

H10793

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-10-1-98

Registry No. H10793

LOCALITY

State Florida

General Locality North Atlantic Ocean

Locality Approaches to Jacksonville

1998

CHIEF OF PARTY
LCDR J.W. Humphery

LIBRARY & ARCHIVES

DATE DEC 29 1998

REGISTRY NUMBER:

H10793

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-10-1-98

State: Florida

General locality: North Atlantic Ocean

Locality: Approaches to Jacksonville

Scale: 1: 10,000 Date of survey: March 26 - May 3, 1998

Instructions dated: March 20, 1997 Project Number: OPR-G354-WH

Vessel: NOAA Ship WHITING

Chief of Party: LCDR John W. Humphrey

Surveyed by: LCDR J.W. Humphrey, LT J. 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

Protracted by: N/A Automated plot by: HP 750C (Field) / Hewlett Packard Design Jet 2500CP Plotter (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 in Red were made during Office Processing.

AWOIS/54RF ✓ 10/13/98 SJV

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APPENDICES

SEPARATES

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 H-10793 (sheet "A") of OPR-G354-WH. H-10793 lies 3.0 nautical miles east 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 81°24'W, and on the east by approximate longitude 81°16'W. The northern and southern approximate limits are latitudes 30°26'N and 30°21'N, respectfully.

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

Sheet "A":

1. 30°21'09"N 081°16'53"W
2. 30°22'11"N 081°24'28"W
3. 30°26'14"N 081°23'44"W
4. 30°25'12"N 081°16'09"W

B.3 Data collection for this survey began on March 26, 1998 (DN 085). Data collection ended on May 3, 1998 (DN 123).

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 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 various line spacing to accommodate multiple range scales. Range scales of 75 and 100 meters were used with a line spacing of 57 and 80 meters, respectfully. These range scales were 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. 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. Comparison velocity casts were also performed on day numbers 085 and 097. No difference was found to indicate any problem with sound velocity tables used for sounding correction.

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 H-10793:

| Cast Number | Day No. | Vessel Covered | Position of Cast | | Days Covered |
|--------------------|----------------|-----------------------|-------------------------|------------------|---------------------|
| | | | Latitude | Longitude | |
| 5 | 085 | WHITING | 30°23'40"N | 081°20'00"W | 085-091 |
| 6 | | Launches | | | |
| 7 | 097 | WHITING | 30°24'18"N | 081°19'54"W | 097-107 |
| 8 | | Launches | | | |
| 15 | 112 | WHITING | 30°24'34"N | 081°19'22"W | 112-118 |
| 16 | | Launches | | | |
| 25 | 120 | WHITING | 30°23'53"N | 081°19'30"W | 120-123 |
| 26 | | Launches | | | |

d. Leadline Comparison

Dual leadline comparisons with the DSF-6000N were conducted for WHITING during OPR-G354-WH (H-10793) on:

DN 089 at 30°23'07"N and 081°16'41"W (60 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 089 at 30°24'21"N and 081°22'59"W (30 ft depths)

DN 090 at 30°24'15"N and 081°24'26"W (15 ft depths)

DN 107 at 30°23'48"N and 081°24'27"W (30 ft depths)

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 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.

* DATA Filed with Field Records.

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.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 SEC209 correctors were applied to all H-10793 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.

Smooth tides for H-10793 were requested from N/OES234 in a letter mailed and dated May 12, 1998.* *Approved Tides and Zones were applied during Office Processing.*

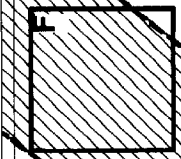
The WHITING and its launches employed no unusual or unique methods or instruments to correct echo soundings.

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.

* DATA Filed with Field Records.

OPR-G354-WH
NOAA Ship Whyking
APPROACHES TO JACKSONVILLE, FL
ALL SHEETS ARE 1:10,000-SCALE
76CM X 122CM

TIDAL ZONING



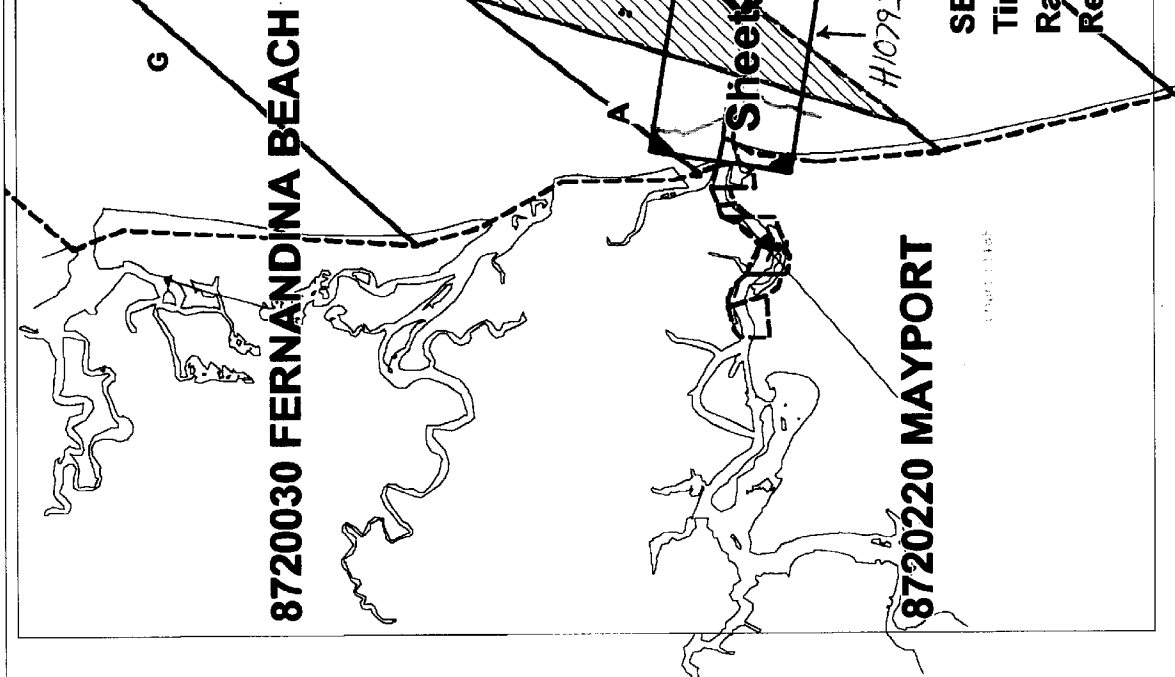
SEC209
Time Corrector -42 mins
Range Corrector X0.87
Reference 8720030

SEC185
Time Corrector -42 mins
Range Corrector X0.84
Reference 8720030

SEC188
Time Corrector -60 mins
Range Corrector X0.78
Reference 8720030

SEC186
Time Corrector -42 mins
Range Corrector X0.81
Reference 8720030

SEC187
Time Corrector -42 mins
Range Corrector X0.78
Reference 8720030



8720030 FERNANDINA BEACH

8720220 MAYPORT

H1079.3

Sheet A

Sheet B

Sheet C

Sheet D

Sheet E

G

A

B

C

D

E

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.

I.3 Differential GPS Equipment:

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

| <u>Vessel</u> | <u>Device</u> | <u>Serial Number</u> |
|---------------|-----------------|--|
| 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 using the **PCheck** program provided by Atlantic Hydrographic Branch. 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.*Pcheck routinely showed the positions given by the two systems to be within 5 meters of each other. 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.

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 H-10793 providing altitude unconstrained positioning.

* DATA filed with Field Records.

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 *See Also Evaluation Report.*

No shoreline is contained within the boundaries of this survey.

K. CROSSLINES

A combined total of 81.98 linear nautical miles of crosslines were acquired for this survey representing 10.6% of the 776.42 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-m (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.*

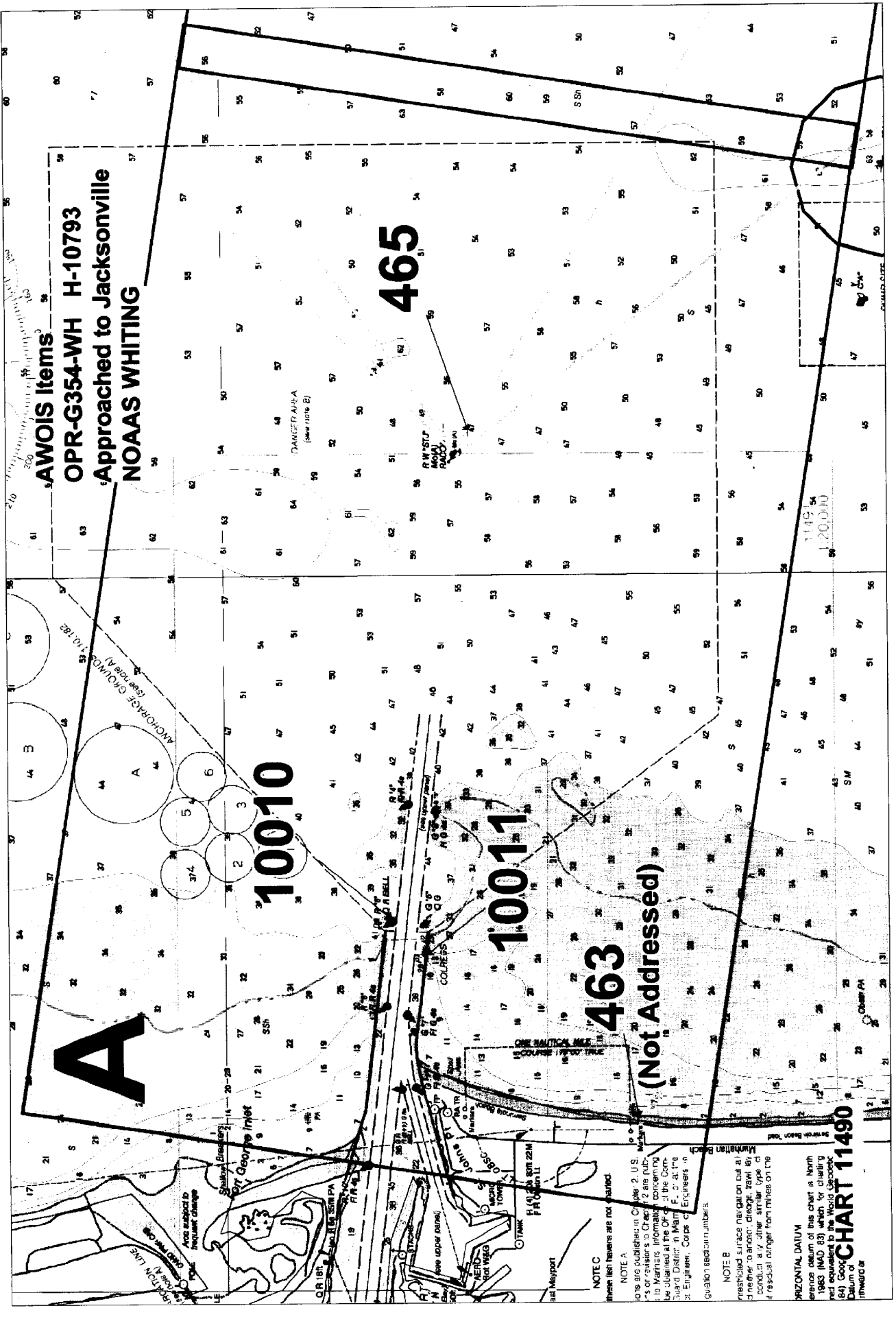
L.1 On its eastern edge, survey H-10793 junctions with survey H-10799. H-10799 is an ongoing survey, sheet "B", of OPR-G354-WH, with a scale of 1:10,000. A comparison of data collected on H-10793 to that on H-10799 proved no significant differences between soundings exist. Generally agreement was excellent, with an occasional 1 to 2 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.

* DATA Filed with Field Records.

AWOIS Items
OPR-G354-WH H-10793
Approached to Jacksonville
NOAAS WHITING



N. ITEM INVESTIGATION REPORTS

AWOIS NO: 465

Item Description: Unknown Trawler

Source: NM 7/4/54

AWOIS Position: Lat. 30°23'30.86"N Lon. 081°18'59.29"W

Required Investigation: Information only **Radius:** None

Charts Affected: 11488, 11490

INVESTIGATION

Date(s): Various

Position Numbers:

Investigation Used: ES, SSS

Surveyed Position:

Position Determined By: Differential GPS

Investigation Summary: Item 465 was unassigned for this project, and was covered with 200% side scan sonar during mainscheme hydrography. This resulted in a 1900-meter search radius. No significant contacts were found that were associated with the AWOIS reported position.

CHARTING RECOMMENDATION

Recommendation: Recommendation: Based on the results of this survey, the hydrographer recommends no charting change for this item. AWOIS item 465 should be considered resolved. The AWOIS database should be updated to reflect this resolution. *Concur*

AWOIS NO: 10010

Item Description: 14-Foot Pleasure Craft

Source: LNM26/86

AWOIS Position: Lat. 30°24'00.00"N Lon. 081°22'24.00"W

Required Investigation: Information only **Radius:** 250

Charts Affected: 11488, 11490

INVESTIGATION

Date(s): 1 May 1998 (DN 121)

Position Numbers: 14432.4

Investigation Used: ES, SSS

Surveyed Position: Lat. 30°23'57.003"N Lon. 081°22'26.099"W

Position Determined By: Differential GPS

Investigation Summary: This item was originally found during prior survey H-10646 and was recorded as contact 375.1. A side scan sonar and singlebeam echosounder investigation of this contact was performed during H-10793. Echosounder lines were run with a line spacing of 5 meters. Contact 12648.6s was subsequently found and is considered to be the same as contact 375.1 from H-10646. This contact was considered insignificant due to surrounding depths.

CHARTING RECOMMENDATION

Recommendation: Based on the results of this survey, the hydrographer recommends removal of charted dangerous wreck *PI* symbol at lat. 30°24'00.792"N, lon. 81°22'24.060"W. AWOIS item 10010 should be considered disproved. The AWOIS database should be updated to reflect this resolution. *(see 001)*

Delete (H: PI)

H10646 could not be processed by AHB;
the registry number has been reassigned.
SRB 6/19/00

AWOIS NO: 10011

Item Description: THERAPY

Source: LNM27/86

AWOIS Position: Lat. 30°23'46.80"N Lon. 081°22'39.00"W

Required Investigation: Information only **Radius:** 250

Charts Affected: 11488, 11490

INVESTIGATION

Date(s): Various

Position Numbers:

Investigation Used: ES, SSS

Surveyed Position:

Position Determined By: Differential GPS

Investigation Summary: AWOIS item 10011 was covered with 200% side scan sonar. No significant contacts were found within the assigned search radius.

CHARTING RECOMMENDATION

Recommendation: Based on the results of this survey, the hydrographer recommends removal of the charted dangerous wreck *PA* symbol at lat. 30°23'47.810"N, lon. 81°22'38.028"W. AWOIS item 10011 should be considered resolved. *CONCUR*

Delete (+) PA

CONTACT NO: 1172.4s (from H-10646)

Item Description: WRECK

Source: Prior survey H-10646

AWOIS Position:

Required Investigation: Echosounder Radius: None

Charts Affected: 11488, 11490

INVESTIGATION

Date(s): 17 April 1998 (DN 107)

Position Numbers: 12853

Investigation Used: ES

Surveyed Position: Lat. 30°23'21.169"N Lon. 81°20'50.288"W

Position Determined By: Differential GPS

Investigation Summary: This contact, originally found during prior survey H-10646, was covered with singlebeam echosounder with a line spacing of 5 meters. A least depth (corrected with predicted tides) of 36.4 feet (11.1 meters) was found.

Approved

37.2 ~~35.4~~

~~10.7~~ *11.3*

CHARTING RECOMMENDATION

Recommendation: Based on the results of this survey, the hydrographer recommends charting a wreck symbol with a least depth (corrected with predicted tides) of 36.4 feet. *Correct*

Approved

~~35.4~~
37.2

*H10646 could not be processed by AHB,
the registry number has been reassigned
SRB 6/19/00*

~~Chart 35 WK~~

Chart 37 WK

CONTACT NO: 5845.6

Item Description: WRECK

Source:

AWOIS Position:

Required Investigation: Echosounder Radius: None

Charts Affected: 11488, 11490

INVESTIGATION

Date(s): 26 April 1998 (DN 116)

Position Numbers: 13786.5

Investigation Used: ES

Surveyed Position: Lat. 30°24'04.625"N Lon. 081°22'44.934"W

Position Determined By: Differential GPS

Investigation Summary: Side scan sonar contact number 5845.6 was found during mainscheme hydrography and then investigated with singlebeam echosounder. No dive was scheduled for this item due to current, water clarity and high traffic in the area. A least depth (corrected with ~~predicted~~ tides) of ~~19.0~~ 16.9 feet (5.1~~8~~ meters) was found.
Approved ~~17.0~~

CHARTING RECOMMENDATION

Recommendation: Based on the results of this survey, the hydrographer recommends charting a wreck symbol with a least depth (corrected with ~~predicted~~ tides) of ~~19.0~~ feet. *CONCUR*
Approved ~~17.0~~ 16.9

Chart (17) WK

CONTACT NO: 5842.2

Item Description: WRECK

Source:

AWOIS Position:

Required Investigation: Echosounder Radius: None

Charts Affected: 11488, 11490

INVESTIGATION

Date(s): 26 April 1998 (DN 116)

Position Numbers: 13798.9

Investigation Used: ES

Surveyed Position: Lat. 30°24'05.338"N Lon. 081°22'51.076"W

Position Determined By: Differential GPS

Investigation Summary: Side scan sonar contact number 5842.2 was found during mainscheme hydrography and then investigated with singlebeam echosounder. A least depth (corrected with predicted tides) of 10.5 feet (3.2 meters) was found. No dive was scheduled for this item due to current, water clarity and high traffic in the area.

CHARTING RECOMMENDATION

Recommendation: Based on the results of this survey, the hydrographer recommends charting a wreck symbol with a least depth (corrected with predicted tides) of 10.5 feet. CONCUR

Approved 8.0
10.7

~~CHART (8) WK~~

CHART (10) WK

CONTACT NO: 12681.6p

Item Description: OBSTRUCTION

Source:

AWOIS Position:

Required Investigation: Echosounder Radius: None

Charts Affected: 11488, 11490

INVESTIGATION

Date(s): 17 April 1998 (DN 107)

Position Numbers: 12874.4

Investigation Used: ES

Surveyed Position: Lat. 30°23'46.074"N Lon. 081°22'28.715"W

Position Determined By: Differential GPS

Investigation Summary: This item was originally found during prior survey H-10646 and was recorded as contact 381.5. A side scan sonar and singlebeam echosounder investigation of this contact was performed during H-10793. Contact 12681.6p was subsequently found and is considered to be the same as contact 381.5 from H-10646. No dive was scheduled for this item due to current, water clarity and high traffic in the area. A least depth (corrected with ^{Approved} predicted tides) of ~~33.8~~ ^{34.6} feet (~~10.3~~ ^{10.5} meters) was found during a 5-meter line spaced echosounder development at fix 14432.4.

CHARTING RECOMMENDATION

Recommendation: Based on the results of this survey, the hydrographer recommends charting an obstruction with a least depth (corrected with ~~predicted~~ tides) of ~~33.8~~ feet. *CONCUR*

Approved

~~32.5~~
34.6

H10646 could not be processed by AHB, the registry number has been reassigned.
SRD 4/19/00

~~Chart 32 Obstr~~

Chart 34 Obstr

N.5 The following is a list of contacts investigated with nothing found or was considered insignificant:

| Contact Number | Easting | Northing |
|----------------|---------|----------|
| 21000.9s | 464219 | 3362657 |

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

O.1 Five charts are affected by this survey (H-10793):

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

Chart 11488
 "Ameila Island to St. Augustine"
 20th Ed. 9 March 1996
 Scale: 1:80,000

Chart 11489
 "Intracoastal Waterway- St. Simons Sd. to Tolomato R."
 31st Ed. 13 September 1997
 Scale: 1:40,000

Chart 11490
 "Approaches to St. Johns River"
 14th Ed. 30 March 1996
 Scale: 1:40,000 / 1:15,000

Chart 11491 PF
 "St. Johns R.- Atlantic Ocean to Jacksonville"
 29th Ed. 4 January 1997
 Scale: 1:20,000

O.2 One Danger to Navigation report was submitted for this survey on May 18, 1998.

| Description | Latitude | Longitude |
|-------------|----------------|----------------|
| Wreck | 30°23'21.169"N | 81°20'50.288"W |

This item was a side scan sonar contact from a prior survey. See appendix A for complete danger to navigation report.

0.3 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. Depending on geographic area, depths generally showed minor shoaling and deepening when compared to charted soundings. Survey depths deeper than charted depths by 4 feet or greater were investigated by splitting the 60 to 80 meter line spacing mainscheme hydrography. This resulted in 30 to 40 meter line spacing in these areas, respectfully.

0.3 b. In general, survey depths were deeper than charted depths. Differences of 1 to 3 feet were common, with and occasional difference of 5 feet. The area located south of the southern jetty of the entrance to St. Johns River showed shoaling and deepening trends that cannot be described in general terms. Any survey depth that showed significant deviation from the charted depths was investigated with singlebeam echosounder. The data collected shows various movements and migrations of shoal areas in this vicinity.

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 *See Also Evaluation Report.*

Q.2 The survey limits for sheet H-10793 contain five aids to navigation:

| Detached Positions | | | |
|---------------------------|-------------------|---|--|
| Nav. Aid | Light List | Description | Difference Between Charted And Survey Positions |
| RW "STJ" | Yes | Red and white stripes with red spherical topmark. | 16 meters |
| G "3" | Yes | Green Lighted | 30 meters |
| R "4" | Yes | Red lighted | 34 meters |
| G "5" | Yes | Green Lighted | 37 meters |
| R "6" | Yes | Red Lighted | 47 meters |

NOTE: Chart 11490, 14th Ed. 3/30/96, was used for this comparison

R. STATISTICS

R.1 a. Number of Non-Rejected Positions 28877
b. Linear Nautical Miles of Sounding Lines:
 Nautical Miles of Side Scan Sonar 561.67
 Nautical Miles Hydrography 214.75
R.2 a. Square Nautical Miles of Hydrography 25.5
b. Days of Production 22
c. Detached Positions 5
d. Bottom Samples 24
e. Tide Stations. 1
g. Velocity Casts 4

S. MISCELLANEOUS *See also Evaluation Report.*

S.1. Where water depths would not allow side scan sonar at 75 meter range scale, echosounder lines were run with a line spacing of 40 meters to develop the 18-foot curve. These areas are located at the western edge of the survey limits. Mainscheme echosounder lines run at the entrance to St. Johns River were run at 80 meter line spacing.

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 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, reading "Michael J. Annis". The signature is written in dark ink and is positioned above a horizontal line.

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 |



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE, Office of Coast Survey
Atlantic Hydrographic Branch
439 W. York Street
Norfolk, VA 23510-1114

May 18, 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. Johns River, Mayport, Florida, (project OPR-G354-WH-98, registry H-10793) the NOAA Ship WHITING discovered a wreck identified as a hazard to navigation. I recommend that the item be included in the next Local Notice to Mariners. This position is based on NAD83 datum and the soundings have been reduced to Mean Lower Low Water (MLLW) using predicted tides. All items were located using Differential GPS. All data is preliminary and subject to further field work and office review.

| | Geographic Position | |
|-------|---------------------|-----------------|
| Depth | Latitude | Longitude |
| 36' | 30°23'21.169"N | 081°20'50.288"W |

Affected Nautical Charts:

| Chart Number | Edition Number | Date | Horizontal Datum |
|--------------|------------------|---------|------------------|
| 11480 | 34 th | 5/03/97 | NAD 83 |
| 11488 | 20 th | 3/09/96 | NAD 83 |
| 11490 | 14 th | 3/30/96 | NAD 83 |
| 11491 | 29 th | 1/04/97 | NAD 83 |

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

Questions concerning this report should be directed to the NOAA Ship WHITING by calling 757-441-6746.

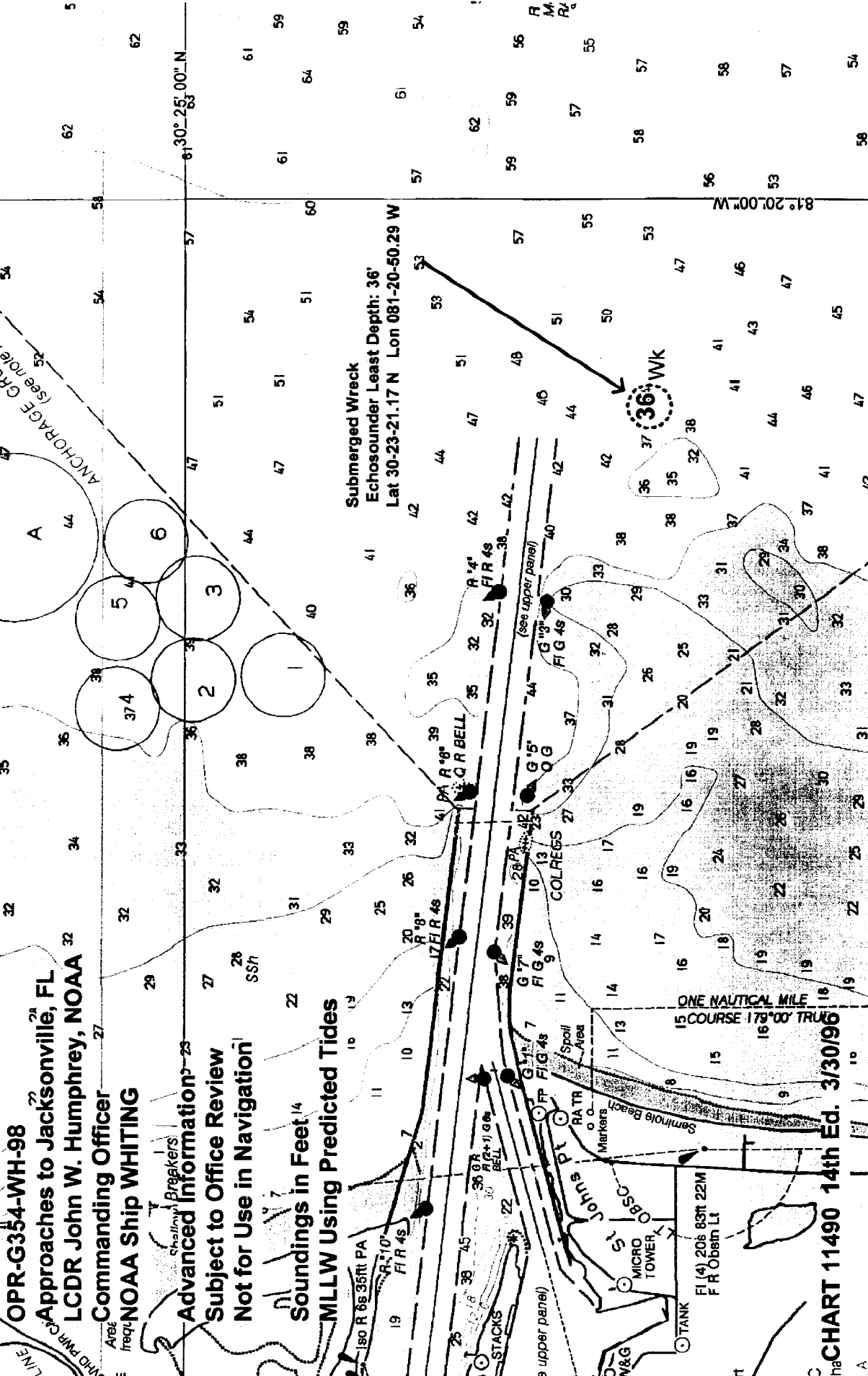
Sincerely,

Nicholas E. Perugini, CDR, NOAA
Chief, Atlantic Hydrographic Branch

Attachment

cc: NIMA-NIS
N/CS26
N/CS31
SJBPA
NAVSTA Mayport





APPENDIX VII


APPROVAL SHEET

LETTER OF APPROVAL

REGISTRY NO. H-10793

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: June 10, 1998

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-G354-WH
HYDROGRAPHIC SHEET: H-10793

LOCALITY: Atlantic Ocean, Approaches to Jacksonville, FL


TIME PERIOD: March 26 - May 3, 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

TIDE STATION USED: 872-0220 Mayport, FL
Lat. 30° 23.6'N Lon. 81° 25.9'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.421 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SEC184, SEC185, SEC209, SJR1, SJR2 and
SJR3.
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



GEOGRAPHIC NAMES

H-10793

| Name on Survey | A ON CHART NO. 11480, 11488, 11493 | | 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 |
| ST JOHNS RIVER | X | | X | | | | | | | | | | | | | | | | 4 |
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Dennis J. Kowalski
Chief Cartographer JUN 9 1998

N/CS 33-101-98

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

11-20-98

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.

H10793 OPR-G354-WH-98

Florida, North Atlantic Ocean
Approaches to Jacksonville

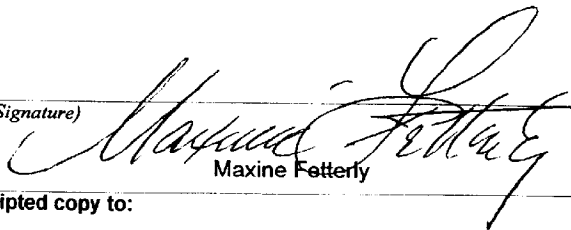
1 Mylar Smooth Sheet

2 Mylar H-Drawings for NOS Chart 11490 (Scales 1:15,000 & 1:40,000)
1 Mylar H-Drawing for NOS Chart 11491

2 Paper Composite Plots for NOS Chart 11490
1 Paper Composite Plot for NOS Chart 11491

1 Descriptive Report
3 Drawing History forms 76-71 for NOS Charts 11490 & 11491

FROM: (Signature)



Maxine Fetterly

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

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

11/20/98

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H10793

| | | |
|---------------------------------------|------------|----------------|
| NUMBER OF CONTROL STATIONS | | 2 |
| NUMBER OF POSITIONS | | 28877 |
| NUMBER OF SOUNDINGS | | 28877 |
| | TIME-HOURS | DATE COMPLETED |
| PREPROCESSING EXAMINATION | 8 | 05/14/98 |
| VERIFICATION OF FIELD DATA | 107.50 | 11/19/98 |
| EVALUATION AND ANALYSIS | 9.50 | |
| FINAL INSPECTION | 34 | 07/27/98 |
| COMPILATION | 208 | 11/19/98 |
| TOTAL TIME | 371 | |
| ATLANTIC HYDROGRAPHIC BRANCH APPROVAL | | 07/28/98 |

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10793 (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 1.313 seconds (40.392 meters or 4.04 mm at the scale of the survey) north in latitude, and 0.842 seconds (23.397 meters or 2.34 mm at the scale of the survey) east in longitude.

J. SHORELINE

Brown shoreline originates with NOS chart 11490 (14th ED., March 30/96) and is for orientation purposes only.

L. JUNCTIONS**H10799 (1998) to the East**

A standard junction was effected between the present survey and H10799 (1998). Depths are in excellent agreement. There are no contemporary surveys to the north, south, or west. Present survey depths are in harmony with the charted hydrography in these areas.

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. Attention is directed to the following:

The present survey covers that area previously surveyed by ARC Surveying and Mapping, Inc., prior survey H-10646 (1995-1996), in its entirety. As per Project Instructions OPR-G354-WH-98, Change Number 1, dated April 30, 1998, acquisition of side scan sonar data on the present survey was not required within the common area. Basic main scheme hydrography, using an echosounder, was acquired during field operations on the present survey. Development lines were run on significant side scan sonar contacts located on prior survey H-10646 (1995-1996).

H10646 could not be processed by AHD,
the registry number has been reassigned.
SRB 4/19/00

The hydrographer makes adequate comparisons in section N. of the Descriptive Report.

**O. COMPARISON WITH CHART 11490 (14th Edition, Mar 30/96)
11491 (29th Edition, Jan 4/97)**

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 present survey covers a small area of the northern portion of the charted Dump site in the vicinity of Latitude 30°21'00.00"N, Longitude 80°18'00.00"W. Soundings in the common area should reflect the present survey.

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

Dangers to Navigation

One Danger to Navigation report was submitted to Commander(oan), Seventh Coast Guard District, Miami, Florida for inclusion in the Local Notice to Mariners, and to the Marine Chart Division, N/CS3x1, Silver Spring, Maryland. Copies of this report are appended to the Descriptive Report.

Controlling Depths

There are no conflicts between the charted controlling depths and the present survey.

P. ADEQUACY OF SURVEY

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

Q. AIDS TO NAVIGATION

Five floating aids to navigation were located by this survey and should be charted as shown on the present survey.

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 Charts are used for compilation of the present survey:

11490 14th ED., Mar 30/96 (Scales 1:15,000 and 1:40,000)
11491 29th ED., Jan 4/97 (Scale 1:20,000)

H10793

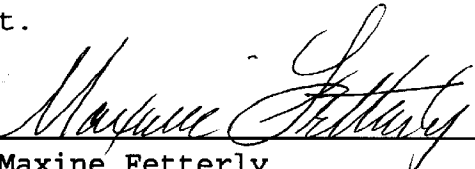
Robert Snow

Robert Snow
Cartographic Technician
Verification of Field Data
Evaluation and Analysis

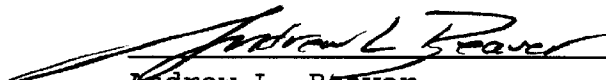
APPROVAL SHEET
H10793

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 disapproval 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: July 28, 1998
Maxine Fetterly
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.

 Date: 7/28/98
Andrew L. Beaver
Lieutenant Commander
Chief, Atlantic Hydrographic Branch

Final Approval:

Approved:  Date: Dec 22, 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. H10793

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 |
|-------|----------|------------------------|--|
| 11490 | 11/17/98 | <i>Maryann Jettley</i> | Full Part Before After Marine Center Approval Signed Via Drawing No. |
| 11491 | 11/13/98 | <i>Maryann Jettley</i> | Full Part Before After Marine Center Approval Signed Via Drawing No. |
| 11489 | 2/18/99 | <i>Mark D. Hoff</i> | Full Part Before After Marine Center Approval Signed Via Drawing No. |
| 11488 | 2/18/99 | <i>Mark D. Hoff</i> | Full Part Before After Marine Center Approval Signed Via Drawing No. |
| 11480 | 2/18/99 | <i>Mark D. Hoff</i> | Full Part Before After Marine Center Approval Signed Via Drawing No. |
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