4154

Dieg. Cht. No. 1240-2 & 1241-2

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: S. Car. & Ga.

11—8613

DESCRIPTIVE REPORT.

Hydro. Sheet No. 4154

LOCALITY:

Tybee Roads -
Entrance to
Calibogue Sound
and Savannah River

1920

CHIEF OF PARTY:

H. A. Cram

4154

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SHEET

TYBEE ROADS

AND

CALIBOGUE SOUND

SOUTH CAROLINA

AND

GEORGIA

U.S.S.BACHE

H.A.SERAN
COMMANDING

NOVEMBER 3RD

TO

DECEMBER 4TH

1920

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET

TYBEE ROADS

and

CALIBOGUE SOUND

Georgia and South Carolina.

LIMITS.

This sheet embraces the hydrography of Tybee Roads and Calibogue Sound. It forms a junction with the offshore survey of P.C. Whitney (sheet No. H3983), the the inshore Hilton Head survey of H.A.Seran, and with recent Army Engineer's surveys of the Savannah River Channel.

It also includes a line of sounding up Lazaretto Creek, through the cut-off to Tybee Creek and down Tybee Creek.

CHANGES SINCE LAST SURVEYED.

The survey has revealed many changes in this locality and it will undoubtedly be necessary to make a new chart of this area.

The most important change is the building out to the eastward of a long narrow shoal from the north end of Tybee Island. In forming, this shoal has not encroached on the main channel but has completely filled in a small boat channel, which formerly passed between a small detached shoal and the point. Extending itself farther to the eastward the shoal has now reached a point one mile east by north of Tybee Lighthouse. The shoalest spot which is near the outer end has one foot of water over it.The present edition of the chart shows 10 feet of water in this locality.

While this shoal has been forming the area immediately to the southward of it has been deepening. There is now 8 feet of water close up to the beach and the indications are that the shore line here is being rapidly eroded by this washing out process.

Further to the southward the shoals have again built out and several spots with four and five feet of water over them were found about one and one half miles east of Tybee Beach Hotel (△ "Cup")

Another very decided change has taken place in the shoals off the southwest end of Hilton Head Island. These shoals have built to the southward and have filled up an area which formerly constituted an unimportant 14 foot channel. On the other hand a 13 foot channel has been cut through between the shoals and the point. This channel, however is almost closed by the points of shoals which project from the mainland and from the main shoal. A second channel is being cut through the center of the large shoal and it is now possible for small boats drawing six feet of water to pass through here at any stage of the tide. Although this shoal has undergone many changes in shape and size it has not encroached on the main channel into Calibogue Sound.

The shape and size of Grenadier Shoal on the west side of of Calibogue Sound entrance remains about the same but the area between this shoal and Daufuskie Island is deepening. Small fishing vessels and launches now use this passage when going between New River and Calibogue Sound.

There are slight but unimportant changes off the entrance to New River. The channel has filled in to some extent between the mouth of the river and the bar but there remains the same amount of water over the bar, (9 feet) The shoals on the east side of this channel have changed somewhat in shape and size. There is now a five foot channel through these shoals, just west of Bloody Point Range Beacon, and this channel is used considerably by small fishing vessels and launches running between New River and Calibogue Sound.

The area off Turtle Island remains about the same. It has filled in slightly in the vicinity of North Jetty. This jetty has apparently settled as the portion of it east of Jones Island Front Range light does not show above the surface of the water. No evidence was found of the existence of the jetty shown on the chart running from Turtle Island to the southward. Several soundings lines were run over this area and over Horse Shoe Shoal. The eastern part of the shoal, just off the mouth of Wright's River is apparently being cut away while the western part is filling in.

South Channel has undergone very little change except at its mouth where it has deepened by several feet. It is now possible to carry 10 feet to the wharf at Fort Schreven. That point of Tybee Knoll Spit which bears at low water is much larger than is shown on the present chart.

The controlling depth to Calibogue Sound from the southward has not been changed. Eleven feet can be carried over the bar, which separates the two channels. The channel into Calibogue Sound from the eastward has a depth of 13 feet but this channel is much narrower than it was formerly, due to the enlargement and extension of the shoals on each side.

The pear shaped shoal one mile north of the triangulation station " Wreck " has changed in that it now has a one foot spot at the south end and a two foot spot at the north end. Both of these shoal spots lie very close to the channel but they can usually be identified by breakers.

A least depth of six feet was found on one shoal in the vicinity of buoy N2, which is one foot less than shown on Chart No. 440. This six foot spot is 550 meters west of the buoy.

No indications were found of the sunken jetty which is shown on the chart about one half mile northwest of buoy N2. Several sounding lines were run over its charted position but nothing less than eight feet of water was found.

A spot with five feet of water over it was found one and one half miles northeast of signal " Wreck " where formerly there was 14 feet. This locality however is in an area of rather irregular bottom and is surrounded by other shoals which have been described.

No soundings are shown on the present chart in Tybee Creek. A line of soundings was run up Lazaretto Creek, through the cut-off to Tybee Creek, and then down Tybee Creek. As this means of reaching Tybee Creek and the beach is used considerably , it is considered rather important that the soundings be shown on the chart.

No changes of note were found in Calibogue Sound. Except for a few minor changes, none of which are important the hydrography of Calibogue Sound was found the same as is shown on the present charts.

OBSTRUCTIONS.

While sounding off Tybee Island in 8 feet of water an obstruction was hit three-eights of a mile east of Tybee Light. This obstruction is approximately three feet below mean low water. On the same line a vertical spar on which was an iron strap was observed and located one half mile east of Tybee Light. The iron strap is two feet above mean low water.

BUOYS.

The buoys marking the main channel were not located by hydrographic party but their positions were furnished on blue prints of surveys made recently by Army Engineers. All buoys not in the dredged channel were located and considerable discrepancy was found between their actual position and their position as shown on Chart No. 440.

The perpendicular striped buoy in longitude 80° 46 W is 1100 meters east by south of its charted position.

Buoy N 2 is 440 meters east south east of its charted position.

Buoy C1 is 220 meters south east of its charted position.

Calibogue Sound bell buoy is 650 meters north by west of its charted position.

CONTROL, SIGNALS, ETC.

The large number of beacons and natural objects which had been previously located by triangulation gave excellent control for the greater part of the work on this sheet. Additional triangulation was extended over the area not already controlled so that practically all of the signals used were triangulation stations. Signal " Wreck " which is the mizzen mast of a three mast schooner, served as an excellent signal for the work at the eastern and southern limits of the sheet.

METHODS EMPLOYED.

In accordance with the instructions lines were run a quarter of a mile apart. These lines were then split where necessary to obtain the proper development. No attempt was made to develop the main channel as this data is furnished on blue prints of the Army Engineers and are forwarded with the sheet.

Soundings were made from the ship's launch by a party consisting of two officers, one recorder, one engineer, one coxswain, one leadsman and one seaman, who pulled in the lead. In addition to this party the chief writer was included in the party in order to obtain experience in taking sextant angles. The coxswain and leadsman alternated at the wheel and lead. Soundings, were taken, ordinarily, every 15 seconds with the launch running at an average speed of 5.1 miles an hour. It was often necessary to increase the sounding interval to 20, 30 and occasionally to 45 seconds.

In water under two fathoms it was decreased to ten seconds.

Lines were run sufficiently far out to over-lap the adjoining work by about a quarter of a mile. An excellent connection was made with the work of P.C. Whitney on Sheet H3983, the crossings agreeing almost invarably to the nearest foot.

In running the line up Lazaretto Creek and down Tybee Creek it was possible by observing from the top of the launch to obtain fixed positions the entire length of the run.

Considerable difficulty was experienced in controlling the speed of the launch when sounding in Calibogue Sound, where the currents are very strong and the water deep. In order to slow the launch down to the proper speed a bucket was dragged from the stern of the launch when running with the current.

In order to connect the survey of the Army Engineers' with the work on this sheet, the following coordinates of their triangulation stations, " East Base " and " West Base " are furnished:

EAST BASE
24348.489 S
63758.830 E

WEST BASE
26759.034 S
59288.551 E

WEATHER, ETC.

With the exception of one or two days the weather was ideal for hydrography. On about 75 percent of the days when sounding was done the sea was dead calm.

Very little time was lost on account of engine trouble, and this coupled with the fact that the ship was anchored very close to the working ground, accounts for the fact that 85.6 percent of the working time was spent in actual sounding.

A table is attached showing the time of sounding each day and also time lost by various causes.

TABLE SHOWING SOUNDING TIME AND TIME DELAYED BY VARIOUS CAUSES

DAY	ACTUALLY SOUNDING	TO AND FROM WORKING GROUND	ANCHORING FOR LUNCH	DELAYED BY ENGINE	DELAYED BY WEATHER	TOTAL FROM LEAVING TO RETURNING TO SHIP	NO. MILES OF SOUNDING
	hr. min.	hr. min.	hr. min.	hr. min.	hr. min.	hr. min.	
A	5 56	1 02	1 03	0 49	0 00	8 50	32.8
B	3 52	0 54	1 00	3 29	0 00	9 15	22.5
C	7 21	0 25	1 09	0 00	0 00	8 55	36.8
D	7 14	0 15	1 16	0 00	0 00	8 45	42.8
E	2 06	0 44	0 00	0 00	0 00	2 50	8.6
F	7 26	0 20	1 11	0 00	0 00	8 57	41.0
G	6 59	0 17	1 34	0 00	0 00	8 50	38.8
H	3 50	0 21	0 00	0 00	0 00	4 11	25.9
J	4 02	0 37	1 27	0 00	0 00	6 06	23.2
K	6 59	1 02	1 00	0 00	0 00	9 01	34.4
L	7 20	0 30	1 12	0 00	0 00	9 02	42.0
M	4 47	0 20	1 03	0 00	0 00	6 10	21.0
N	1 12	0 52	0 00	0 00	0 00	2 04	6.3
P	4 04	0 51	0 00	0 00	0 00	4 55	11.5
Q	5 35	0 14	1 11	0 00	0 20	7 20	21.8
R	7 19	0 21	1 00	0 00	0 50	9 30	26.8
S	6 28	0 33	0 00	0 00	0 00	7 01	27.4
T	4 04	1 03	1 11	0 00	0 00	6 15	27.0
TOTAL	96 34	10 41	15 17	4 18	1 10	128 00	490.6
AVGS	5 22	0 36	0 51	0 14	0 04	7 07	27.3

Total time from leaving to returning to ship 128:00
Time out for Lunch 15:17
Actual working time 112:43

Percentage of time actually sounding	85.6
Percentage of time running to and from Working grounds	9.5
Percentage of time delayed by engine Trouble	3.8
Percentage of time delayed by weather	1.1
	100.0

Respectfully submitted,

Frank S. Borden
Asst Engr.

Approved,

H.H. Doran
H.and G. Engineer,
C.and G. Survey.

STATISTICS

SHEET II

TYBEE ROADS

SOUTH CAROLINA & GEORGIA

Date	Letter	Volume	Soundings	Positions	Miles
Nov. 4	A	1	1255	114	32.8
5	B	1 & 2	794	85	22.5
9	C	2	1306	141	36.8
10	D	2 & 3	1448	138	42.8
12	E	3	374	36	8.6
18	F	3 & 4	1796	145	41.0
19	G	5	1335	125	38.8
20	H	5 & 6	862	81	25.9
22	J	6	684	75	23.2
23	K	6 & 7	1301	129	34.4
24	L	7	1433	143	42.0
26	M	8	736	85	21.0
27	N	8	284	28	6.3
29	P	8	362	58	11.5
30	Q	8 & 9	600	100	21.8
Dec. 1	R	9	943	125	26.8
2	S	9 & 10	901	105	27.4
3	T	10	826	91	27.0
	TOTAL		17240	1804	490.6

DIRECTOR
ADDRESS THE [redacted]
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 41/VFB

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON February 14, 1921.

Division of Hydrography and Topography:

Division of Charts:

Tidal reductions are approved in
10 volumes of sounding records for

HYDROGRAPHIC SHEET 4154

Tybee Roads, S. C. - Georgia
H. A. Seran in 1920

Plane of reference is
Mean low water, reading

-0.2 ft. on tide staff at Fort Scriven Wharf,
Tybee Island, Georgia.

Condition of records: Satisfactory.

Chief, Division of Tides and Currents.

ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4 MEM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet 4154. Surveyed in 1920.

Chief of Party: H. A. Seran. Surveyed by F. S. Borden

Protracted by F. S. Borden. Soundings plotted by F. S. Borden.

Verified and inked by A. Baer.

1. The records conform to the requirements of the General Instructions, except that boats courses were entirely omitted and bottom characteristics were seldom given.

2. The plan and character of development fulfill the requirements of the General Instructions.

3. The plan and extent of development satisfy the specific instructions.

4. In general the sounding line crossings are adequate, although there are numerous exceptions.

5. The development is sufficient to permit the usual depth curves to be drawn.

6. The field plotting was completed to the extent prescribed in General Instructions. The positions were not numbered as frequently as called for in General Instructions. Also little attempt was made to obtain the best selection of soundings at crossings.

7. No further surveying is required within the limits of the survey.

8. ✓ Although the instructions directed that a tide station be established in Calibogue Sound this was not done. The failure to do this necessitated a revision of the tide reducers for the upper end of Calibogue Sound, in which locality the Tybee Island gauge introduced errors of the tidal plane amounting to as much as 1.6 feet. This difference is obtained by using the tidal differences as given in the Tide Tables for May River Entrance in combination with Tybee Island observations.

9. The character and scope of the surveying and field drafting are good.

10. Reviewed by E. P. Ellis, March, 1921.

11. Two copies of this report to be sent to Hydrography and Topography Division.

ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No.

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

Verification Report of Hydrographic Sheet 4154.

As a whole the plotting was faidy good save for several of the following details. Positions were not numbered as called for in regulations: they were numbered only at "beginnings" and "ends" of lines or at "turns". Of the few "bottoms" recorded none were plotted. There was apparently no discretion whatever used in the selection of soundings, such as at the crossings of lines. In fact in 95 per cent of the cases where one of two soundings was plotted the greater depth was selected. On the shoal making off of Hilton Head relativly few soundings had been plotted for "S" day.

In the upper part of Calibogue Sound in midchannel west of △ white, 28 ft. crosses 35 ft., 34 P and 45 P. Off the north-eastern point of Daufuskie Island the line 15 to 45 shows rather an abrupt rise from the closly adjacent line 24 - 30 Q; this is emphasized by 39 ft. at 30 Q practically falling on 45 ft. 127 C. On the shoal off Hilton Head a 22 ft. spot lies between 32 and 46 ft., "S" day. At 2½ mi, 36° from △ Wreck an isolated 6 ft. crosses with 10, 96 - 97 A and 30 - 31 D. There were many other instances of poor "crossings" of lesser differences than the above.

Probably only twenty "bottoms" in all were noted in the records; and the boat's course so important in winding rivers, was entirely omitted. Aside from this the records were well kept, the timing of soundings being expecially good. The depth curves as they were pencilled in showed a very poor knowledge of the theory of these curves. Practically the entire system of these curves had to be redrawn.

Respectfully submitted,

Alois Baer

Alois Baer,
Draftsman.

Form 537
11—6812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4154

State So. Carolina and Georgia.

General locality Tybee Roads

Locality Mouth of ~~Tybee Roads and~~ Entrance of Calibogue Sound and Savannah River

Chief of party H.A.Seran.

Surveyed by F.S.Borden.

Date of survey Nov. 4, - Dec. 3, 1921.

Scale 1: 20000

Soundings in Feet.

Plane of reference Mean Low Water, Tybee Id., Ga.

Protracted by F.S.Borden Soundings in pencil by F.S.Borden.

Inked by Verified by

Records accompanying sheet (check those forwarded):

Des. report, 2 Tide books, --- Marigrams, 1 Boat sheets,

10 Sounding books, --- Wire-drag books, --- Photographs.

Data from other sources affecting sheet
Off shore hydrographic survey by P.C.Whitney. Sheet H3983.
Army Engineers survey of dredged channel, Savannah River Entrance, Ga.

Remarks:

Blue prints of recent Army Engineers' survey of the dredged channel accompany this sheet.

4155

Dirg. Cht. No. 1240-2

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

11—5812

State: South Carolina

DESCRIPTIVE REPORT.

Hydr Sheet No. 4155

LOCALITY:

Hilton Head Island
Port Royal Sound to
Calibogue Sound.

1920

CHIEF OF PARTY:

H. A. Doran

4155

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDRGRAPHIC SHEET

PORT ROYAL SOUND

TO

CALIBOGUE SOUND

OFF HILTON HEAD ID. S.C.

U.S.S.BACHE
H.A.SERAN
COMMANDING

LIMITS.

This sheet embraces the inshore hydrography off Hilton Head Island, from Port Royal Entrance to the shoals at the entrance to Calibogue Sound. It overlaps the Port Royal Entrance Survey of F.C.Engle (Sheet) H3897) to the northward, the off-shore survey by P.C. Whitney (sheet H3983) to the eastward and the Tybee Roads survey by H.A.Seran to the southward.

CHANGES SINCE LAST SURVEY.

The most noticeable change since the last survey was made of this area is in the shape, size and position of Gaskin Bank. This shoal has moved approximately one mile to the westward and has decreased considerably in size. The western end of this shoal, a small portion of which bears at low water, is now in what the present edition of chart No. 571 shows to be 16 feet of water. The bottom over this shoal is so irregular that it has only been possible to generalize the 12 foot curve.There seems to be a tendency for long, narrow ridges, running parallel to the shore line, to form in the shoal. While sounding over this area the general trend of these ridges could be identified by the lines of breakers.

No evidence was found of the five foot shoal at the southeast end of Gaskin Banks, although a nine foot spot was found just southeast of this shoal. As Gaskin Bank moves to the westward the eastern part washes away and considerable more water was found over this area than is shown on present edition of the chart.

The water between Gaskin Bank and the shore is now deeper than when the last survey was made. The six foot curve is about one half as far from shore as is shown on the present chart.

That the shore line is being washed back is evidenced by the fact that many tree stumps were seen at least 100 meters out from the high water mark.

The detached shoal shown on the chart three quarter mile southeast of Hilton Head Front Range Light has been entirely washed away but a new shoal with five feet of water on it has formed about one mile northeast of the old one.

The east side of Joiner's Bank is practically identical with its positions as shown on chart No. 571, but the outer end has built out about three-eighth of a mile to the eastward.

CONTROL, SIGNALS, ETC.

The hydrography on this sheet was controlled by the two triangulation stations " Do" and " Hilton" and the intermediate signals located by the plane table party. The signals shown on the boat sheet differ in position from those on the smooth sheet,, due to the adjustment made after the traverse had been run from " Do " to "Not ", which are on extreme ends of Hilton Head Island.

The intermediate signals consisted of standard tripod signals located about a mile and a quarter apart and of small banners built by the plane table party about a quarter of a mile apart. Hilton Head Front Range light was used to good advantage as was the tall hydrographic signal " Do" still standing from previous work in this vicinity.

PARTY.

The entire work on this sheet was done by the same party, which consisted of two officers, one recorder, one launch engineer, two leadsmen and helmsmen, and one seaman. The leadsman and helmsman alternatedat the wheel and lead, and one seaman pulled in the lead.

METHOD EMPLOYED.

In accordance with instructions, lines were run a quarter of a mile apart. In only a few instances was it necessary to run additional lines as the bottomover the greater part of the area is regular and the curves are easily defined. On Gaskin Bank the bottom was so very irregular and the value of a close survey so slight that it was not deemed necessary or expedient to furthur develop it, after running the quarter mile lines. On a bank of this nature the shoalest areas are readily determined by the breakers and a complete development of it adds very little to the value of the survey.

Soundings were made with the launch running at an average speed of 5.3 miles per hour. The greater part of the soundings were taken at 15 second intervals although it was often necessary to increase this interval to twenty and occasionally to thirty seconds. In water under two fathoms, the interval was decreased to ten seconds.

Lines were run sufficiently far out to overlap the adjoining surveys by about a quarter of a mile.

Where the sheet overlaps sheet H3897, the soundings checked remarkably well but where it overlaps Sheet H3983 there is a slight descrepancy, this survey giving a little more water than is shown in the survey of a few years ago.

Considerable time was lost on account of engine trouble and also on account of the long runs to and from the working grounds. A table is attached showing the time of sounding each day and also the time delayed by various causes. This table shows that of the 71 1/3 hours of working time in surveying this area, only 39 1/2 hours or 55.4 percent of the total working time was spent in actual sounding.

TABLE

Showing time actual sounding

and

Time delayed by various causes.

DAY	SOUNDING hr	SOUNDING min	Time Going from Base to Working Ground hr	Time Going from Base to Working Ground min	Delayed by ENGINE hr	Delayed by ENGINE min	Time Out for Lunch; Getting up Anchor, etc. hr	Time Out for Lunch; Getting up Anchor, etc. min	Delayed by Bad Weather hr	Delayed by Bad Weather min	Total time from leaving Ship to Returning hr	Total time from leaving Ship to Returning min	No. Miles Sounding	Av. Sounding Speed mi/hr.	
A	5	27	1	34	1	01	1	13	0	00	9	15	27.0	4.95	
B	4	21	4	20			1	14			9	55	21.0	4.83	
C	4	45	1	41			1	09			7	35	26.5	5.60	
D	1	12	1	27	6	26	1	00			10	05	7.6	6.33	#
E	5	09	4	36	0	10	1	05			11	00	25.3	4.91	
F	4	53	2	40	0	00	1	05			8	38	28.7	5.85	
G	3	24	1	38	0	50	0	38			6	30	19.8	5.82	
H	3	04	0	24	4	37	1	00			9	05	16.2	5.28	
J	7	16	0	07	0	18	1	14			8	55	38.2	5.26	
Totals	39	31	18	27	13	22	9	38	0	00	80	58	210.3		
Avgs.	4	23	2	03	1	29	1	04	0	00	9	00	23.4	5.32	

Only one line ran, which was with favorable current.

Total time (from departure to return of launch to ship) 80:58

Time taken out for lunch, anchoring and getting up anchor 9:38

Total working time 71:20

Percentage of working time actually sounding 55.4

Percentage of time running to and from working Grounds, 25.8

Percentage of working time delayed by engine trouble, 18.8

Percentage of working time delayed by weather 00.0

100.0

Respectfully submitted,

Approved
H.B. Heran.
Commanding.

Frank S. Borden,
Jr. Engineer,
Const. and Geodetic Survey.

STATISTICS

SHEET I

OFF HILTON HEAD ISLAND
SOUTH CAROLINA

Date 1920		Letter	Volume	Soundings	Positions	Miles
Oct.	21	A	1	1118	92	27.0
	22	B	1	757	70	21.0
	25	C	2	1253	87	26.5
	26	D	2	249	24	7.6
	28	E	2 & 3	1170	79	25.3
	29	F	3	1093	92	28.7
Nov.	1	G	4	706	62	19.8
	2	H	4	682	59	16.2
	3	J	4 & 5	1653	142	38.2
		TOTAL		8681	707	210.3

U.S.S.BACHE

H.A.SERAN, COMMANDING.

DIRECTOR
ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

FIELD RECORDS (C)

AND REFER TO No. 41/VFB

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON February 11, 1921.

Division of Hydrography and Topography:

Division of Charts:

Tidal reductions are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 4155

Off Hilton Head Island, S. C.
H. A. Seran in 1920

Plane of reference is
Mean low water, reading

-0.2 ft. on tide staff at Fort Scriven Wharf,
Tybee Island, Georgia.

Condition of records: Satisfactory.

Chief, Division of Tides and Currents.

SECTION OF FIELD RECORDS

Report on Verification and Inking H4155

The records for this sheet were in good condition and, except for the failure to note compass courses, they were well kept.

The protracting and plotting of soundings were excellent.

The lines were well controlled and further development was not done because it would not add to the knowledge of the bottom.

The drafting conformed to the General Instructions except in the matter of numbering every position.

The work in the field and upon the sheet by F.S. Borden was commendable.

Frank M. Albert

Feb. 23, 1921

Mar. 28, 1921

In order to obtain better relative depths the following inked soundings were changed, with tidal reductions based on Yaketa Banks instead of Ft. Dorsey:

Between 84c and 86c the depths were increased one foot.

" 48c " 51c " " decreased " "
" 36c " 39c " " " " "
" 22c " 25c " " " " "
" 49E " 52E " " increased " "
" 21F " 23F " " " " "
" 1c " 9c " " " " "

Frank M Albert

ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4 MEM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

SECTION OF FIELD RECORDS.

Report on Hydrographic Sheet 4155. Surveyed in 1920.

Chief of Party: H. A. Seran. Surveyed by F. S. Borden.

Protracted by F. S. Borden. Soundings plotted by F.S.Borden.

Verified and inked by F. M. Albert.

1. The records of this sheet were well kept except for the omission of boats courses, and the omission (with a few exceptions) of bottom characteristics.

2. The plan and character of development fulfills the requirements of the General Instructions except for the omission of cross lines. There are several lines whose depths do not agree with adjacent parallel lines. Cross lines would have aided in rectifying the differences.

3. The plan and extent of development satisfy the specific instructions.

4. The sounding line crossings are adequate.

5. The development is sufficient to permit the usual depth curves to be drawn.

6. The field plotting was completed to the extent prescribed in General Instructions.

7. The office draftsman did not have to do over again any of the field drafting.

8. No further surveying is required within the area covered by the sheet.

9. The instructions called for simultaneous observations between the Tybee Island gauge and Capt. Luce's gauge in Port Royal Sound. These simultaneous observations were made, but the resulting adjustments to the Tybee Island reducers were not made. Revision of the tide reducers was therefore necessary in the office.

10. The character and scope of the surveying are excellent. The field drafting also is excellent.

11. Reviewed by. E. P. Ellis, March, 1921.

12. Two copies of this report to be sent to Hydrography and Topography Division.

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4155

State . South Carolina. . . . . .

General locality ~~Off~~ Hilton Head Island. . . . . .

Locality Port Royal Sd. to Calibogue Sd. . . . . .

Chief of party H.A.Seran. . . . . .

Surveyed by F.S.Borden. . . . . .

Date of survey Oct. 21 -- Nov.3, 1920. . . . . .

Scale . . . . 1 : 20000 . . . . . .

Soundings in . Feet. . . . . .

Plane of reference Mean Low Water, Tybee Id., Ga. . . .

Protracted by F.S.Borden Soundings in pencil by F.S.Borden.

Inked by . . . . . Verified by . . . . . .

Records accompanying sheet (check those forwarded):

Des. report ✓, ___ Tide books, ___ Marigrams, 1 Boat sheets ✓,

5 Sounding books ✓, ___ Wire-drag books, ___ Photographs.

Data from other sources affecting sheet . . . . . .

Surveys by F.G.Engle, Sheet No. H3897 and by F.C.Whitney, Sheet No. H3983.

Remarks:

NAUTICAL CHARTS BRANCH

SURVEY NO. 4155

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
10/31/46	44C	K.E. MacSwan	~~Before~~ After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2158-1

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.