

H10877

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-10-1-99

Registry No. H10877

LOCALITY

State FLORIDA

General Locality NORTH ATLANTIC OCEAN

Locality APPROACHES TO JACKSONVILLE

1999

CHIEF OF PARTY

LCDR JOHN W. HUMPHREY

LIBRARY & ARCHIVES

DATE

MAY 8 2000

REGISTRY NUMBER:

H10877

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-10-01-99

State: Florida

General locality: North Atlantic Ocean

Locality: Approaches to Jacksonville

Scale: 1:80,000 Date of survey: May 3, 1999-June 8, 1999

Instructions dated: August 26, 1998 Project Number: OPR-G344-WH

Vessel: NOAA Ship WHITING

Chief of Party: LCDR John W. Humphrey

Surveyed by: LCDR J.W. Humphrey, LT T. Haupt, LTL Krepp, ENS G. Imahori, ENS M. Moser, UL Gardner, P.G. Lewit, K.D. Kemp, C.H. Clemens, E.S. Baum

Soundings taken by echo sounder, hand lead-line, or pole: Odom Echotrac DF200MKIIr

Graphic record scaled by: WHITING Personnel

Graphic record checked by: WHITING Personnel

Automated plot by: N/A HP 750C (Field) 2500C/P (Office)

Verification by: Hydrographic Surveys Branch

Soundings in: Feet: Meters: at MLW: MLLW: (*)

Remarks: Time Zone Used, 17 (UTC)

Basic Hydrographic and 200% Side Scan Sonar

Handwritten changes in the Descriptive Report were made during office processing.

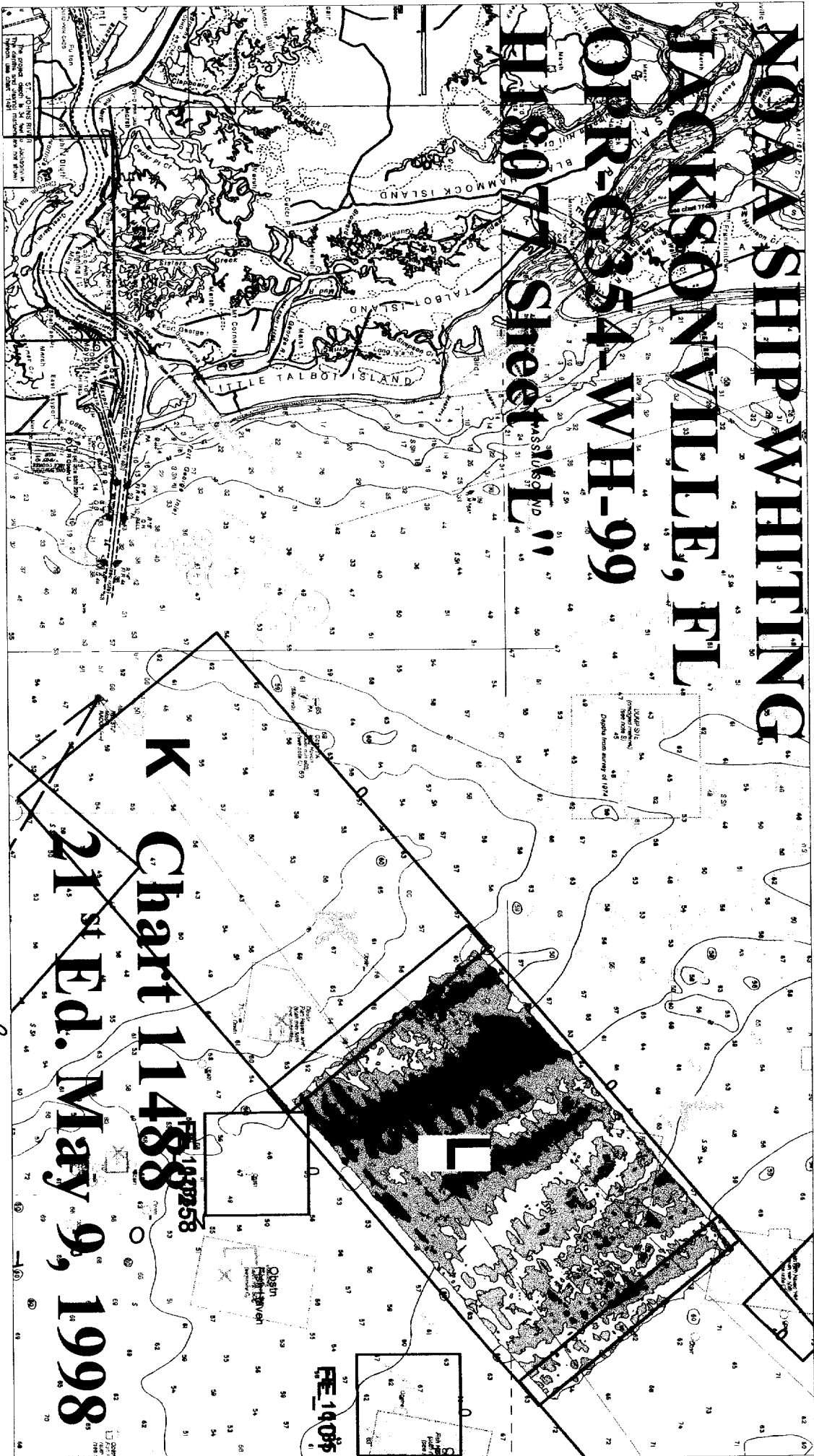
AW015/SJFP 4/24/00 SJV

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* Data filed with original field records

NOVA SHIP WHITTING JACKSONVILLE, FL OPR-0354 WH-99 H1807 Sheet 'E'



K
Chart 11488
21st Ed. May 9, 1998

FE 1406

A. PROJECT

A1. This survey was conducted in accordance with Hydrographic Project Instructions OPR-G354-WH-99, basic hydrographic surveys, of approaches to Jacksonville, Florida.

A.2 The original instructions are dated May 4, 1999.

A.3 No changes were introduced to the instructions for Jacksonville, Florida up to this date.

A.4 This Descriptive Report covers H10877 (sheet "L") of OPR-G354-WH-99. H10877 lies 10.8 NM Northeast of ST. John's Inlet in Mayport, Florida. See section B.1 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 10.8 NM NE of ST. John's Inlet in Jacksonville, FL. The survey comprises one sheet with the following boundaries, starting at the NE corner and proceeding clockwise:

Sheet "L":

- 1. 30°33' ^{31.06"}34.98" N 081°09' ^{05.06"}05.52" W
- 2. 30°30' ^{35.48"}25.78" N 081°06' ^{11.55"}04.11" W
- 3. 30°26' ^{34.56"}11.32" N 081°11' ^{42.47"}53.62" W
- 4. 30°29' ^{21.45"}20.66" N 081°14' ^{27.68"}55.03" W

B.2 Data collection for this survey began on May 3, 1999 (DN 123). Data collection ended on June 8, 1999 (DN 158).

C. SURVEY VESSELS

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

Vessel	EPD Number	Primary Function
NOAA Ship Whiting	2930 (WTEW)	Hydrography and Side Scan Operations
NOAA Launch 1014	2932	Hydrography, Side Scan and Diving 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** compact disc provided by Pacific Hydrographic Branch (N/CS33).

D.2 The SEABIRD SBE-19 sound velocity profile unit was utilized with **SEASOFT** and **SEACAT** software. The program **Velociwin** 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 High frequency (100 kHz) 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 one range scale to cover the entire sheet. This range scale was used to obtain complete (200%) area coverage and provide optimal contact resolution. A range scale of 100 meters was used with a line spacing of 80 meters. The line spacing is in accordance with the value specified in the Field Procedures Manual (FPM). Data collected with an EPE of 30 or greater was rejected or smoothed during 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. All holidays regardless of length were covered with 200% side scan sonar. 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.

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 1014 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 75-meter range scale. Detailed descriptions of all investigated contacts falling within the navigable area are addressed in the ITEM INVESTIGATION REPORTS found in section M.

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

F. SOUNDING EQUIPMENT

F.1 All hydrographic soundings were acquired using an ODOM ECHOTRAC DF3200 MKII precision survey echo sounder.

Vessel	Serial Number
NOAA Ship Whiting	A008303
NOAA Launch 1014	A008304

F.2 Diver investigation utilized two Digital Pressure Gage-D2000 (s/n 68332 and 68338). 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 calculated using measurements taken from a Sea-Bird SBE 19 Seacat Profiler (s/n 196093-1060). A Data Quality Assurance Test was conducted after the velocity cast to ensure that the unit was operating within tolerance. The Seacat Profiler was calibrated January 14, 1999 by SEA-BIRD ELECTRONICS, INC.

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

The following is a list of sound velocity casts performed for H10877:

Cast #	Velocity Table Number	Day	Vessel Number	Position of Cast		Days Covered
				Latitude	Longitude	
03	03	123	Whiting 2930	30°30'24"N	081°09'36"W	123-133
03	04	123	2932	30°30'24"N	081°09'36"W	123-133
04	07	137	Whiting 2930	30°30'36"N	081°09'06"W	137-152
04	08	137	2932	30°30'36"N	081°09'06"W	137-152
08	14	142	2932	30°30'42"N	081°09'12"W	142 dive only
09	16	154	Whiting 2930	30°30'56"N	081°12'30"W	153-154

b. Leadline Comparison

Dual Leadline comparisons for the ECHOTRAC DF 3200 MKII were conducted for WHITING during OPR-G354-WH-99 (H10877) on DN 137. The location of the check was at Mayport Naval Air Station (30°23'27"N and 081°24'40"W (8.4 m depth). In addition, leadline comparisons were done on launch 1014 on DN 147. The location of the check for launch 1014 was at St. John's River (30°19'12"N and 081°37'24"). The Digital Instrument Corrector had an average of 0.27 for vessel 2930 and for 1014 a high of 0.21 and a low of 0.15.

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 May 17, 1999, and the calibration confirmed that the leadline error was negligible. See the fathometer record on the above listed days for actual ECHOTRAC DF 3200 MKII readings.

c. Static Draft

On July 28, 1993 the static draft correction was 0.55 meters for launch 1014. This value was entered into HPS^{*} Offset Table 2. The correction for Whiting vessel 2930 was 3.2 meters, which was measured while the ship was in Mayport Naval Station May 3, 1999. The corrector was entered into^{*} Offset Table 9. Static draft correctors were applied during data processing for each survey platform.

d. Dynamic Draft (Settlement and Squat Correctors)

Settlement and squat values for WHITING were determined on April 19, 1999 at the Craney Island fuel pier, and were entered into HPS^{*} Offset Table 9. The settlement and squat correctors were applied to the sounding data in real time. Refer to^{*} Separates section I for data records. The settlement and squat values for launch 1014 were determined March 16, 1998 and entered into^{*} offset tables 2 and 1 respectively.

e. Heave, Roll, and Pitch Correctors

Heave correctors for data acquired by WHITING 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:

* Data filed with field records

Vessel	Serial Number
2930	2066
2932	2068

G. 2 No correctors for diver level depth gauges were used. * See appendix E for calibration information.

G.3 Tide Correctors

a. The tidal datum for this project is Mean Lower Low Water (MLLW). Soundings are referenced to MLLW. The operating tide station at Mayport, Florida (872-0220) served as control for datum determination.

B. Tidal zones are controlled by one primary gauge, Mayport, Florida (872-0220). Due to the limitations of HPS and for ease of data processing, one tide zone was used for each field examination item, using the tide application utility in HPTools. All proper zones will be applied through HPS upon receipt of smooth tides from N/OES234. See following page for location of all zones for H10877. The following table shows all tide zones used for H10877:

Zone Name	Time Corr. (min)	Ratio Corr.	Reference
Temp 2	-18	1.23	8720220

Smooth tides for H10877 were requested from N/OES234 in a letter dated June 24, 1999. *Smooth tides and zoning were applied during office processing.

Zoning for this project is consistent with the project instructions.

H. HYDROGRAPHIC POSITION CONTROL - See also Evaluation Report

H.1 The horizontal datum for this survey is the North American Datum of 1983 (NAD 83). No horizontal control stations were established for this survey.

H.2 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 a 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.

H.3 The geographic positions for the DGPS stations used during this survey are as follows:

Location	Latitude	Longitude	Frequency
Charleston, SC	32° 45.50' N	079° 50.60' W	298 KHZ
Cape Canaveral, FL	28° 27.60' N	080° 32.60' W	289 KHZ

H.5 a. 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.

H.5 b. DGPS performance checks for the WHITING and launch 1014 were conducted while secured in the WHITING davits using correctors from the Cape Canaveral, FL or Charleston, SC DGPS towers. Simultaneous HYPACK positions were compared between vessels. An offset in distance and azimuth was then calculated between the ship and launch systems. A summary of the DGPS performance checks is included in *Appendix G. All DGPS performance checks confirmed that the equipment was working properly.

H6. Differential GPS Equipment:

The serial numbers of the Ashtech Sensor and CSI MBX1 receivers on the data acquisition platform 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)
2932 (1014)	Ashtech Sensor CSI MBX1	700417B1055 X-1079

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

H.7 b. There were no equipment malfunctions.

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

H.7 d. The maximum allowed HDOP value of 4.0 was never exceeded.

H.7 e. No systematic errors were detected which required adjustments.

H.7 f. DGPS antenna offsets were measured on March 19, 1993, and verified on April 15, 1999 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 were used during survey H10877 providing altitude unconstrained positioning.

H.7.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. Offset, layback and height corrections for the launches aft towing boom were measured on July 28, 1993, verified on April 15, 1999, and applied by HPS during processing. Correctors were entered into *Table 2 for launch 1014. 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 the appendix F.

I. SHORELINE

No shoreline is contained within the boundaries of this survey.

J. CROSSLINES

J.1. A combined total of 30.58 linear nautical miles of crosslines were acquired for this survey representing 5.65% of the 541.21 calculated nautical miles of mainscheme hydrography.

J.2. 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 were found to be excellent. The majority of compared soundings fell within 1 to 2 feet of each other.

K. JUNCTIONS - See also Evaluation Report

K.1 On its southwestern edge, survey H10877 (sheet "L") junctions with survey H10878 (sheet "K"). H10878 is an ongoing 1:10,000 scale survey of OPR-G354-WH.
and with FCC441(1998).

K.2 A comparison of data collected on H10877 to that on H10878 proved no significant differences between soundings exist. Generally agreement was excellent, with an occasional 1 to 2 foot difference.

L. COMPARISON WITH PRIOR SURVEYS - See also Evaluation Report

L.1 A comparison with prior surveys is not required for this survey due to the completion of 200% SSS coverage.

M. ITEM INVESTIGATION REPORTS

Contact Number: 20091.5p

Item Description: Wreck

Source: N/A

AWOIS Position: N/A

Required Investigation: N/A **Radius:** None

Charts Affected: 11480, 11488

INVESTIGATION

Date(s): 22 May 1999

Position Numbers: 20273

Investigation Used: DI, S2

Surveyed Position: Lat. 30°30'55.7"N Lon. 081°12'29.9"W

Position Determined By: Differential GPS

Investigation Summary: On day ¹⁴²~~124~~ divers investigated target 20091.5p and found remains of a dilapidated wreck. The remains consisted of a mast, scattered tanks, propeller, shaft and, a deck winch. A Least depth of 13.15m (43.14ft) was taken atop of the mast.

CHARTING RECOMMENDATION

Recommendation: The hydrographer recommends charting an ^{obstruction} wreck, least depth known", with a least depth 43ft based on ^{actual} predicted tides at the survey location.

Add (43) Obstr

Contact Number: 47589.6

Item Description: Obstruction

Source: N/A

AWOIS Position: N/A

Required Investigation: N/A **Radius:** None

Charts Affected: 11490, 11480

INVESTIGATION

Date(s): May 20, 1999

Position Numbers: 63225.5

Investigation Used: ES

Surveyed Position: Lat. 30°28'56.89" N Lon. 081°13'10.85"W

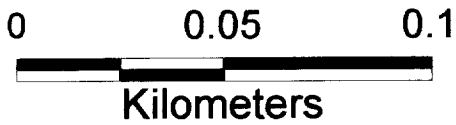
Position Determined By: Differential GPS

Investigation Summary: During mainscheme hydrography, target number 47589.6 was found on May 20, 1999 (DN 140). A Least depth of 15.6m (51.0ft) was determined via echosounder. ^{8 52}

CHARTING RECOMMENDATION

Recommendation: The hydrographer recommends charting an "obstruction, least depth known", with a least depth of ⁵²51 ft based on ^{actual}predicted tides at the survey location.

Add (52) Obstr



current radius of danger circle if moved for 1998 feature (15.8m) will miss this other item (15.6)

168m

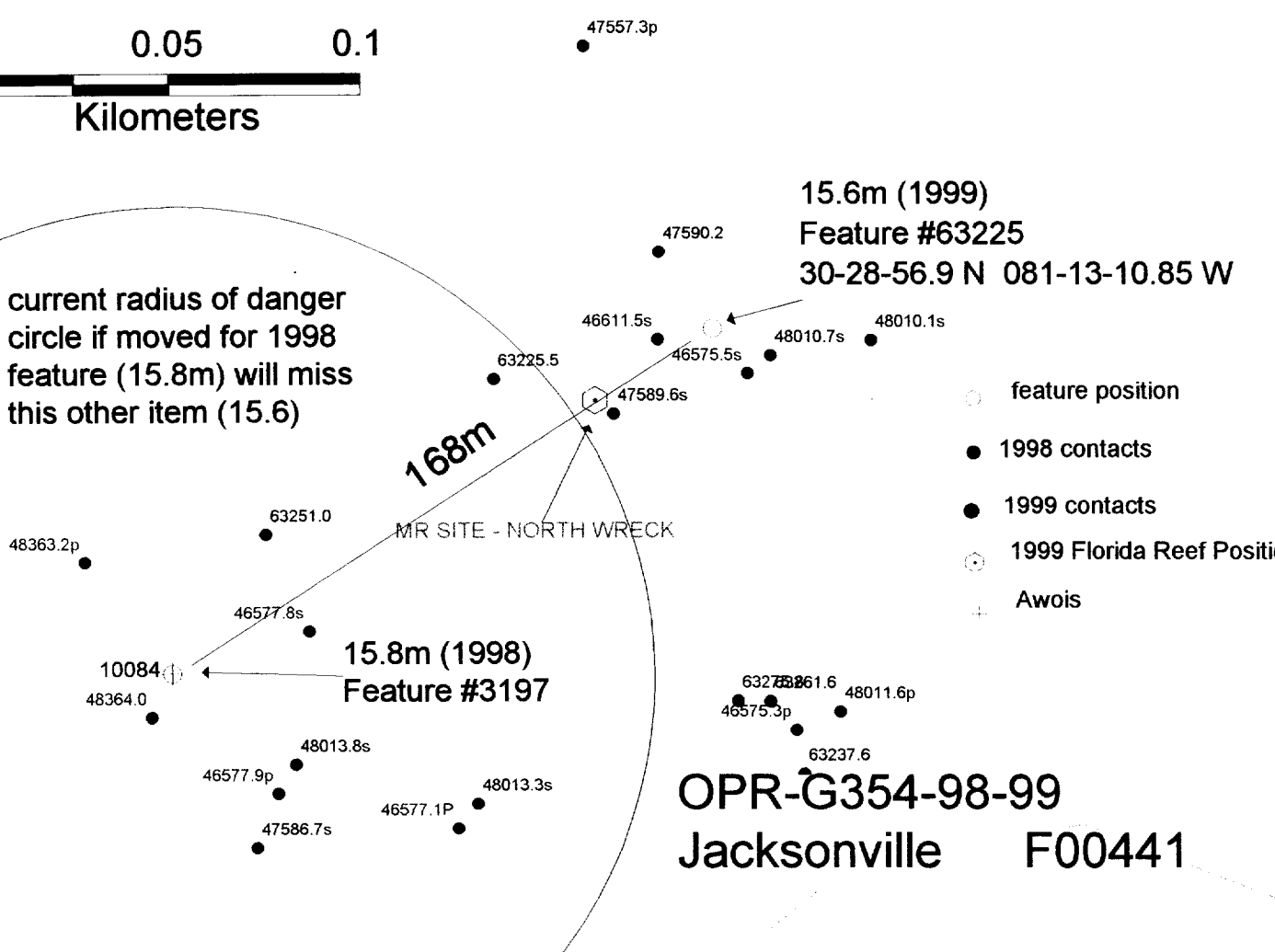
15.6m (1999)
Feature #63225
30-28-56.9 N 081-13-10.85 W

- feature position
- 1998 contacts
- 1999 contacts
- ⊕ 1999 Florida Reef Position
- + Awois

15.8m (1998)
Feature #3197

OPR-G354-98-99
Jacksonville F00441

MR SITE - NORTH WRECK



1998 DP #3197

1998

100%
E
075M
08:19:55 63222
100% 08:19:54 63221
E
075M
100%
E
075M
100%
E
075M
08:19:53 63220
E
075M
100%
E
075M
100%
E
075M
08:19:04 63219
E
075M
100%
E
075M
100%
E
075M
08:18:38 63218

1999 DP #63225

1999

OPR-G354-99

H10877

The following contacts were located during the course of survey operations. Upon development at reduced range scale, the contacts were determined to be insignificant.

Contact Number	Position	Dev. Day #
53954.7p	30°30'59.54" N 081°08'14.04" W	140
49275.3	30°30'59.98" N 081°09'47.83" W	140
45209.9c	30°30'39.94" N 081°08'56.84" W	140
41084.6	30°32'04.05" N 081°10'37.2" W	140
40306.1s	30°32'04.38" N 081°10'52.4" W	140
40081.0p	30°30'56.48" N 081°12'29.44" W	140
47589.6s	30°28'56.15" N 081°13'11.81" W	140 <i>Obstn Found</i>
48011.6p	30°28'53.54" N 081°13'11.77" W	140
50543.3	30°28'43.42" N 081°12'28.6" W	140

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

N.1 Four charts are affected by this survey(H10877):

Chart 11009
"Cape Hatteras to Straits of Florida"
35 34th Ed. ~~03 May, 1993~~ 07 AUGUST 1999
Scale 1:1,200,00

Chart 11480
"Charleston Light to Cape Canaveral"
36 35th Ed. ~~May 9 1998~~ 03 JULY 1999
Scale: 1:449,659

Chart 11488
"Amelia Island to St. Augustine"
22nd Ed. May 15, 1999
Scale: 1:80,000

Chart 11490
"Approaches to St. Johns River"
15th Ed. April 10th, 1999
Scale: 1:40,000

N.2 Dangers to Navigation

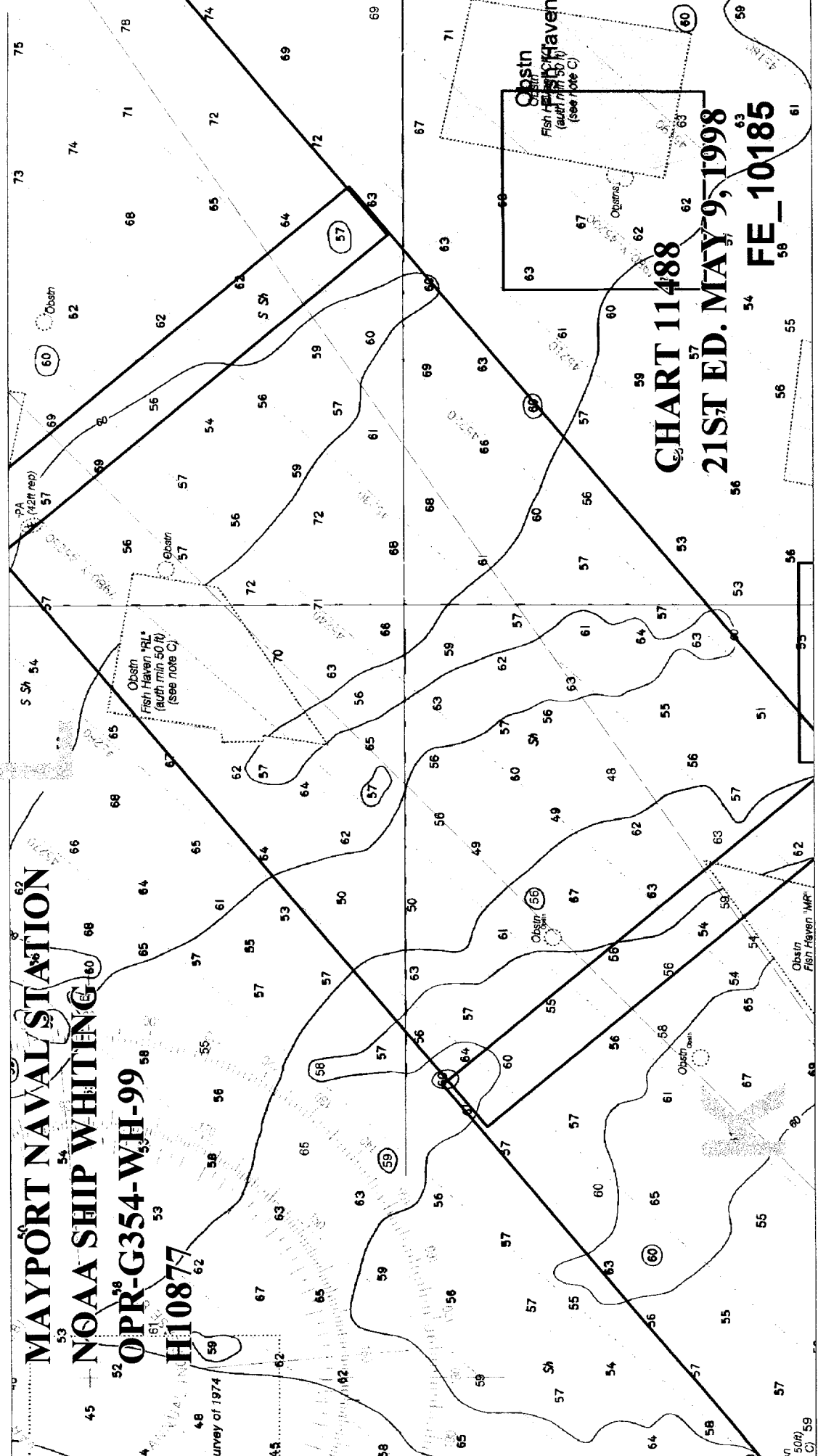
N.2 a. There are no danger to navigation reports for this area

N.3 a. In general, survey soundings gathered for project G 354-99 showed roughly an overall difference of 1-3 feet for sheet "L" (in comparison to chart 11488 21st Edition).

There were however, some discrepancies upon looking at the old raster (11488 21st Ed). The 22nd edition appears to be missing shoal soundings that should have carried over to the next edition. These soundings (from 22nd edition) were verified as being valid according to our data by reexamining the crosslines and offsets for this sheet. Five cases were found with the following positions:

MAYPORT NAVAL STATION
NOAA SHIP WHITING

OPR-G354-WH-99
H10877



NOAA SHIP WHITING
JACKSONVILLE, FL
OPR-G354-WH-99
H18077 Sheet "L"

NOAA SHIP
ASSOCIATION
OPERATION
NO. 48

Depths from survey of 1979

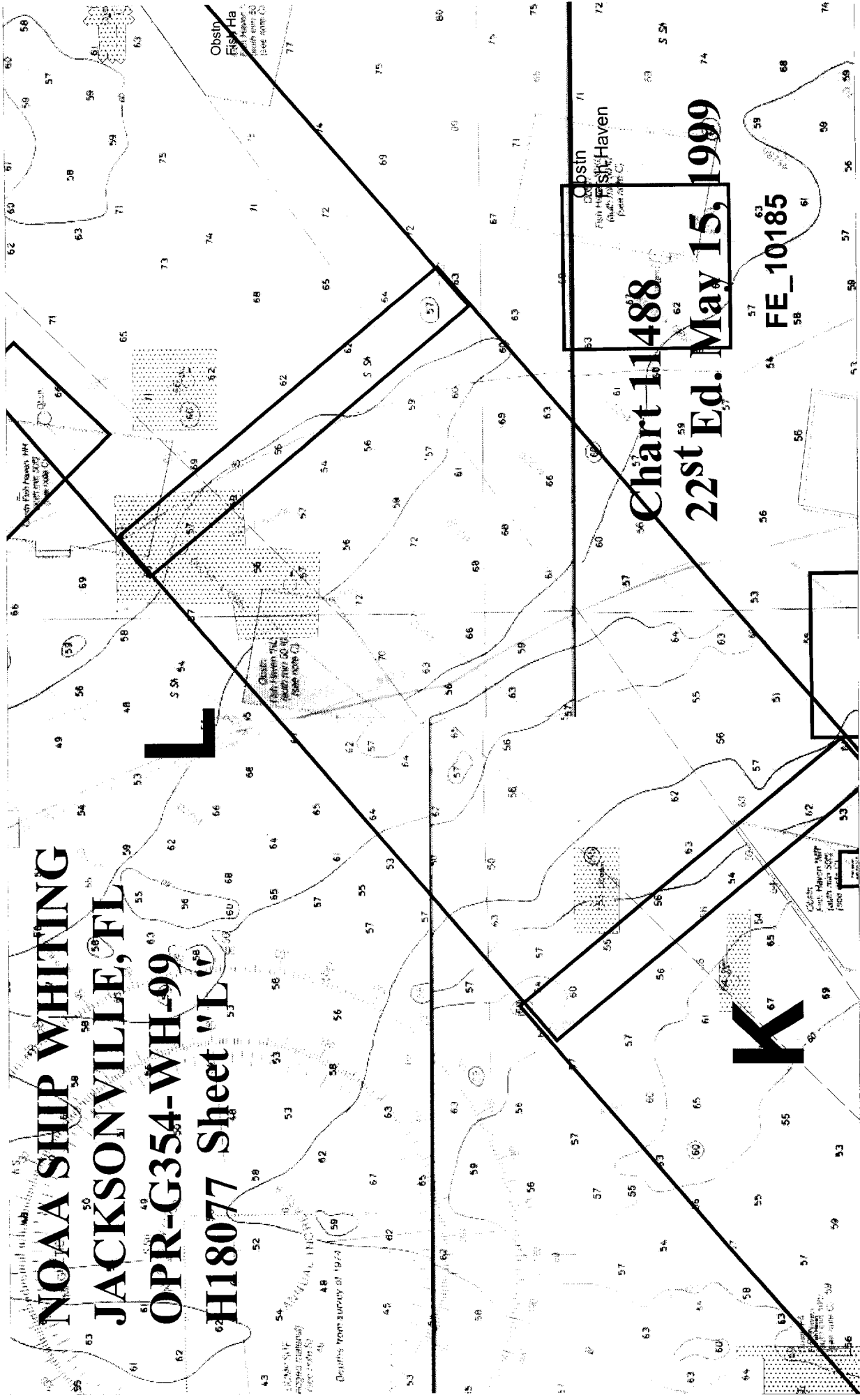


Chart 11488
22st Ed. May 15, 1999

FE_10185

Latitude	Longitude	Soundings Appearing on Chart (ft)		Fix(es) #	Survey Depths (ft)
		21 st	22 nd		
30°29'27.28" N	081°12'17.78" W	49	None	48,309-12 48,662-64	49
30°28'52.46" N	081°11'03.43" W	56	None	54,229-33 54,545-47	56 55
30°28'40.97" N	081°10'45.10" W	63	None	55,940-42 56,084-86	63 62
30°28'21.96" N	081°11'36.38" W	48	None	26,418-21 54,658-60	48
30°28'49.35" N	081°11'59.30" W	49	None	43,719-24 51,839-42	50 48

The hydrographer recommends charting representative soundings ^{From the present survey,} at the above positions.

In addition, two shoal trends with a corrected depth of ~~46~~⁵⁶ and ~~47~~⁴⁸ were located between:

Depth (feet)	Latitude	Longitude
46 56	30°28'10.30" N	081°09'38.97" W
	30°28'00.18" N	081°09'53.32" W
47 48	30°28' 31.40" N	081°11' 41.94" W
	30°28' 31.18" N	081°11' 41.76" W

O. ADEQUACY OF SURVEY - See also Evaluation Report

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

P. AIDS TO NAVIGATION

There are no aids to navigation within the survey limits of H10877.

Q. STATISTICS

Q.1 a. Number of Non-Rejected Positions31,037
b. Linear Nautical Miles of Sounding Lines:
 Nautical Miles Hydrography 52.01
c. Linear Nautical Miles of side scan sonar 580.59
d. Square nautical miles of side scan sonar 26.87

Q.2 a. Days of data acquisition18
b. Detached Positions 1
c. Bottom Samples 41
d. Velocity Casts 3
e. Tide stations installed 0

R. MISCELLANEOUS - *see also Evaluation Report*

R.1 No additional information

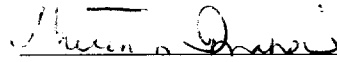
S. RECOMMENDATIONS

S.1 No further survey work is recommended.

T. 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.



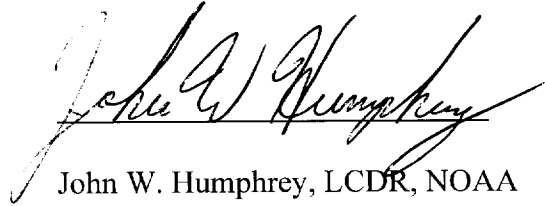
Gretchen Imahori, ENS, NOAA
Junior Officer

APPENDIX K

APPROVAL SHEET

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 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.

A handwritten signature in black ink, reading "John W. Humphrey". The signature is written in a cursive style with a horizontal line underneath the name.

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



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: November 3, 1999

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-G354-WH-99
HYDROGRAPHIC SHEET: H-10877

LOCALITY: Approaches to Jacksonville, FL- Atlantic Ocean

TIME PERIOD: May 3 - June 8, 1999

TIDE STATION USED: 872-0291 Jacksonville Beach, FL
Lat. 30° 17.0'N Lon. 81° 23.2'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.619 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: ATL852, ATL853, ATL861 & ATL862.

Refer to attachments for zoning information.

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

Thomas A. Hill 11/4/99

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

Final tide zone node point locations for OPR-G354-WH-99,
Sheet H-10877.

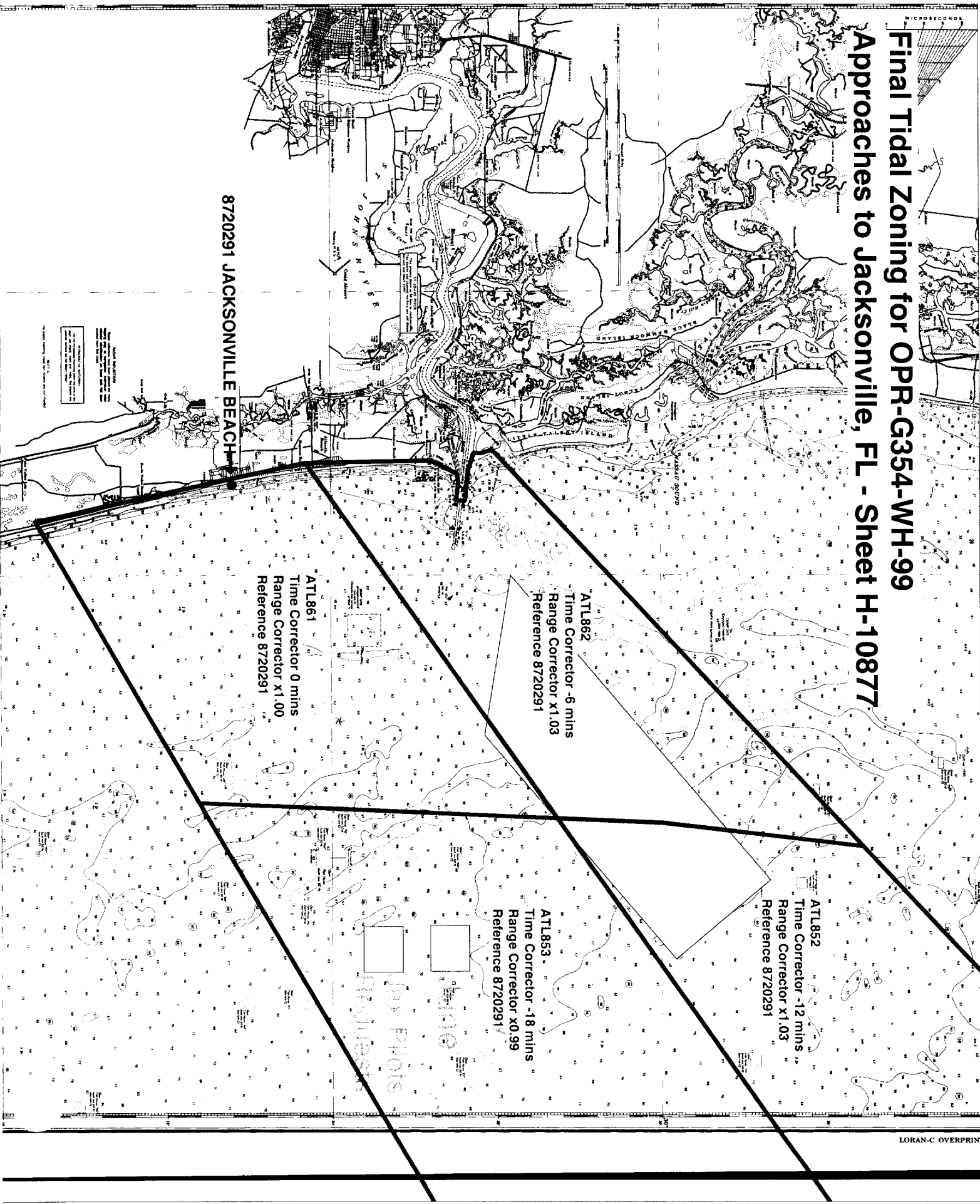
Format: Longitude in decimal degrees (negative value denotes
Longitude West),
Latitude in decimal degrees
Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction

	Tide Station Order	AVG Time Correction	Range Correction
Zone ATL852 ✓			
① -81.18733 30.500304 ✓	8720291	-12	1.03
② -81.190022 30.447133 ✓			
③ -80.814924 30.673684			
④ -80.71037 30.744654			
⑤ -80.707158 30.763549			
⑥ -80.664301 30.952132			
⑦ -80.634575 31.043575			
⑧ -80.85907 30.852384			
⑨ -81.173476 30.60148			
⑩ -81.18733 30.500304			
Zone ATL853 ✓			
① -81.190022 30.447133 ✓	8720291	-18	0.99
② -81.199356 30.266502			
③ -80.748708 30.49067			
④ -80.737955 30.583409 ✓			
⑤ -80.71037 30.744654			
⑥ -80.814924 30.673684			
⑦ -81.190022 30.447133 ✓			
Zone ATL861 ✓			
① -81.190022 30.447133 ✓	8720291	0	1.00
② -81.399643 30.320327 ✓			
③ -81.365311 30.18379 ✓			
④ -81.199356 30.266502 ✓			
⑤ -81.190022 30.447133			
Zone ATL862 ✓			
① -81.173476 30.60148	8720291	-6	1.03
② -81.407213 30.414787			
③ -81.405183 30.408968			

(9) -81.405518 30.405383
-81.395587 30.402654
-81.387802 30.401906
-81.377182 30.400815
-81.377463 30.396525
-81.388408 30.397583
-81.393123 30.396917
-81.400915 30.383682
-81.399643 30.320327
-81.190022 30.447133
-81.18733 30.500304
-81.173476 30.60148

Final Tidal Zoning for OPR-G354-WH-99 Approaches to Jacksonville, FL - Sheet H-10877

8720291 JACKSONVILLE BEACH



GEOGRAPHIC NAMES

H-10877

Name on Survey	A CHART NO. 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		X														2
NORTH ATLANTIC OCEAN	X		X														3
																	4
																	5
																	6
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																	25

James J. Remick
 SEP 22 1999

N/CS33-26-2000

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

ORDINARY MAIL

AIR MAIL

REGISTERED MAIL

EXPRESS

GBL (Give number) _____

DATE FORWARDED

APRIL 24, 2000

NUMBER OF PACKAGES

ONE TUBE

LETTER TRANSMITTING DATA

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.

H10877

FLORIDA, ATLANTIC OCEAN, APPROACHES TO JACKSONVILLE

(ONE) TUBE CONTAINING THE FOLLOWING:

- 1 SMOOTH SHEET FOR SURVEY H10877
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 H10877
- 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

F00452

- 1 H-DRAWING FOR NOS CHART 11490
- 1 COMPOSITE DRAWING FOR NOS CHART 11490

FROM: (Signature)

DEBORAH A. BLAND



RECEIVED THE ABOVE

(Name, Division, Date)

Return receipted copy to:

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

04/21/2000

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H10877

NUMBER OF CONTROL STATIONS		2
NUMBER OF POSITIONS		31037
NUMBER OF SOUNDINGS		31037
	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	164.5	08/27/1999
VERIFICATION OF FIELD DATA	432.5	03/08/2000
QUALITY CONTROL CHECKS	0.0	
EVALUATION AND ANALYSIS	11.5	
FINAL INSPECTION	11.0	02/29/2000
COMPILATION	116.0	04/06/2000
TOTAL TIME	735.5	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		03/15/2000

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10877 (1999)**

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 (HPS)
NADCON, version 2.10
SITEWORKS 02.01
MicroStation 95, version 5.05
I/RAS B, version 5.01

The smooth sheet was plotted using a HEWLETT-PACKARD DesignJet 2500CP plotter.

H. HYDROGRAPHIC POSITION CONTROL

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 datum move the projection lines 0.867 seconds (26.712 meters or 2.67 mm at the scale of the survey) north in latitude, and 0.712 seconds (18.981 meters or 1.90 mm at the scale of the survey) east in longitude.

K. JUNCTIONS

H10878	(1999)	to the southwest
<u>F00441</u>	<u>(1998)</u>	<u>to the southwest</u>

A standard junction was effected between H10878 (1999) and the present survey.

A standard junction could not be effected with junctional survey F00441 (1998). The junctional survey is archived at National Ocean Service (NOS) headquarters in Silver Spring, Maryland. The note "ADJOINS" is shown on the present survey in the junctional area. Depths are in adequate agreement. Any adjustments to the depth curves will have to be made by the compilers in Silver Spring during chart compilation.

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

L. COMPARISON WITH PRIOR SURVEYS

A comparison with prior surveys was not performed. This is in accordance with section 4. Of the memorandum titled, "Changes to Hydrographic Survey Processing," dated May 24, 1995.

**N. COMPARISON WITH CHART 11009 (35th Edition, AUG 07/99)
11480 (36th Edition, JUL 03/99)
11488 (22nd Edition, MAY 15/99)
11490 (15th Edition, APR 10/99)**

Hydrography

The charted hydrography originates with prior surveys and miscellaneous sources. The hydrographer makes adequate chart comparisons in Sections N. and O. of the Descriptive Report. The following should be noted:

1. A charted 53 foot dangerous submerged obstruction, in Latitude 30°28'53.94"N, Longitude 081°13'16.15"W originates with ~~prior~~ survey F00441 (1998). This obstruction was found on the side scan records of the present survey and has been brought forward from the prior survey to supplement the present survey. It is recommended that, where chart scale permits, this obstruction be retained as charted.

GRK/
4/29/00

O. ADEQUACY OF SURVEY

This is an adequate hydrographic survey. No additional work is recommended.

R. MISCELLANEOUS

Chart compilation using the present survey 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 were used for compilation of the present survey:

H10877

11488	(22 nd Edition, MAY 15/99)	1:80,000
11490	(15 th Edition, APR 10/99)	1:40,000

Douglas V. Mason

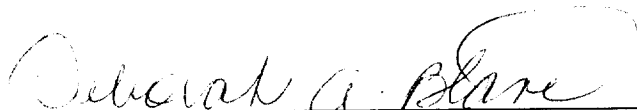
Douglas V. Mason

Cartographic Technician
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H10877

Initial Approvals:

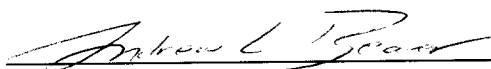
The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet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



Date: 15 MAR 2000

Deborah A. Bland
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: 15 MAR 00

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

Final Approval:

Approved: 

Date: May 8, 2000

Samuel P. De Bow, Jr.
Commander, NOAA
Chief, Hydrographic Surveys Division

