

9800

Diag. Cht. No. 1242-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT  
(HYDROGRAPHIC)

Type of Survey ..... Hydrographic .....  
Field No. .... HSB-5-2-78 .....  
Office No. .... H-9800 .....

LOCALITY

State ..... Georgia/Florida .....  
General Locality ..... Cumberland Sound .....  
Locality ..... St. Marys Entrance .....

1978-79

CHIEF OF PARTY  
T.W. Richards

LIBRARY & ARCHIVES

DATE ..... April 9, 1980 .....

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*Area 3*

*Ch. 4*

*11502*

*11503*

*11489 A*

☆ U.S. GOV. PRINTING OFFICE: 1976-669-441

*76.40 forms see L-259(79)*

**HYDROGRAPHIC TITLE SHEET**

H - 9800

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.

HSB - 5 - 2-78

State Georgia/Florida

General locality Georgia/Florida Border. Cumberland Sound

Locality St. Marys Entrance

Scale 1:5,000

Date of survey (JD 320) (JD 168)  
16 Nov. 1978 -17 June 1979

Instructions dated 31 July 1978

Project No. OPR-G324-HFP-78\*

Vessel Launch 1277 and Launch 1278

Chief of party LCDR Thomas W. Richards

Surveyed by Kathy Andreen, LT., NOAA

Soundings taken by echo sounder, ~~hand lead~~ <sup>hand lead</sup> ~~XXXXXXXX~~ pole Raytheon Fathometer, s/n 2924

Graphic record scaled by K.A., W.S., D.B., J.K., K.K., S.P., S.G., A.B., R.L.

Graphic record checked by Same

Protracted by \_\_\_\_\_ Automated plot by Field plot - PDP8/e  
AMC-Xyninetics 12001

Verification by RR Hill

Soundings in ~~XXXXXXXX~~ feet at MLW ~~XXXXX~~

REMARKS: This survey is complete and adequate to supersede prior survey. For

other reference reports, see Section "S". Time Meridian: 0° (GMT)

KA - Kathy Andreen \* Change No. 1 (9/20/78)

WS - Wayne Sprye

Change No. 2 (11/7/78)

DB - Danny Bryant

JK - Judy Krauthamer

Change No. 3 (2/5/79)

KK - Krutz Klinefelter

SP - Steve Pugh

Change No. 4 (5/9/79)

SG - Susan Gilbert

AB - A. Y. Bryson

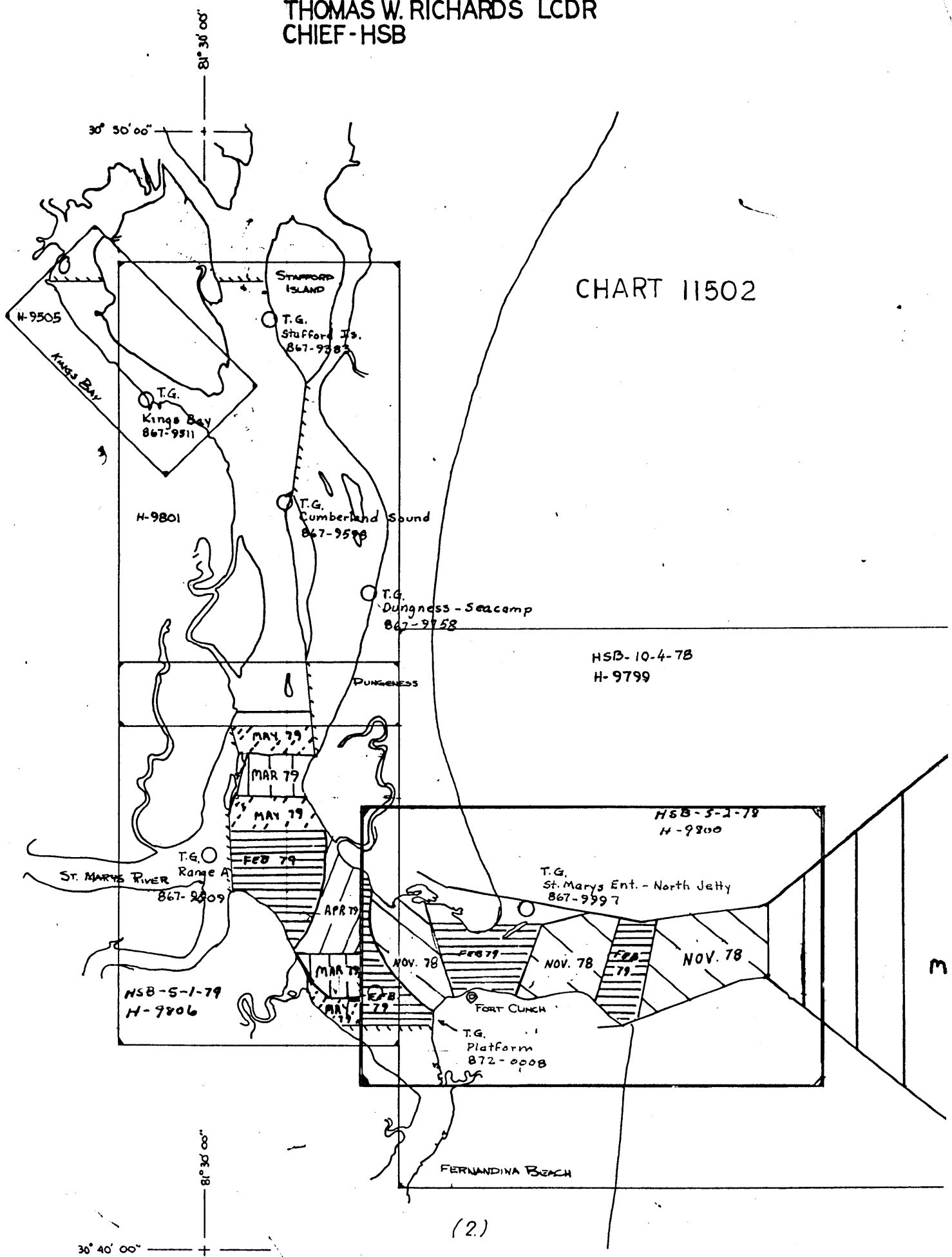
RL - Robert Lewis

*Applied to stds 9/10/80*  
*[Signature]*

(1.)

THOMAS W. RICHARDS LCDR  
CHIEF - HSB

CHART 11502



DESCRIPTIVE REPORT  
TO ACCOMPANY  
HYDROGRAPHIC SURVEY H-9800 (HSB-5-2-78)

Scale: 1:5,000 (1978-79)  
LCDR Thomas W. Richards  
LT Kathryn Andreen

Hydrographic Field Party #2  
Chief of Party  
Officer-in-Charge

A. PROJECT

This hydrographic survey was conducted in accordance with PROJECT INSTRUCTIONS OPR-G324-HFP-78, St. Marys River to Kings Bay, Georgia, dated July 31, 1978, with the following supplements to instructions: Change No. 1, dated September 20, 1978; Change No. 2, dated November 7, 1978; Change No. 3, dated February 5, 1979; and Change No. 4, dated May 9, 1979.

B. AREA SURVEYED

The area covered by this survey was bound on the north by the shoreline of Cumberland Island and the St. Marys Entrance North Jetty. The southern boundry was the shoreline of Amelia Island and St. Marys Entrance South Jetty. Longitude 81°24'07"W was the eastern limit of the survey, with the western edge at Longitude 81°28'26". The survey commenced on November 16, (JD 320), 1978, and ended on June 17 (JD 168), 1979.

C. SOUNDING VESSELS

NOAA Launch 1277, equipped with a Raytheon fathometer, Model 723-D, was used to obtain all soundings and bottom samples for this survey. NOAA Launch 1278, using the Raytheon fathometer, Model 719-B, was used only to wire drag for the PSR #4 marker located at 30°42'28.57"N, 81°27'53.54"W.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Sounding equipment operated well during the survey, with a few minor problems. The Raytheon 723-D fathometer (s/n 2924) used on Launch 1277, operated well in depths greater than three feet, but could not consistantly sound well in the shoaler areas. Pole soundings were usually obtained for soundings between 0 to 3 feet when using 1277. On several occasions, (JD 033, 043, 044, 045, and 047, 1979), the digitizer, s/n 2773, would not digitize depths correctly on fix positions. On JD 46, 1979, the digitizer would not digitize soundings at all. To remedy this problem, on JD 059, 1979, the threshold in the ECU was readjusted for a more stable readout and the digitizer module in the ECU was replaced.

Since Launch 1278, with the 719-B Raytheon fathometer, s/n 5784, was employed one day only to wire drag for an ob-

struction where it was impossible to record a trace of the object, no bar checks nor velocity curves were completed for this fathometer.

Technicians monitored the fathometers continuously during the operations and kept the initial value on the analog trace at zero. All fathograms were scanned twice after hydrography for peaks and deeps as well as comparing the analog trace with the digitized value. When scanning showed that the digitized value was undoubtedly in error, a depth was determined from the analog trace.

Stylus arm length checks were made routinely with the Raytheon 723-D, by switching from Scale A to F, and noting the 240-foot trace. Adjustments were made if necessary. All sounding poles and bar check lines were measured with a steel tape before and after the survey and were found to be accurate.

Bar checks were taken daily, weather permitting, down to depths of 60 feet. It should be noted that on several occasions, bar checks could not be taken due to the combination of strong winds opposing the strong currents in the survey area, resulting in loss of the bar trace. Also, many times it was difficult to obtain digitized values for the bar checks. When this was the case, the analog trace was taken and later compared to other bar checks where digitized values were recorded. Bar check abstracts, velocity curve and velocity table are included in the separates following the text. Bar checks from both HSB-5-2-78 (H-9800) and HSB-5-1-79 (H-9806) were combined and averaged to construct the velocity curve used for this survey. Any bar check listed on the abstract which was not submitted with this survey, will be included with the data from HSB-5-1-79 (H-9806).

Settlement and squat for the vessel was determined as outlined in Section 4.9.4.2 of the Hydrographic Manual, 4th Edition. The graph and settlement and squat corrector abstract are included with this report in the separates following the text. Daily TRA corrections were determined as outlined in Section 4.9.4.1 of the Hydrographic Manual, 4th Edition.

#### E. HYDROGRAPHIC SHEETS

The transverse mercator projection and soundings were plotted using the PDP8/e hydroplot system on Launch 1277, while the logging and editing of tapes was accomplished by using hydroplot systems both on 1277 and in HFP-3's trailer. Launch 1277, equipped with the PDP8/e computer, s/n 308137, and complot plotter, Model DP-3, s/n 5445-11, was primarily used for gathering raw data and smooth plotting the final field sheet. HFP-3's system equipped with the PDP8/e computer, s/n 08130, was used only for processing the data tapes.

The central meridian for this survey was 81°26'00"W and the control latitude was 3393000 meters north of latitude zero. Rough plots were made daily and the final plot constructed continuously as the survey progressed. Velocity corrections were not applied due to program problems with plotting programs RK212 and RK216. TRA and predicted tide corrections were applied due to the final plot. Predicted tides were computed for the St. Marys Entrance, North Jetty, using Savannah River Entrance, Georgia, as the reference station. Program AM500 was used to construct predicted tide tapes.

Along with the one main scheme final field sheet, there is an overlay sheet used for developments, X-lines, bottom samples and detached positions. Both are at a scale of 1:5,000. No discernable distortion could be detected in the mylar boat-sheets during the period of smooth field plotting. All data was transferred to the Processing Division, Atlantic Marine Center for verification.

#### F. CONTROL STATIONS

Control stations H-62-02-GA, 1978; Beach 2, 1933; Cumberland Sound Range "A" Front Light, 1978; Gun, 1954; and TIG (USE), 1954; were established or verified by Photo Party #62, Coastal Mapping Division, Atlantic Marine Center. Control station St. Marys Entrance Front Range Light, 1979, (signal number 126) was established by Photo Party 61, Coastal Mapping Division. Refer to Signal Report, CM-7804, Kings Bay to St. Marys Entrance, Georgia for surveying methods, geodetic abstracts and computations.

Control station St. Marys Entrance Front Range Light (signal number 126) was removed and rebuilt on May 10 (JD 130), 1979. The structure had been previously (September 1978) hit by a shrimp boat, and was tilted at an angle. The geodetic position obtained by Photo Party 62 has been for the Range Light before it was leaning and this position was not used for hydrography. The structure was relocated by Photo Party 61, and this revised position was used for hydrography from the beginning of hydrography until May 10 (JD 130), 1979. On this date, the Front Range Light was replaced with a new structure. HFP#2 established a geodetic position for the new St. Mary Entrance Front Light (#1277), by intersection with a Kern Theodolite and Program RK300. Computations are included in the separates following the text, with the angle book in the Launch 1278 date accordian file. Refer to the signal listing included with this report for the control station signal numbers.

#### G. HYDROGRAPHIC POSITION CONTROL

Del Norte positioning equipment, operating in a range-azimuth mode (using a Del Norte remote unit with a Wild T-2) was used to control the hydrography on Sheet HSB-5-2-78 (H-9800). Six control networks were used on this survey.

All shore stations were located at established third order triangulation, intersection or traverse stations.

Whenever possible, calibration was established twice daily by positioning the vessel at known third order traverse or intersection stations. Del Norte ranges were compared to ranges calculated by the PDP8/e computer using Program RK407. Refer to the sounding volumes for calibration data, and the abstract of electronic correctors included with this report.

In general, the Del Norte equipment worked well throughout the time of the survey. The only exception was on JD 045, 1979, when the remote unit s/n 252 stopped transmitting abruptly. A maximum difference of 4 meters between morning and evening calibrations was observed, with the mean standard deviations of calibrations throughout the survey range between 1.03 and 2.15 meters. Calibration distances varied from 1460 to 3790 meters.

The following is a summary of equipment utilization during the project. Refer to the enclosed signal list for shore station names and locations.

<u>Signal No.</u>	<u>Del Norte Remotes-S/N</u>	<u>Julian Days Used</u>
126	174	347 (1978) 046,047,059 (1979)
127	174	142,155 (1979)
200	174	044,045,141,142 (1979)
200	174	101,120,131,135 (1979)
200	252	320,321,325,332,333 (1978) 033,043 (1979)
200	927	087 (1979)
138	174	159 (1979)
<u>DMU (S/N)</u>	<u>Del Norte Master-S/N</u>	<u>Julian Days Used</u>
432	162	320,321,325,332,347 (1978) 033,043,044,045,046,047, 059 (1979)
189	199	087,101,120,131,135,141, 142,155,159 (1979)

#### H. SHORELINE

Shoreline and topographic details were originally transferred in blue ink from the Class 3 Manuscript TP-00203. At the completion of operations, the shoreline was copied in blank ink (verified) from the Class I Manuscripts (TP-00200 - TP-00203). Shoreline details were verified by field edit in

December, 1978, by Photo Party 61, Coastal Mapping Division, Atlantic Marine Center. No changes in shoreline were noted by the hydrographer.

I. CROSSLINES

Crosslines totaled 9.97 nautical miles or 9.0% of the main scheme soundings. All crosslines compared to the main scheme agreed to within one foot. It should also be noted, that due to problems with the plotting Programs RK 212 and RK 216, JD 045, 1979, crossline positions 1695-1798 do not have the draft correction applied on the smooth field sheet.

J. JUNCTIONS

As per PROJECT INSTRUCTIONS, junctions were made with Survey H-9799 (HSB-10-4-78), scale 1:10,000 (1979), H-9806 (HSB-5-1-79), scale 1:5,000, (1979), and with Prior Survey H-8106, scale 1:10,000, (1954-55). All junction soundings between this survey and the Contemporary Surveys H-9799 agreed to within two feet. Comparing the Present Survey H-9800 with that of the Prior Survey H-8106 showed poor junctioning in the area of the St. Marys Entrance between the east ends of the jetties. On the western side of the present survey, junction with H-9806 agreed within one foot. Refer to Section K, Comparison With Prior Surveys, for more information.

K. COMPARISON WITH PRIOR SURVEYS

Comparisons were made with the Prior Surveys, H-5754, North River to Jackson Creek, Georgia/Florida, June 1934 - February 1935, scale 1:10,000; H-5690, St. Marys Entrance, Georgia/Florida, July-August 1934, scale 1:10,000; and H-8106, St. Marys Entrance-Cumberland Sound, Georgia/Florida, January 1954-February 1955, Scale 1:10,000.

The Prior Survey, H-5754, when compared to the current survey, showed general agreement within two to four feet, with the prior survey appearing to be the shoaler of the two, except in a few cases.

<u>H-5754</u>	<u>H-9800</u>	<u>Latitude</u>	<u>Longitude</u>
46	<del>56</del> 57	30/42/23	81/27/27
22	<del>36</del> 38	30/42/10	81/27/42
<del>58</del> 48	52 54	30/42/23	81/27/40
45	<del>52</del> 55	30/42/33	81/27/31
28	35 <sup>✓</sup>	30/42/00	81/27/48
12	5 <sup>✓</sup>	30/42/13	81/28/12

Comparing the 1934 Survey H-5690 with the Contemporary Survey, especially in the area east of Long. 81°26'45"W, revealed poor agreement, due to the dynamic area involved in this vicinity. However, west of this longitude, H-5690,



had soundings with depths within two to six feet to that of H-9800. The following are discrepancies from the pattern mentioned above.

<u>H-5690</u>	<u>H-9800</u>	<u>Latitude</u>	<u>Longitude</u>
20	<del>35</del> 36	30/42/22	81/27/07
1	<del>12</del> 13	30/42/19	81/27/22
46	<del>36</del> 34	30/42/18	81/27/33
40	<del>32</del> 33	30/42/19	81/27/28
30	41	30/42/24	81/27/17
45	<del>56</del> 59	30/42/35	81/27/31
37	45	30/42/26	81/26/49
50	<del>38</del> 40	30/42/ <del>42</del> 38	81/27/05*

\*This is now a spoil area.

H-8106 was also compared to the Present Survey H-9800. West of the Long. 81°25'45"W, there was excellent agreement to within three feet between the two surveys. Once again, due to the strong currents, sand bottom, and northeasterly storms, the area east of 81°25'45"W, did not compare well with the prior survey. The discrepancies between the surveys are too numerous to list; however, it should be noted that some of the prominent features from the earlier survey do not appear on the Contemporary Survey. The shoal located at 30°42'45", 81°24'35", with a least depth of 12 feet on H-8106, now has a depth of 25 feet; the 16-foot shoal on H-8106 (30°42'45", 81°24'50"), is now in 27 feet of water; and the 23-foot shoal at 30°42'32", 81°24'33", was found to have a depth of ~~38~~ 40 feet on the Present Survey H-9800.

It should also be noted that all the prior surveys show deeper water along the shorelines of Cumberland Island, Amelia Island and in the shoal areas adjacent to the jetties, than that of H-9800, the current survey. Shoaling was noticed by the field party personnel, especially in the areas of the jetties, since the beginning of operations on this project; thus, it is recommended that the soundings obtained by the present survey supersede any prior survey soundings.

When comparing this survey with all the above prior surveys for details other than soundings, it was discovered that the submerged rock base of the old Daybeacon #12A, from H-5754 and H-8106, was deleted from the Chart 11503. These rocks were verified by a pole sounding on this survey H-9800 (Position Number 2771, JD 155). Refer to Section P., Miscellaneous, in this report, for further information.

The presurvey review items that were within the limits of this survey, were investigated and the following results were found:

#6 - Submerged wreck, covered 28 feet at MLW, charted in Lat. 30°42.51', 81°24.97'. This item was removed in 1957 according to Chart Letter 360 (1979), a Corps of Engineers letter. (This letter is included in the separates following the text.) Due to this correspondence, this item is no longer an item of investigation according to C351, Rockville. It is recommended that this wreck be removed from the chart.

#4 - Marker, charted at 30°42.47', 81°<sup>2</sup>17.88', was verified by a wire sweep using otter boards. On JD 159, Launch 1278, using this configuration hung-up on a submerged obstruction located five meters west by northwest from the Position Number 3001, 30°42'28"N, 81°27'53"W. Due to the strong currents in this area, no least depth or trace on the fathogram was obtained. It is recommended that the notation "Marker" be revised to "Submerged Obstruction", and retained on the chart. On June 17 (JD 168), 1979, this obstruction was investigated by divers from the NOAA Ship FERREL. The obstruction was verified with a least depth of 16 feet at time 141500 (GMT) on JD 168 and also confirmed as the cement marker described in the presurvey review. (pos 3002) This depth, time, and location (Del Norte rate 1342 meters, with an angle, from Station Beach 2 initialized on GUN, of 023°47') were recorded with the hydrographic data. Concur

#5 - Submerged piles, charted in Lat. 30°42.30', 81°28.29'. According to the presurvey review, this was the remains of the Tiger Island Front Range Light, (Survey H-8106). It was discovered that the "submerged piles" do not exist; however, in their place stands the old Tiger Island Front Range "Platform." Position Number 2291, located the concrete platform (height of 7 feet, width and length equals 8 feet) at 30°42'18"N, 81°28'17.5"W, which was the same as on the two prior surveys, H-5754 and H-8106, and the location of the platform marked on the Class I Manuscript TP-00202. It is recommended that the description "Submerged Piles" be deleted, and "platform" be added to the chart for this item. Concur

It should also be noted that this platform is also described in H-9806 PSR #3. For further information, refer to the Descriptive Report, OPR-G324, HSB-5-1-79 (H-9806), Section K, Comparison With Prior Surveys.

#### L. COMPARISON WITH THE CHART

This survey was compared with NOAA Chart 11503 (29th Edition, July 9, 1977), Scale 1:20,000. Soundings between the chart and the present survey, in the vicinity of the eastern ends of the jetties, were in poor agreement. Chart 11503 has shoaler depths, in general, than those obtained on the current survey in this area. Due to the dynamic nature of the area involved, (strong currents and sand

bottom), disagreement between the chart and the Contemporary Survey was expected. However, west of Long. 81°25'45"W, the charted soundings agree to within two feet of that obtained on the Survey H-9800, except in the following cases:

<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>CHART 11503</u>	<u>HSB-5-2-78 H-9800</u>
30/42/48	81/26/33	8 ft.	19 <del>17</del> ft.
30/42/27	81/26/39	33 ft.	45 <del>43</del> ft.
30/42/48	81/26/40	7 ft.	18 <del>17</del> ft.
30/42/25	81/26/57	36 ft.	49 <del>47</del> ft.
30/42/20	81/27/05	4 ft.	17 <del>16</del> ft.
30/42/38	81/27/18	33 ft.	44 ft.
30/42/41	81/27/24	22 ft.	32 ft.
30/42/50	81/27/39	10 ft.	23 ft.
30/42/53	81/27/19	5 ft.	1 ft.
30/42/54	81/27/26	5 ft.	1 ft.
30/42/55	81/27/33	4 ft.	0 ft.
30/42/56	81/27/42	4 ft.	0 ft.
30/42/57	81/27/51	4 ft.	0 ft.

It is recommended that the present survey's soundings be charted in all cases.

The disposal area, located at 30°42'40"N, 81°26'55"W, was developed using 25 meter sounding lines, since the spoil area is now inactive. The St. Marys Entrance jetties were found to be awash at MHW, with the east ends submerged at MLW.

#### M. ADEQUACY OF SURVEY

HSB-5-2-78 (H-9800) is a thorough survey of the areas covered by the limits of this boatsheet. It is complete and adequate to supersede prior surveys for charting in the common areas. All fathograms and field survey records were scanned and checked for peaks and deeps and appropriate changes were made to the original records when necessary.

#### N. AIDS TO NAVIGATION

Comparison of the aids to navigation at the completion of this survey, to the Light List, Vol. II, 1979, showed many discrepancies. Due to the widening of the channel and the establishment of the Kings Bay Naval Submarine Base, the number of buoys have increased from 6 to 12, plus several beacons have been constructed. The St. Marys North Jetty Lighted Buoy "2NJ" is the only buoy that has remained the same. The South and North Jetty Buoys "E" and "F", respectfully, have been removed and replaced by metal I-beam beacons with signs reading "Danger, Submerged Jetty." These still have the respected letters of "E" and "F". The Buoys #12 and #13 were moved further east, beyond the limits of this survey. In the approximate vicinity of the original location of these buoys are now the Buoys #15 and #16.

About .87 mile west of Buoys #15 and #16, is a newly established Buoy #18, and according to Coast Guards plans, Buoy #17 will be installed in the same area soon. Another mile west are the Buoys #20 and #21. Along the Range "A" section of the channel, 3/10 mile west of #20, is Buoy #22; 0.6 mile is Buoy #23; and at one mile west is Buoy #25. All of these buoys are newly established in this area. The original Buoys #16 and #17, just off the Quarantine Reach, were removed and replaced by Buoys #24 and #25. Buoy #24 was installed after all hydrography was complete on this survey, thus a position was not obtained for it. The only other new buoy within the limits of this survey, is Buoy #26, which is 0.5 miles south of #24 on the Quarantine Reach. The following are geographic positions for all the buoys and beacons located during hydrographic operations:

<u>BUOY</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
15	30/42/30	81/24/45
16	30/42/38	81/24/46
18	30/42/36	81/25/46
20	30/42/32	81/26/51
21	30/42/37 26	81/27/01
22	30/42/36	81/27/15
23	30/42/36	81/27/33
24	30/42/51	81/27/55
25	30/42/16	81/27/40
26	30/41/49	81/27/50
2NJ	30/43/08	81/24/12
<u>BEACONS</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
E	30/42/52	81/25/29
F	30/42/13	81/25/16
N	30/42/48	81/27/16
S	30/42/20	81/27/05

It is recommended that locations and descriptions of the buoys be obtained from the Coast Guard, Aids to Navigation, Seventh Coast Guard District, Miami, Florida, since they were constantly being changed during times of survey operations and were still undergoing modification at completion of this survey.

St. Marys Entrance Front Range Light was hit by a shrimp boat in September, 1978, causing the structure to lean at an angle. This was replaced by a new structure made of I-beams, and located by third order methods. Refer to Section F of this report for further information. All characteristics and approximate location has remained the same. *New location of light, rebuilt & located by D.P. on May 10, 1979.*

Due to dredging operations coinciding with hydrography, it was not possible for the hydrographer to ascertain whether or not the aids adequately marked the channel.

After visual inspection from the survey area, Chart 11503 was found to be lacking several of the more prominent landmarks that are needed for navigation. These were discussed in the Descriptive Report, OPR-G324, HSB-10-4-78 (H-9799); refer to this report for further information.

The NOAA Forms 76-40, Landmarks for Charts, for the survey area, are included in the separates following the text. No other aids are recommended by the hydrographer.

#### O. STATISTICS

Except for Launch 1278, using only one position number and gathering zero miles of sounding lines, which was engaged only in one wire drag, Launch 1277 was the only vessel used on this survey for hydrography. 1277 obtained 111.4 nautical miles of sounding lines, covering 6.1 square nautical miles with 2572 positions and 47 bottom samples. Refer to the Abstract of Positions in the separates following the text for further information concerning statistics.

#### P. MISCELLANEOUS

The Daybeacon No. 12A atop a submerged rock base at 30°41'57"N, 81°28'07"W on the Prior Survey H-8106, St. Marys Entrance-Cumberland Sound, Georgia-Florida, January 1954-February 1955, Scale 1:10,000, was removed; however, the submerged rock base was not, nor was it charted on the NOAA Chart 11503. The current survey verified that the rocks do exist (detached Position No. 2771, JD 159) and with predicted tides applied to the least depth, they were determined to be awash at MLW. (A pole sounding was taken; refer to the data printout for JD 159). It is recommended that these rocks be recharted at the location given above. *Rock awash (Q) at MLW, Chart 95 shown on present survey*

Sandwaves were noticed on several of the crosslines, *JPS* especially in the area on the eastern section of the survey. These were on JD 045 1979, pos. 1628 (2nd sounding out of the fix) to 1630; pos. 1754 - 1964; and pos. 1766 - 1776; along with JD 087 1979, pos. 2164-2173.

The eastern area covered by this survey is subject to continuous change in bottom profile due to strong currents and sand bottom. Also, strong winter storms with northwesterly winds can instantly change the configuration of the shoals near the jetties. These are probably the reasons that the present survey has different depths in this vicinity than that of the Prior Survey H-8106, 1954-55.

It should also be noted that during the times of hydrography, the St. Marys Entrance Channel was being dredged by the Army Corps of Engineers, Jacksonville District. Post dredging surveys will be forwarded to the Processing Division, Atlantic Marine Center, at the completion of the dredging.

Tidal data for smooth tides were requested by field personnel at the end of each month that hydrography was obtained for this survey. Tide gage records plus the request for smooth tides were sent to the Tides and Water Levels Branch, Rockville. Copies of these letters are included in the separates following the text.

#### Q. RECOMMENDATIONS

There are no other recommendations other than those previously mentioned in the text.

#### R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished as per instructions in the Hydrographic Manual, 4th Edition, and the AMC Manual. Sounding and position data were obtained by the hydroplot/hydrolog system utilizing Computer Programs RK111 and FA181.

At the beginning of this survey, an "on-line" range/azimuth program was not available to the field party; hence, the Real Time Range-Range Plot Program (RK111) was used to log all the data except the azimuth. The azimuths were recorded in books and later all tapes were edited using RK602 into the correct format along with the angles. On JD 120, 1979, and after, the Real Time Range/Azimuth Hydrolog Program (FA181) was used to log all data. This new program still has several bugs which create different format errors in the raw master tapes. One problem is that the TTY#2 will be printing out a long word on the "on-line" printout and will suddenly stop without completing the long word or have a "return" and "line feed." This results in running a couple lines of data together.

Also, the program will duplicate data either on the same line or record a copy of a long word. These format errors that show up on the "on-line" printout are not necessarily the same ones that are on the "raw master tape." To eliminate possible confusion, a copy of the "raw master tape" printout, along with a copy of the edited master tape printout and the "on-line" data printout are all submitted. Due to the format errors, it was difficult to scan the fathogram off any other printout except the "edited" master printout; thus, all depth corrections, plus peaks and deeps will be found on this printout, for Days JD 120 and later.

Plotting Programs RK212 and RK216 also presented a few problems. When plotting the smooth field sheet, JD 347, 1978, did not have tides applied to the soundings (hence, these were hand plotted on the smooth field sheet) and JD 045, 1979, the crossline on the Overlay sheet, did not have the draft correction applied to the soundings. Reasons for these errors could not be ascertained by field party

personnel, since both tide tapes and corrector tapes (which contain draft corrections) were read by the computer at the time of plotting. Also, if a velocity tape is used, both of the above problems occur at a greater frequency. Due to this fact, velocity corrections were not applied to the smooth field sheet.

For each master tape, there is a corresponding correction tape which includes the vessel's TRA and the Del Norte daily correctors, along with all depth corrections including missed depths, peaks, and deeps. Time and course corrections for Del Norte busts were put on edited master tapes.

Computer programs used during this survey are included in the following list of programs:

<u>PROGRAM</u>	<u>NAME</u>	<u>VERSION DATE</u>
RK111	Range-Range Real Time Hydroplot	1/30/76
FA181	Range-Azimuth Hydrolog	2/23/78
RK201	Grid, Signal & Lattice Plot	4/18/75
RK212	Visual Station Table Load	4/01/74
RK216	Range/Azimuth Non-Real Time Plot	2/05/76
RK300	Utility	2/05/76
RK330	Reformat & Data Check	5/04/76
RK407	Geodetic Direct/Inverse	10/23/75
AM500	Predicted Tide Generator	11/10/72
RK602	Elinore	5/21/75

#### S. REFERENCES TO REPORTS

Signal Report, CM-7804, Kings Bay to St. Marys Entrance, Georgia, 1978.

Descriptive Report, OPR-G324, HSB-10-4-78 (H-9799), St. Marys Entrance, Georgia/Florida, 1979.

Descriptive Report, OPR-G324, HSB-5-1-79 (H-9806), St. Marys Entrance-Cumberland Sound, Georgia/Florida, 1979.

Respectfully submitted,

*Robert Lewis*  
 Kathryn Andreen  
 LT, NOAA

FIELD TIDE NOTE  
OPR-G324

Field tide reduction of soundings was based on predicted tides for St. Mary's Entrance, north jetty, using Savannah River Entrance as the reference station. Using program AM500, predicted tide tapes were constructed converting all times to GMT.

The following tide gages were installed during the 1978 and 1979 season:

<u>SITE &amp; NUMBER</u>	<u>LOCATION</u>	<u>PERIOD</u>
* St. Mary's Ent. N. Jetty, Georgia #867-9997	30° 43.1'N 81° 26.7'W	11-7-78 End of Survey
** Platform #872-0008	30° 42.3'N 81° 28.15'W	11-8-78 End of Survey
** Range "A" Light Tower #867-9909	30° 43.6'N 81° 29.9'W	11-6-78 End of Survey
** Dungeness - Sea- camp Dock #867-9758	30° 45.6'N 81° 28.3'W	11-3-78 End of Survey
* Bubbler gage		
** ADR gage		

During the times of operation, the following problems were encountered, concerning the specified gages:

The orifice for the North Jetty gage was located too far inshore to adequately record extreme low tides (i.e. any negative tides). This problem was not discovered until several weeks after the installation of the gage when a negative tide occurred leaving the orifice bare of water. Due to the excessive amount of work and the additional length of exposed tubing involved in relocating the orifice, it was decided to leave it in its original location and not to run hydro during negative tides. (However, bottom samples and detached positions on bouys were taken during a negative tide - J.D.087). From November 7, 1978 to February 9, 1979, when the gage read zero tide, the orifice was awash. After February 9th, the orifice was awash when the gage recorded two feet of tide. This was to insure that low tides were not being missed due to the gage pen setting. On December 28, 1978, the original jetty gage, Metercraft s/n 7603-686-123,



was washed out and buried under sand by unseasonable high winds and tides. Only part of the December tide record was salvageable, (December 1st thru December 13th). This gage was replaced on January 10, 1979 by another Metercraft, s/n 7603-707-135, with the gage being set farther inland (orifice location remained the same.) The following are days when the bubbler tubing from the orifice to the gage was found broken and later repaired:

Broken - March 1, 1979	Repaired - March 6, 1979
March 28, 1979	March 30, 1979
May 8, 1979	May 9, 1979
May 21, 1979	May 21, 1979

It should also be noted, that on several occasions, the nitrogen to the gage was turned off by unknown persons.

The ADR on the cement platform (#872-0008) had erratic differences between staff/gage comparison, during January and early February. (There was no hydrography accomplished during this time). After resetting the gage to correspond with the staff, the problem disappeared.

Erratic differences between staff/gage comparisons also occurred with the other Leupold Stevens ADR at Range "A" gage. This gage was replaced with a Fisher Porter gage on the 8th of December 1978. The problem was no longer experienced.

The ADR gage values were set 10 feet higher than staff values. The bubbler gage was originally set with the gage zero equal to the staff zero and later changed to read two feet higher than the staff. All gages were set to local time (EST and later EDT) and all records were sent to the Tides and Water Levels Branch, Rockville. All gages were leveled at the time of installation and releved at time of removal.



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SURVEY  
Hydrographic Field Party #2  
P.O. Box 1160  
Fernandina Beach, Fla. 32034

March 15, 1979

To: Chief, Tides Branch, C331

From: LT Kathryn A. Andreen  
OIC, Hydrographic Field Party #2

Subject: Request for Tide Data

Please furnish tide data to AMC Processing Division for Surveys HSB-5-2-79, (H-9800) and HSB-5-1-79, Project OPR-G324-HFP-78.

See enclosed field tide note and chartlet for gages operated.

The following times of hydrography include two hours before and after actual times:

H-9800, HSB-5-2-78

<u>J.D. 1978</u>	<u>Hydro Begins (GMT)</u>	<u>Hydro Ends (GMT)</u>	<u>Area of Hydro</u>
320	1400	2100	81/25/45 to 81/26/15W
321	1400	2200	81/25/45 to 81/26/45W
325	1400	2300	81/27/30 to 81/28/15W
332	1300	2200	81/24/15 to 81/25/00W
333	1300	2300	81/24/45 to 81/25/45W
347	1500	2300	81/26/30 to 81/27/45W

J.D. 1979

033	1400	2300	81/24/32 to 81/25/55W
043	1300	1900	81/24/15 to 81/24/45W
044	1400	2100	81/27/00 to 81/28/00W
045	1300	2200	81/24/25 to 81/28/15W
046	1300	2200	81/26/30 to 81/28/00W
047	1300	2100	81/26/15 to 81/28/00W

HSB-5-1-79

J.D. 1979

039	1400	2000	30/43/03 to 30/43/48N
053	1300	2200	81/29/03 to 81/29/30W
			30/42/48 to 30/43/47N
			81/28/46 to 81/29/45W





**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
 NATIONAL OCEAN SURVEY  
 Hydrographic Field Party #2  
 P.O. Box 1160  
 Fernandina Beach, Fla. 32034

April 4, 1979

To: Chief, Tides Branch, C331

From: LT Kathryn A. Andreen  
 OIC, Hydrographic Field Party #2

Subject: Request for Tide Data

Please furnish tide data to AMC Processing Division for Surveys HSB-5-2-79, (H-9800); HSB-10-4-78, (H-9799); and HSB-5-1-79, Project OPR-G324-HFP-78.

The following times of hydrography include two hours before and after actual times:

HSB-5-1-79

<u>J.D. 1979</u>	<u>Hydro Begins (GMT)</u>	<u>Hydro Ends (GMT)</u>	<u>Area of Hydro</u>
061	1400	2200	30/44/00 to 30/44/30 81/28/53 to 81/29/42
071	1600	2300	30/42/21 to 30/42/45 81/28/12 to 81/28/57

HSB-5-2-78, H-9800

087	1400	2400 **	81/26/06 to 81/24/10
-----	------	---------	----------------------

HSB-10-4-78, H-9799

068	1500	2300	East of 81/24/15
072	1500	2300	East of 81/24/15
078	1600	0100 (JDO79)	East of 81/24/15
079	1600	2400	East of 81/24/15
080	1300	2300	East of 81/24/15

\*\* Only bottom samples and detached positions on buoys were taken after 1720 (GMT) on this day due to negative tides.





**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SURVEY  
Hydrographic Field Party #2  
P.O. Box 1160  
Fernandina Beach, Fla. 32034

May 7, 1979

To: Chief, Tides Branch, C331

From: LT Kathryn A. Andreen  
OIC, Hydrographic Field Party #2

Subject: Request for Tide Data

Please furnish tide data to AMC Processing Division for Surveys HSB-5-2-78 (H-9800), and HSB-5-1-79 (H-9806), Project OPR-G324-HFP-78.

The following times of hydrography include two hours before and after actual times:

<u>HSB-5-2-78</u> <u>J.D. 1979</u>	<u>Hydro Begins (GMT)</u>	<u>Hydro Ends (GMT)</u>	<u>Area of Hydro</u>
101	1300	2100	30/42/06 to 30/43/00 N 81/24/08 to 81/28/23 W
120	1300	2200	30/41/10 to 30/43/00 N 81/24/08 to 81/28/23 W
<u>HSB-5-1-79</u> <u>J.D. 1979</u>			
102	1500	2300	30/42/26 to 30/43/38 N 81/28/17 to 81/29/20 W
107	1400	2300	30/42/46 to 30/43/15 N 81/28/14 to 81/29/11 W
108	1400	2300	30/42/18 to 30/43/38 N 81/28/20 to 81/28/54 W
109	1300	1900	30/43/54 to 30/44/05 N 81/28/56 to 81/29/38 W





**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
 NATIONAL OCEAN SURVEY  
 Hydrographic Field Party #2  
 P.O. Box 1160  
 Fernandina Beach, Fla. 32034

June 8, 1979

To: Chief, Tides Branch, C331

From: LT Kathryn A. Andreen  
 OIC, Hydrographic Field Party #2

Subject: Request for Tide Data

Please furnish tide data to AMC Processing Division for Surveys HSB-5-2-78, (H-9800), and HSB-5-1-79 (H-9806), Project OPR-G324-HFP-78.

The following times of hydrography include two hours before and after actual times:

HSB-5-2-78 (H-9800)

<u>J.D. 1979</u>	<u>Hydro Begins (GMT)</u>	<u>Hydro Ends (GMT)</u>	<u>Area of Hydro</u>
131	1200	2100	30/42/26 to 30/43/01 N 81/24/07 to 81/27/02 W
135	1300	1900	30/42/32 to 30/42/49 N 81/24/56 to 81/25/17 W
141	1600	2400	30/42/02 to 30/42/58 N 81/24/37 to 81/27/07 W
142	1100	2200	30/42/05 to 30/43/09 N 81/25/19 to 81/28/17 W
155*	1200	1700	30/41/57 N 81/28/08 W

HSB-5-1-79 (H-9806)

<u>J.D. 1979</u>	<u>Hydro Begins (GMT)</u>	<u>Hydro Ends (GMT)</u>	<u>Area of Hydro</u>
122	1300	2100	30/44/44 to 30/45/06 N 81/28/46 to 81/29/41 W
123	1300	2200	30/43/39 to 30/44/43 N 81/28/46 to 81/29/47 W
124	1300	2100	30/42/52 to 30/45/09 N 81/29/18 to 81/29/33 W
130	1200	2200	30/42/39 to 30/45/23 N 81/28/51 to 81/29/37 W
143	1100	2200	30/43/05 to 30/44/55 N 81/28/38 to 81/29/37 W
144	1100	1900	30/42/02 to 30/43/10 N 81/28/12 to 81/29/07 W

\*D.P. Sounding



GEOGRAPHIC NAMES

Name on Survey	CROSS-REFERENCES										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND McNALLY ATLAS	U.S. LIGHT LIST			
Cumberland Island										1	
St. Marys Entrance										2	
Fort Clinch										3	
Amelia Island										4	
AMELIA RIVER										5	
CUMBERLAND SOUND										6	
LITTLE TIGER ISLAND										7	
										8	
										9	
										10	
										11	
										12	
										13	
										14	
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										20	
										21	
										22	
										23	
										24	
										25	

Approved:

*Chas. E. Harrington*

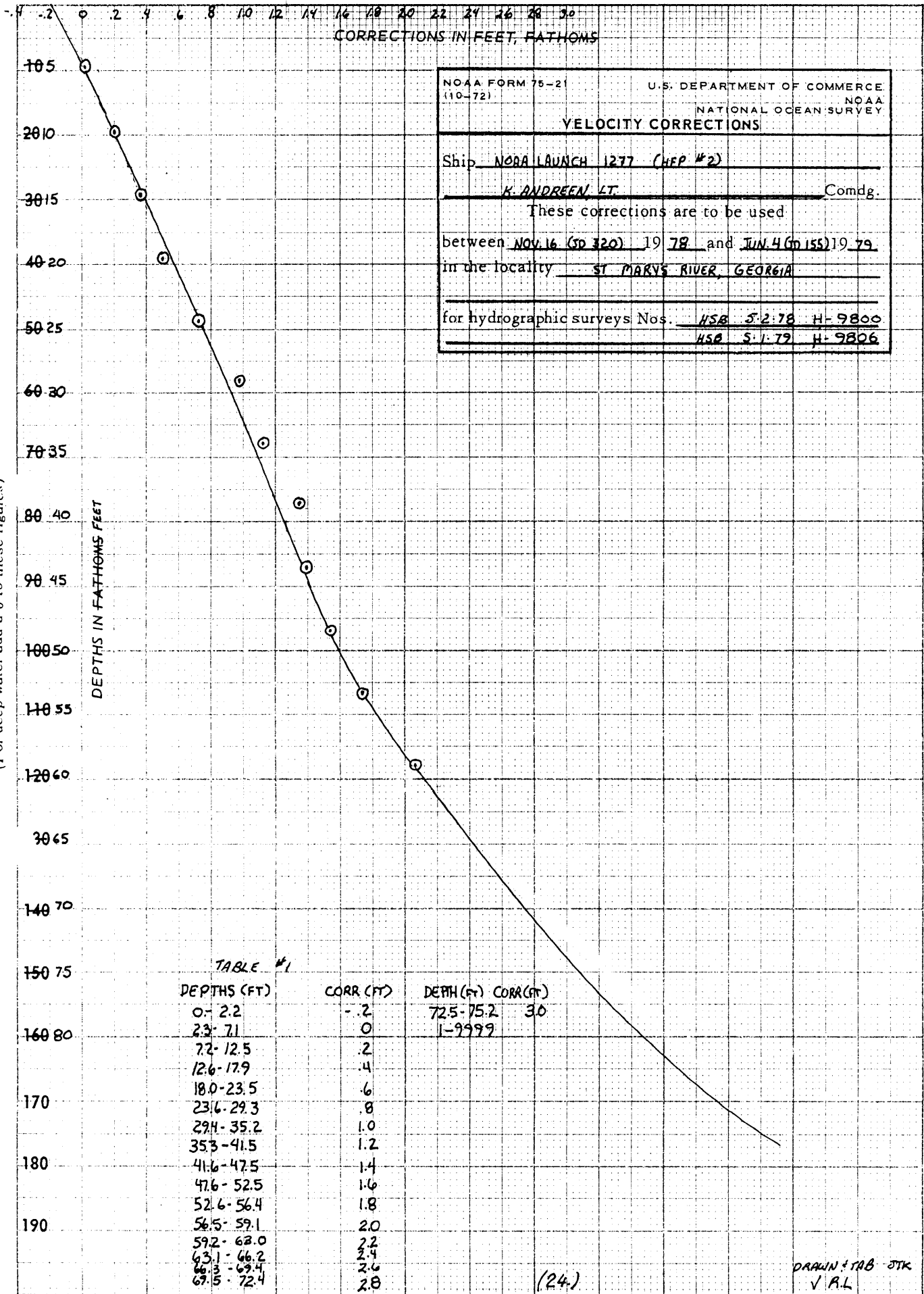
Chief Geographer - C3x5

14 MAY 1980

(22.)

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

Table No. 1



NOAA FORM 75-21 (10-72)	U.S. DEPARTMENT OF COMMERCE NOAA NATIONAL OCEAN SURVEY
<b>VELOCITY CORRECTIONS</b>	
Ship <u>NOAA LAUNCH 1277 (HEP #2)</u>	
<u>K. ANDREEN, LT.</u> Comdg.	
These corrections are to be used	
between <u>NOV. 16 (SD 320) 19 78</u> and <u>JUN. 4 (SD 155) 19 79</u>	
in the locality <u>ST. MARYS RIVER, GEORGIA</u>	
for hydrographic surveys Nos. <u>HSB 5-2-78 H-9800</u>	
<u>HSB 5-1-79 H-9806</u>	

TABLE #1

DEPTHS (FT)	CORR (FT)	DEPTH (FT)	CORR (FT)
0-2.2	-.2	72.5-75.2	.30
2.3-7.1	0	1-9999	
7.2-12.5	.2		
12.6-17.9	.4		
18.0-23.5	.6		
23.6-29.3	.8		
29.4-35.2	1.0		
35.3-41.5	1.2		
41.6-47.5	1.4		
47.6-52.5	1.6		
52.6-56.4	1.8		
56.5-59.1	2.0		
59.2-63.0	2.2		
63.1-66.2	2.4		
66.3-69.4	2.6		
69.5-72.4	2.8		

(24.)

DRAWN: TAB JTK  
V.P.L.

VELOCITY TABLE #1

OPR G-324

H 9800

HSB 5-2-78

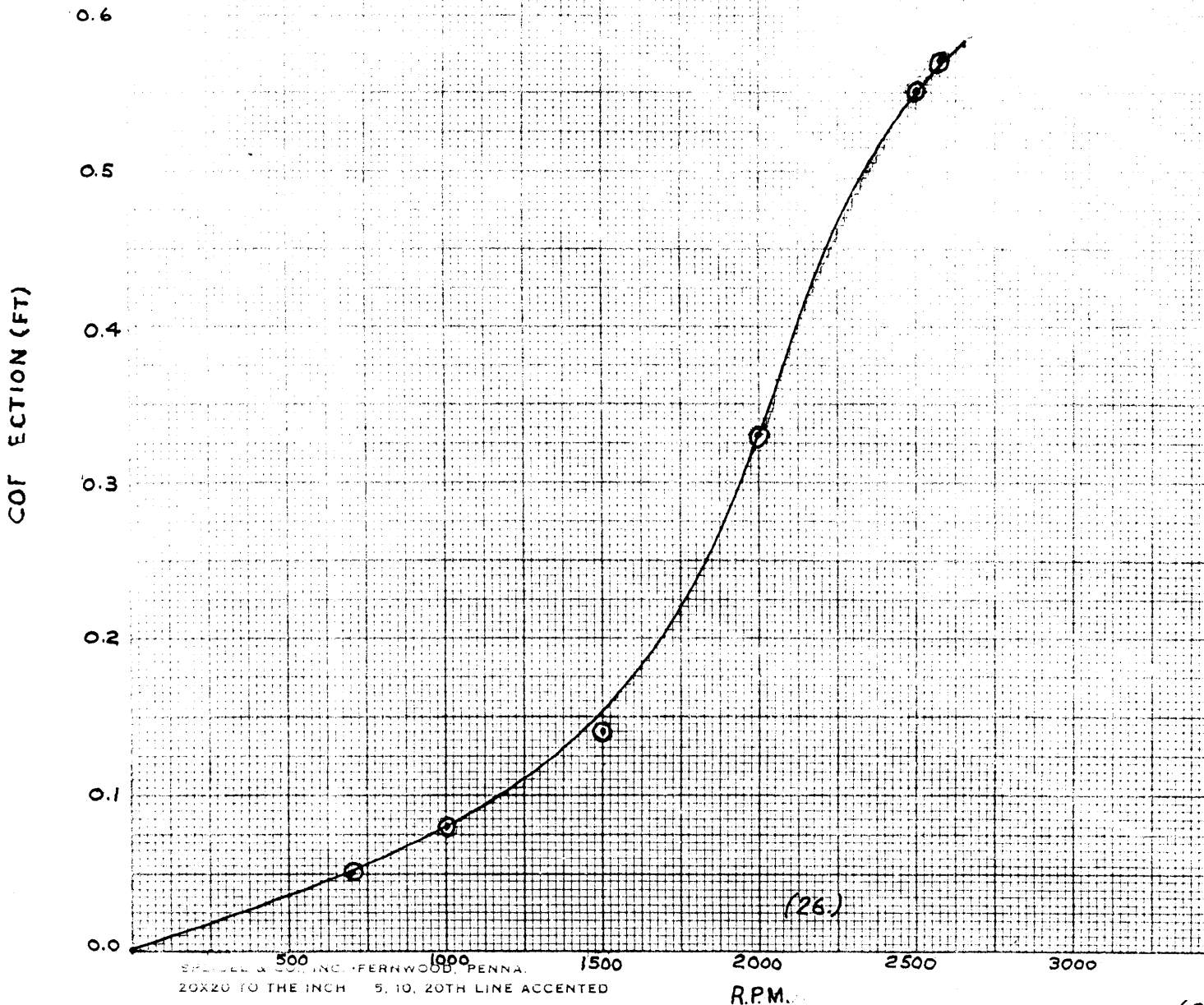
000022 1 0002 0001 000 127700 009800  
000071 0 0000  
000125 0 0002  
000179 0 0004  
000235 0 0006  
000293 0 0008  
000352 0 0010  
000415 0 0012  
000475 0 0014  
000525 0 0016  
000564 0 0018  
000591 0 0020  
000630 0 0022  
000662 0 0024  
000694 0 0026  
000724 0 0028  
000752 0 0030  
999999 0 0030



SETTLEMENT & SQUAT  
 LAUNCH 1277  
 NOV. 14, 1978

*ABSTRACT*

<i>RPM</i>	<i>CORRECTION (FT)</i>
0-1170	0.0
1171-1940	0.2
1941-2530	0.4
2531-2575	0.6



SPENCER & CHASE, INC. - FERNWOOD, PENNA.  
 20X20 TO THE INCH 5, 10, 20TH LINE ACCENTED

SIGNAL LISTING

OPR G-324

HSB 5-2-78

H-9800

106	6	30	42	19040	081	27	15438	139	0000	000000	Gun, 1954
108	3	30	41	56801	081	28	34063	250	0000	000000	Tig (USE), 1954
126	5	30	42	27023	081	27	54272	250	0000	000000	+St. Marys Ent. Ft. Range Lt., 1979
127	2	30	42	27083	081	27	54206	250	0000	000000	*St. Marys Ent. Ft. Range Lt., 1979
130	3	30	43	34260	081	29	53562	250	0000	000000	C. S. Range "A" Ft. Range Lt., 1978
138	4	30	43	09747	081	28	10229	250	0000	000000	Beach 2, 1933
200	3	30	42	55543	081	27	10432	250	0000	000000	H-62-02-GA-78, 1978

+Station located by Photo Party 61

\*Station located by Hydro Field Party 2

All other stations recovered or located by Photo Party 62

Richards

NONFLOATING AIDS										NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE FOR CHARTS				ORIGINATING ACTIVITY	
NOAA FORM 76-40 (8-74) Replaces C&GS Form 567.		REPORTING UNIT (If field party, ship or office) Coastal Mapping Div. AMC Norfolk, VA		STATE Florida		LOCALITY Kings Bay to St. Marys Entrance		DATE March 1979		<input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> COMPILATION ACTIVITY <input type="checkbox"/> FINAL REVIEWER <input type="checkbox"/> QUALITY CONTROL & REVIEW GRP. <input type="checkbox"/> COAST PILOT BRANCH (See reverse for responsible personnel)		CHARTS AFFECTED			
OPR PROJECT NO. G 324		JOB NUMBER CM-7804		SURVEY NUMBER TP-00202		DATUM NA 1927		METHOD AND DATE OF LOCATION (See instructions on reverse side)		FIELD		CHARTS AFFECTED			
CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	LATITUDE		LONGITUDE		D.P. Meters	OFFICE	FIELD	CHARTS AFFECTED						
		D.M. Meters	D. Meters	D. Meters	D. Meters										
5/12/79 to May 10 5/12/79 - May 10 after 7/8 LIGHT	MOVED Sept 78, 5/19/79, and 6/11/79 - LA Light moved again 6-14-79 St. Mary's Entrance Range Front Light (Check Coast Guard for new position) JWS	30-42	27.0173	81-27	144.1	54.2693	78K(I) 3459 Mar. 24, 1978	F-3-6-L July 1978	11503						
LIGHT	St. Marys Entrance Range Rear Light	30-42	24.5572	81-29	184.1	06.9197	78K(I) 3459 Mar. 24, 1978	F-3-6-L July 1978	11503						
LIGHT	Amelia River Light 19	30-41	17.83	81-27	31.82	847	78K(I) 3589 Apr. 2, 1978	F-V-VIS Nov 1, 1978	11503						
LIGHT	(Amelia River Light 15, 1954) Not in place at time of field investig.	30-41.3		81-27.6				Light Removed F-V-Vis Nov. 1, 1978	11503						
LIGHT	Amelia River Light 20	30-41	16.50	81-27	40.61	78K(I) 3589	78K(I) 3589 Apr. 2, 1978	F-V-VIS Nov. 1, 1978	11503						
LIGHT	Amelia River Light 24	30-40	11.79	81-28	06.95	78K(I) 3589	78K(I) 3589 Apr. 2, 1978	F-V-VIS Oct 23, 1978	11503						
MARKER		30-42	27.08	81-28	39.08	78K(I) 3459	78K(I) 3459 Mar. 24, 1978	F-V-VIS Nov. 1, 1978	11503						
MARKER		30-42	23.0425	81-29	07.9473			F-4-8-L Nov. 1978	11503						
MARKER		30-42	24.2958	81-28	38.1295			F-4-8-L Nov. 13, 1978	11503						
LIGHT	Amelia River Light 22	30-40	19.4393	81-28	1014.6	06.5205		F-4-8-L Nov. 13, 1978	11503						

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

**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:

- P - 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.

**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.  
 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

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

Richards

NOAA FORM 76-40  
(8-74)

Replaces C&GS Form 567.

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

### LANDMARKS FOR CHARTS

TO BE CHARTED  
 TO BE REVISED  
 TO BE DELETED

REPORTING UNIT: Coastal Mapping Div.  
 STATE: Florida  
 LOCALITY: Kings Bay to St. Marys Entrance

DATE: Mar. 1979

The following objects HAVE  BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS...  
 OPR PROJECT NO. G324  
 JOB NUMBER: CM-7804  
 SURVEY NUMBER: TP-00202

ORIGINATING ACTIVITY:  
 HYDROGRAPHIC PARTY  
 GEODETIC PARTY  
 PHOTO FIELD PARTY  
 COMPILATION ACTIVITY  
 FINAL REVIEWER  
 QUALITY CONTROL & REVIEW GRP.  
 COAST PILOT BRANCH  
 (See reverse for responsible personnel)

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	DATUM				POSITION				METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED
		LATITUDE		LONGITUDE		LATITUDE		LONGITUDE		OFFICE	FIELD	
		° /	'	° /	'	° /	'	° /	'			
RADIO TOWER	(WYHI) ht= 187 ft.	30	40	81	27	34.39	1059	32.95	877	78K(I)3589 Apr. 2, 1978	F-V-Vis. Nov. 1, 1978	11503
TANK	(Fernandina, Municipal Tank, 1954)	30	40	81	27	14.456	445.2	22.072	587.5	78K(I)3589 Apr. 2, 1978	Triang. Rec. Nov. 1, 1978	11503
TOWER	(Fernandina Nassau County Courthouse, Cupola, 1932)	30	40	81	27	14.319	440.9	42.091	1120.5	78K(I)3589 Apr. 2, 1978	Triang. Rec. Nov. 1, 1978	11503

RESPONSIBLE PERSONNEL		ORIGINATOR
TYPE OF ACTION	NAME	<input checked="" type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
OBJECTS INSPECTED FROM SEAWARD	A. Bryson	
POSITIONS DETERMINED AND/OR VERIFIED	A. Bryson	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	F. Margiotta	<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,

OFFICE	FIELD (Cont'd)
<p><b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b>            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</p>	<p><b>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.</b>            EXAMPLE: P-8-V            8-12-75            74L(C)2982</p>
<p><b>FIELD</b></p> <p><b>I. NEW POSITION DETERMINED OR VERIFIED</b>            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</p> <p>A. Field positions* require entry of method of location and date of field work.            EXAMPLE: F-2-6-L            8-12-75</p> <p><b>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</b></p>	<p><b>II. TRIANGULATION STATION RECOVERED</b>            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</p> <p><b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b>            Enter 'V-Vis.' and date.            EXAMPLE: V-Vis.            8-12-75</p> <p><b>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</b></p>



RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	A. Bryson
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	A. Bryson F. Margiotta
<p style="text-align: center;">INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' (Consult Photogrammetric Instructions No. 64.)</p>	
<p><b>OFFICE</b></p> <p><b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> 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</p> <p><b>FIELD</b></p> <p><b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection</p> <p>A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75</p> <p>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	<p><b>FIELD (Cont'd)</b></p> <p>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</p> <p><b>II. TRIANGULATION STATION RECOVERED</b> 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</p> <p><b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75</p> <p>**PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>
<p><b>ORIGINATOR</b></p> <p><input checked="" type="checkbox"/> PHOTO FIELD PARTY  <input type="checkbox"/> HYDROGRAPHIC PARTY  <input type="checkbox"/> GEODETIC PARTY  <input type="checkbox"/> OTHER (Specify)</p> <p>FIELD ACTIVITY REPRESENTATIVE</p> <p>OFFICE ACTIVITY REPRESENTATIVE</p> <p><input type="checkbox"/> REVIEWER  <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE</p>	

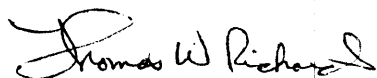


APPROVAL SHEET  
SURVEY H-9800 (HSB-5-2-78)

The hydrographic records transmitted with this navigable area survey are complete and adequate to supersede prior surveys for charting with no additional hydrography recommended.

Direct daily supervision was not given by me during the field work.

Approved and forwarded,



THOMAS W. RICHARDS

Lt. Cdr., NOAA

Chief, Hydrographic Surveys Branch

June 12, 1979

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for Form 362

Tide Station Used (NOAA Form 77-12): 867-9997 St. Marys River Ent, GA  
872-0008 Platform, FL

Period: November 16, 1978 - April 30, 1979

HYDROGRAPHIC SHEET: H-9800

OPR: G 324

Locality: St. Marys River Entrance, Georgia - Florida

Plane of reference (mean ~~lower~~ low water): 0.1 ft. - St. Marys (11/7/78-2/8/79)  
0.2 ft. - St. Marys (2/12/79-4/30/79)  
1.16ft. - Platform

Height of Mean High Water above Plane of Reference is  
5.7 ft. - St. Marys River Ent.; 6.0 ft. - Platform

Remarks: Recommended zoning:

- (1) East of 81°27.0' zone direct on St. Marys River Entrance.
- (2) 81°27.0' - 81°27.6' zone on Platform applying -10 minute time correction and range ratio x0.97.
- (3) West of 81°27.6' zone direct on Platform.

*Milton S. Rutstein*  
for \_\_\_\_\_  
Chief, Datums and Information Branch

September 20, 1979

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 872-0008 Platform, FL

Period: May 11 - June 4, 1979

HYDROGRAPHIC SHEET: H-9800

OPR: G324

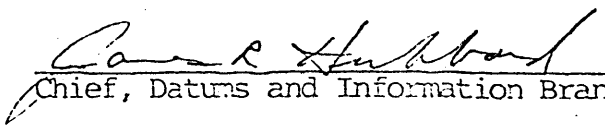
Locality: St. Marys River Entrance, Georgia - Florida

Plane of reference (mean ~~xxxx~~ low water): 1.16 ft.

Height of Mean High Water above Plane of Reference is  
6.0 ft. - Platform

REMARKS: Recommended zoning:

- (1). East of 81°27.0' zone on Platform applying -20 minute time correction and range ratio x0.95.
- (2). 81°27.0' - 81°27.6' zone on Platform applying -10 minute time correction and range ratio x0.97.
- (3). West of 81°27.6' zone direct.

  
Chief, Datums and Information Branch



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SURVEY  
Rockville, Md. 20852

August 30, 1979

OA/C3421:ELR

TO: OA/C3222 - James W. Dailey  
FROM: OA/C342 - John D. Perrow, Jr.  
SUBJECT: Cancellation of Blue Print Numbers Assigned to  
Twelve Class I Maps in Job CM-7804, Kings Bay  
to St. Marys Entrance, Georgia-Florida

Blue Print numbers BP-107091 through BP-107102 should be canceled from all Nautical Chart Branch STANDARDS. These Blue Print numbers are assigned to Class I Maps, TP-00193 through TP-00203, in Job CM-7804. The maps have not and will not be used to update NOS nautical charts within the area. The maps are labeled VOID and will be filed in the Nautical Data Section for reference purposed only. The original Class III Maps will be revised to depict the extensive dredging work done after the maps were compiled.

New photography will be flown in October 1979 and all 12 maps, TP-00193 through TP-00203, will be revised. The new revision will be field edited and registered in the Bureau Archives as Final Field Edited Maps.

Upon completion of each phase of compilation, Class I and Final Map copies will be furnished the Nautical Data Section for assignment of new Blue Print numbers.

cc:

C342  
C3421  
CAM52  
CAM521



APPROVAL SHEET  
FOR  
SURVEY H-9800

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not~~ been made. A new final sounding printout has/~~has not~~ been made.
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the Verifier's Report.

Date: 2-27-80

Signed:



Title: Chief, Verification Branch



REGISTRY NO. H-9800

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE \_\_\_\_\_ TIME REQUIRED \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:

REGISTRY NO. H-9800

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE 12 Aug 83 TIME REQUIRED \_\_\_\_\_ INITIALS LG

REMARKS:

ATLANTIC MARINE CENTER  
VERIFIER'S REPORT

REGISTRY NO. H-9800

FIELD NO. HSB-5-2-78

Georgia and Florida, Cumberland Sound, St. Mary's Entrance

SURVEYED: November 16, 1978 through June 17, 1979

SCALE: 1:5,000

PROJECT NO: OPR-G324

SOUNDINGS: Raytheon DE-723-D  
Raytheon DE-719-B  
Sounding Pole  
Leadline

CONTROL: Del Norte &  
Theodolite T-2  
(Range-Azimuth)

Chief of Party . . . . . T. W. Richards  
Surveyed by . . . . . K. Andreen  
. . . . . W. Sprye  
. . . . . D. Bryant  
. . . . . J. Krouthamer  
. . . . . K. Klinefelter  
. . . . . S. Pugh  
. . . . . S. Gilbert  
. . . . . A. Bryson  
. . . . . R. Lewis

Automated Plot by . . . . . Xynetics 1201 Plotter (AMC)

Verified and Inked by . . . . . R. R. Hill  
February 27, 1980

I. Introduction

a. During verification of this survey, a problem was encountered with a sounding line run on May 22, 1979 (Julian Day 142), in the vicinity of Latitude 30°42'20", Longitude 81°27'00". This line of hydrography (position #2728-2730) reveals depths up to 20 feet shoaler than what was found on adjacent lines run on February 15, 1979 (Julian Day 046). This conflict was investigated by the verifier, using all available hydrographic data.



Positional raw data (angles, distances and correctors) was reexamined for a possible error in the location of this line (Position #2728-2730). Also the locations for positions #1898-1904 and #1905-1912 were rechecked, which are sounding lines run on either side of the questionable data. Based upon the field positional data at hand, no discrepancy in the plotted locations was detected.

Fathograms and sounding correctors for the pertinent data were also reexamined by the verifier; however, this also failed to resolve the depth differences.

Considering the verifier's investigation thus far, it appears that the positional and sounding data at hand is accurate.

Upon this conclusion, another approach to the problem was attempted. Dredging by the Corps of Engineers was in progress during the time of this survey and an office copy of their vicinity map (D.O. File No. 90-32, 707 dated April 1978) showed a potential beach disposal area (D/A-A) at Latitude  $30^{\circ}42'18''$ , Longitude  $81^{\circ}26'54''$ . Also, field records show a time lapse of 96 days between the conflicting sounding lines. With these two thoughts in mind, it could be assumed that deposition from the dredging operations caused the depth differences. However, after the Jacksonville District Office of the Corps of Engineers was contacted it was ascertained that the disposal area in question had not been officially used.

With respect to the response from the Jacksonville District Office of the Corps of Engineers pertaining to the use of Beach Disposal Area D/A-A and

considering the validity of the hydrographic data at hand, the verifier feels that a potential navigational hazard exists in this area. Unless this feature is disproved by subsequent information, it is recommended that it be charted.

*Chart depths in this area as they are shown on the present survey.*

Also a field investigation is recommended in the area as soon as possible to verify the existence and extent of this feature.

*Very much the same condition found 250 meters west of this line*

b. No Class I manuscripts were available for shoreline transfer at the time of verification.

*Class I manuscripts were cancelled because of shoreline inaccuracies. Class III's were considered more reliable and were the source of shoreline.*

c. All red notes in the Descriptive Report were made by the verifier.

## 2. Control and Shoreline

a. The source of control is adequately described in Sections F and G of the Descriptive Report.

b. Shoreline for the survey was transferred from Class III manuscripts TP-00200, TP-00201, TP-00202 and TP-00203 as per letter dated August 30, 1979.

*This shoreline is for orientation purposes only. Class I manuscripts were not used because of shoreline inaccuracies*

## 3. Hydrography

a. Depths at crossings are in good agreement. *Do not concur. Several sdps were replotted on time & course to eliminate crossline conflicts.*

b. The standard depth contours were adequately delineated. An

additional brown curve and supplemental 3-foot, 24 foot, and 36-foot curves were included in some areas to further delineate the bottom configuration.

*Depth curves were mechanically drawn & were recompiled during Q.C.I.*

c. The development of the bottom configurations and the investigation of least depths were considered adequate. *Exceptions are addressed in the Q.C. Report.*

#### 4. Condition of Survey

The smooth sheet and accompanying overlays, hydrographic records, and reports are adequate and conform to the requirements of the Hydrographic Manual with the following exceptions:

a. The information logged in the sounding volumes was not in complete accord with Section 4.8.3.1 of the Hydrographic Manual.

b. The hydrographer failed to investigate the questionable sounding line, which is discussed in Section I of this report. *contradicts item 3.c above*

#### 5. Junctions

An adequate junction was effected on the western boundaries of the present survey with H-9806 (1979). *concur*

A junction on the east with H-9799 (1979) was not completed. Due to the unavailability of this survey for adjustments, depth curves are not in complete harmony and should be considered further by Quality Control.

*Junction was completed during Q.C.I.*

There are no contemporary surveys available to the south at this time.

6. Comparison with Prior Surveys

H-5690	(1934)	1:10,000
H-5754	(1935)	1:10,000
H-8106	(1955)	1:10,000

These prior surveys are the most recent in this area that provide complete coverage. The comparison with these prior surveys is adequately discussed under *COLL CUR* Section K of the Descriptive Report. Differences encountered are attributed to natural and cultural changes in the survey area.

7. Comparison with Chart No. 11503 (29th Edition, July 9, 1977)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys with the exception of numerous depths located primarily along the edges of the dredged channels. The source for these charted depths was not readily determined at this time. Due to the dredging operations conducted at the time of this survey, the present survey is considered adequate to supersede these charted depths supplemented by the Corps of Engineers After Dredge Survey within the common area.

The disposition of Presurvey Review Items and charted features

located within the limits of this survey were adequately discussed under Sections K, L, and P of the Descriptive Report. *CONCUR*

b. Controlling Depths

There are no conflicts with the controlling depths in the area of the present survey.

Due to dredging operations conducted during the time of this survey, it is recommended that the channel areas affected be updated according to the after dredge surveys. *CONCUR*

c. Aids to Navigation

Numerous changes in the aids to navigation have occurred in the present survey area and these changes are adequately discussed in Section F and M of the Descriptive Report. *Coast Guard should be consulted for all aids within the survey area.*

8. Compliance with Instructions

This survey adequately complies with the Project Instructions.


9. Additional Field Work

This is considered an adequate navigable area survey. Additional field work is recommended as soon as possible in the vicinity of the questionable sounding line discussed under Section I of this report.

Inspection Report  
H-9800


Any verification errors regarding procedures and presentation of survey data detected during inspection by the Hydrographic Inspection Team have been corrected before submission for administrative approval. HIT comments regarding quality of field work, compliance with instructions, and adequacy of the survey have been incorporated within the Verifier's Report.

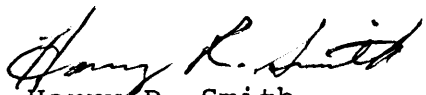
Examined and Approved:  
Hydrographic Inspection Team  
Date:

  
Robert A. Trauschke, CDR, NOAA  
Chief, Processing Division


ABSENT  
David W. Yeager, Lt. Cdr., NOAA  
Field Procedures Officer  
Operations Division

ABSENT  
R.D. Sanocki  
Technical Assistant  
Processing Division

  
Maureen R. Kenny, LT, NOAA  
Chief, Electronic Data  
Processing Branch

  
Harry R. Smith  
Team Leader  
Verification Branch

Approved/Forwarded

  
Richard H. Houlder  
RADM, NOAA  
Director, Atlantic Marine Center



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SURVEY  
Rockville, Md. 20852

OA/C352:FPS

May 6, 1980

TO: Glen R. Schaefer *GRS*  
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch *gml*

FROM: F. P. Saulsbury *F. P. Saulsbury*  
Quality Evaluator

SUBJECT: Quality Control Report for H-9800 (1978-79), Georgia/Florida,  
Cumberland Sound, St. Marys Entrance

A quality control inspection of H-9800 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. In general, it was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report and as follows:

1. Revisions and corrections to survey items made on the smooth sheet during quality control inspection are shown on the one-half scale survey copy furnished to verification.
2. Geographic positions were not furnished for detached positions listed in the sounding volumes.
3. Occasionally the year the hydrography was accomplished was omitted on Fathogram Stamp No. 31 affixed to the echo records for the present survey. In this case, where the survey was done over a period of 2 years, the complete date should be annotated on the appropriate record.
4. A questionable fathometer trace, resembling a wreck, was not investigated by the hydrographer. The 33-foot questionable sounding, in surrounding depths of 36 to 40 feet, is located in latitude 30°42.55'N, longitude 81°24.44'W. *33 175102  
Chen  
Chen Rev. 1980*
5. Inadequate hydrographic development compromised the delineation of bottom configuration in the following areas:



<u>Latitude (N)</u>	<u>Longitude (W)</u>
30°42.35'	81°27.00'
30°42.33'	81°27.13'
30°42.33'	81°27.35'
30°42.15'	81°27.67'

6. Several soundings, in the northwestern portion of the survey, were replotted on time and course to eliminate crossline conflicts during quality control inspection. These conflicts were the result of the launch changing speed while sounding; e.g., slowing down on the ends of lines or beginning from a slow start.

The hydrographer's responsibility is to annotate changes of speed in the survey records. Additional fixes taken by the surveyor would have precluded the necessity to replot in between soundings to account for the increased or decreased speed of the launch. (See section 4.8.3.10 of the Hydrographic Manual.)

7. Crosslines run parallel to steep gradients along the bottom slope as indicated on the position overlay should be avoided. (See section 4.3.6 of the Hydrographic Manual.)

8. Elevations of features referenced to MHW, MLW, or chart datum on the boat sheet of the present survey are misleading since the hydrographer is only furnished heights of predicted tides. Field references should therefore include the elevation relative to the water surface and the time and date of the observation. Subsequent application of actual tide correctors to these observed elevations is made at the time of verification to produce heights of features above the appropriate datum.

cc:  
OA/C35  
OA/C351





UNITED STATES DEPARTMENT OF COMMERCE  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SURVEY  
Rockville, Md. 20852

AUG 4 1980

OA/C351:SRB

TO: OA/CAM - Richard H. Houlder

FROM: *[Signature]*  
F/OA/CS - Roger F. Lanier

SUBJECT: H-9800 (1978-79), OPR-G324-HFP-78, Georgia/Florida, Cumberland Sound,  
St. Marys Entrance, Report of Compliance with Project Instructions

The smooth sheet and Descriptive Report for the subject survey have been examined. This survey, except as noted in the Quality Control Report, dated May 6, 1980 (copy attached), and the Hydrographic Survey Inspection Team Report, dated February 22, 1980, is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-G324-HFP-78, dated July 31, 1978.

Attachment

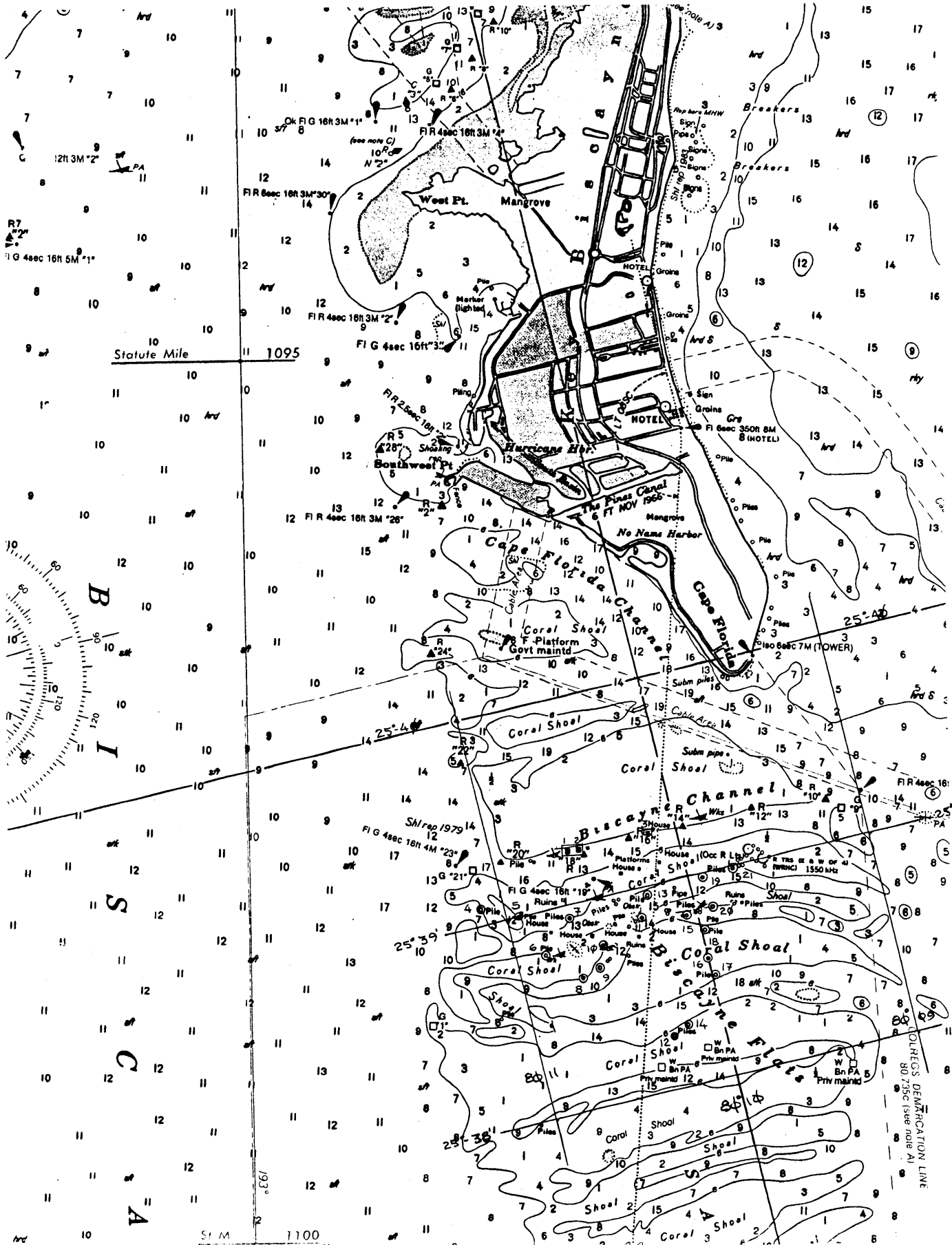
cc:  
OA/C352 w/o att.



**10TH ANNIVERSARY 1970-1980**

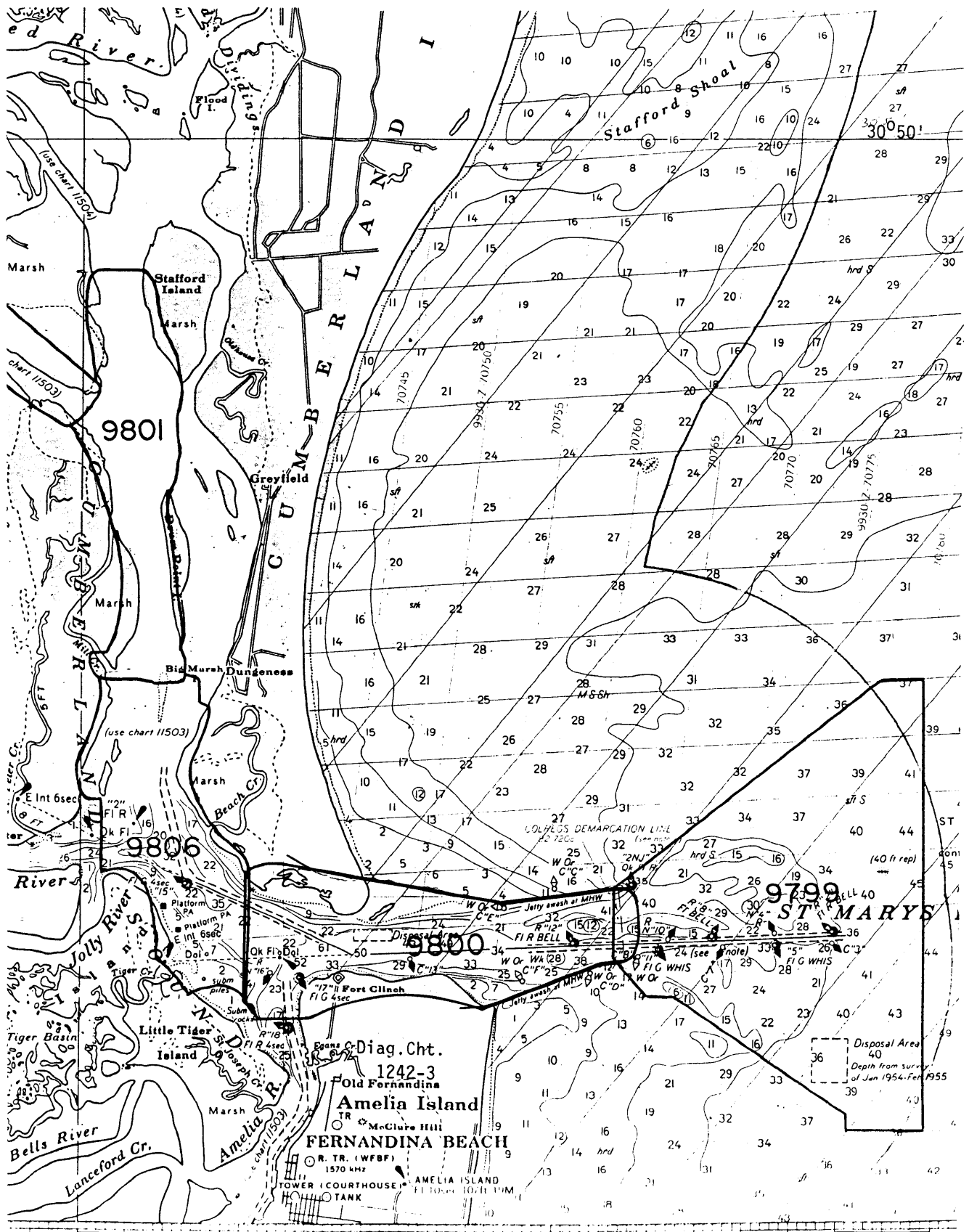
**National Oceanic and Atmospheric Administration**

A young agency with a historic  
tradition of service to the Nation



VERTICAL DEMARCATION LINE  
80° 25' 30" (see note A)

1.100



DEPARTMENT OF COMMERCE  
 Environmental Science Services Administration  
 U.S. Coast and Geodetic Survey  
 Washington, D.C.

Hydrographic Index No. 78 C

