H10794

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey SIDE SCAN SONAR

Field No. WH-10-02-98

Registry No. H10794

LOCALITY

State FLORIDA

General Locality NORTH ATLANTIC OCEAN

Sublocality APPROACHES TO JACKSONVILLE

19 98

CHIEF OF PARTY
LCDR J. W. HUMPHREY, NOAA

*U.S. GOV. PRINTING OFFICE: 1967—756-980

NOAA FORM 77-28
(11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTRY NUMBER:

H10794

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-10-2-98

State: Florida

General locality: North Atlantic Ocean

Locality: Approaches to Jacksonville

Scale: 1: 10,000 Date of survey: March 27 - May 8, 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 DesignJet 350C (office)

Verification by: Hydrographic Surveys Branch

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

Remarks: **Time Zone Used, 17 (UTC)**

Basic Hydrographic and 200% Side Scan Sonar

Notes in Descriptive Report were made in Red during Office Processing.

SURF/AWOIS ✓ 10/5/98; SJV

NOAA FORM 77-28 SUPERSEDES FORM C & GS - 537

* U.S. GOVERNMENT PRINTING OFFICE: 1976-665-661/1222 REGION NO.6

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 H-10794 (sheet "C") of OPR-G354-WH. H-10794 lies 15.0 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 81°10'W, and on the east by approximate longitude 81°01'W. The northern and southern approximate limits are latitudes 30°24'N and 30°19'N, respectfully.

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

Sheet "C":

1. 30°19'10"N 081°02'21"W
2. 30°20'12"N 081°09'56"W
3. 30°24'15"N 081°09'12"W
4. 30°23'13"N 081°01'37"W

B.3 Data collection for this survey began on March 27, 1998 (DN 086). Data collection ended on May 8, 1998 (DN 128).

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-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 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 accommodate a range scale of 100 meters, 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 launch 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.

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-10794:

Cast Number	Day No.	Vessel Covered	Position of Cast		Days Covered
			Latitude	Longitude	
1	085	WHITING	30°21′04″N	081°04′14″W	086-098
2		Launches			
9	100	WHITING	30°23′05″N	081°03′36″W	100-106
10		Launches			
19	112	WHITING	30°21′06″N	081°04′00″W	113-118
20		Launches			
29	121	WHITING	30°21′19″N	081°04′06″W	121-123
30		Launches			

d. Leadline Comparison

Dual leadline comparisons with the DSF-6000N were conducted for WHITING during OPR-G354-WH (H-10794) 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 launch 1015 is 0.55 meters, and was measured on July 28, 1993. This corrector was entered into HPS Offset Table 2.* 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 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.

*Data filed with field records

h. Heave, Roll, and Pitch Correctors

Heave correctors for data acquired by WHITING 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

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 SEC186 correctors were applied to all H-10794 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 SEC186.

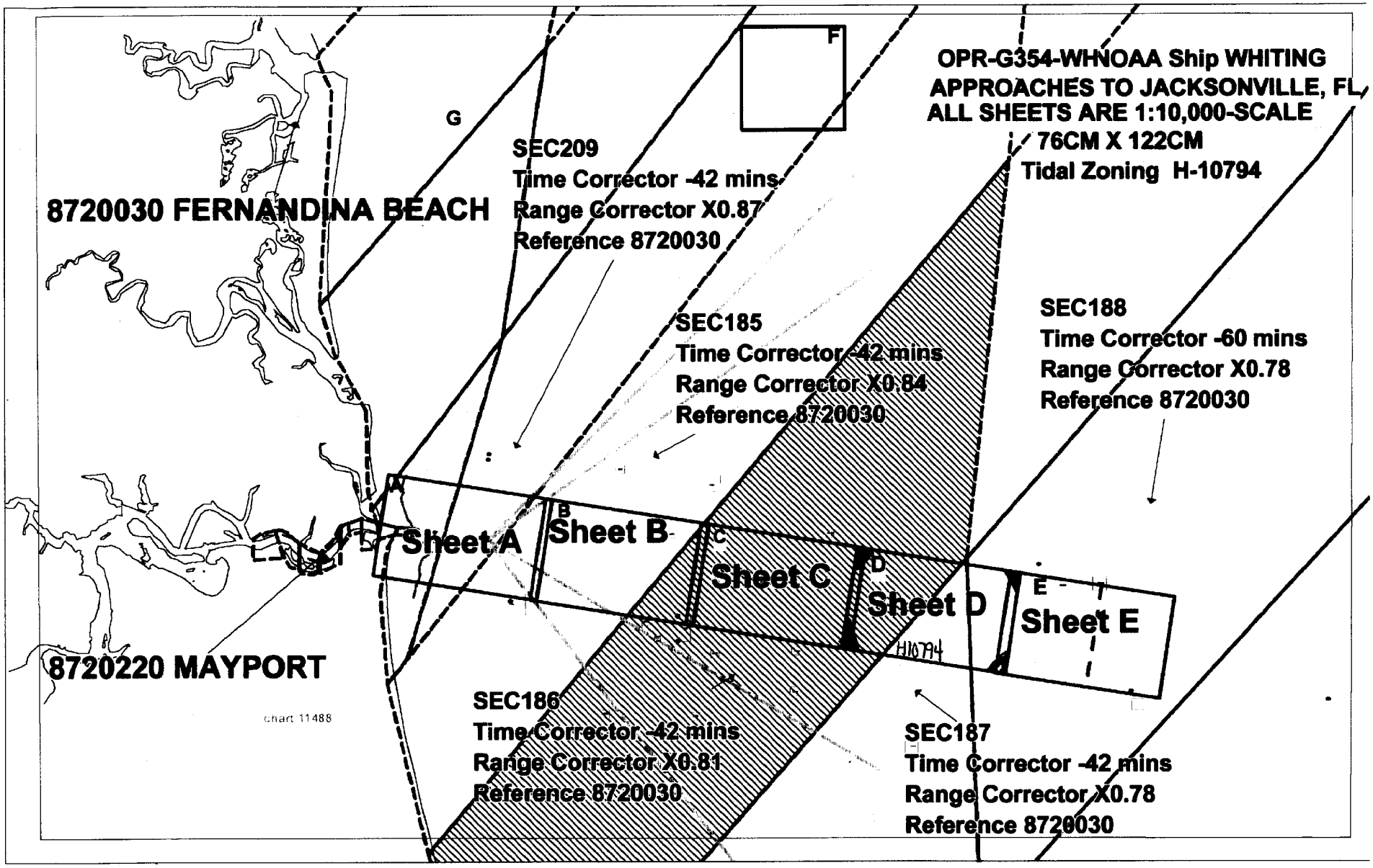
Smooth tides for H-10794 were requested from N/OES234 in a letter mailed and dated May 13, 1998. *Approved tides and zoning are applied during office processing.

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.

H. CONTROL STATIONS

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


OPR-G354-WHNOAA Ship WHITING
APPROACHES TO JACKSONVILLE, FL
ALL SHEETS ARE 1:10,000-SCALE
76CM X 122CM
Tidal Zoning H-10794
F
G
8720030 FERNANDINA BEACH
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
A
B
C
D
E
Sheet A
Sheet B
Sheet C
Sheet D
Sheet E
H10794
8720220 MAYPORT
chart 11488
SEC186
Time Corrector -42 mins
Range Corrector X0.81
Reference 8720030
SEC187
Time Corrector -42 mins
Range Corrector X0.78
Reference 8720030

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 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:

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

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

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 launch 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. A minimum of four satellites was used during survey H-10794 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. 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.*

* Data filed with field records.

J. SHORELINE

No shoreline is contained within the boundaries of this survey.

K. CROSSLINES

A combined total of 76.07 linear nautical miles of crosslines were acquired for this survey representing 9.8% of the 773.33 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 2 feet of each other, with only an occasional difference of 3 feet noted along contour lines.

L. JUNCTIONS - See also Evaluation Report

L.1 On its western edge, survey H-10794 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-10794 to that on H-10799 proved no significant differences between soundings exist. Generally agreement was excellent, with an occasional 1 to 2 foot difference. On its eastern edge, survey H-10794 junctions with survey H-10800. H-10800 is an ongoing survey, sheet "D" of OPR-G354-WH, with a scale of 1:10,000. A comparison of data collected on H-10794 to that on H-10800 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.

N. ITEM INVESTIGATION REPORTS - See also Evaluation Report

N.1 Survey H-10794 contains many natural bottom features, referred to as "ledges" in the item investigation reports, and contact tables. Most of these items reside in water greater than 65 feet and were deemed insignificant. Singlebeam echosounder development lines showed the rise and/or depression of these "ledges".

N.2 The following is a list of contacts investigated with nothing found or were considered insignificant:

Contact Number	Easting	Northing	Method
42935.75	491958.9	3362018.9	Echosounder
43605.0	489001.3	3362227.7	Echosounder
56253.1	491997.9	3361910.3	Echosounder
63274.2	492288.7	3355872.9	Echosounder
63460.9	492634.8	3355727.7	Echosounder
64168.8	491512.3	3355551.6	Echosounder
64458.6	491442.4	3355527.9	Echosounder
64670.5	492031.3	3355445.2	Echosounder
65159.0	492248.9	3355237.1	Echosounder
43098.9	494578.9	3361468.4	SSS
43362.0	488914.1	3362300.8	SSS
44356.9	492035.2	3361556.3	SSS
50125.8	490346.0	3359940.3	SSS
62427.83	494390.5	3355750.2	SSS
63062.5	486812.4	3356835.1	SSS
64371.0	486862.5	3356412.7	SSS
65871.0	491643.5	3355035.1	SSS
65876.55	491362.6	3355065.6	SSS
66676.3	492915.0	3354956.8	SSS

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

O.1 Three charts are affected by this survey (H-10794):

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

O.2 No Danger to Navigation reports were submitted for this survey.

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. Survey depths deeper than charted depths by 5 feet or greater were investigated by splitting the 80 meter line spaced mainscheme hydrography.

O.3 b. In general, survey depths were deeper than charted depths. Differences of 1 to 4 feet were common, with and occasional difference of 5 feet. Any survey depth that showed significant deviation from the charted depths was investigated with singlebeam echosounder.

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 H-10794 contain no aids to navigation.

R. STATISTICS

R.1	a. Number of Non-Rejected Positions	28400
	b. Linear Nautical Miles of Sounding Lines:	
	Nautical Miles of Side Scan Sonar	674.78
	Nautical Miles of Hydrography	98.63
R.2	a. Square Nautical Miles of Hydrography	26.4
	b. Days of Production	23
	c. Detached Positions	0
	d. Bottom Samples	25
	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 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.

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

APPENDIX VII

APPROVAL SHEET

LETTER OF APPROVAL

REGISTRY NO. H-10794

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-10794

LOCALITY: Atlantic Ocean, Approaches to Jacksonville, FL

TIME PERIOD: March 27 - May 8, 1998

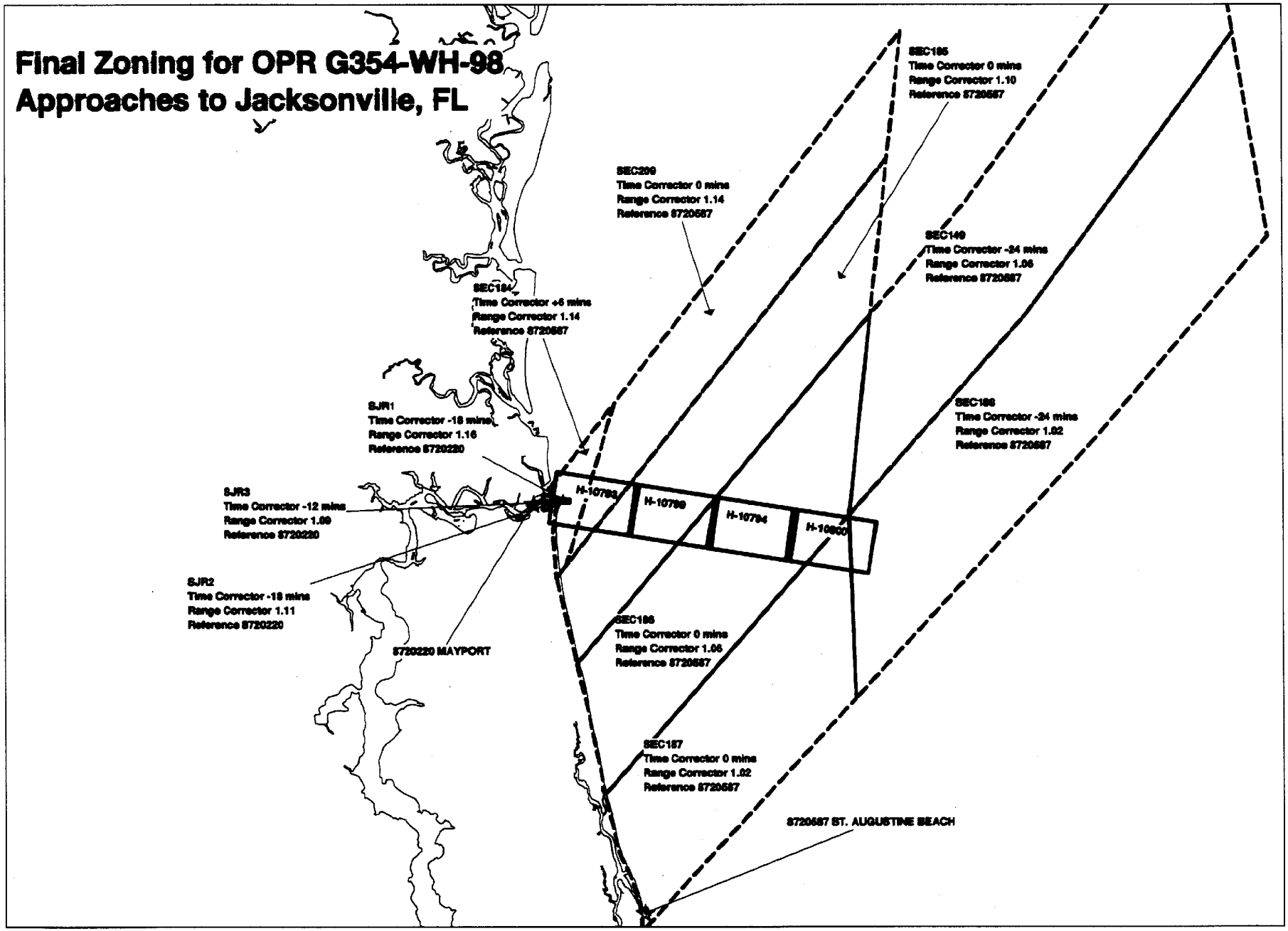
TIDE STATION USED: 872-0587 St. Augustine Beach, FL
Lat. 29° 51.4'N Lon. 81° 15.8'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.466 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SEC185 and SEC186.
Refer to attachments for zoning information.

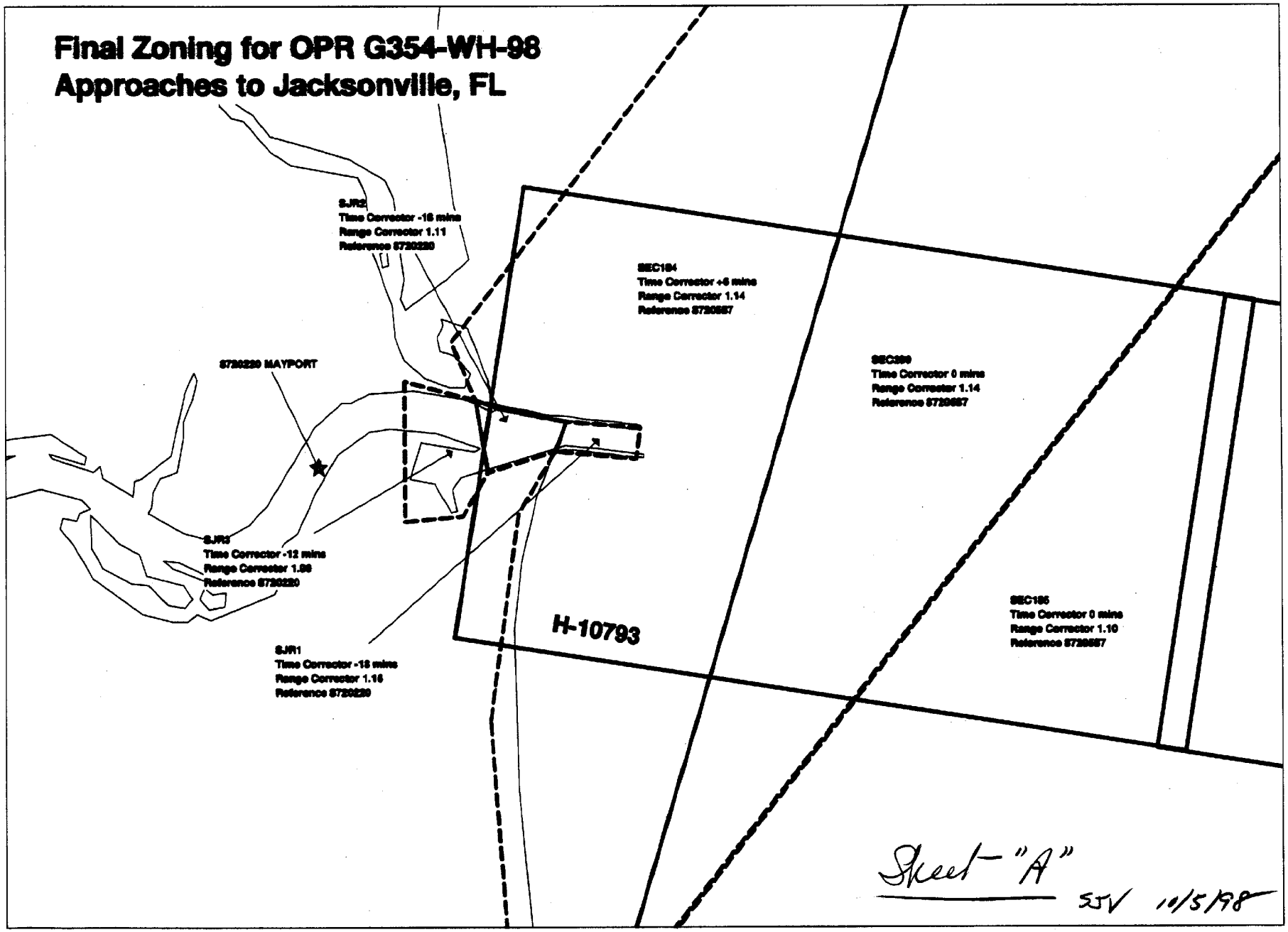
Note 1: Provided time series data are tabulated in metric units (Meters), relative to MLLW and on Greenwich Mean Time.

CHIEF, OPERATIONAL ANALYSIS BRANCH

Final Zoning for OPR G354-WH-98
Approaches to Jacksonville, FL



Final Zoning for OPR G354-WH-98
Approaches to Jacksonville, FL



Sheet "A"

SJV 10/5/98

Final tide zone node point locations for OPR G354-WH-98, Sheet H-10794.

Format: Longitude in decimal degrees (negative value denotes Longitude West),
Latitude in decimal degrees
Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction

	Tide Station Order	AVG Time Correction	Range Correction
Zone SEC185			
-80.889664 30.852068	872-0587	0	1.1
-81.396613 30.297258			
-81.365311 30.18379			
-80.915238 30.645371			
-80.889664 30.852068			
Zone SEC186			
-81.365311 30.18379	872-0587	0	1.06
-81.344689 30.110808			
-81.321688 30.012357			
-80.948501 30.380064			
-80.915238 30.645371			
-81.365311 30.18379			

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10794

Name on Survey	A ON CHART NO. 11480, 11488, 11490	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									2
NORTH ATLANTIC OCEAN	X		X							3
										4
										5
										6
										7
										8
										9
										10
										11
										12
								JUN	9 1998	13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

Approved:

Chief Geographer

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 61-29
(12-71)

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

LETTER TRANSMITTING DATA

REFERENCE NO.

N/CS33-82-98 DAB

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

- [ ] ORDINARY MAIL
- [ ] AIR MAIL
- [ ] REGISTERED MAIL
- [X] EXPRESS
- [ ] GBL *(Give number)* _____

DATE FORWARDED

SEPTEMBER 30, 1998

NUMBER OF PACKAGES

ONE TUBE

TO:

CHIEF, DATA CONTROL GROUP, N/CS3x1
NOAA/NATIONAL OCEAN SERVICE
STATION 6815, SSMC3
1315 EAST-WEST HIGHWAY
SILVER SPRING, MARYLAND 20910-3282

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.

H10794

FLORIDA, NORTH ATLANTIC OCEAN, APPROACHES TO JACKSONVILLE

(ONE) TUBE CONTAINING THE FOLLOWING:

1 SMOOTH SHEET FOR SURVEY H10794
1 ORIGINAL DESCRIPTIVE REPORT
2 DRAWING HISTORY FORMS (NOAA FORM #76-71) 1 EACH FOR NOS CHARTS 11488 AND 11490
1 RECORD OF APPLICATION TO CHART FORM (NOAA FORM #75-96) FOR SURVEY H10794
1 H-DRAWING FOR NOS CHART 11488
1 H-DRAWING FOR NOS CHART 11490
1 COMPOSITE DRAWING FOR NOS CHART 11488
1 COMPOSITE DRAWING FOR NOS CHART 11490

FOR F00436

1 PAGE OF ORIGINAL EVALUATION REPORT
1 DRAWING HISTORY FORM (NOAA FORM #76-71) FOR NOS CHART 11504
1 H-DRAWING FOR NOS CHART 11504
1 COMPOSITE DRAWING FOR NOS CHART 11504

FROM: *(Signature)*

Deborah A. Bland Deborah A. Bland

Return receipted copy to:

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

RECEIVED THE ABOVE
(Name, Division, Date)

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10794 (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 0.874 seconds (26.915 meters or 2.69 mm at the scale of the survey) north in latitude, and 0.729 seconds (19.481 meters or 1.95 mm at the scale of the survey) east in longitude.

L. JUNCTIONS

H10799 (1998) to the west
H10800 (1998) to the east

Standard junctions were effected between the present survey and H10799 (1998) and H10800 (1998). There are no junctional surveys to the north or south. Present survey depths are in harmony with the charted hydrography to the north and south.

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 11490 (14th Edition, Mar. 30/96) 11488 (20th Edition, Mar. 9/96)

Hydrography

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

1. Portions of the following charted obstructions (fish haven) were covered by the present survey. No conflicts with the charted authorized clearance depths were found:

Item	Latitude (N)	Longitude (W)
Obstn (Fish Haven)	30°20'00"	81°10'00"
Obstn (Fish Haven)	30°18'00"	81°05'00"
Obstn (Fish Haven)	30°23'42"	81°05'36"

No changes in charting are recommended.

2. The following obstructions were charted subsequent to the start of the present survey. They had been identified but not charted at the time this survey was done. These obstructions originate with Chart Letter 528 of 1998 (CL528/98). The field covered the area encompassing these obstructions with 200% side scan sonar. There was no indication of these obstructions found by the present survey:

Item	Latitude (N)	Longitude (W)
Obstn	30°23'20"	81°05'00"
Obstn	30°23'09"	81°05'03"
Obstn	30°22'54"	81°04'48"

It is recommended that the above charted obstructions be deleted from the chart.

3. A charted 69-ft (21m) depth in Latitude 30°22'28"N Longitude 81°01'45"W originates with an unknown source and was neither proved nor disproved by the present survey. It is recommended that the charted sounding be reapplied to the chart.

charted.

4. A charted 62 foot depth (18^{9} m), in Latitude 30°19'57"N Longitude 81°07'30"W, and a charted 55-ft depth (16^{8} m), in Latitude 30°20'10"N Longitude 81°09'38"W, originate with an unknown source and are not considered disproved by the present survey. These soundings are shown on the 14th edition of NOS chart 11490, but are not shown on the 21st edition of NOS chart 11488. These depths are the shoalest in the area and should be shown on both charts. It is recommended that these depths be shown on both charts.

Except as 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 using the present survey was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data has been forwarded to Marine Chart Division, Silver Spring, Maryland.

The following NOS charts were used for compilation of the present survey:

11490	**(14th Edition, March 30/96)**	**1:40,000**
11488	**(21st Edition, May 9/98)**	**1:80,000**

H10794

Robert Snow

Robert Snow
Cartographic Technician
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H-10794

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.

Robert G. Roberson Date: 27 Jul 98
Robert G. Roberson
Chief, Cartographic Section

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: 27 JUL 98
Andrew L. Beaver
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

****

Final Approval:

Approved: Andrew A. Armstrong III Date: Oct 14, 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. H10794

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
11488	9/9/98	Deborah Blake	Full [redacted] After Marine Center Approval Signed Via
			Drawing No.
11490	9/4/98	Deborah Blake	Full [redacted] 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
			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
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.