

H10497

NOAA FORM 76-35A	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE	
DESCRIPTIVE REPORT	
Type of Survey	Hydrographic
Field No.	AHP-10-11-93
Registry No.	H-10497
LOCALITY	
State	Florida
General Locality	Pensacola Bay
Sublocality	Bohemia to Live Oak Point
.....	
1993	
CHIEF OF PARTY LCDR James Waddell, Jr., NOAA	
LIBRARY & ARCHIVES	
DATE	JAN 10 1995

Diagram 1265-3

Ret. L-479/94

Ref L-282/95

PRODUCTS

CFS

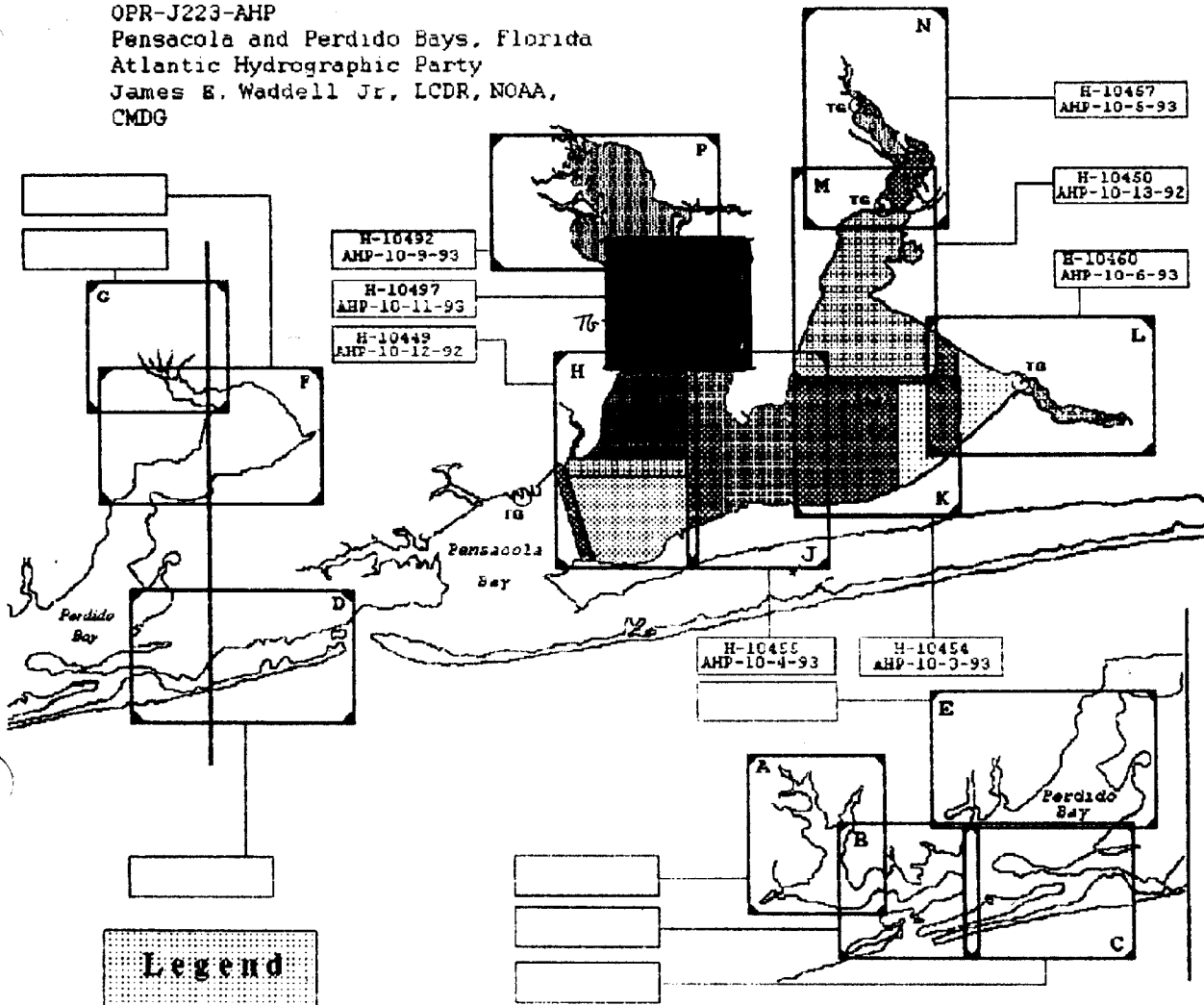
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NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION REGISTER NO. H-10497
HYDROGRAPHIC TITLE SHEET	
INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.	FIELD NO. AHP-10-11-93
State <u>Florida</u> General locality <u>Pensacola Bay</u> Locality <u>Bohemia to Live Oak Point</u> Scale <u>1:10,000</u> Date of survey <u>August 12-September 28, 1993</u> Instructions dated <u>September 25, 1992</u> Project No. <u>OPR-J223/AHP</u> Vessel <u>NOAA Launch 0517</u> Chief of party <u>LCDR J. E. Waddell, Jr., NOAA</u> Surveyed by <u>M.J. McMann, J.L. Budlong, N.J. Briscoe- Atlantic Hydrographic Party</u> Soundings taken by echo sounder, beam echo pole <u>Innerspace echo sounder</u> Graphic record scaled by <u>M.J. McMann, J.L. Budlong, N.J. Briscoe</u> Graphic record checked by <u>M.J. McMann, J.L. Budlong, N.J. Briscoe</u> Verification by <u>C.R. Davies</u> Automated plot by <u>PHS Xynetics</u> Evaluation by <u>C.R. Davies</u> Soundings in metres feet <u>meters and decimeters</u> at MLLW <u>MLLW</u>	
REMARKS: <u>Time in UTC. Revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.</u> <u>All depths listed in this report are referenced to mean lower low water unless otherwise noted.</u> <div style="text-align: right;"> <u>Surf + Awaits 3/5/95</u> <u>MLR</u> </div> <u>301-8-97</u>	

Progress Sketch
 OPR-J223-AHP
 Pensacola and Perdido Bays, Florida
 Atlantic Hydrographic Party
 James E. Waddell Jr, LCDR, NOAA,
 CMDG



Legend

MONTH	SQUARE NM SOUNDINGS	LINEAL NM SOUNDINGS	LINEAL NM ITEM DRAGS	LINEAL NM T/F&MISC	Bottom Smples	Control station	Tide station	SYMBOLS
NOV								
DEC	4	164.9	—	80/14	—	1	4	[Symbol: Dotted pattern]
JAN	10	210.9	—	80/27	—	—	—	[Symbol: Cross-hatch pattern]
FEB	4	218.4	—	156/64	60	—	—	[Symbol: Solid black]
MAR	9	357.4	—	272/67	—	—	—	[Symbol: Horizontal lines]
APR	4	239.8	—	320/100	25	—	—	[Symbol: Vertical lines]
MAY	2	32.9	—	190/60	56	2	—	[Symbol: Diagonal lines (top-left to bottom-right)]
JUN	1	17.7	4.4	150/60	6	—	—	[Symbol: Diagonal lines (bottom-left to top-right)]
JUL	15.9	294.0	—	210/105	8	—	—	[Symbol: Stippled pattern]
AUG	26.4	474.9	—	330/132	67	—	—	[Symbol: Fine grid pattern]
SEP	8.1	149.0	3.9	274/128	48	—	—	[Symbol: Horizontal lines]
OCT	0.1	2.0	—	64/20	23	—	—	[Symbol: Vertical lines]

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10497
FIELD NO. AHP-10-11-93
SCALE: 1:10,000
1993
ATLANTIC HYDROGRAPHIC PARTY
CHIEF OF PARTY: LCDR James E. Waddell, Jr.

A. PROJECT ✓

This survey was conducted in accordance with Hydrographic Project Instructions OPR-J223-AHP, Pensacola and Perdido Bays, Florida and Alabama, dated September 25, 1992 and amended by Change No. 1 dated January 4, 1993. This survey is designated as Sheet "0" on the revised sheet layout dated November 17, 1992.

The purpose of this project is to provide contemporary hydrography for the maintenance of existing charts. The area was last surveyed in 1935 by the U. S. Coast and Geodetic Survey using lead line methods.

B. AREA SURVEYED ✓

The area surveyed for H-10497 covers central Escambia Bay from Bohemia to Live Oak Point. The survey limits are as follows:

North - $30^{\circ}32'56''$ N
South - $30^{\circ}27'50''$ N
East - $087^{\circ}05'20''$ W
West - $087^{\circ}10'55''$ W

This survey was conducted from August 12, 1993 (DN 224) to September 28, 1993 (DN 271).

C. SURVEY VESSELS ✓

NOAA launch 0517 (EDP No. 0517), a 21-foot MonArk was used to collect all survey data. There were no unusual vessel configurations nor problems encountered.

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

The Hydrographic Data Acquisition and Processing System (HDAPS) was used to process all hydrographic data for this survey. Version 4.03 of the PC-DAS programs were used for on-line data acquisition. A listing of HDAPS programs used for data processing and their corresponding version numbers is appended to this report. WordPerfect version 6.0 and NOS programs VELOCITY (version 2.0) and NADCON (version 1.01) were also used on this survey.

E. SONAR EQUIPMENT ✓

Not Applicable.

F. SOUNDING EQUIPMENT ✓

An Innerspace model 448 depth sounder, serial number 187 was used to collect all soundings for this survey.

A standard lead line calibrated in meters, serial number 0517, was used during this survey for comparison readings with the echo sounder. A 5-meter sounding pole, marked according to HSG No. 69, was used to obtain pole soundings.

G. CORRECTIONS TO SOUNDINGS

The Innerspace model 448 depth sounder used during the survey was adjusted for a speed of sound through water of 1500 meters/second. Corrections for the speed of sound through water were computed from data obtained with Odom Hydrographic Systems, Inc. DIGIBAR electronic probe serial number 154. Data quality assurance tests were performed in accordance with Field Procedures Manual 2.1.3.2, prior to each cast. Program VELOCITY, version 2.0, was used to compute speed of sound corrections. Copies of the velocity tables and cast data are in the Survey Separates.* The following casts were taken on this survey:

Cast No.	Table No.	Day/Date	Applicable Days	Latitude (N)	Longitude (W)	Actual/Extended Depth
1	---	225/8-13-93	Not Used	30°24'45"	87°08'00"	5.0/6.5
2	11	239/8-27-93	233 - 245	30°23'00"	87°11'30"	7.0/9.1
3	12	251/9-8-93	246 - 255	30°32'10"	87°07'24"	8.0/10.4
4	13	259/9-16-93	256 - 263	30°31'10"	87°08'40"	3.0/3.9
5	14	267/9-24-93	267 - 271	30°31'13"	87°09'00"	4.0/5.2

- not used

Changes to the gain and/or chart speed were noted on the echogram. Digitized soundings agreed with the analog trace within 0.1 meter. Necessary corrections were made while scanning the echogram.

Weather permitting, lead line comparisons were conducted each day in accordance with FPM 2.1.3.1. No instrument error was detected from these comparisons. The lead line comparison form can be found in the Survey Separates.*

A static draft of 0.3 meter was applied to the on-line data. The draft was measured by subtracting the difference from a punch mark on the side of Launch 0517, 0.6 meters above the transducer, to the water surface.

Settlement and squat measurements were performed on May 15, 1992 (DN 136), at Shalimar, Florida, using Zeiss level S/N 08754. Settlement and squat correctors and the static draft corrector were applied on-line using the

* Filed with the hydrographic data.

offset table. Copies of the field data, the graphs of the settlement and squat correctors vs. speed, and the offset table are included in the Survey Separates.*

The Pensacola, Florida tide station (872-9840) served as control for datum determination. This station is also the reference station for the predicted tides which were applied to the final field sheet. This survey required a +0 hr 30 min time corrector and a x1.04 range ratio be applied to the predicted tides.

The final field sheet was plotted after reapplying the correctors to each data record using the HDAPS program REAPPLY.

Approved tides were requested from the Sea and Lake Levels Branch, N/OES231, in a letter dated December 23, 1993. A copy of the letter is appended to this report.*

H. CONTROL STATIONS ✓

The horizontal control datum for this project is the North American Datum of 1983. One station, TRIS 1992, was used to control this survey. A second station, PITT 1992, was used to check the DGPS equipment performance. A copy of the "Control Station List" is appended to this report.

The Atlantic Hydrographic Party used the Global Positioning System (GPS) to establish horizontal control for this project. The horizontal control report titled "GPS Traverse, Pensacola and Escambia Bays, Florida" was written and submitted by AHP in October 1992 for OPR-J223 to N/CG23322.

I. HYDROGRAPHIC POSITION CONTROL ✓

Differential GPS was used as the method of positioning for all hydrographic data on this survey. An Ashtech model XII receiver, serial number 700157E1076 was used for the reference station. An Ashtech sensor, serial number 700417A1065 was used as the remote station on launch 0517. Maxon VHF radios, using frequency 170.200 MHz, were used as the datalink between reference and remote stations. This equipment meets hydrographic standards for a 1:10,000 scale survey.

Program MONITOR was run for 24 hours on November 12, 1992 to test the reference site for multi-path. The GPS availability at this site was determined to be better than 99% from this test. A copy of the "Plot of Radial Error in Position" and the "outlier.sum" file are included in the Survey Separates.*

Performance checks were conducted daily by resting the launch alongside station PITT 1992. The raw record and the abstract of these checks are included in the Survey Separates.*

Hydrographic operations ceased whenever the horizontal dilution of precision (HDOP) exceeded 3.8. This was calculated in accordance with FPM 3.4.2. High HDOP values occurred during periods of poor satellite geometry.

* Filed with the hydrographic data

J. SHORELINE See Euse Report, section 2

Shoreline shown on the final field sheet was transferred by hand from a photo revised copy of TP-00540 [Cartographic Revision Survey (CRS) 003392]. This document consolidates recent photogrammetric data with TP-00540. This manuscript was compiled on NAD 1927 at 1:20,000 scale and enlarged to 1:10,000 scale. The only shoreline changes noted from the CRS blueprint was the addition of piers.

Shoreline verification was conducted using mainscheme hydrography that junctioned at shore, detached positions, or by visual inspection. Verified shoreline is shown in black ink on the final field sheet. There were no shoreline changes.

Recommendation: The hydrographer recommends that shoreline from TP-00540 and CRS-003392 be used to updated charted shoreline in the common areas with this survey. CMCWR

Existing piers which agreed with the shoreline manuscript were given reference numbers, while piers not shown were located by detached positions and are shown in red on the final field sheet.

The following features were identified on this survey which did not appear on TP-00540 nor CRS-003392:

Position	Latitude (N)	Longitude (W)	Description
1213	30°29'34.57"	087°09'14.65"	Pier Ruins ✓
1564	30°29'54.60"	087°05'53.48"	SE corner Pile ruins
1565	30°29'54.97"	087°05'55.08"	SW corner Pile ruins
1566	30°29'57.02"	087°05'54.57"	NW corner Pile ruins
1567	30°29'57.67"	087°05'53.04"	NE corner Pile ruins
1568	30°30'32.6 ² / ₈ "	087°05'47.63"	Wood Pier - in red
1569	30°30'33.5 ⁸ / ₈ "	087°05'47.82"	Wood Pier - in red
1695	30°30'03.45"	087°09'30.83"	Rock Groin

} Filed with ruins

Verified shoreline features are shown in black ink on the final field sheet. Their reference numbers and corresponding heights were hand plotted on the final field sheet. The term "bares" was used in lieu of the term "exposed" on both the final field sheet and the raw records. Reference number descriptions, field notes, and explanations of new shoreline features are located on the graphic record. Photographs of the features are in the Survey Separates. A complete list of all detached positions by day is included in the accordion file.* It lists the position of each feature or item number.

Recommendation: The hydrographer recommends that details seaward of the HWL from this survey be used to supersede TP-00540 and CRS-003392 in the common area. CMCWR

* Filed with the hydrographic data

K. CROSSLINES ✓

A total of 20.3 nautical miles of crosslines were run, representing 9.6% of the mainscheme hydrography. Crossline soundings agree to within 0.5 meter of the mainscheme soundings.

L. JUNCTIONS ✓

This survey junctions with H-10455 and H-10449 to the south and H-10492 to the north; all are 1:10,000 scale surveys from OPR-J223-AHP. These surveys were completed earlier in 1993. Junction soundings agree within 0.3 meter with all three junction surveys.

M. COMPARISON WITH PRIOR SURVEYS *See Eumc Report, section 6*

This survey was compared with prior survey H-5822, 1:20,000 scale, completed in 1935.

No items were addressed on this survey which originated from the prior survey.

Prior survey soundings agree well with the current survey. Sounding agreement is generally within 0.5 meter, except in the area of the dredged Escambia Bay channel, which was constructed sometime after 1935. In this area, soundings are much shoaler on the prior survey.

Current survey soundings are generally shoaler than prior soundings. Prior survey and current survey contours are generally in good agreement, considering the conversion from feet to meters. Major changes in the area include the replacement of the railroad drawbridge with a high rise fixed bridge, and the construction of the two Interstate 10 bridges spanning the bay from Lora Pt to Liveoak Pt.

Recommendation: The hydrographer recommends that data from the present survey be used to supersede that of H-5822 within their common areas. *See Section 6 of Eumc Report*

N. ITEM INVESTIGATION REPORTS ✓

One AWOIS item, number 8330, was addressed as part of this survey. The item investigation report is appended.

O. COMPARISON WITH THE CHART *See Eumc Report, section 7*

Comparisons were made with Chart 11378, 25th Edition, June 22, 1991 and the 26th Edition, September 5, 1992.

Four dangers to navigation were identified during this survey. Three uncharted piles and a shoal were reported in a letter forwarded to the Commander, Eighth U.S. Coast Guard District. A copy of the letter is appended to this report.

Current soundings compared within 0.5 meter of those charted.

Discrepancies with the chart are as follows:

A 2-meter shoal was located in the vicinity of 30°28'50"N, 087°09'05"W. Mainscheme hydrography was split to 10 meters over the shoal and a least depth of 2.0 meters (6.5 ft.) was found. This shoal's least depth is not a danger to navigation, since charted depths are from 6 to 8 feet. ✓

A charted 6-foot shoal at 30°29'00", 087°08'50", was developed with 10-meter line spacing and a least depth of 1.9 meters (6.2 ft) was found. ✓

An uncharted shoal was located during mainscheme hydrography and later developed with 25-meter line spacing. This shoal is located at 30°29'18.0"N, 087°08'02.0"W. A least depth of 1.5⁴ meters (4.8⁶ ft.) was found, and reported in the danger to navigation letter.

A charted 6-foot shoal in the vicinity of 30°31'00"N, 087°07'55"W, was developed with 50-meter line spacing and a least depth of 1.6 meters (5.2 ft) ✓ was found. This shoal covers a much smaller area than charted.

A charted 6-foot shoal at 30°31'05"N, 087°07'32"W, was developed with 50-meter line spacing and a least depth of 2.0 meters (6.6 ft) was found. ✓

A charted 6-foot shoal at 30°30'40"N, 087°07'32"W, was developed with 50-meter line spacing and a least depth of 2.0 meters (6.6 ft) was found. ✓

A charted 6-foot shoal at 30°30'32"N, 087°07'20"W, was developed with 50-meter line spacing and a least depth of 2.1 meters (6.9 ft) was found. ✓

A charted 6-foot shoal at 30°30'40"N, 087°07'10"W, was developed with 50-meter line spacing and a least depth of 2.1 meters (6.9 ft) was found.

A charted 6-foot shoal at 30°31'00"N, 087°06'50"W, was developed with 50-meter line spacing and a least depth of 1.8 meters (5.9 ft) was found. ✓

A charted 6-foot shoal at 30°30'25"N, 087°07'05"W, was developed with 50-meter line spacing and a least depth of 2.1 meters (6.9 ft) was found. /

A charted 5-foot shoal at 30°30'27"N, 087°06'55"W, was developed with 50-meter line spacing and a least depth of 1.8 meters (5.9 ft) was found. ✓

A charted 6-foot shoal at 30°30'45"N, 087°06'15"W, was developed with 50-meter line spacing and a least depth of 2.0 meters (6.6 ft) was found. ✓

A charted 6-foot shoal at 30°30'30"N, 087°06'15"W, was developed with 50-meter line spacing and a least depth of 2.0 meters (6.6 ft) was found. ✓

A charted 6-foot shoal at 30°30'15"N, 087°06'30"W, was developed with 50-meter line spacing and a least depth of 2.0 meters (6.6 ft) was found. ✓

A charted 6-foot shoal at 30°30'05"N, 087°06'55"W, was developed with 50-meter line spacing and a least depth of 1.8 meters (5.9 ft) was found. ✓

A charted 5-foot shoal at 30°30'00"N, 087°06'30"W, was developed with 50-meter line spacing and a least depth of 1.5 meters (4.9 ft) was found. ✓

A charted 4-foot shoal at 30°29'45"N, 087°07'00"W, was developed with 50-meter line spacing and a least depth of 1.6 meters (5.2 ft) was found. ✓

A charted 6-foot shoal at 30°29'25"N, 087°06'45"W, was developed with 50-meter line spacing and a least depth of 1.8 meters (5.9 ft) was found.

A charted 5-foot shoal at 30°29'05"N, 087°06'55"W, was developed with 50-meter line spacing and a least depth of 1.8 meters (5.9 ft) was found.

A charted 5-foot shoal at 30°29'00"N, 087°06'45"W, was developed with 50-meter line spacing and a least depth of 2.0 meters (6.6 ft) was found.

A charted 6-foot shoal at 30°28'45"N, 087°06'40"W, was developed with 50-meter line spacing and a least depth of 1.8 meters (5.9 ft) was found.

Recommendation: Soundings from these shoal developments should supersede charted soundings. *concur*

A charted channel in the area just south of Lora Pt., noted on the chart as "10 FT 1977", was investigated by running 50-meter line spacing across the channel. No indications of a dredged channel were found. Depths found were between 1.7 and 2.3 meters (5.6 ft. and 7.5 ft.) This channel served barges into the Pensacola Westinghouse facility. Discussions with plant personnel indicated barges no longer use this docking facility, and that there are no plans for using it again. (Lat. 30°31'00"N, Long. 87°09'18"W.)

Recommendation: The hydrographer recommends the dashed channel limits and the "10 FT 1977" note be removed from the chart. *concur, see Encl. Report Section 7.C.*

Two uncharted canals now exist off the northwest corner of Indian Bayou. Depths in these canals are between 1.1 and 1.7 meters (3.6 to 5.9 feet).

Recommendation: The canals and depths from this survey should be charted. *concur*

A charted stake at 30°29'35"N, 087°08'55"W, originated from the prior survey H-5822. This stake was investigated using a chain drag with 60 feet of chain between the otter doors and 50 feet of tow line, at 10 meter line spacing, for a 50-meter radius around the prior survey position. Nothing was found. A page sized track-plot of the area covered by this drag is appended to this report. *

Recommendation: The stake should be removed from the chart. *concur*

A charted pile in the vicinity of 30°29'55"N, 087°08'40"W, originated from prior survey H-5822. This pile was investigated using a chain drag with 60 feet of chain between the otter doors and 50 feet of tow line, at 10 meter line spacing, for a 50-meter radius around the prior survey position. Nothing was found. A page sized track plot of the area covered by this drag is appended to this report. *

* Filed with the hydrographic data

Recommendation: The pile should be removed from the chart. *Concur*

A charted spoil area on the west side of the Escambia Bay channel has not been used since 1971. Discussions with Mr. Jim Walker of the U.S. Army Corps of Engineers (205/690-3319) revealed that this area is still considered active.

Recommendation: The spoil area along the west side of the Escambia Bay channel should remain as charted. *Concur*

Two "stakes reported" notes on the east side of this survey area were addressed as AWOIS 8330, appended to this report.

P. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede all prior surveys within the common area, *except as noted in section 6 of the Enac Report.*

Q. AIDS TO NAVIGATION ✓

There are five aids to navigation in the survey area. One is a light, three are daybeacons with radar reflectors, and one is a buoy. Only the light has a published position in the U.S.C.G. Light List, Volume IV, Gulf Of Mexico, 1993. The surveyed position for Escambia Bay Light 7, U.S.C.G. Light List, Volume IV, 1993, No. 4790, is 30°29'17.8"N, 087°08'02.5"W. This agrees well with its light list position of 30°29.3'N, 087°08.1'W.

Detached positions were taken on all aids to navigation. The comparison of the surveyed position with the charted location was:

<u>LL No.</u>	<u>NAVAID</u>	<u>PN</u>	<u>Comparison Results</u>
4785	R "4"	1218	230 meters NE of charted position
4790	Lt "7"	1217	On station
4795	R "10"	1562	On station
4800	G "11"	1561	On station
None	RN "12"	1559	Not Charted

Daybeacon R "4" is charted as position approximate, which explains the difference between the surveyed and charted position. All of the aids serve their intended purpose although they should be re-charted using the surveyed positions, listed on the appended NOAA form 76-40. *Concur*

Two landmarks shown on chart 11378 were visually inspected from seaward and could not be seen, while a third does not exist. Positions and descriptions for these landmarks recommended for deletion from the chart are included on the appended NOAA form 76-40, *attached to this report.*

A cable crossing sign was located by detached position 1558 at 30°030'22.5"N, 087°09'42.2"W, which agrees well with the western terminus of a charted cable area.

No pipelines, nor ferry routes exist within the survey area. ✓

None of the bridge and overhead cable clearances were suspect and they should all remain as charted. *concur*

R. STATISTICS ✓

<u>Description</u>	<u>Quantity</u>
Total Number of Positions	1695
Total Lineal NM of Hydrography	211.5
Square NM of Hydrography	11.8
Days of Production	12
Detached Positions	46
Bottom Samples	40
Tide Stations	2
Velocity Casts	5

S. MISCELLANEOUS ✓

No anomalous currents or tides were observed during this survey.

Forty bottom samples were taken and submitted to the Smithsonian Institution in accordance with the project instructions. Bottom sample positions are plotted on the overlay and are listed on the Oceanographic Log Sheet-M, NOAA Form 75-44, which may be found in the Survey Separates.*

Position number 425 was duplicated during this survey.

The "assign fix" function of the program QUICK EDIT, was used to assign position numbers to the beginning or ending of a line as needed.

T. RECOMMENDATIONS ✓

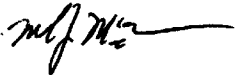
No inadequacies in this survey, planned construction, nor future dredging were identified.

* Filed with the hydrographic data

U. REFERRAL TO REPORTS ✓

<u>Title</u>	<u>Transmittal Information</u>
Horizontal Control Report for OPR-J223-AHP	October November 1992: N/CG23322
Coast Pilot for OPR-J223-AHP	April 1994: N/CG245
User Evaluation for OPR-J223-AHP	April 1994: N/CG245
Chart Inspection Report for OPR-J223-AHP	April 1994: N/CG245

Submitted by:



Mark J. McMann
Launch Hydrographer In Charge

AWOIS NO: 8330

Item Description: OBSTRUCTION
Source: CL1196/80--USPS

AWOIS Position: Lat - 30 30' 36.00"N, Lon - 87 06' 48.00"W

Required Investigation: VS, ES

Charts Affected: 11378

INVESTIGATION

Date(s)/DN(s): 9-16-93 / 259 (OPR-J233-AHP, H-10497)

Position Numbers: 1570-1587

Launch Number: 0517

Investigation Used: Visual Search

Position Determined By: Ashtech M-XII DGPS

Investigation Summary: Pos. 1570-1587 were taken on 12" diameter wood piles exposed from 1.3m to 4.3m. These piles mark oyster leases within the dashed boundary shown on the AWOIS chart markup and as described in the AWOIS listing. Nine of these piles have signs reading "Danger Submerged Oyster Reef". The piles were located at the following positions:

<u>PN</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>	<u>Elevation</u>
1570	30°31'06.21"	087°06'46.15"	^{bases} exposed 4.3m
1571	30°31'02.69"	087°06'45.82"	exposed 4.3m
1572	30°31'03.33"	087°06'40.30"	exposed 4.3m
1573	30°30'59.64"	087°06'42.12"	exposed 4.3m
1574	30°30'59.47"	087°06'38.47"	exposed 4.3m
1575	30°30'57.31"	087°06'38.63"	exposed 4.3m
1576	30°31'04.46"	087°06'20.15"	exposed 3.3m
1577	30°30'51.58"	087°06'18.53"	exposed 3.3m
1578	30°30'48.61"	087°06'05.42"	exposed 3.3m
1579	30°30'11.29"	087°06'33.14"	exposed 4.3m
1580	30°30'12.41"	087°06'28.32"	exposed 1.3m
1581	30°30'13.96"	087°06'22.02"	exposed 1.8m
1582	30°30'07.89"	087°06'09.55"	exposed 1.8m
1583	30°30'09.74"	087°06'30.06"	exposed 4.3m
1584	30°30'04.51"	087°06'32.80"	exposed 4.3m
1585	30°30'00.64"	087°06'31.35"	exposed 4.3m
1586	30°29'57.87"	087°06'30.53"	exposed 4.3m
1587	30°29'57.09"	087°06'27.67"	exposed 4.3m ^{bases}

CHARTING RECOMMENDATION

The Hydrographer recommends charting the piles as located and removing the stakes reported notes at 30°30'36"N, 087°06'48"W and 30°29'06"N, 087°06'18", from the chart.

Concur

Recommended Position: As listed above

Recommended Least Depth: As listed above

COMPILATION NOTES

Chart

Applied As

CONTROL STATIONS as of 21 Dec 1993

No	Type	Latitude	Longitude	H	Cart	Freq	Vel Code	MM/DD/YY	Station Name
001		030:19:41.774	087:10:22.533	0	0	0.0	0.0	10/00/92	TRIS 1992
002		030:24:27.633	087:12:27.549	0	0	0.0	0.0	10/00/92	PITT Cal Point 1992
003		030:34:03.622	086:59:47.491	0	0	0.0	0.0	12/15/92	Blackwater Channel Light 30
004		030:17:15.417	087:29:09.073	58	0	0.0	0.0	11/29/93	EDEN 1993
005		030:18:35.685	087:26:19.266	2	0	0.0	0.0	11/29/93	CAL 1 1993
006		030:24:22.477	087:26:10.133	2	0	0.0	0.0	11/29/93	CAL 2 1993



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Coast and Geodetic Survey
Norfolk, Virginia 23510-1114

Atlantic Hydrographic Party
439 West York St.
Norfolk, VA 23510-1114

March 9, 1994

**ADVANCE
INFORMATION**

Commander, (OAN)
Eighth U. S. Coast Guard District
Hale Boggs Federal Building
501 Magazine St.
New Orleans, LA 70130-3396

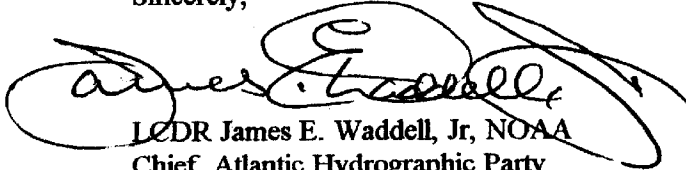
Dear Sir,

While conducting a basic hydrographic survey (Registry No. H-10497) of Pensacola, Florida, Escambia Bay, Bohemia to Live Oak Point, four uncharted features were identified as dangers to navigation. These features are listed on an attachment to this letter and are recommended for inclusion in the Local Notice to Mariners.

Positions are in NAD83 datum and the elevations and depth have been reduced to Mean Lower Low Water (MLLW) using predicted tides. The features were located using Differential GPS. This information affects chart 11378, 26th Edition/September 5/92, NAD 1983 datum. A chart section showing the locations of these dangers is attached.

Questions concerning this report should be directed to me at (904) 458-0067 or Mr. Dennis Hill at the Pacific Hydrographic Section, Seattle, WA at (206) 526-6853.

Sincerely,



LEDR James E. Waddell, Jr, NOAA
Chief, Atlantic Hydrographic Party

Attachments

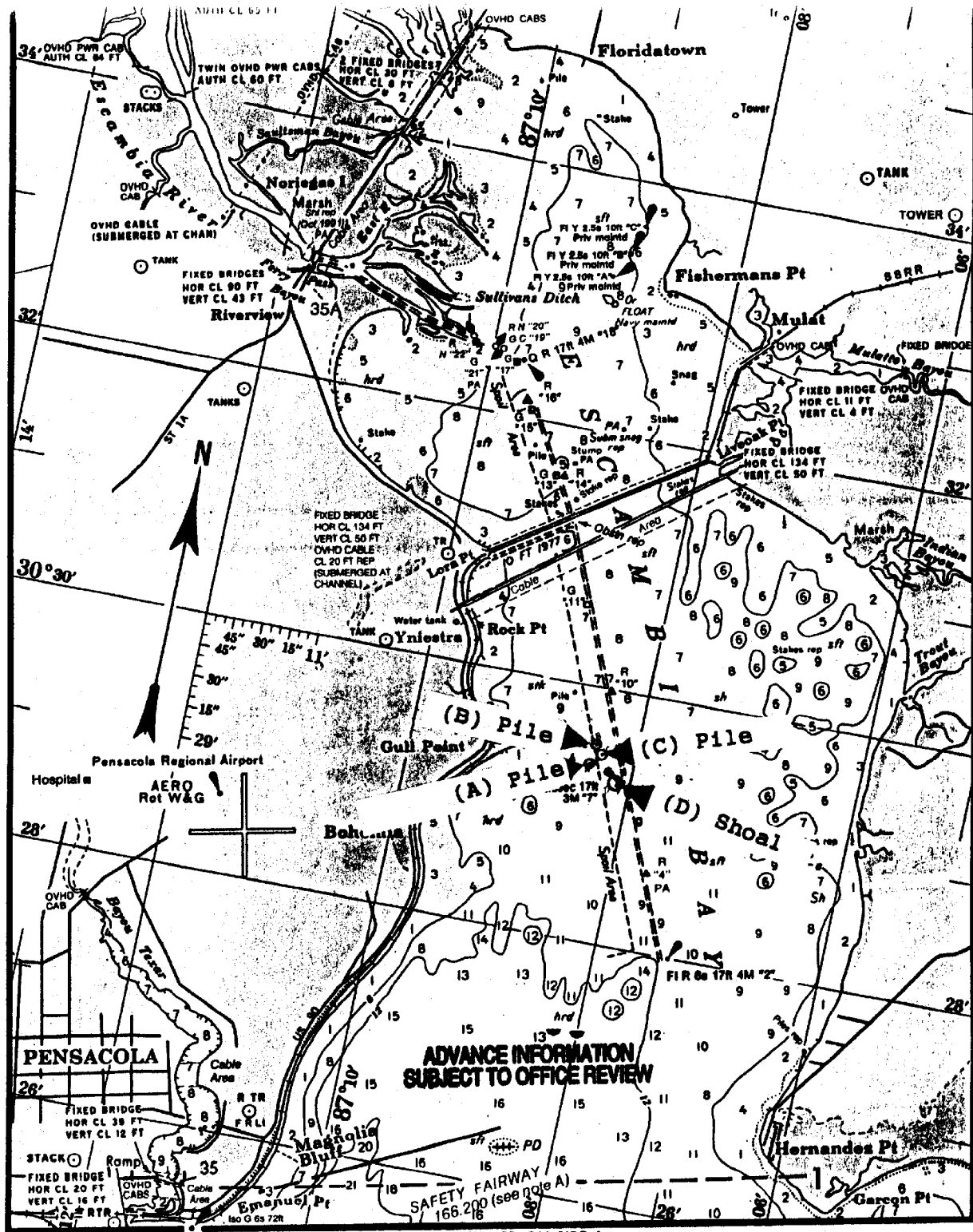
cc: N/CG221
N/CG245
DMAHTC



Dangers to Navigation Affecting Chart 11378

Feature	Latitude (N)	Longitude(W)	Elevation
(A) Pile	30°29'24.8"	087°08'25.3"	Bares 10.5 ft.
(B) Pile	30°29'34.9"	087°08'22.9"	Bares 10.5 ft.
(C) Pile	30°29'30.0"	087°08'17.8"	Bares 10.5 ft.
(D) Shoal	30°29'18.0"	087°08'04.0"	Least Depth of 4.9 ft.

**ADVANCE INFORMATION
SUBJECT TO OFFICE REVIEW**



SIDE B

Section from Chart 11378
 26th Edition, September 5/92
 Escambia Bay Extension
 1:80,000 Scale
 NAD 1983

RESPONSIBLE PERSONNEL		ORIGINATOR
TYPE OF ACTION	NAME	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETTIC PARTY <input type="checkbox"/> OTHER (Specify)
OBJECTS INSPECTED FROM SEAWARD	MARK J. McMANN	FIELD ACTIVITY REPRESENTATIVE
POSITIONS DETERMINED AND/OR VERIFIED	BRIAN A. LINK	OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
 (Consult Photogrammetric Instructions No. 64.)

FIELD (Cont'd)

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS
 Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.
 EXAMPLE: 75E(C)6042
 8-12-75

FIELD

I. NEW POSITION DETERMINED OR VERIFIED
 Enter the applicable data by symbols as follows:
 F - Field
 L - Located
 V - Verified
 1 - Triangulation
 2 - Traverse
 3 - Intersection
 4 - Resection
 5 - Field Identified
 6 - Theodolite
 7 - Planetable
 8 - Sextant

A. Field positions* require entry of method of location and date of field work.
 EXAMPLE: F-2-6-L
 8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

B. Photogrammetric field positions* require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.
 EXAMPLE: P-8-V
 8-12-75
 74L(C)2982

II. TRIANGULATION STATION RECOVERED

When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.
 EXAMPLE: Triang. Rec.
 8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.
 EXAMPLE: V-Vis.
 8-12-75

*PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	MARK J. McMANN
POSITIONS DETERMINED AND/OR VERIFIED	BRIAN A. LINK
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
 (Consult Photogrammetric Instructions No. 64.)

OFFICE
I. OFFICE IDENTIFIED AND LOCATED OBJECTS
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FIELD
I. NEW POSITION DETERMINED OR VERIFIED
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 5 - Field identified
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 7 - Planetable
 8 - Sextant
 A. Field positions* require entry of method of location and date of field work.
 EXAMPLE: F-2-6-L
 8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)
 B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.
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 8-12-75
 74L(C)2982

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 Enter 'V-Vis.' and date.
 EXAMPLE: V-Vis.
 8-12-75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

APPROVAL SHEET

BASIC HYDROGRAPHIC SURVEY

OPR-J223-AHP

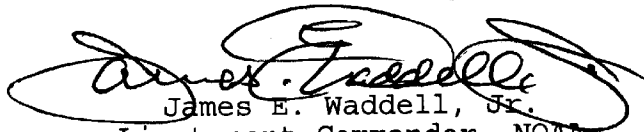
AHP-10-11-93

H-10497

1993

This basic hydrographic survey was conducted in accordance with the project instructions for OPR-J223-AHP, the hydrographic manual, the hydrographic survey guidelines, and the field procedures manual. The survey data and reports were completed under frequent supervision. All reports were reviewed in their entirety and all supporting records checked by Mr. Brian Link, Assistant Chief of Party. The final field sheet and descriptive report were reviewed and approved by LCDR James E. Waddell, Jr., Chief of Party.

This survey is a complete basic hydrographic survey for the area described in Section B of this report.


James E. Waddell, Jr.
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Party



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

ORIGINAL

DATE: January 13, 1994

MARINE CENTER: Pacific

HYDROGRAPHIC PROJECT: OPR-J223-AHP2

HYDROGRAPHIC SHEET: H-10497

LOCALITY: Florida, Pensacola Bay, Bohemia to Live Oak Point

TIME PERIOD: August 12 - September 28, 1993

TIDE STATION USED: 872-9816 Lora Point, Escambia Bay, Fl.
Lat. $30^{\circ} 30.9'N$ Lon. $87^{\circ} 09.7'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 3.02 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.4 ft.

REMARKS: RECOMMENDED ZONING

Times and heights are direct on Lora Point, Fl. (872-9816).

Note: Times are tabulated in Central Standard Time.

William M. H. Shaw
CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

H-10497

Name on Survey	A ON CHART NO. 11378											
	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				
AVALON BEACH (locale)												1
BASIN BAYOU	X											2
BOHEMIA	X											3
DEVILS POINT	X	X										4
ESCAMBIA BAY	X	X										5
FLORIDA (title)	X											6
GABERONE	X											7
GULL POINT (locale)	X											8
INDIAN BAYOU	X											9
LIVEOAK POINT	X	X										10
LORA POINT	X	X										11
ROCK POINT	X											12
TROUT BAYOU	X											13
YNIESTRA	X											14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

Approved:

Charles E. Harrington

Chief Geographer - N/CG 2x5

APR 7 1994

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	1
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	
DESCRI- PTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR- GRAMS
ACCORDION FILES	1		
ENVELOPES			
VOLUMES			
CAHIERS			
BOXES			

SHORELINE DATA	
SHORELINE MAPS (List):	TP-00540 (CRS-003392)
PHOTOBATHYMETRIC MAPS (List):	NA
NOTES TO THE HYDROGRAPHER (List):	
SPECIAL REPORTS (List):	NA
NAUTICAL CHARTS (List):	11378 27th Ed., 5/7/94

OFFICE PROCESSING ACTIVITIES
The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			1695
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	24.5		24.5
VERIFICATION OF SOUNDINGS	14		14
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	11		11
COMPARISON WITH PRIOR SURVEYS AND CHARTS		8	8
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		12	12
GEOGRAPHIC NAMES			
OTHER*		10	10
*USE OTHER SIDE OF FORM FOR REMARKS			
TOTALS	49.5	30	79.5
Pre-processing Examination by LT M. Larsen	Beginning Date 3/24/94	Ending Date 5/11/94	
Verification of Field Data by R. Davies	Time (Hours) 49.5	Ending Date 9/7/94	
Verification Check by	Time (Hours)	Ending Date	
Evaluation and Analysis by R. Davies	Time (Hours) 20	Ending Date 12/1/94	
Inspection by G. Kay	Time (Hours) 6	Ending Date 12/7/94	

EVALUATION REPORT

H-10497

1. INTRODUCTION

Survey H-10497 is a basic hydrographic survey accomplished by the Atlantic Hydrographic Field Party 2 under the following Project Instructions.

OPR-J223-AHP, dated September 25, 1992

CHANGE NO. 1, dated January 4, 1993

CHANGE NO. 2, dated October 13, 1993

This survey was conducted in Escambia Bay, Florida between the town of Bohemia and Live Oak Point. The surveyed area also includes Trout and Indian Bayous. The surveyed area extends from latitude 30/27/58N to latitude 30/31/56N, and from longitude 87/05/21W to longitude 87/09/54W. The shoreline in the area is characterized by sand and marsh. Numerous private piers exist throughout the area. The bottom consists of mud and sand. Depths range from 0.2 meters along the shoreline to 4.6 meters in the center of Escambia Bay Channel.

Predicted tides for Pensacola, Florida were used for the reduction of soundings during field processing. Approved hourly heights zoned from Lora Point, Escambia Bay, Florida, gage 872-9816 were used during office processing.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. NAD 83 is used as the horizontal datum for plotting and position computation. The offset values and velocity correctors are adequate. An accompanying computer printout contains the parameters and the correctors.

A digital file has been generated for this survey that includes categories of information required to comply with Hydrographic Survey Guidelines No. 52, Standard Digital Data Exchange Format, April 15, 1986. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Sections H and I of the hydrographer's report and the 1992 Horizontal Control Report for OPR-J223-AHP, contain adequate discussions of horizontal control and hydrographic positioning.

Differential GPS (DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The quality of 16

positions exceeded the limit in terms of HDOP. These positions are isolated and occur randomly throughout the survey area. A review of the data, however, indicates that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with the surrounding information. These fixes are considered acceptable.

The position of the horizontal control station used during hydrography is a 1992 field value based on NAD 83.

The smooth sheet and accompanying overlays are annotated with NAD 27 adjustment ticks based on values determined with NGS program NADCON. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: 0.707 seconds (21.764 meters)
Longitude: -0.114 seconds (-3.041 meters)

The year of establishment of the control station shown on the smooth sheet originates with the horizontal control records for this survey.

Cartographic Revision Survey (CRS) BP-148143 (TP-00540), updated by NANCI support data, was compiled on NAD 27 and applies to this survey.

The following shoreline changes are depicted on the smooth sheet with a red line with supporting positional information. These revisions are adequate to supersede the common photogrammetrically delineated shoreline.

<u>Feature</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>
pier	30/30/32.62	87/05/47.63
pier	30/30/33.58	87/05/47.82

3. HYDROGRAPHY

Except as noted below and elsewhere in this report, hydrography is adequate to;

- a. delineate the bottom configuration, determine least depths, and draw selected depth curves;
- b. reveal there are no significant discrepancies or anomalies requiring further investigation;
- c. show the survey was properly controlled and soundings are correctly plotted.

Standard depth curves were adequately drawn and developed with the exception of the zero

curve. Project Instructions limits inshore hydrography to the 0.7 meter depth curve based on the shallowness of the area and a small tide range.

4. CONDITION OF SURVEY

With the exception of the following, the hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, March 1993 edition, except for the following.

Two features which originate with prior survey H-5822 and are charted were not investigated during this survey. See section 6 of the Evaluation Report for the identification of the features.

5. JUNCTIONS

Survey H-10497 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10449	1992-93	1:10,000	Southwest
H-10455	1993	1:10,000	Southeast
H-10492	1993	1:10,000	North

The junction with surveys H-10449, H-10455 and H-10492 are complete. Several soundings and one feature have been transferred to survey H-10497 from survey H-10492 to better portray the bottom in the common area.

6. COMPARISON WITH PRIOR SURVEYS

H-5822(1935) 1:20,000

Survey H-5822 covers the entire area common to survey H-10497. There is an average difference in depths of 1 meters with extreme cases of 2 to 3 meters. These extremes occur in the channel. In most cases, the prior soundings are shoaler. This area has experienced natural accretion and erosional processes. These processes, the different horizontal datums and relative accuracy of the contemporary data acquisition techniques account for the depth differences between the surveys.

The following features were brought forward from prior survey H-5822 because of inadequate investigations.

<u>Feature</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>
rock awash	30/30/18	87/09/36
pier ruins	30/29/33	87/09/13

There are no AWOIS items which originates with the prior survey H-5822.

Survey H-10497 is adequate to supersede the above mentioned prior survey within the common area except for the above mentioned features.

7. COMPARISON WITH CHART

Chart 11378, 26th Edition, Sept 5, 1992; scale 1:40,000/1:80,000

Chart 11378, 27th Edition, May 7, 1994; scale 1:40,000/1:80,000

The 26th and 27th editions of chart 11378 are identical except for some minor revision to the shoreline, the controlling depth of Escambia Bay channel, the addition of the dangers to navigation reported during this survey and charted notes.

a. Hydrography

Charted hydrography originates with the prior survey mentioned in section 6 and miscellaneous sources and requires no further discussion, except for the following.

A note, "*10 ft 1977*", associated with the charted channel at latitude 30/31/00N, longitude 87/09/18W, should be removed. Soundings in the area of this charted channel indicate that the channel no longer exists. Until the channel is removed from the chart, it should be charted as discontinued with a note, "*4 ft 1993*" (1.4 meters).

A note, "*Obstr rep*", charted at latitude 30/31/12N, longitude 87/08/33W, falls within the junction area with this survey and survey H-10492. This feature is AWOIS item 8331, and was found to be an submerged obstruction with a least depth of 2 meters at MLLW. A detail discussion can be found in the Descriptive Report for survey H-10492.

Three "*piles PA*", charted in the vicinity of latitude 30/29/30N, longitude 87/08/23W, originates with this survey, see dangers to navigation report, and should be retained as charted but with the note "*PA*" removed.

The note, "*shl (4 1/2 ft 1994)*", charted at latitude 30/29/18N, longitude 87/08/04W, originates with this survey, see danger to navigation report, should be retained as charted.

Survey H-10497 is adequate to supersede charted hydrography within the common area.

b. AWOIS

AWOIS item 8330 originates with a miscellaneous source. Refer to the hydrographer's report for discussion and disposition of these features.

c. Controlling Depths

Escambia Bay channel traverses this survey in a southeast-northwest direction in Escambia Bay. It is maintained channel with a controlling depth of 9 feet (2.7 meters). The depths found during this survey depths range from 3.3 to 4.6 meters (10.8-15.1 ft).

The charted position of Escambia Bay channel between latitude 30/30/40N, longitude 87/08/42W is between 20 to 100 meters west of the channel defined by this survey. It is recommended that Escambia Bay channel limits be compiled with the aid of this present survey.

d. Aids to Navigation

There are four fixed and one floating aids to navigation within the survey area. These aids were located and serve their intended purpose.

Escambia Bay Daybeacon 4 was located hydrographically with DGPS. It was found to be 230 meters off the charted position. The new position does serves its intended purpose, marking the east side of the Escambia Bay channel. It is recommended that this aid be charted at its survey position and the "PA" note removed.

e. Geographic Names

Names appearing on the smooth sheet and in the survey title have been approved by the Chief Geographer.

f. Dangers to Navigation

Four dangers to navigation were reported by the hydrographer. A copy of the report is attached. No dangers to navigation were generated during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10497 adequately complies with the project instructions except where noted in this report.

9. ADDITIONAL FIELD WORK

This is an adequate hydrographic survey. Additional field work is recommended on a low priority basis for the rock awash and pier ruins mentioned in section 6 of this report.

Charles R. Davies
C.R. Davies
Cartographer

APPROVAL SHEET
H-10497

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disapproval of charted data. The digital data have been completed and all revisions and processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts have been made and are included with the survey records. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Dennis J. Hill Date: *December 7, 1994*
Dennis J. Hill
Chief, Hydrographic Processing Unit
Pacific Hydrographic 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.

Kathy Timmons Date: *12/16/94*
Commander Kathy Timmons, NOAA
Chief, Pacific Hydrographic Section

Final Approval

Approved:

Thomas W. Richards Date: *2/8/95*
Thomas W. Richards
Captain, NOAA
Director, Coast Survey

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10497

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
11385			Full Part Before After Marine Center Approval Signed Via <i>Full Application</i>
			Drawing No. <i>of sheets from another chart</i>
11383	22 Feb 96	Mark D. Jiffi	
		<i>SEW</i>	Full Part Before After Marine Center Approval Signed Via
			Drawing No. <i>42</i>
11378	10 May 96	Mark D. Jiffi	
			Full Part Before After Marine Center Approval Signed Via
			Drawing No. <i>28 Reapplied thru 11383</i>
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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			Full Part Before After Marine Center Approval Signed Via
			Drawing No.