°55'W, and on the east by approximate longitude 80°50'W. The northern and southern approximate limits are latitudes 30°22'N and 30°17'N, respectfully.

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

Sheet "E":

1. 30°17'40"N 080°51'23"W
2. 30°18'14"N 080°55'36"W
3. 30°22'17"N 080°54'52"W
4. 30°21'44"N 080°50'38"W

B.3 Data collection for this survey began on May 2, 1998 (DN 122). Data collection ended on May 20, 1998 (DN 140).

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

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 acquisition 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. A slip-ring assembly connected the armored cable to the SSS recorder.

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. 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 H10809:

Cast Number	Day No.	Vessel Covered	Position of Cast		Days Covered
			Latitude	Longitude	
33	124	WHITING	30°21'45"N	080°51'26"W	122-125
34		Launches			
41	131	WHITING	30°21'17"N	080°51'50"W	131-140
42		Launches			

d. Leadline Comparison

Dual leadline comparisons with the DSF-6000N were conducted for WHITING during OPR-G354-WH (H10809) on:

DN 089 at 30°23'07"N and 081°16'41"W (~~60~~⁴⁸ 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~~^{JANUARY 13}, 199~~7~~⁸, and the calibration confirmed that the leadline error was negligible. See the echosounder record on the above listed days for actual DSF 6000N readings.

A leadline comparison was performed for the launches on:

DN 089/090 at 30°24'15"N and 081°24'26"W
DN 107 at 30°23'48"N and 081°24'27"W (30 ft depths)
DN 133 at 30°23'42"N and 081°22'48"W

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

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 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 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.*

* DATA Filed with Field 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

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.

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 SEC185 correctors were applied to all H10809 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 SEC188.

Smooth tides for H10809 were requested from N/OES234 in a letter mailed and dated June 2, 1998. ** Approved Tides AND Zoning were applied during Office processing.*

The WHITING employed no unusual or unique methods or instruments to correct echo soundings.

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.

H. CONTROL STATIONS *see Also Evaluation Report.*

The horizontal datum for this survey is the North American Datum of 1983 (NAD 83). A horizontal control station was established at St. Johns Lighthouse for the use of a NOAA VHF "Fly-Away" station. Ashtech software **GPSS**, along with NGS software **FORWARD3D** and **INVERSE3D** were used to compute the station position. NGS program **MONITOR** was used as a quality check for the computed position. Geographic position and DQA results of **MONITOR** for this station can be found in appendix III of this report. * *DATA filed with Field Records.*

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 and NOAA-established VHF "Fly-Away" station. The launches and the ship used an Ashtech Sensor GPS receiver with a CSI MBX1 beacon receiver supplying USCG correctors for DGPS navigation. When the NOAA VHF station was used, DGPS correctors were received with Maxon or TAD VHF radios. HSDutils automatically initialized Ashtech receivers 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.

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)

I.4 Correctors were received from the Cape Canaveral, FL, Charleston, SC and NOAA VHF 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 Cape Canaveral, FL DGPS beacon were compared to the position determined using correctors from the Charleston, SC or the NOAA VHF 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.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.

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.* A minimum of four satellites was used during survey H10809 providing altitude unconstrained positioning.

I.9.g. 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. A copy of HPS Offset Table 9 is contained in Separate III.*

*DATA filed with Field Records.

J. SHORELINE

No shoreline is contained within the boundaries of this survey.

K. CROSSLINES

A combined total of 41.1 linear nautical miles of crosslines were acquired for this survey representing 11.0% of the 374.52 linear nautical miles of mainscheme hydrography.

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 to 3 feet of each other.

L. JUNCTIONS See Also Evaluation Report.

L.1 On its western edge, survey H10809 junctions with survey H10800. H10800 is a survey, sheet "D", of OPR-G354-WH, with a scale of 1:10,000. A comparison of data collected on H10809 to that on H10800 proved no significant differences between soundings exist. Generally agreement was excellent, with an occasional 1 to 3-foot difference.

M. COMPARISON WITH PRIOR SURVEYS See Also Evaluation Report.

A comparison with prior surveys is not required for this survey, as stated in the Hydrographic Project Instructions for OPR-G354-WH.

N. ITEM INVESTIGATION REPORTS

N.1 During mainscheme hydrography, an uncharted wreck was found at lat. $30^{\circ}20'55.920''$ ^{1 42,380}N, lon. $080^{\circ}50'34.861''$ ^{6 726}W. This wreck is located within a charted fish haven with an authorized minimum depth of 50 feet, and does not rise above this depth. No charting change is recommended. *CONCUR*

The wreck protrudes less than 10 feet off the bottom in depths of 110 feet. SKM 10/14/98

O. COMPARISON WITH THE CHART *See also Evaluation Report.*

O.1 One chart is affected by this survey (H10809):

Chart 11480
"Charleston Light to Cape Canaveral"
34th Ed. 3 May 1997
Scale: 1:449,659

O.2 No Danger to Navigation reports were submitted as a result of this survey.

O.3 a. Overall, the soundings collected for this survey correlated well with charted depths. Survey depths were converted from meters to fathoms and overlaid on the largest scale chart of the area using MapInfo software.

O.3 b. Only two charted soundings exist within the survey limits for H10809, "15" and "17" fathoms. Survey depths were .3 to .8 fathoms deeper than the charted "15". Survey data showed no difference when compared to the charted "17".

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 No charted aids to navigation are located within H10809.

R. STATISTICS

R.1 a. Number of Non-Rejected Positions 13772
b. Linear Nautical Miles of Sounding Lines:
 Nautical Miles of Side Scan Sonar 333.42
 Nautical Miles Hydrography 41.1
R.2 a. Square Nautical Miles of Hydrography 15.1
b. Days of Production 12
c. Detached Positions 0
d. Bottom Samples 16
e. Tide Stations. 1
g. Velocity Casts 2

S. MISCELLANEOUS

S.1 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.

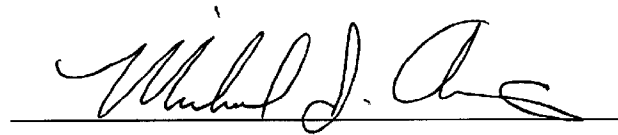
T. RECOMMENDATIONS

T.1 No further survey work is recommended.

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.

A handwritten signature in cursive script, appearing to read "Michael J. Annis", is written above a horizontal line.

Michael J. Annis
Physical Scientist
Atlantic Hydrographic Branch

APPENDIX III

LIST OF HORIZONTAL CONTROL STATIONS & MONITOR Output Plots

The geographic positions for the differential GPS stations used during this survey are as follows:

Charleston, SC 298 KHz	Lat. 32° 45.5 N Long. 079° 50.6 W
Cape Canaveral, FL 289 KHz	Lat. 28° 27.6 N Long. 080° 32.6 W
NOAA VHF "Fly Away" 171.2 MHz	Lat. 30° 23.169 N Long. 081° 23.875 W

APPENDIX VII

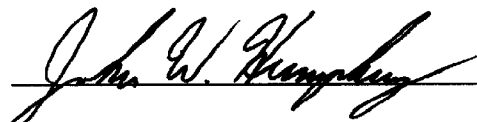
APPROVAL SHEET

LETTER OF APPROVAL

REGISTRY NO. H10809

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 OCEANIC SERVICE
Office of Ocean and Earth Sciences
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: June 16, 1998

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-G354-WH
HYDROGRAPHIC SHEET: H-10809

LOCALITY: Atlantic Ocean, Approaches to Jacksonville, FL

TIME PERIOD: May 2 - May 20, 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: SEC188.
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.

Dele H. Dietzinger, acting

CHIEF, OPERATIONAL ANALYSIS BRANCH



GEOGRAPHIC NAMES

H-10809

Name on Survey	Source											
	A ON CHART NO. 11480	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
JACKSONVILLE (title)	X		X									2
NORTH ATLANTIC OCEAN	X		X									3
												4
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Approved:

Deborah P. [Signature]
Chief Geographer

JUL 14 1998

LETTER TRANSMITTING DATA

N/CS33-90-98

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

- ORDINARY MAIL
- AIR MAIL
- REGISTERED MAIL
- EXPRESS
- GBL (Give number) _____

TO:

CHIEF, DATA CONTROL GROUP, N/CS3x1
 NOAA/NATIONAL OCEAN SERVICE
 STATION 6813, SSMC3
 1315 EAST-WEST HIGHWAY
 SILVER SPRING, ME 20910-3282

DATE FORWARDED

24 SEPT. 1998

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.

H10809

FLORIDA, NORTH ATLANTIC OCEAN, APPROACHES TO JACKSONVILLE

1 (ONE) TUBE CONTAINING THE FOLLOWING:

- 1 ORIGINAL DESCRIPTIVE REPORT FOR H10809
- 1 SMOOTH SHEET FOR H10809
- 1 COMPOSITE DRAWING FOR NOS CHART 11480
- 1 H-DRAWING FOR NOS CHART 11480
- 1 DRAWING HISTORY FORM #76-71 FOR NOS CHART 11480
- 1 RECORD OF APPLICATION TO CHARTS FORM #75-96 FOR SURVEY H10809

FROM: (Signature)


 Richard W. Blevins

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

ATLANTIC HYDROGRAPHIC BRANCH
 N/CS33
 439 WEST YORK STREET
 NORFOLK, VA 23510-1114

09/23/98

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H10809

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	13772
NUMBER OF SOUNDINGS	13772

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	12	06/12/98
VERIFICATION OF FIELD DATA	10	08/07/98
EVALUATION AND ANALYSIS	2	
FINAL INSPECTION	10	09/10/98
COMPILATION	25	09/16/98
TOTAL TIME	59	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		09/23/98

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10809 (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 2500CP 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 0.878 seconds (27.032 meters or 2.70 mm at the scale of the survey) north in latitude, and 0.750 seconds (20.031 meters or 2.00 mm at the scale of the survey) east in longitude.

L. JUNCTIONS

H10800 (1998) to the West

Standard junctions were effected between the present survey and survey H10800 (1998). There are no junctional surveys to the East, South or North. Present survey depths are in harmony with the charted hydrography to the East, South and North.

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 11480 (35th Edition, May 9/98)

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. The following should be noted:

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.

H10809

Robert Snow

Robert Snow
Cartographic Technician
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H10809

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.

Richard W. Blevins Date: 9/10/98
Richard W. Blevins
Cartographer
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.

Andrew L. Beaver Date: 9/23/98
Andrew L. Beaver
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

Final Approval:

Approved: Andrew A. Armstrong Date: Oct 19, 1998
Andrew A. Armstrong, III
Captain, NOAA
Chief, Hydrographic Surveys Division

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H10809

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
11480	9/16/98	Richard Blum	Full Part Before After Marine Center Approval Signed Via Drawing No.
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