

8106

Diag. Cht. No. 1242-2.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ECFP-1-1053 Office No. H-8106

LOCALITY

State Florida - Georgia

General locality Fernandina Harbor

Locality St. Marys Entrance - Cumberland Sound.

19/54-55

CHIEF OF PARTY

C. R. Reed

LIBRARY & ARCHIVES

DATE September 27, 1957

8-1870-1 (1)

8106

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER NO. H-8106

Field No. ECFP- 1-10-53

State Florida - Georgia

General locality Fernandina Harbor, Florida

Locality St. Marys Entrance - Cumberland Sound

*see also title
sheet for 1955 work*

Scale 1: 10,000

Date of survey 4 Jan. 1954 to 9 Apr. 1954

Instructions dated 30 September 1954

Vessel East Coast Field Party

Chief of party Clarence R. Reed.

Surveyed by E.K. McCaffrey, L. D. Kelley & C. E. Horne

Soundings taken by ~~XXXXXXX~~ fathometer, graphic recorder, hand lead, ~~XXX~~ sounding pole

Fathograms scaled by Party Personnel

Fathograms checked by R.B.N. - E.K.M. - L.D.K. - C.E.H. & Norfolk District Office

Protracted by A.K. Schugeld

Soundings penciled by A.K. Schugeld

Soundings in ~~XXXXXX~~ feet at MLW ~~MLW~~ are true depths

REMARKS:

*HUB
10/18/55*

NOTES FOR DESCRIPTIVE REPORT
TO ACCOMPANY

Hydrographic Sheet H-8106 (Field No. ECFP 1-10-53)
St. Marys Entrance and Cumberland Sound
Florida and Georgia

East Coast Field Party

C. R. Reed, Chief of Party

Project CS-364

1954

SCALE 1:10,000

* * * * *

PROJECT

This survey was accomplished under instructions dated 30 September 1953 for hydrographic surveys in the vicinities of St. Marys Entrance and Nassau Sound.

SURVEY LIMITS & DATES

(1954-55)
The survey on Sheet H-8106 (Field No. ECFP L-10-53) covers Cumberland Sound north to latitude $30^{\circ}45.0'$, west to the entrances of St. Marys River, Holly River and Tiger Creek; south to latitude $30^{\circ}41.3'$; and east thru the jetties. The outside limits were to have been the part of chart 453 which lies north of latitude $30^{\circ}40.6'$. Adverse weather conditions and closing of the field season prevented completion of the survey. Work was begun on 4 January and ended on 9 April 1954. See attached Desc. Report for 1954-55 season.

VESSELS AND EQUIPMENT

Aluminum launch #172 and ship's launch #115 (USC&GSS-HYDROGRAPHER) were used in this survey. Both launches operated from Fernandina Public Wharf.

Launch #172 has a turning radius of 15 meters while running at sounding speed of 6 knots (2500RPM), launch #115 has a turning radius of 25 meters at sounding speed of 9 knots (1400RPM).

Echo soundings were obtained with graphic recorders #138 SPX and #119 S with transducers mounted inboard in Launch 172 and in a fish boat to the keel of Launch 115. Recorder #138 SPX was used in Launch 115 for the period 4-14 January and in Launch 172 for the period 18 January through 5 February. Recorder #119 S was used in Launch 115 for the period 16-18 March and in Launch #172 for the period 5-9 April.

TIDES AND CURRENTS

The tide note is appended to this report. No current observations were made on this project.

SMOOTH SHEET

The smooth sheet is to be plotted by the Norfolk Processing Office.

CONTROL STATIONS

The control consisted mainly of triangulation and photo-hydro stations. The latter were plotted on Air Photo Compilation Sheet T-9801-N by photogrammetrist J. C. Lajoie. These were then transferred to the boat sheet. All necessary hydrographic stations were located by sextant fixes taken at the signal position.

SHORELINE AND TOPOGRAPHY

(1951-52)

The shoreling and topographic details were transferred from air-photo compilation sheet T-9801-M. The low water line of extensive flats south of Cumberland Island was located with a series of detached fixes taken from the launch. Significant changes in the shoreline and wharfage on the northwest part of Amelia Island were recorded on Air Photos of that area. (See Field Inspection Report, Project Ph 123(53) page 7 (e) by J. C. Lajoie).

SOUNDINGS

Soundings were taken by Graphic Recorder, sounding pole and hand lead. Bottom samples were obtained using an armed hand lead.

CONTROL OF HYDROGRAPHY

The sounding lines on this sheet were controlled by means of three point sextant fixes. No unusual jumps were observed in changing control stations. Offshore hydrography was controlled by the use of circular arcs, constructed on the "circle-sheet" principle using the locus of points of three prominent on shore control stations.

ADEQUACY OF SURVEY

Surveys in Cumberland Sound were carried to a satisfactory junction with surveys of the U. S. Army Corps of Engineers made in August and September 1953. Copies of these surveys were forwarded to Washington Office 29 January 1954 by this party. The portion of the survey in Cumberland Sound east to the end of St. Marys Entrance jetties is considered adequate to supersede prior surveys. The portion of the survey outside the jetties was not completed due to adverse weather, launch trouble, and ending of the field season. (Completed following season - Desc. Report attached)

CROSSLINES

Prescribed crosslines were run on the inshore portions of this survey, and satisfactory crossings obtained. No crosslines were run on offshore portions of this sheet, Because the survey of this area was not completed. Completed in 1954-55 work.

COMPARISON WITH PRIOR SURVEYS

(1934-35)

(1934)

A comparison with prior surveys Nos. H-5754, and H- 5690, together with chart 453-(Rev. 1952) showed few discrepancies. These, together with items mentioned in the preliminary review supplied by the Washington Office, are listed below.

COMPARISON WITH CHART & PRELIMINARY REVIEW

Latitude	Longitude	Chart	1954	Remarks;
			Survey	
30°41.98'	81°28.1'	Piles & ---		Item 9- Preliminary Review The rock pile at the base of Beacon 12A has become lower in elevation so that it is now covered one half foot at mean low water. It is approximately 20 meters in diameter with the beacon at the center. It is unfortunate that the present charted note "piles and rock" extends entirely across the western channel, making its use
4	.13	Rocks		

COMPARISON WITH CHART & PRELIMINARY REVIEW (CONT.)

3

<u>Latitude</u>	<u>Longitude</u>	<u>Chart</u>	<u>1954 Survey</u>	<u>Remarks</u>
				in navigation questionable. It is recommended that the note be changed to read "submerged rock base" and placed to the west of the beacon immediately beneath the number "12A" in such a manner as to indicate its descriptive nature.
30°43.15 ^{.08}	81°29.07 ^{.04}	16 ft.	14 16 ft.	Item 4 - Preliminary Review. Two 16 ft. soundings were recorded, 40m W & 30m SW to verify the charted sounding. It is recommended that the charted 16 ft. be retained. superseded by 14 ft.
30°42.45 ⁷	81°27.92 [✓]	13 ft.	16 ft.	Item 2 - Pre. Review - No verification was found for this 13' depth. Soundings of 16' & 17' were located 10m W & 30m SW. Depths on U.S. Engineers' survey - August 1953 show 16 foot minimum. It is recommended that the 13 foot sounding be deleted from the chart. Concur.
30°41.6 ⁷	81°27.6 [✓]	Dolphin & Rocks	Dolphin & Rocks	Items 3 & 8 Pre. Review - The existence of these charted features was verified. The rocks are all that remain of old rock groins in that area. See Review
30°42.75 [✓]	81°24.50 [✓]	14 ft.	19 ft. (12 ft.)	Soundings of 19' were found 20m W and 30m SE. Extensive sounding in this area indicates that the shoal has shifted to the westward. Least depths of 12 feet 150m WNW should be charted.

The mud flats on the southeast tip of Cumberland Island are more extensive than shown on Chart 453. The present shoal area is shown on this survey.

The controlling depth in the marked channel (Item 1 of Pre. Review) is 29 feet. This is a dredged channel and subject to shoaling at its edges.

The large dock (Item 13 of Pre. Review) was located from a land survey and plotted on a chart section which will be forwarded separately. (H-8179, 1955)

Items 10, 11 and 12 of Pre. Review were located by triangulation.

Items 5, 6 and 7 of Prelim. Review were not investigated due to closing of the field season. See 1955 Desc. Report.

COAST PILOT

* subsequent C of E. surveys have superseded this item.

A separate report on Coast Pilot will be made.

AIDS TO NAVIGATION

See Processing Office List

Fixed aids to navigation were located by triangulation. Their positions are to be computed by the Washington Office. Floating aids located on this survey are listed on the following page.

Latitude Longitude Buoy Depth Date

(Fernandina Entrance)

30°43.52	81°23.18	Black Lt. 23	28	4 Feb. '54
		Bell "3f"		
30°43.12	81°24.18	Red: Lt. Whis "4"	33	8 Jan. '54
30°42.77	81°24.20	Can "5"	31	8 Jan. '54
30°42.73	81°24.75	Black Bell "7"	25	4 Jan. '54
30°42.88	81°24.54	Nun "6"	42	4 Jan. '54
30°42.83	81°24.91	Nun "8"	37	4 Jan. '54
30°42.77	81°25.38	Nun "10"	30	4 Jan. '54

re-located in 1955,
See 1955 Desc. Report

(Amelia River)

30°42.34	81°27.97	Nun "2"	16	18 Mar. '54
30°42.27	81°27.68	Black Lt "11"	51	17 Mar. '54

LAND MARKS

Landmarks will be submitted separately on Form 567. (CL 892-1954)

GEOGRAPHIC NAMES

There are no changes or additions to Geographic names to report.

Respectfully submitted

Edwin K. McCaffrey

Edwin K. Mc Caffrey

Ens. U. S. Coast & Geodetic Survey

Approved and forwarded

Clarence R. Reed

Clarence R. Reed

CDR, USCGS, Chief of Party

VELOCITY CORRECTIONS TO ACCOMPANY

SHEET NO. H-8106(FIELD NO. ECFP 1-10-53)

The following corrections are based on an initial set of 2.0 feet in Launch #115 and 0.0 feet in Launch #172. Variations from this initial on the Graphic Record are recorded in the respective sounding volumes as an index correction.

FATHOMETER NO. 138 SPX - Launch #172

The following corrections to be used 27 January through 22 March

A RANGE

Depth	Corr.(foot)
0.0 to 22.0	+0.2
22.1 to 32.0	0.0
32.1 to 42.0	-0.2
42.1 to 49.0	-0.4
49.1 to 54.0	-0.6
54.1 to 55.0	-0.8

B RANGE

Depth	Corr.(Feet)
35.0 to 50.0	-3.4
50.1 to 56.0	-3.6

FATHOMETER NO. ^{119-S}~~138~~ SPX - Launch #172

The following corrections to be used 23 March - end of season

A RANGE

Depth	Corr.(feet)
0.0 to 22.0	+0.4
22.1 to 30.0	+0.6
30.1 to 37.5	+0.8
37.6 to 45.6	+1.0
45.1 to 52.0	+1.2
52.1 to 55.0	+1.4

B RANGE

NOT USED

FATHOMETER NO. 138 SPX - Launch #115

The following corrections to be used 17 December '53 - 3 Feb. '54

A RANGE

Depth	Corr.(feet)
0.0 to 8.8	0.0
8.9 to 18.0	-0.2
18.1 to 27.5	-0.4
27.6 to 37.0	-0.6
37.1 to 46.0	-0.8
46.1 to 55.0	-1.0

B RANGE

Depth	Corr.(feet)
45.0 to 51.0	-3.4
51.1 to 56.0	-3.6
56.1 to 62.0	-3.8

(continue on next page)

VELOCITY CORRECTIONS CONTINUE

FATHOMETER No. 119 S - Launch #115

The following corrections to be used 17 Feb. 18 Mar.

A RANGE		B RANGE	
Depth	Corr(feet)	Depth	Corr(feet)
0.0 to 55.0	0.0	35.0 to 48.0	-0.2
		48.1 to 60.0	-0.4

(For velocity correction curves see report for
Hydrographic Surveys H-8107 and H-8108)

APPROVAL SHEET

HYDROGRAPHIC SURVEY H-8106

The records and boat sheet for Hydrographic Survey H-8106 have been inspected by me and are approved.

Additional development is required inside the jetties at St. Marys Entrance. Only a small amount of work was done outside the jetties.

Clarence R. Reed

Clarence R. Reed
CDR, USC&GS
OinC, East Coast Field Party

TIDAL NOTES TO ACCOMPANY

HYDROGRAPHIC SHEET H-8106(FIELD NO. ECFP-1-10-53)

Observations were made at two tide stations at which portable automatic gages were maintained. These stations were located at Fernandina Beach Pier (30° 37.5 81° 26.0) and Fort Clinch (30° 42.3 81° 27.2). The station at Fernandina Beach Pier was used to reduce offshore soundings taken in the period 4 January - 18 January. That at Fort Clinch was used to reduce soundings in Cumberland Sound for the period 16 March - 9 April. Offshore soundings taken 27 January 1, 4 & 5 February, when the gage at Fernandina Beach Pier was in-operative, were reduced from the station at Simpson Creek Entrance. Planes of Reference were furnished by the Washington Office.

STATION	LATITUDE	LONGITUDE	MLW ON STAFF
Fort Clinch	30° 42.3'	81° 27.2'	0.1'
Fernandina Beach, Pier	30° 37.5'	81° 26.2'	1.2'
Simpson Creek Entrance	30°29.0'	81°25.4'	1.5'
Fort George Club	30°28.4'	81°25.4'	2.2'

8106

Diag. Cht. No. 1242-2.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. ECFR-1-1053 Office No. H-8106

LOCALITY

State FLORIDA - GEORGIA

General locality FERNANDINA HARBOR

Locality ST. MARY'S ENTRANCE &
CUMBERLAND SOUND

194 55

CHIEF OF PARTY

CLARENCE R. REED

LIBRARY & ARCHIVES

DATE _____

B-1870-1 (1)

8106

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER NO. H-8106

Field No. ECFP 1-10-53

State Florida - Georgia

General locality Fernandina Harbor, Florida

Locality St. Marys Entrance - Cumberland Sound

Scale 1:10,000 Date of survey 12/9/54 - 2/17/55

Instructions dated 30 September 1953 - Supplemental 4 October 1954

Vessel East Coast Field Party

Chief of party Clarence R. Reed

Surveyed by E.K. McCaffrey

Soundings taken by fathometer, graphic recorder, hand lead, ~~none~~

Fathograms scaled by Party personnel

Fathograms checked by E.K. McCaffrey and Norfolk District Office

Protracted by A.K. Schugeld

Soundings penciled by A.K. Schugeld

Soundings in ~~fathoms~~ feet at MLW ~~XXXXX~~ are true depths

REMARKS: _____

NOTES FOR DESCRIPTIVE REPORT TO ACCOMPANY

Hydrographic Sheets H-8106 (Field No. ECFP 1-10-53)
H-8179 (Field No. ECFP 1754)

St. Marys Entrance, Cumberland Sound and Fernandina Beach
Florida and Georgia

EAST COAST FIELD PARTY

C. R. REED - CHIEF OF PARTY

PROJECT CS-364

1955

SCALE 1:10,000

* * * * *

REPORT OF PRIOR WORK Part of the field work on survey H-8106 (1954-55) (ECFP 1-10-53) was accomplished in the winter of 1953-54. A separate Descriptive Report was submitted for that portion of the work at that time.

PROJECT This survey was accomplished under instructions dated 30 September 1953 and supplemental instructions dated 4 October 1954.

SURVEY LIMITS AND DATES The survey on sheet H-8106 (Field No. ECFP-1-10-53) includes that portion of Cumberland Sound covered by Chart 453. (except the area covered by U.S. Engineers surveys). The limits of the area surveyed on the outside coast include all the area on Chart 453 (exclusive of USE Survey at jetty entrance) except that part which lies south of latitude $30^{\circ}-40.5'$. (1954-55)

The survey on sheet H-8179 (Field No. ECFP 1754) includes that area bounded on the north by latitude $30^{\circ} 40.5'$, on the east by the $30'$ foot curve, on the south by latitude $30^{\circ} 36.3'$, and on the west by the coast of Florida. (54-55)

The present survey on sheet H-8106 (Field No. ECFP 1-10-53) was begun 9 December 1954. The survey on sheet H-8179 (Field No. ECFP 1754) was begun 1 February 1955. The work on these sheets was done concurrently and terminated 17 February 1955.

VESSELS AND EQUIPMENT Aluminum launch CS-168 and plywood launch CS-175 were used concecutively in these surveys. Both operated from Fernandina Public Wharf. Launch CS-168 was used prior to 26 January 1955. Launch CS-175 was used after this date, and for the remainder of the surveys.

Launch CS-168 was operated at a sounding speed of 5.5 knots. Launch CS-175 was operated at a sounding speed of 9.0 knots.

Echo soundings were obtained with Graphic Recorders 121S and 77, with transducers mounted inboard in both launches. Fathometer 121S was used 9 December 1954 in launch #168. Fathometer 77 was then used for the remainder of both surveys.

Tides and Currents Tide reducers for this project were obtained from hourly heights furnished this party by the Washington Office. These heights were inferred from the Fernandina Standard Gage. This gage was inspected and serviced 1-3 February by the tide party of ENS. Paul Hertelendy.

No current observations were made on this project.

SMOOTH SHEET The smooth sheet is to be plotted by the Norfolk Processing Office.

(1951-52)
CONTROL STATIONS Control consisted of triangulation and Photo-hydro stations. These latter were transferred to the boat sheets from Air-photo Compilation sheets T-9801N and T-9801S. All necessary hydrographic stations were located by sextant fixes taken at the signal position.

SHORELINE AND TOPOGRAPHY The shoreline and topographic details were transferred from Air-photo Compilation Sheets T-9801N & T-9801S of 1951-52.

Measurements from photo-hydro signals to the high water line were made in accordance with Paragraph 5 of Supplemental Instructions dated 10/4/54. Unfavorable tides and winds prevented location of the low water line on survey H-8179 (ECFP 1754) during hydrography. It was located at low water by a series of detached positions.

SOUNDINGS Soundings were taken by Graphic Recorder, sounding pole and hand lead. Bottom samples were obtained using an armed hand lead.

CONTROL OF HYDROGRAPHY The sounding lines on these sheets were controlled by means of three point sextant fixes. No unusual jumps were observed in changing control stations.

ADEQUACY OF SURVEY This survey is considered complete and adequate to supersede prior surveys. A satisfactory junction was made between surveys H-8106 (Field No. ECFP 1-10-53) and H-8179 (Field No. ECFP 1754). A juncture was also made with the U.S. Engineers survey at St. Marys Jetty Entrance. (1954-55) (1955)

CROSSLINES Crosslines were run as specified in the original instructions of 30 September 1953. Discrepancies should be resolved by application of final tides on the smooth sheet. Discrepancies resolved. (1934) (1924)

COMPARISON WITH PRIOR SURVEYS A comparison with prior surveys Nos. H-5690 and H-4376 showed few discrepancies. In general the present survey listed depths approximately 2-3 feet deeper than prior surveys in depths of 15-30 feet immediately east of Amelia Island. (1934) (1924)

COMPARISON WITH CHART A comparison with Chart 453 (Rev. 1954) showed few discrepancies. Major variations include those covered in the preliminary review by Chart Division and are discussed in the following section. See Review

The St. Marys Entrance Jetties, have sunk to such an extent that approx. 400 yds. on the east end of the south jetty and the outer 600 yds. of the north jetty are awash at high water.

It is suggested that their charted character be altered and/or a note be added to the chart to indicate this fact.

PRELIMINARY REVIEW BY CHART DIVISION - CHART 453

* from H-5690 (1934)

Item 5 The 6 foot charted sounding* in latitude $30^{\circ} 41.54'$, longitude $81^{\circ} 24.56'$ was not found. The present survey reveals depths of 10-12 in this area. It is ^{evident} probable that the bottom has changed in this sandy area and it is recommended that the 6 foot sounding be deleted. Concur.

Item 6 The 37 foot sounding^{from H-5555 (1920)} charted in latitude $30^{\circ} 41.94'$, longitude $81^{\circ} 21.54'$ was not found. Although not extensively developed, a sounding line run 20m ^{north} south of its charted position showed depths of 4 1/2 feet in regular bottom. The bottom in this area is soft, black mud. It is recommended that this sounding be deleted. Concur.

Item 7 The wreck charted in latitude $30^{\circ} 43.56'$, longitude $81^{\circ} 21.48'$ was not found. Sounding lines were run 30m south and 50m north of its

* (N. to M. 35, 1950)

charted position, showing depths of 41-43 feet in regular bottom. Mr. David Tapper, local shrimp boat captain reports local shrimpers have snagged this wreck on several occasions with resultant loss of net. This is the shrimp trawler "Gipsy Girl" which burned and sank.* He could not give exact information as to what depth such snagging occurred, but estimated it at approximately 40 feet, as charted. However, he reported that such snagging occurred while crossing the range formed by St. Marys Entrance bell buoy "3F" and the smoke visible from St. Marys Kraft Corporation. This would place the wreck approx. 300-400 meters north of its present location. It is recommended that the present symbol and notation be retained in its present position, until such time as more definite information justifies changing it. *Concur.*

Item not numbered The 14 foot sounding in latitude $30^{\circ} 42.75'$, longitude $81^{\circ} 23.85'$ was investigated by a system of parallel sounding lines whose spacing did not exceed 60 meters. The least depths obtained were 20-21 feet which verified soundings in the same area from the U.S. Engineers survey. The bottom in the vicinity has ~~probably~~ *evidently* changed and the 14 foot sounding should be deleted.

Item 1 The latest controlling depth in the marked channel is 29 feet. This is a dredged channel and subject to shoaling at its edges. *(This item superseded by subsequent surveys by C. & E.)*

COAST PILOT There are no corrections or additions to Coast Pilot recommended.

AIDS TO NAVIGATION No fixed aids to navigation were located this field season. Floating aids to navigation were located as follows:

See Processing Office List

<u>NAME (1953 Light List)</u>	<u>LOCATION</u>	<u>DEPTH</u>	<u>VOL.</u>	<u>PAGE</u>	<u>DATE</u>
Fernandina Entrance	$30^{\circ} 43.55'$	30	8	3	17 Feb. 1955
Lighted Bell Buoy "3F"	$81^{\circ} 23.23'$				
Fernandina Entrance	$30^{\circ} 43.07'$	46	4	13	21 Jan. 1955
Lighted Whistle Buoy "4"	$81^{\circ} 24.23'$				
Fernandina Entrance	$30^{\circ} 42.93'$	40	4	13	21 Jan. 1955
Buoy "5"	$81^{\circ} 24.20'$				
Fernandina Entrance	$30^{\circ} 42.93'$	32	4	13	21 Jan. 1955
Buoy "6"	$81^{\circ} 24.76'$				
Fernandina Entrance	$30^{\circ} 42.85'$	38	4	13	21 Jan. 1955
Lighted Bell Buoy "7"	$81^{\circ} 24.70'$				
Fernandina Entrance	$30^{\circ} 42.86'$	32	4	14	21 Jan. 1955
Buoy "8"	$81^{\circ} 25.02'$				
Fernandina Entrance	$30^{\circ} 42.75'$	29	4	14	21 Jan. 1955
Lighted Buoy "10"	$81^{\circ} 25.40'$				

LANDMARKS FOR CHARTS There are no new landmarks to report.

GEOGRAPHIC NAMES There are no changes or additions to Geographic Names to report.

MISCELLANEOUS The Rayonier Corporation discharges its waste industrial liquor in the ocean off Fernandina Beach by means of a submerged discharge pipe. The inshore end is shown on Air-Photo Manuscript T-9801-S. The offshore end was located by means of a sextant fix taken on the observed fluid discharge. This is recorded as position 8 e, page 53, Vol. 2 -

H-8179
only

(1955)
Sheet H-8179 (ECFP 1754). A bar check was taken in the immediate vicinity and showed that this discharge apparently did not change the water density enough to materially affect the velocity of sound.

H-8179
only

Respectfully submitted

Edwin K. McCaffrey
Edwin K. McCaffrey
ENS. USC&GS

Approved and forwarded

Clarence R. Reed

Clarence R. Reed
CDR., USC&GS
Chief of Party

TIDE NOTE TO ACCOMPANY

**Hydrographic Survey Sheet H-8106(FIELD NO. ECFP 1-10-53)
H-8179(FIELD NO. ECFP 1754)**

Tide reducers for this project were obtained from hourly heights furnished this party by the Washington Office. These heights were inferred from the Fernandina Standard Gage.

FATHOMETER CORRECTIONS

Hydrographic Survey Sheets H-8106(Field No. ECFP 1-10-53)
H-8179(Field No. ECFP 1754)

The corrections tabulated below are based on an initial set at zero feet on the fathogram. Index corrections have been entered in the sounding volumes where the initial varied from zero feet. All soundings were taken in feet.

LAUNCH 168

Fathometer 121-S
9 December 1954

Correction (Feet)	Depth (Feet)	
A Range	From	To
+0.2'	0.0	14.6
0.0	14.8	55.0

B Range not used

LAUNCH 168

Fathometer 77
10 December 1954- 21 January 1955

Correction (Feet)	Depth (Feet)	
A Range	From	To
+0.2	0.0	25.0
0.0	25.2	32.0
-0.2	32.2	55.0
B Range		
+1.2	35.0	42.4
+1.0	42.6	45.8
+0.8	46.0	48.2
+0.6	48.4	50.2
+0.4	50.4	52.0
+0.2	52.2	54.4
0.0	54.6	Limit of sounding

LAUNCH 175

Fathometer 77
22 January 1955 - 17 February 1955

A Range	From	To
-0.6	0.0	6.6
-0.4	6.8	48.0
-0.2	48.2	55.0
B Range		
0.0	35.0	42.0
+0.2	42.2	52.0
+0.4	52.2	limit of sounding

APPROVAL SHEET FOR

Hydrographic Surveys H-8106 (Field No. ECFP 1-10-53)
H-8179 (Field No. ECFP 1754)

The records and boat sheets for Hydrographic Survey H-8106 (1954-55) (ECFP 1-10-53) and H-8179 (ECFP 1754) have been inspected by me and are approved. (1955)

It should be noted that navigational buoys in St. Marys Entrance have been moved since the original field work was done on Survey H-8106. Their new positions have been determined during the present field season. They mark a channel which falls north of the entrance range. ✓

It should also be noted that the boat sheet for Survey ECFP-1754 has been re-oriented in order to get signals at the north end of the survey on the sheet. The smooth sheet for Survey H-8106 will require a slight shift northward to eliminate the dog ear. ✓

It is not practical to search for the wreck (Review Item No. 7) off the entrance except by wire drag. ✓

The tides used for boat sheet reduction of soundings are from predicted curves and do not give perfect agreement on crosslines. It is expected that smooth sheet plotting will improve these crossings. ✓

The present survey fails to overlap the U.S. Engineers survey just south of the end of the south jetty. However, depth curves are in essential agreement and no further work seems indicated. A rather swift current near the ends of the jetties can be expected to cause great variations in submarine topography. ✓

The high and low water lines in the vicinity are quite changeable, as each new storm builds up or tears down some of the sandy beach. Groins, which were erected in early 1954 north of latitude 30° 40', have had some effect on this changing shoreline. The low water line on Survey H-8179 (ECFP-1754) was determined by sextant fixes at the time of low water on "d" day. The high water and storm high water lines were determined at high water the morning of 23 February 1955. Measurements were made from the various photo-hydro signals and these measurements have been inked on the boat sheet and on the field photographs. The new high water line has been inked in red. It is recommended that this line be transferred to the smooth sheet directly from the boat sheet as the changeable nature of the shore here does not warrant correction of the Air Photo Compilation. ✓

Clarence R. Reed

Clarence R. Reed
CDR., USCG&GS
CinC, East Coast Field Party

PROCESSING OFFICE
LIST OF SIGANLS

H-8106

TRIANGULATION STATIONS

AMEL	AMELIA ISLAND LIGHTHOUSE, 1905-53
BOLT	BEACH 2, 1933-53
CON	FERNANDINA, AMERICAN CONTAINER CORP., TANK, 1954
EVE	AMELIA RIVER, LIGHT 12, 1954
FAR	GUN (USE), 1954
FERN	FERNA, 1954
JIM	ST. MARY'S RIVER, LIGHT 2, 1954
JOL	JOL (USE), 1954
LAND	CUMBERLAND SOUND, LIGHT 79, 1954
MOCK	HAMMOCK 2, 1954
PET	PET (USE), 1954
REAR	TIGER ISLAND RANGE, REAR LIGHT, 1954
RONT	TIGER ISLAND RANGE, FRONT LIGHT, 1954
TANK	DUNGENESS TANK, 1905-53
TIG	TIG (USE), 1954

TOPOGRAPHIC STATIONS

SOURCE T-9801N

Ber	Cum	Joe	Lan	Pun	Ran	Red	Tow
-----	-----	-----	-----	-----	-----	-----	-----

SOURCE T-9801S

Gab	Jug	Kim	Mac	Tan
-----	-----	-----	-----	-----

HYDROGRAPHIC STATIONS

Ben	Vol. 3, pg. 9
Cre	Vol. 9, pg. 41
Ear	Vol. 11, pg. 10
Low	Vol. 3, pg. 7
	Vol. 13 , pg. 35
Pin	Vol. 6, pg. 3

PROCESSING OFFICE

FLOATING AIDS TO NAVIGATION
H-8106

<u>BUOY</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>DEPTH</u>	<u>POS. NO.</u>	<u>DATE</u>
Amelia R. Buoy 2	30-42.3 ⁴ 5	81-27.97 [✓]	17'	16j	3/18/54 ✓
Amelia R. Ltd. Buoy 11	30-42.27 [✓]	81-27.68 [✓]	51'	106h	3/17/54 ✓
Fernandina Entr. Ltd. Bell Buoy 3F	30-43.5 ⁷ 8	81-23.23 [✓]	30'	1j	2/17/55 ✓
Fernandina Entr. Ltd. Whistle Buoy 4	30-43.0 ⁴⁸ 1	81-24.23 [✓]	46	9m	1/21/55 ✓
Fernandina Entr. Buoy 5	30-42.93 [✓]	81-24.20 ^{✓✓}	41'	10m	1/21/55 ✓
Fernandina Entr. Buoy 6	30-42.9 ⁵ 8	81-24.76 [✓]	32'	12m	1/21/55 ✓
Fernandina Entr. Ltd. Bell Buoy 7	30-42.8 ⁶ 5	81-24.70 [✓]	38'	11m	1/21/55 ✓
Fernandina Entr. Buoy 8	30-42.86 [✓]	81-25.0 ⁴ 3	32'	13m	1/21/55 ✓
Fernandina Entr. Ltd. Buoy 10	30-42.7 ⁷ 6	81-25.40 [✓]	29'	14m	1/21/55 ✓

PROCESSING OFFICE
STATISTICS
H-8106
1954 FIELD SEASON

<u>DATE</u>	<u>DAY LTR.</u>	<u>VOL. NO.</u>	<u>NO. POS.</u>	<u>LL SDGS</u>	<u>STAT. MI.</u>
4 Jan. 54	a (red)	1	7	-	-
5 " "	b	1	77	-	10.2
6 " "	c LCH. 115	1	37	-	4.3
7 " "	d	1&2	137	-	17.8
8 " "	e	2	91	2	12.6
14 " "	f	2	26	-	3.9
16 Mar.	g	3	27	-	2.5
17 " "	h	3	122	-	15.2
18 " "	j	3&4	119	-	13.3
18 Jan	a (blue)	5	74	-	8.0
27 " "	b LCH. 172	5	107	-	14.2
28 " "	c No soundings				
1 Feb.	d	6	69	3	7.8
4 " "	e	6	28	1	3.6
5 " "	f	6	38	-	5.1
5 Apr.	g	6&7	116	-	14.4
6 " "	h	7	93	-	11.8
8 " "	j	7	79	-	10.5
9 " "	k	8	53	-	7.7
TOTALS			1300	6	162.9

SQUARE STATUTE MILES HYDROGRAPHY 12.2

PROCESSING OFFICE
STATISTICS
H-8106

1954 & 1955 FIELD SEASON

LAUNCH 168

<u>DATE</u>	<u>DAY LTR.</u>	<u>VOL. NO.</u>	<u>LL SDGS.</u>	<u>NO. POS.</u>	<u>STAT. MI.</u>
9 Dec. 54	a (purple)	9	0	15	2.1
10 "	b	9	0	93	12.9
13 "	c	9	0	7	1.0
15 "	d	9	0	60	10.0
16 "	e	9&10	0	115	19.1
17 "	f	10	0	50	8.8
5 Jan. 55	g	10&11	0	78	12.0
6 "	h	11	0	45	4.0
7 "	j	11	0	60	7.5
11 "	k	11	0	50	8.8
12 "	l	11&12	0	76	12.8
21 "	m	12	6	35	5.0
25 "	n	12	0	109	17.3
TOTALS			6	793	121.3

LAUNCH 175

27 Jan. 55	a (green)	13	0	101	18.7
28 "	b	13	0	96	18.1
31 "	c	14	0	105	18.0
9 Feb.	d	14	8	85	14.0
10 "	e	14&15	3	75	13.8
14 "	f	15	0	84	12.6
15 "	g	15	11	32	4.6
16 "	h	15	10	62	10.6
17 "	j	16	1	47	8.0
TOTALS			33	687	118.4

GRAND TOTAL FOR SURVEY	16	45	2780	402.6
------------------------	----	----	------	-------

4.0

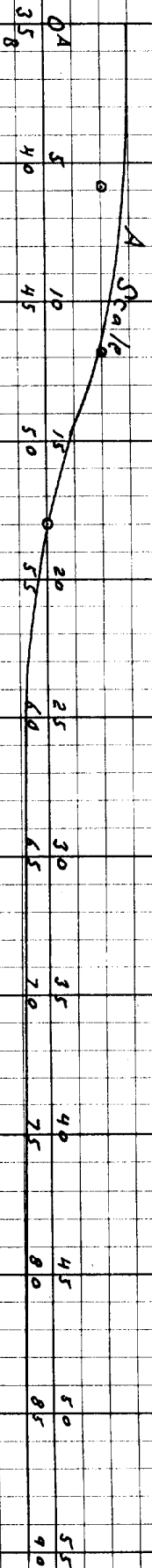
Depths in Feet

+0.5

Corrections in Feet

-0.5

-1.0



Corrections:

A Scale

+0.2' From 0.0 to 14.6'

0.0 From 14.8' to 55.0'

Corrections:

B Scale

Not Used

VELOCITY CORRECTIONS

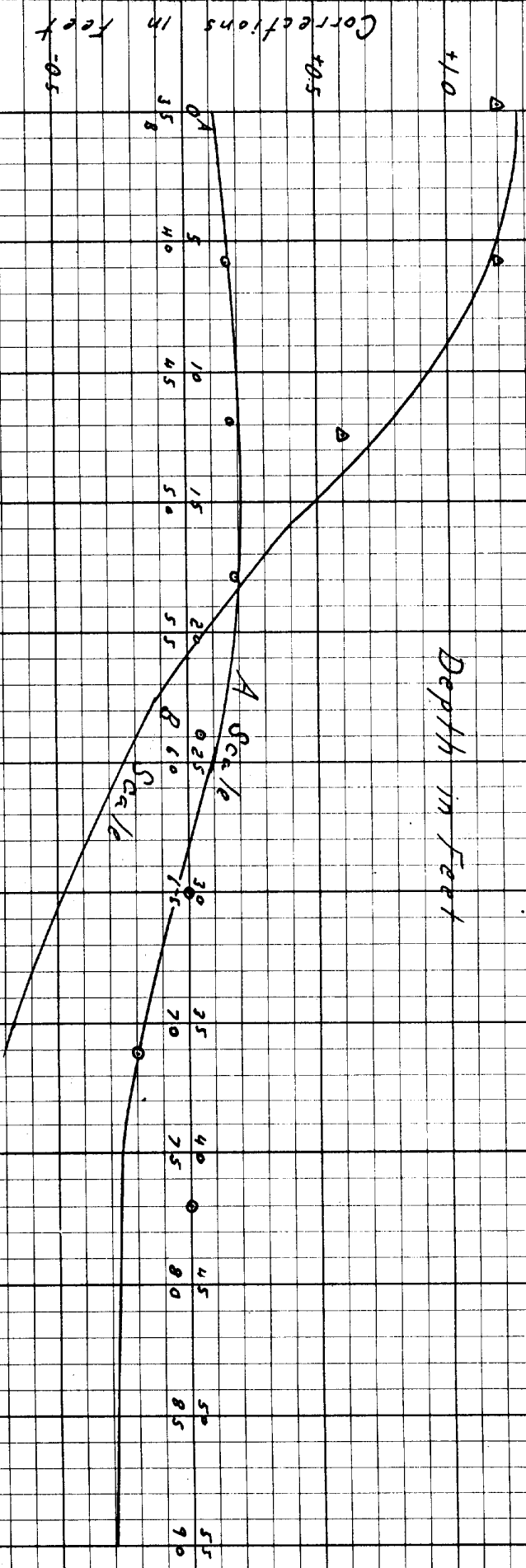
Launch No. - 168; Fath No. 1215

Day, 9 December 1954

Project CS-364

East Coast Field Party

C. R. Reed - Cmdr.



Corrections:

A Scale

+0.2' From 0.0 to 250'

0.0 From 252' to 320'

-0.2 From 32.0' to 550'

Corrections:

B Scale

+1.2 From 350' to 424'

+1.0 From 426' to 458'

+0.8 From 460' to 482'

+0.6 From 484' to 502'

+0.4 From 504' to 520'

+0.2 From 522' to limit of sounding

VELOCITY CORRECTIONS

Launch No. - 168; Fath. No. - 77

From 10 Dec. 1954 - To 21 Jan. 1955

Project CS-364

East Coast Field Party

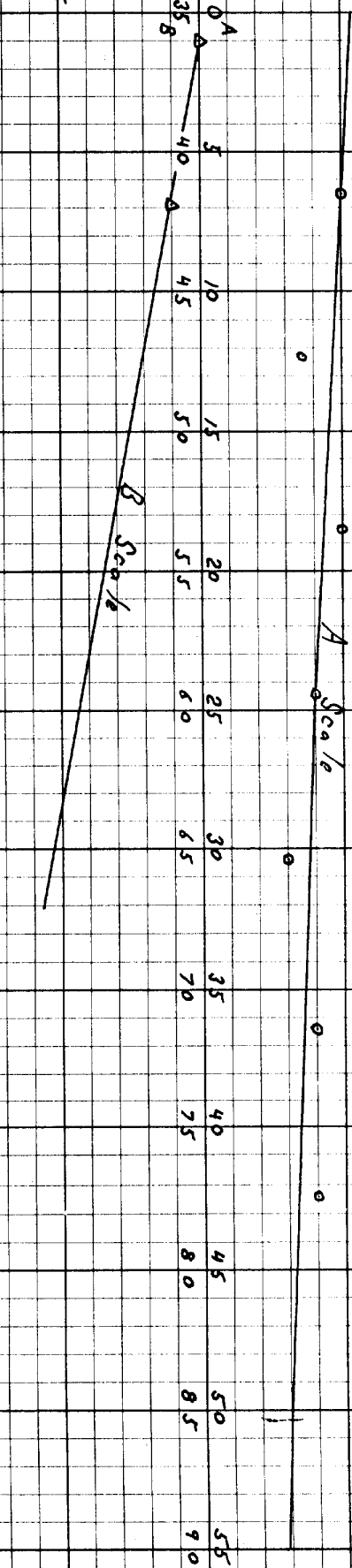
C. R. Reed - Cmdr.

-10

Depths in Feet

Corrections in Feet +

+10



Corrections:

A Scale

-0.6 From 0.0 to 6.6'

-0.4 From 6.8' to 48.0'

-0.2 From 48.2' to 55.0'

Corrections:

B Scale

0.0 From 35.0' to 42.0'

+0.2 From 42.2' to 52.0'

+0.4 From 52.2' to limit of sounding

VELOCITY CORRECTIONS

Launch No.-175 ; Fat4. No. 77

From 22 Jan. 1955- To 17 Feb. 1955

Project CS-364

East Coast Field Party

C.R. Reed-Cmdy.

PROCESSING OFFICE
ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8106 (Field No. ECFP-1-1053)

GENERAL

This appears to be an excellent basic survey except for discrepancies listed below.

SOUNDINGS

16-42b rejected All soundings on a-day (purple) and those from positions 1 thru 42b (purple) are being submitted on an overlay. They disagree with surrounding hydrography by from 2 to 5 feet. The remaining soundings on the survey agree very well.

In areas of irregular bottom, the fathograms were checked scanned and the soundings reduced with templates in the Processing Office. In most areas of smooth bottom, the field scanning was accepted and the soundings were reduced in the conventional manner. The method used on each day is noted in the volumes.

CIRCLES

All positions East of Longitude 81-23'-30" were plotted on circles from stations AMEL, FERN and TANK.

Norfolk, Va.
23 Sept. 1957

Respectfully submitted,

Hugh L. Proffitt
Hugh L. Proffitt
Cartographer

GEOGRAPHIC NAMES

Survey No. H -8106

GEOGRAPHIC NAMES		Survey No. H, -8106									
Name on Survey	On Chart No. On previous survey No. On U. S. quadrangle Maps From local information On local Maps P. O. Guide or Map Rand McNally Atlas U. S. Light List										
	A	B	C	D	E	F	G	H	K		
Florida			(for title)						BGN	1	
Georgia			"						"	2	
Fernandina Harbor			"							3	
Amelia Island										4	
Amelia River										5	
Fort Clinch			(tide station)							6	
St. Marys Entrance									BGN	7	
Cumberland Island										8	
Cumberland Sound										9	
Tiger Creek										10	
Jolly River										11	
St. Marys River									BGN	12	
			Names approved 10-11-57								13
Other tide stations off sheet								L.Hack		14	
Fernandina										15	
Simpson Creek										16	
			There is considerable conflict about the name								17
			of the major town on Amelia Island. All our								18
			charts have Fernandina, which is the corporate								19
			and railroad name, so far as can be ascertained,								20
			while general current usage (State Highway Map,								21
			1957 Rand McNally, etc) is Fernandina Beach. The								22
			descriptive report for T-11453/454 (1954) stated								23
			that Fernandina and Fernandina Beach had been								24
			combined under the name Fernandina Beach. There								25
			is also a B.G.N. decision for Fernandina Beach,								26
			applying to the Atlantic Beach of Amelia I.,								27
			about 14 miles long (adopted 1950). Further								28
			inquiries will be made as to the legal situation								29
			of the name of the town.								30
								L.H.		31	
										32	
										33	
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										49	
										50	

M 234

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens

29 October 1957

Plane of reference approved in
16 volumes of sounding records for

HYDROGRAPHIC SHEET 8106

Locality Fernandina Harbor, Florida

Chief of Party: C. R. Reed in 1954-1955

Plane of reference is mean low water, reading

1.2 ft. on tide staff at Fernandina Beach Pier

23.4 ft. below B.M. 1 (1953)

0.1 ft. on tide staff at Fort Clinch

9.5 ft. below B.M. 1 (1954)

1.5 ft. on tide staff at Simpson Creek Entrance

6.0 ft. below B.M. 1 (1954)

~~CHARTER OF RECORDS satisfactory except as noted below~~

Height of mean high water above plane of reference is:

Fernandina Beach Pier	5.7 ft.
Fort Clinch	5.8 ft.
Simpson Creek Ent.	4.6 ft.



Signature

Chief, Tides Branch

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ..8106...

Records accompanying survey:

Boat sheets ...1...; sounding vols. ..16...; wire drag vols.;
bomb vols.; graphic recorder rolls ..19Envelopes
special reports, etc. 1-Smooth sheet, 1-Descriptive report,
1-Blackline Impression T-9801N and 1-Blackline Impression T-9801S.

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	2780 1300
Number of positions checked	..130..
Number of positions revised	...14..
Number of soundings revised (refers to depth only)	...20..
Number of soundings erroneously spaced	...5..
Number of signals erroneously plotted or transferred
Topographic details	Time ..2 Hrs
Junctions	Time ...3 Hrs
Verification of soundings from graphic record	Time ...20 Hrs

Verification by *Robert W. Lester* Total time *148* Date *10/13/58*
J. L. Blum
(curves, junctions) *22* *12/16/58*
Reviewed by *[Signature]* Time *65* Date *1/30/59*
[Signature]

✓DRE

DIVISION OF CHARTS

Review Section - Nautical Chart Branch

Review of Hydrographic Survey

Registry No. H-8106

Florida-Georgia, Fernandina
Harbor, St. Mary's Entrance,
Cumberland Sound

Field No. ECFP-1-1053

Surveyed - Jan. 1954 - Feb. 1955

Scale: 1:10,000

Project No. CS-364

Soundings:

Control:

Graphic recorder
hand lead
pole

Sextant fixes on
shore signals

Chief of Party - C. R. Reed

Surveyed by - E. K. McCaffrey, L. D. Kelley, C. E. Horne

Protracted by - A. K. Schugeld (Norfolk P.O.)

Soundings plotted by - A. K. Schugeld

Verified and inked by - R. H. Leshner & J. C. Chambers

Reviewed by - L. V. Evans III 1/30/59

Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with the incomplete, un-reviewed manuscripts of photogrammetric surveys T-9801K * and T-9801S of 1951-52. Shoreline revisions by the hydrographer in 1955 are shown in red.

The sources of control are given in the Descriptive Report.

2. Sounding Line Crossings

Depths are in adequate agreement at crossings.

3. Depth Curves and Bottom Configuration

The depth curves are adequately defined.

* The project of which these surveys were a part was cancelled, and these surveys were never completed as long file "T-sheets"; these numbers were withdrawn and assigned to surveys in another area. The surveys referred to here are on file in the Photogrammetry Div. as RS-697 & RS-698. AE 1/30/69

The bottom of the surveyed area off the outer coast has a generally smooth, even slope except in the vicinity of St. Mary's Entrance where the general coastal slope is interrupted by the entrance bar. The inside area has extensive flats bordering the channels of Cumberland Sound and the mouths of St. Mary's and Amelia Rivers.

4. Junctions with Contemporary Surveys

A satisfactory junction was effected with H-5754 (1934) at the mouths of the Amelia, Jolly and St. Mary's Rivers and smaller tributaries of Cumberland Sound.

On the outside, H-8179 (1955), adjoining to the south, has been given a preliminary verification and review. The junction appears satisfactory, but final consideration and transfer of junction soundings is deferred pending complete verification of H-8179.

On the east and north, where the present survey extends to the project limits, present survey depths are in harmony with the charted hydrography.

Within the body of the present survey those areas covered by contemporary surveys by the Corps of Engineers were not surveyed. An adequate junction was effected with C. of E. surveys of Aug.-Sept. 1953 (Sp-51031-34).

5. Comparison with Prior Surveys

A.	H-479 (1855) 1:20,000	H-592 (1856) 1:10,000
	H-571 (1857) 1:10,000	H-980 (1869) 1:20,000
	H-579 (1855-57) 1:10,000	H-1112 (1871) 1:10,000

Within the area of the present survey these prior surveys have been entirely superseded by H-5690 (1934) and H-5754 (1934-35), discussed in paragraph C, and need no further consideration.

B.	H-591 (1855-57) 1:10,000	H-3555 (1910) 1:20,000
	H-1062 (1870) 1:20,000	H-3770 (1915) 1:80,000
	H-1110 (1871) 1:20,000	H-4376 (1924) 1:20,000
	H-1218 (1874-76) 1:10,000	H-4436 (1924) 1:20,000

The portions of these prior surveys superseded by H-5690 (1934) and H-5754 (1934-35) will not be considered in the present review.

Beyond the limits of H-5690 (1934) a comparison with the present survey shows little change in the area north of St. Mary's Entrance. The entrance bar has been building seaward to the east and south-east, as in lat. 30°41.0' long. 81°22.6' where prior

depths of 40 ft. on H-3555 are superseded by present 35 ft. depths. Some scouring has taken place south of the south jetty, for example in lat. $30^{\circ}40.9'$ long. $81^{\circ}25.0'$ where present depths of 12-13 ft. supersede depths of 9 ft. from H-4376.

The 31-ft. sounding in lat. $30^{\circ}41.03'$ long. $81^{\circ}21.42'$, the 33-ft. sounding in lat $30^{\circ}40.9'$ long. $81^{\circ}21.42'$ and the 32-ft. sounding in lat. $30^{\circ}40.7'$ long. $81^{\circ}21.42'$, all charted from H-3555, are shoal indications which were not developed by the present survey. It is recommended that these soundings be retained on the charts pending further investigation; they have been carried forward to the present survey to complete the current information for the area.

With the exception of the area of the soundings noted in the preceding paragraph, the present survey is adequate to supersede these prior surveys within the common areas.

C. H-5690 (1934) 1:10,000 H-5754 (1934-35)

These surveys covered all of the inside area, the entrance and most of the outside area of the present survey.

On the inside, there have been changes in the channels caused at least in part by dredging. Since the present survey does not provide complete coverage (Item 4) a full consideration of the channels is not included in this discussion. Otherwise, the generally unstable nature of the area is illustrated by (1) the rather large bar, bare 1 ft. at M.L.W., off the mouth of Tiger Creek in an area of former 1 to 3 ft. depths and (2) the changes in the southeast tip of Cumberland I. which has built seaward some 500 m. while the former islet off the point has completely eroded.

On the outside there has been no change of any consequence north of the jetties, but the entrance bar has built seaward to the east and southeast. Some scouring has taken place inshore, south of the jetties. The following comparisons between the present survey and H-5690 typify the changes that have occurred:

<u>Prior Depth(ft.)</u>	<u>Lat.</u>	<u>Long.</u>	<u>Present Depth (ft)</u>
38	30°42.35'	81°22.2'	23
31	30°41.55'	81°23.3'	12
6	30°41.53'	81°24.54'	10
5	30°41.5'	81°25.0'	10
0	30°41.7'	81°25.4'	5

The entrance area is subject to continuing changes from natural deposition and scouring as well as from maintenance dredging of the Federal project channels.

The dolphins on H-5754 off the ends of the pier in lat. 30°41.6' long. 81°27.6' (originally from T-5233, 1934) should be disregarded since it is apparent that the pier has been extended and its structure now covers the former locations of those dolphins.

The rocks charted in the vicinity of lat. 30°41.7' long. 81°27.6' from H-5754 have been carried forward on the present survey. According to the Descriptive Report of the 1954 season (p. 3) these rocks were verified.

With the additions noted the present survey is adequate to supersede these prior surveys in the common areas.

6. Comparison with Chart 453 (verified drawing of reconstruction)

A. Hydrography

Pertinent charted hydrography originates with the reviewed smooth sheet of the present survey except for the 3 soundings discussed in paragraph 5 B.

B. Controlling Depths

The charted controlling depths in the maintained channels originate with Corps of Engineers surveys subsequent to the date of the present survey.

C. Aids to Navigation

All of the aids, fixed and floating, in the area of the present survey, except Amelia Island Lighthouse, have been changed in some manner since the date of the survey. Changes in these aids from the date of survey

locations to the present charted positions are listed in H. O. Notices to Mariners 20 - 1958, 43-1957, 42 -1957, 36 - 1957 and 49 - 1956. The charted positions of the aids adequately serve the purpose intended.

7. Condition of Survey

- A. The field records are complete.
- B. The smooth plotting was satisfactory. All of a-day (purple) and a portion of b-day (purple) were rejected. These soundings had been submitted on an overlay by the smooth plotter because of discrepancies of 2 to 5 ft. with surrounding hydrography. No cause of the discrepancies could be ascertained during the review. The area is covered in part by prior Corps of Engineers Surveys.

8. Compliance with Project Instructions

This survey adequately complies with the project instructions except as noted below.

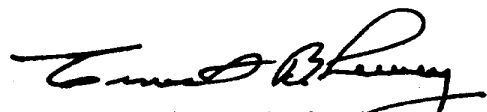
9. Additional Field Work Recommended.


In the area sounded, the present survey is basic except for the development of the shoal indications from lat. $30^{\circ}41.35'$ long. $81^{\circ}21.35'$ to the southward. It is recommended that the development of this shoal be made. The wreck in lat. $30^{\circ}43.26'$ long. $81^{\circ}21.48'$ should be investigated by wire drag.


Examined and Approved:

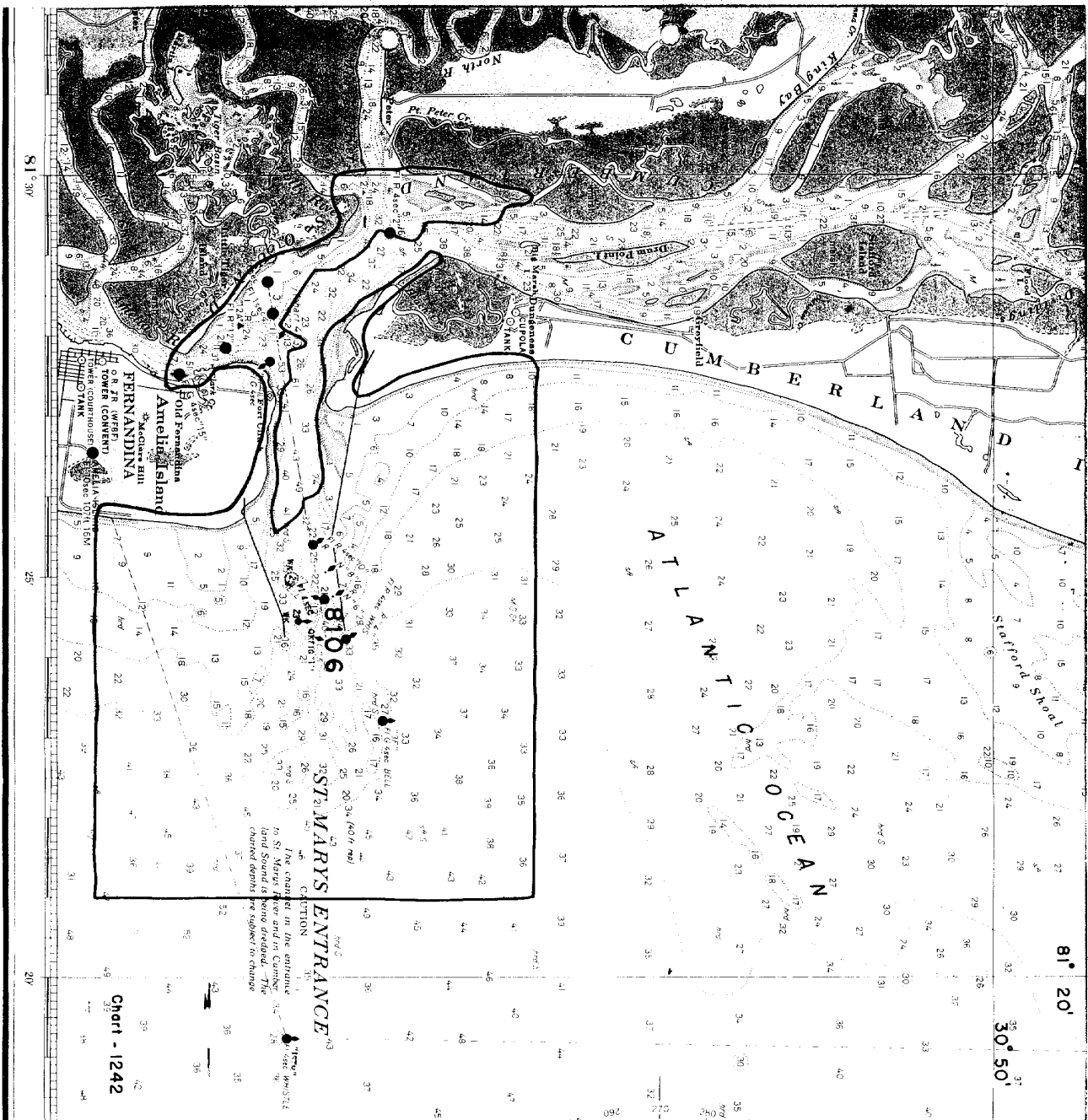

Max G. Ricketts

Chief, Nautical Chart Branch


Ernest B. Lewey
Chief, Division of Charts


Lorin F. Woodcock
Chief, Hydrographic Branch


Samuel B. Grenell
Chief, Division of Coastal Surveys



81° 30'

25'

20'

Chart - 1242

ST. MARYS ENTRANCE

The channel in the entrance to St. Marys River and in Cumberland Sound is being dredged. The channel depth is subject to change.

81° 20'

30° 50'

NAUTICAL CHARTS BRANCH

SURVEY NO. H8106

Record of Application to Charts

[illegible]

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.