

5817

2.195

Form 504
Rev. Dec. 1933

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~KEELED OFF~~ } Sheet No. 4.
Hydrographic }

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

JUN 27 1935

Acc. No. _____

State Florida

LOCALITY
Apalachicola Bay.
Apalachicola and Vicinity.

~~Project 194.~~

193 5

CHIEF OF PARTY

C. A. Egnor.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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.

Field No. 4

REGISTER NO. **5817**

State Florida

General locality ~~Gulf Coast~~ Apalachicola Bay

Locality Apalachicola and vicinity

Scale 1/10000 Date of survey April--May, 1935

Vessel Field Party No. 23

Chief of Party C. A. Egnor.

Surveyed by R. E. Dille, Surveyor; C. A. Burmister, Lieut. (j. g.)

Protracted by C. A. Egnor, V. F. Simmons.

Soundings penciled by G. C. McGlasson

Soundings in ~~fathoms~~ feet

Plane of reference M. L. W.

Subdivision of wire dragged areas by _____

Inked by S. B. Levin

Verified by S. B. Levin

Instructions dated Nov. 30, 1934., 19

Remarks: _____

5817



U. S. COAST & GEODETIC SURVEY
 LIBRARY AND ARCHIVES
 JUN 27 1935
 Acc. No. _____

Scale 1:10,000

Waterfront and docks
 see sketch on opposite scale
 1/2 scale

REPORT TO ACCOMPANY

HYDROGRAPHIC

SHEET 4.

Instructions

The work on this sheet was done as a part of the work under Project HT-194, calling for a resurvey of the general locality of Apalachicola Bay and Vicinity. These Instructions were date Nov. 30, 1934. ✓

Purpose

To revise existing surveys, to provide new surveys in connection with the Inland Waterways, and to furnish new information regarding Oyster Bed formations. ✓

Limits and Junctions

This sheet covers the immediate vicinity of Apalachicola, including the waterfront; the Apalachicola River to a point about $1\frac{1}{2}$ miles above the town, where it joins sheet #10; the area of the John Gorrie Memorial Bridge for about $\frac{1}{2}$ mile north and south of it, and joining Sheet 6 on the north and Sheet 5 on the south; Apalachicola dredged channel to the lighted beacon; and all area west of this dredged channel to a junction with sheet #2 in Long. 85--01.4'. The southern limit of this sheet in this area is Lat. 29--41, where overlap is effected with Sheet 5. ✓

Methods

All area was sounded with the hand lead, operating from the houseboat Southland, or from an outboard motor driven Gondola Type of large skiff. The usual methods were employed; all sounding was controlled by 3-pt. fix on signals located by triangulation, or by topographic intersection, or, in a few cases, by sextant fix. ✓

In the channels, lines were run along the axis of the current, spaced closely enough to develop the depth curves. In open area lines were run normal to the shoreline. Where natural ranges were available they were used to control the sounding boat on line; at other times compass courses were resorted to. Cross lines were spaced approximately $\frac{1}{2}$ mile apart. ✓

No attempt was made to define the zero curve in the Apalachicola River as the banks are very abrupt. ✓

Control--Horizontal

Triangulation in this area is of second and third order, broken down from the first order work of Lt. Anderson in 1934. All is on the N. A. 1927 Datum. Some fourth-order intersection stations were also located by triangulation.

The topography of the Apalachicola waterfront an immediate vicinity was executed on bristol board on a scale of 1/10000. Signals from this sheet were transferred direct by tracing. That of East Bay was done on bristol board on 1/20000, the signals being transferred by dms and dps.

A few signals on the John Gorrie Bridge were located by sextant fix due to the fact that the progress of laying the floor of the bridge made necessary the removal of early signals located by topography and the temporary construction of new ones.

Control--Vertical

Two tide gauges furnished the data for the reduction of soundings. The Apalachicola gauge was well centered and was used over the greater portion of the sheet--all of the waterfront, the dredged channel, the area west of the channel. The Cat Point gauge was used for only a minor portion around the eastern end of the bridge and adjacent area.

As the tidal range is quite small, it is believed that no appreciable error can enter into the reduction of soundings by any such arbitrary division.

It is felt that a better plane for both of these gauges is now obtainable from the longer series of observations since the planes were originally computed. It is believed a very satisfactory plane in each case can be arrived at by independent computation, since each series is comparatively long, that at Apalachicola extending over about five months.

Effect of the John Gorrie Bridge

During the progress of the hydrography this $4\frac{1}{2}$ mile bridge across the Bay was under construction. The longer central portion rests upon open piling; at either end this is approached by a comparatively long hydraulic fill. The Apalachicola River is crossed by a steel and concrete awing span with a 30' clearance, the approaches being fairly abrupt and resting on concrete piers.

There were many points brought up, it is understood, in the

Recomputation did not change original plane. G.H.

preliminary discussions as to the type of bridge best suited, cost and liquidation playing an important part.

The Apalachicola River drains some 18000 miles of territory with a resulting amount of drainage water which enters Apalachicola Bay via the main branch, and also by the St. Marks, Little St. Marks, and East Rivers, these latter three being comparatively small and emptying into East Bay, which lies north of the bridge.

Along the open piling section of the bridge the hydrographic party encountered a surprising amount of current, partly tidal, but mostly due to this drainage water. The bridge crosses an open, exposed bay which can become exceedingly rough in SW storms due to its shallow depth. These forces oppose each other roughly in the line of the bridge, and offer considerable basis for speculation as to what will happen when the bridge is subjected to (1) heavy flood stages of the river, or (2) a very severe SW storm. The latter have occurred here at infrequent, but certain, intervals in the past.

While it is outside the scope of this report to discuss the factors which led to the adoption of the type of bridge, it can be said that already there are evident some of the effects of its construction in changes in the depths thereabouts.

For one thing, the hydraulic fill, reaching from the swing span eastward for the distance of about a mile and a half, is acting somewhat as a dam, restricting the river water at ebb tide to the opening of the swing span and approaches, and forcing it along the line of the dredged cut toward the lighted beacon. (Bn. G) Some scouring action seems to have taken place already, and it is fair to assume that this dredged cut may tend to deepen and maintain itself. So it is hoped. Already (as noted in the report for Sheet 5) a shoal which had developed near the south end of the cut and opposite Bn. G, and which was sounded over in February by the party of the Miller, seems to have partly disappeared, possibly due to this eroding action. At that time, and at one or two times subsequent to it, the Miller touched bottom slightly. The Miller draws about five feet of water. In May this shoal was carefully developed. It was evident that some deepening had occurred, as soundings over identical areas were greater by about a foot. While this may be ascribed partly to the use of the Apalachicola tide gauge, whereas the original work was referred to the St. George gauge, with the possibility of some later adjustment when new planes are computed, still it appears that this shoal is being worn away.

It seems equally safe to conclude that these hydraulic fills on either end of the open trestle will tend to increase the current in this area with consequent changes in the depths in that locality.

Without begging the question, there is locally, some difference of opinion as to whether the hydraulic fill is high enough to prevent heavy storms from washing over the roadway. This would break the fills for they depend only upon natural slope without retaining walls of any sort. While this is not a hydrographic question, it indicates the wave action to which these area are often times subjected.

The point of this discussion is that this area, which has in the past built up from natural causes with changes due to meteorological conditions, and those resulting from the drainage water of a fairly extensive river, now has an artificial force to alter the trend and effect. It may be concluded that as time goes on there will be radical alterations in these trends, and this general area will eventually present a much different picture. It is recommended, therefore, that this locality will warrant a resurvey much sooner than would otherwise have been the case.

As this bridge will not be completed until about October 1935, the hydrographic survey was made during a time of change. The hydraulic fills were not completed when the sounding was done, and at other points, the survey necessarily had to accept the state of work on an "as is" basis, on the day it was done.

It is suggested that since this party will be working in the general locality for some months to come, a party could easily be sent to Apalachicola to bring the topographic features of the bridge up-to-date.

Description of the Area

Apalachicola and the Apalachicola River present no unusual features. The depth of water in the river is greater opposite the city than can be carried through the dredged cut, and also greater than the controlling depth in the Inside Route (Lake Wimico dredged Cut). Boats, therefore, which can get to town have little to worry about along the Apalachicola waterfront.

Westward of the Apalachicola dredged cut, the area is flat and regular and shallow, broken neither by extensive shoals nor oyster bars. Eastward of this cut the bay deepens gradually from zero to six or seven feet as far as the sheet extends.

North of the bridge in the lower portions of East Bay, the bottom is quite shoal and regular, with insufficient water to accommodate boats of even moderate draft. This area has little importance, and represents a delta area for the River.

At present, and until the bridge is completed, a ferry line maintains a regular schedule between Apalachicola and Godley's Point, traversing a route which parallels the bridge.

Meteorological Conditions

Even more than the tide, winds have a great effect upon

the depths in this locality. The tide may even be reversed altogether. After a continuous NW wind for a couple of days the water level may be as much as two feet less than normal. In such a shoal area as East Bay, this is serious. It even stops the ferry schedule for hours.

Apalachicola Waterfront

On an enlarged sub-plan, approximately to a scale of 1/5000, there is shown a sketch of the Apalachicola Waterfront with soundings along the docks.

Oyster Beds

This area is not a prolific Oyster Bed locality, though some oysters are taken out in small patches in East Bay, the positions of which are known to local fishermen. Though a very great number of bottom characteristics were gotten during the hydrography, little information as to the locations of these were obtained.

Holes Dredged

It will be noted on the sheet that irregular areas flanking the hydraulic fills are of much greater depth than the surrounding waters. These holes were dredged to make the fills. They will undoubtedly fill up again, so no development has been done.

Bridge Clearances

The swing span of the John Gorrie Bridge has a vertical clearance of 30.8 ft. at M. L. W., according to the plane of the Apalachicola T. G. The horizontal clearance on either side of the center pivot is 120 ft. Soundings indicate a depth of water under the swing span of 22 ft. at M. L. W.

An additional opening to accommodate small craft of low superstructure has been provided in the piling section of the bridge $1\frac{1}{2}$ miles from Godley's Point. This opening has a vertical clearance of 19 ft. at M. L. W. and a horizontal clearance of 38 ft. There is $5\frac{1}{2}$ ft. of water at M. L. W. in this opening.

Controlling Depths

The dredged channel to Apalachicola calls for 9 ft. at M. L. W. This depth, or slightly greater, is now obtainable.

A depth of four feet may be carried in the path traversed by the ferry route between Apalachicola and Godley's Point. There is no channel here, and the ferry will be discontinued when the bridge is finished.

Nine feet of water may be carried to Sheeps Mill.

An extensive bar extends half way of the main river channel opposite Apalachicola. It is expected that the shape of this will alter radically due to the hydraulic fill.

Shoreline

All shoreline on the sheet was gotten from the aerial photographs. This area was flown during the early stages of the bridge and consequently the photos show none of the bridge itself nor the developed roadways leading to it, nor of the fills. ✓

The waterfront shoreline, though from the photos, was accurately checked by planetable. ✓

Comparison with previous surveys

Small basis is found for this, so that it may be said that this survey represents new work, except in that area south and west of Apalachicola. The survey of 1914 (H. C. Denson) and this one offer little argument, though it is evident that the northern shoreline of Apalachicola Bay and St. Vincent Sound has receded. ✓

The waterfront of Apalachicola has undergone some expansion mainly due to the development of the oyster industry, and more recently the bridge. However, commercial development in the town has not grown otherwise. Historically, Apalachicola was one of the most important cotton shipping ports on the gulf in the days when this cotton was carried down the river and lightered to boats in the bay. Now this is all gone, as evidenced by the abandoned ship chandleries, warehouses, etc. along Bay St. Some expansion should result from the bridge as no doubt there will be more tourist traffic. ✓

Coast Pilot Notes

Are a part of a general report covering all sheets. ✓


Statistics

Form a part of this report. ✓

List of Signals Used

One copy herewith, the duplicate under the fly leaf of Vol. 1. ✓

Respectfully submitted


C. A. Egner.
Chief of Party.

triangulation only, no hydrography.
R.E.

Statistics For Hydrographic Sheet

No. 4 (Field)

Date	Day Letter	Boat	Soundings	Positions	Miles	Volume
3/1/35	A	SOUTHLAND	640	141	21.85	1
3/9	B	"	82	29	2.3	1
3/21	a	GONDOLA #2	238	58	6.9	1
3/22	b	"	616	172	18.8	1
3/23	c	"	426	109	12.4	1
3/25	d	"	245	62	6.9	1
3/25	d	"	334	107	10.6	2
3/26	e	"	133	35	4.0	2
3/27	f	"	798	207	24.0	2
3/28	g	"	322	84	9.5	2
3/28	g	"	380	95	10.5	3
3/29	h	"	770	181	22.0	3
4/2	j	"	97	28	2.5	3
4/3	k	"	158	28	3.3	3
5/7	l	"	123	36	3.2	3
5/7	l	"	19	6	.3	4
5/8	m	"	514	143	14.4	4
5/24	n	"	67	21	1.6	4
Apr. 11	a	GONDOLA #3	250	45	8.0	1
" 16	b	"	1186	277	36.5	1
" 17	c	"	269	72	8.3	1
" 17	c	"	732	194	22.9	2
" 18	d	"	706	193	24.3	2
" 19	e	"	324	89	9.2	3
" 22	f	"	895	231	24.9	3
" 23	g	"	350	90	12.9	3
" 23	g	"	108	26	3.3	4
Sub-- Totals.....			10782	2759	325.35	
June 8	p	Apalach. Docks	55	55	----	1
			10837	2814	325.35	

LIST OF SIGNALS

Hydrographic Sheet 4.

<u>Triangulation</u>	<u>Topographic</u>		<u>Hydrographic</u>
Green Pt. 2 1935 (Ree)	Shun	Did	Fill
Chic 1935	Tay	Ex	Tar
Laurel 1909	You	Pa	Pain
Muni 1934-35.	Rep	Ir	Near
(Sheips) Mill Tank 1935.	Her	Ne	Box
Rear Bn. 1935	Park	Tot	Hump
"F" Bn. 1935.	Not	Lag	End
"G" Bn. 1935.	Do	Ap	Red
Bridge 1935.	Sil	Tree	Mark
Godleys 1935 (Ley)	Pen	As	
(St) Marks 1935 (St)	Ink	It	
	Cross	Fix	
	Pile	Fear	
	Ak	Zwei	
	Blo	Dri	
	Draw	In	
	Front	Eye	
	Old Bn.	Lim	
	Sea	Ap	
	Bay	T. P. 2	
	Stack	Tat	
	Tall	Del	
	Flag	Las	
	Con	Low	
	Isle	Is	
	T. P. I		
	Why		
	Pil		
	Le		
	Bur		
	Rub		
	See		
	My		

TIDE NOTE FOR HYDROGRAPHIC SHEET

Division of Hydrography and Topography:

July 8, 1935.

✓ Division of Charts: Attention: Mr. E. P. Ellis

Tide Reducers are approved in
9 volumes of sounding records for

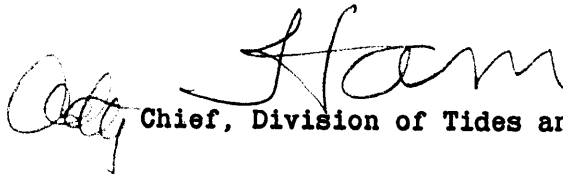
HYDROGRAPHIC SHEET 5817

Locality Apalachicola and vicinity, Florida.

Chief of Party: C. A. Egner in 1935
Plane of reference is mean low water reading
3.6 ft. on tide staff at Apalachicola
8.9 ft. below B.M. 2
2.0 ft. on tide staff at Cat Point
4.8 ft. below B.M. 1

Height of mean high water above plane of reference is 1.0 feet at
Apalachicola; 1.4 feet at Cat Point.

Condition of records satisfactory except as noted below:


Chief, Division of Tides and Currents.

Field Records Section (Charts).

HYDROGRAPHIC SHEET NO.5817

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

Number of positions on sheet2814
Number of positions checked195
Number of positions revised10
Number of soundings recorded10837
Number of soundings revised9
Number of signals erroneously plotted or transferredsignals not checked by SBL

Date: AUG. 31, 1935

Verification by

S. Benedict Leyin

Review by

Chas R Bush Jr
R. J. Christman

Time:

18½ days

Time:

3 days 2hr
20¼ hrs

H 5817 (1935)

10,000

Verifier's Report

August 31, 1935

Verification of this sheet has been completed, with the exception of junctions with adjacent sheets, as follows:

- H 5792 (1935) on the West
- H 5794 (1935) on the South and East.
- H 5818 (1935) on the East and North
- H 5797 (1935) in Cipalacticola River.

The records conform to the requirements. The field plotting was complete and satisfactory.

The usual depth curves can be completely drawn.

Topographic stations were transferred from graphic control sheets T 6310 a, b (1935) and T 6308 b (1935). Shoreline was taken from air photo compilation T 5509 (1935).

Remarks:

(1) Hydrographic records do not make adequate mention of the pile jetty marking the east side of Cipalacticola channel.

(2) No descriptions are available for a group of 9 topographic signals located in the Bay north of the new bridge. It is presumed they are not recoverable. ^{the chief of party states that they are "bush stumps" used as temporary markers by the party.}

It is felt that certain ^{permanence} stone soundings should have been left as whole feet but on the suggestion of Corlies they were left as the verifier had inked them.

The above junctions were satisfactory

Chas R Bush

Respectfully,

S. Benedict Levin

8-31-35

HYDROGRAPHIC SURVEY NO. 5817

Smooth Sheet 1

Boat Sheet 1

Sounding Records 9 Vols. _____

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes in Vol. 1

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party C. A. Egner

Recoverable Station Cards (Form 524) Yes

Special Chart for Lighthouse Service
(Circular Nov. 30, 1933) No

Remarks _____

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5817 (1935) FIELD NO. 4

Apalachicola and Vicinity, Apalachicola Bay, Florida
Surveyed in April - May 1935
Instructions dated Nov. 30, 1934 (C. A. Egner)

Hand Lead Soundings.

3 Point fixes on shore signals.

Chief of Party - C. A. Egner.
Surveyed by - R. E. Dille, C. A. Burmister.
Protracted by - C. A. Egner, V. F. Simmons.
Soundings penciled by - G. C. McGlasson.
Verified and inked by - S. B. Levin.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual, except that no triangulation reference station was shown on the smooth sheet. A reference station has been added in the office.

The Descriptive Report is complete and satisfactorily covers the items of importance.

The Chief of Party states that the signals in the water area north of the bridge are bush stakes used by the ferry as temporary markers for the channel.

2. Compliance with Instructions for the Project.

The plan and character of development are in accordance with the instructions for the project.

3. Shoreline and Signals.

The shoreline originates with air photo compilations T-5508 (1934) and T-5509 (1934).

Signals are from 1934 triangulation, from graphic control sheets H-6308b (1935), H-6310a (1935) and H-6310b (1935), and a number of signals determined by sextant positions recorded in Vol. 6 of the sounding records.

4. Sounding Line Crossings.

Sounding line crossings are satisfactory, depths generally agreeing within less than 1 foot.

5. Depth Curves.

Within the area covered the usual depth curves may be satisfactorily drawn.

6. Junction with Contemporary Surveys.

The survey joins H-5797 (1935), H-5818 (1935), H-5794 (1935), and H-5792 (1935). All the junctions are satisfactory.

7. Comparison with Prior Surveys.a. T-601 (1857), H-687 (1859), H-747 (1860), H-1092 (1871).

These surveys are on a scale 1:20,000. The area is a naturally changeable one and this has been further accentuated by the depletion of the oyster beds and the dredging of a channel across the bar of the Apalachicola River, and more recently the construction of a bridge across Apalachicola Bay. A few soundings from the last two of the above surveys have been retained on the present chart but the representation of the bottom has been greatly altered by subsequent surveys made by and for the Fish Commission. A general comparison only has been made as it would serve no useful cartographic purpose to list the many changes in detail. Because of the lapse of time since the surveys were made and the changeable nature of the bottom, as well as the larger scale and closer development of the present survey, H-5817 (1935) should supersede the above surveys for charting purposes.

b. H-2265 (1895-6).

This survey on a scale 1:20,000 was made for and the original is filed in the office of the U. S. Commission of Fish and Fisheries. A tracing of the hydrographic information is filed and registered under the above number in the Coast and Geodetic Survey. A later survey by the Bureau of Fisheries is filed as blue print 15748 (1915). The blue print shows two oyster beds in the vicinity of latitude $29^{\circ} 41.5'$, longitude $84^{\circ} 59.2'$, and H-2265 (1895-6) shows two shoal areas of 3 feet in the same general vicinity, but not in the same positions. The present survey shows regular bottom of 5 to 6 feet in this area and it is probable that these oyster beds have been depleted by oyster dredges and no longer exist. General depths, except along the dredged channel where the present survey shows some shoaling, are in fair agreement. Because of the larger scale and closer development of the present survey, H-5817 (1935) should supersede the above surveys for future charting.

8. Comparison with Chart 183, (New Print dated Nov. 21, 1935).a. Hydrography.

Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs and the following surveys by the U. S. Engineers in the improved channels.

They are blue prints 16440 and 16441 of 1915, blue print 18842 of 1923, and blue print 24993 of 1932. The last is on a scale 1:20,000 and covers a considerable area but all except the improved channel seems to have been compiled from other sources and shows only a scanty development. Because of the changeable character of the bottom none of these surveys need be considered in future charting.

b. Controlling Depths.

The controlling depth through the channel across the bar of the Apalachicola River is reported monthly by the U. S. Engineers, the latest report on file being "10 ft. Sept. 1935" (Chart Letter 1045). The present survey shows 9 to 10 feet as the controlling depth (April - May 1935) but the Descriptive Report calls attention to the probable scouring effect resulting from the construction of the new bridge (Descriptive Report, pages 2 - 3).

c. Aids to Navigation.

The charted positions of the range beacons and fixed aids are in agreement with the positions on the survey. There are no floating aids within the area of the present survey.

9. Field Plotting.

The field plotting was excellent.

10. Additional Field Work Recommended.

The survey is complete and satisfactory and no further work is required. However, attention is directed to the 2nd paragraph, page 4, of the Descriptive Report, recommending that due to the changed conditions caused by the construction of the John Gorrie Bridge, a resurvey of the area be made "much sooner than would otherwise have been the case."

11. Superseding Old Surveys.

Within the area covered, the present survey supersedes the following surveys for charting purposes:

T-601	(1857)	all the hydrography on this sheet.
H-687	(1859)	Entirely
H-747	(1860)	In Part
H-1092	(1871)	" "
H-2265	(1895-6)"	" "

12. Reviewed by - R. J. Christman, Dec. 24, 1935.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green, *C. K. Green*
Chief, Section of Field Records.

F. S. Borden
Chief, Section of Field Work.

L. C. ...
Chief, Division of Charts.

G. ...
Chief, Division of H. & T.

Applied to Chart Cor. 1114	June 17, 1938.	N.E. MacEwen
" " " 1262	June 1940	D.S.O.
" " " 865	6/2/46 W.A.B.	
" " " 866	6/28/46 W.A.B.	

5752
5686

5752
5686

U. S. COAST & GEODETIC SURVEY
LIBRARY & ARCHIVES

JUN 21 1955

Acc. No. _____