

5592

U. S. COAST & GEODETIC SURVEY  
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Form 504  
Rev. Dec. 1933  
DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~Hydrographic~~ } Sheet No. 5592  
Hydrographic } Field No. 12

State Georgia - South Carolina

LOCALITY

Tybee Roads

Entrance to Savannah River

1934

CHIEF OF PARTY

C. A. Egnar

U. S. GOVERNMENT PRINTING OFFICE: 1934

5592

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5592

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. 12

REGISTER NO. 5592

State Georgia - South Carolina

General locality Tybee Roads

Locality Entrance to Savannah River *Large*

Scale 1:10,000 Date of survey June-July-Dec., ~~1932~~ 1934

Vessel Launch OGLETHORPE and Launch MILLER

Chief of Party C. A. Egnar

Surveyed by C. A. Burmister

Protracted by V. F. Simmons

Soundings penciled by V. F. S.

Soundings in ~~fathoms~~ feet

Plane of reference M. L. W.

Subdivision of wire dragged areas by

Inked by J. A. McCORMICK

Verified by J. A. McCORMICK

Instructions dated Dec. 4, 1933 ~~1932~~

Remarks:

DESCRIPTIVE REPORT  
TO ACCOMPANY  
HYDROGRAPHIC SHEET NO. 12

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AUTHORITY:

This sheet was executed under Instructions dated December 5, 1933 covering operations of Field Party No. 23 on the Georgia Coast. ✓

PURPOSE:

To provide a more comprehensive survey than has before been available. ✓

LIMITS AND  
JUNCTIONS:

This sheet covers the area in the vicinity of Tybee Island, joining Sheet No. 3 on the south, Sheet No. 11 (H-5550) on the west (in Savannah River and Tybee River), Sheet No. 16 on the NW. side of Tybee Roads, and Sheet No. 18 (H-5549) at the entrance to Calibogue Sound.

It is covered by topographic sheets A', B', H', all of 1/10,000 and sheet M of 1/20,000.

The odd shape and limits of this sheet resulted from the fact that it became necessary to alter the original plan of making a series of 1/20,000 sheets covering the outside coast and approaches. The Tybee Island part of the area was first laid out as a part of 1/20,000 sheet No. 3; when this was changed there had already been a considerable portion of sheet No. 3 completed into the creeks of Tybee Island, so that sheet No. 12 was laid out to finish off the headwaters of those creeks (Tybee Creek, Lozaretto Creek, Oyster Creek, etc.) and cover the entire portion of Tybee Roads to the junction referred to above. ✓

U. S. ENGINEERS  
REQUEST:

After the sheet was laid out and some work done on it the Savannah Office of the U. S. Engineers requested that some sounding be done around the upper point of Tybee Island and along the outside coast for a short distance down the beach to assist them in collecting data for the study of changes in that locality.

While this work was not called for by our Instructions, it did not involve a great deal of extra effort and was executed in the course of the regular sounding operations. However, the construction of several groins in this area for combatting beach erosion prevented lines being run close to the beach. Also the usual swell made work close to the groins dangerous for small boats with the result that this assistance to the Engineers was not as complete as was desired.

Later, it was found expedient to follow the zero curve at low water by a man on foot taking sextant angles at frequent intervals to better delineate this curve.

U. S. ENGINEERS WORK  
WITHIN THE LIMITS OF SHEET:

In the course of their regular operations, the U. S. Engineers make surveys of the Savannah River to the ends of the rock jetties, and keep a constant depth in the channel by a dredge which operates here most of the year.

The depths in the main channel are therefore constantly changing from both natural and artificial causes. This survey therefore represents depths to be relied upon only for the time being.

The main body of Tybee Roads likewise changes somewhat but not so radically and while the depth curves follow the chart roughly it is not possible to get a complete agreement with charted values.

7  
Nov 1731

APC T5113

Lat 31-59-30

Long 80-50-50

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Pier on south end

Savannah Beach

Δ Station (Sw. B Tybrisa Tank)  
Name

SHORELINE:

All gotten from aerial photos on the Savannah River Atlas layout of sheets.

CONTROL  
HORIZONTAL:

Almost a sufficient number of objects, located by triangulation, were found to execute the hydrography. These were supplemented by some stations of the U. S. Engineers' scheme and by a few topo signals located by intersection with the planetable.

CONTROL  
VERTICAL:

Tides for the main channel are controlled by the Standard Gage at Fort Screven. This gage was out of order for several days and for those days the gage at Quarantine Dock was used with a 15 minutes time correction. Comparison of the two gages indicates a time lag between them of that amount and that substitution of Quarantine reducers for Fort Screven reducers results in no appreciable error when this time correction is taken into consideration. The only other gage used on this sheet was Tybee Inlet.

SOUTH  
CHANNEL:

This was completely sounded, although this is used very infrequently as a navigation passage.

COAST PILOT  
INFORMATION:

Buoys have been located and will be included in a special report covering these data.

GEOGRAPHIC  
NAMES:

Names as originally charted have been retained. A few additional local names have been indicated on the sheet.

TIDAL DATA:

The tide runs very fast in the main channel of the Savannah River.

Gages and planes are as follows;

Gage name		M.L.W. on staff
Fort Screven	-	3.2
Quarantine Dock (Sav.River)	-	4.1
Tybee Inlet	-	3.1


STATISTICS:

Shown on accompanying table/

LIST OF SIGNALS ON SHEET:

Are shown on accompanying tables.

Respectfully submitted,

  
C. A. Egner,  
H. & G. Engr.  
Chief of Party.

Signals on Sheet 12

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Triangulation Stations

Neal	Tybee Hotel N. Cupola
TyBRISA Water Tank	S.End U.S.E.
Tybee WATERworks Tank	Ft. ScREVEN
TYbee Lighthouse	Lazaretto SWING Span
CockSPUR Lighthouse	TyBEE Knoll F.R.
Quarantine TANK	JONES ID. F. R.
Jones ID. R.R.	BLOODY Point F.R.
Bloody POINT R.R.	BLOODY

Topographic Signals

West	Bag	Tall	Pat
Scot	Sand	TelePHONE	
Stack	Club	West BASE	
Al	LAZaretto		Tom
Cap	Bum	New HOPE	
Gab	<u>Ft.</u> Pulaski		Front
Knoll	Tide	John	Fill
Borr	Oyster	Shell	

Sextant Positions

Tre	Tu	Won
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Statistics Sheet No. 12

Date	Day	Boat	Vol.	Miles	Snd'gs.	Pos.
6/4/34	a	OGLETHORPE	1	8.1	289	87
5	b	"	1	14.0	609	158
7/23/34	c	"	2	16.4	366	95
24	d	"	2	31.0	786	218
25	e	"	2	16.5	468	125
9/6/34	f	"	3	20.8	502	137
7	g	"	3	1.0	48	16
10	h	"	3	14.0	553	153
11	j	"	3	14.2	496	131
11	j	"	4	16.1	550	143
12	k	"	4	31.0	952	250
13	l	"	4	8.0	253	65
13	l	"	5	17.7	654	145
14	m	"	5	9.6	335	90
8/27/34	A	MILLER	6	8.0	185	47
28	B	"	6	11.5	212	56
29	C	"	6	8.4	167	44
9/4/34	D	"	6	22.9	520	135
5	E	"	6	9.2	201	55
10	F	"	6	4.3	85	22
17	G	"	6	6.7	130	38
12/5/34	b	Afoot	7	- - -	5	5
11/30/34	a	Afoot	7	- - -	26	26
Totals . . . . .				288.4	8382	2241

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. ..5592

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

Number of positions on sheet	2241 <del>9399</del>
Number of positions checked	..196..
Number of positions revised	...95..
Number of soundings recorded	8382
Number of soundings revised	..Many
Number of signals erroneously plotted or transferred	..... .....1

Date: MARCH 30, 1935.

Verification by J. A. McCORMICK

Time: 83 hrs.

Review by R. J. Christman

Time: 23<sup>3</sup>/<sub>4</sub>

To: H.M.Strong  
 From: C.F.M.

Survey No. H 5592

Date. Jan. 25, 1935

**GEOGRAPHIC NAMES**  
 GEORGIA & SOUTH CAROLINA

Chart No. 1240 & 1241

Diagram No. 1240-2 & 1241-2

Names approved Feb. 25, 1935. Allen M. Strong

*Harlow Bacon*

- \* Approved by the Division of Geographic Names, Department of Interior.
- ⊘ Not Approved by the Division of Geographic Names, Department of Interior.
- ⊞ Referred to the Division of Geographic Names, Department of Interior.

Status	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
*	<u>Daufuskie Island</u> ✓	Same			
	<u>Bloody Point</u> ✓	"			
	<u>New River</u> ✓	"			
	<u>Walls Cut</u> ✓	"			
	<u>Wright River</u> ✓	"			
	<u>Turtle Island</u> ✓	"			
*	<u>Savannah River</u> ✓	"			
	<u>Cockspur Island</u> ✓	"			
	<u>Ft. Pulaski</u> ✓	"			
	<u>South Channel</u> ✓	"			
	<u>Tybee Island</u> ✓	"			
	<u>Lazaretto Creek</u> ✓	"			
	<u>Tybee Creek</u> ✓	"			
Note: The Names on this sheet were inked on this sheet by the field.					

LCC

March 4, 1935.

Division of Hydrography and Topography:

✓ Division of Charts:

Attention E. P. Ellis.

Tide Reducers are approved in  
7 volumes of sounding records for

HYDROGRAPHIC SHEET 5592

Locality Entrance to Savannah River, Georgia

Chief of Party: C. A. Egner in 1934

Plane of reference is mean low water, reading  
3.1 ft. on tide staff at Tybee Creek Entrance  
11.6 ft. below B.M. 1  
3.2 ft. on tide staff at Fort Screven  
10.4 ft. below B.M. 9  
4.1 ft. on tide staff at Quarantine Dock  
13.0 ft. below B.M. 1

Height of mean high water above plane of reference is 6.8 ft. at  
Tybee Creek Entrance and Fort Screven; 7.0 ft. at Quarantine Dock.

Condition of records satisfactory except as noted below:

Considerable revision of tide reducers was necessary in Vol. 6  
in order to make them consistent with the records submitted to  
the office.

*Hammer*  
Acting Chief, Division of Tides and Currents.

Await comparison with air photo compilation which is in the field at the present time. RJS

showed a dock just offshore from the Quarantine Tank. Tide gage was supposedly on this dock. H-5550 showed no dock and showed the tide gage close inshore to the tank, which position would have plotted inside high water line on H-5592. H-5550 also had a line of soundings which would have crossed the dock as shown on H-5592. Consequently the docks and tide gage were removed from H-5592 to await comparison with photo compilation sheet of this area. <sup>This dock has been added to H-5592 (1934) from the graphic control sheet T-61546 and air photo compilation T-5148. Discrepancy in sounding line referred to field party.</sup> Junction with H-5549 at Lat. 32-03 Long. 80-54.3 is questionable Junction OK RJS

Comparison with Other Data.

Air photo compilation sheets and control sheets are in the field for additional work.

Remarks:

Shoreline on this sheet is believed to be considerably in error in several places.

Boat sheet was in very poor shape. Fixes were not plotted with even moderate care on the boat sheet. Consequently the boat sheet is of very little help in reconciling questionable fixes.

Single note in the record reveals presence of wreck 30 meters south of position 104 h. Wreck was not plotted by field party.

Positions 9-11 m were rejected by verifier and plotted on line and time!

Records show single notes concerning breakwaters and jetties on the Atlantic side of Tybee Island. Nothing was done about these at the present hoping that the photo compilation would give a little more information. These notes were not taken care of even on the boat sheet.

The 18' spot on Jones D. Range was mentioned before. This crossing was

1  
Verification Report on H-5592

Records: Field party made no entries in the column provided for courses. This made it difficult for the verifier to reconcile sharp turns on the smooth sheet with apparently straight lines on the boat sheet. ✓

Contracting: Contracting was fair mechanically. Changes of positions were due mostly to erroneous recording and questionable fixes. ✓

Drafting: Drafting was poor. Triangulation stations were plotted wrong and then changed ~~when~~ after soundings had been plotted necessitating re-plotting of lines in the field. Field draftsman did not re-plot all of the erroneous positions. Location of Hydro signal W-01 was in error about 100 meters due to poor location and bad judgment of field draftsman in checking its location. ✓

Crossings: Crossings were fairly good after adjustment. Field draftsman spaced all soundings by eye and made no attempt to check with dividers on poor crossings. 18' sounding between 107 and 108 D showed up very badly. Three lines crossed at this point. They were adjusted by the verifier but the 18' sounding still falls within a few meters of Jones I. Range which marks the 30 ft. channel. ✓

Curves: Curves were fairly regular. ✓

Junctions: Eight junctions were made on this sheet. Junction with H-5550 in the main channel of the Savannah River was bad as regards shoreline. This sheet, H-5592, ✓

3

adjusted as much as possible and was improved  
but it is still a subject for investigation.  
10 and 11 foot soundings to seaward of it are  
just as bad.

March 20, 1935.

Submitted

James McCormick

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5592 (1934)

Entrance to Savannah River, Tybee Roads, Georgia-South Carolina  
Surveyed June-July-December, 1934  
Instructions dated December 5, 1933 (NATOMA)

Hand Lead Soundings

3 Point Fixes on Shore Signals

Chief of Party - C. A. Egner.  
Surveyed by - C. A. Burmister.  
Protracted and Soundings Plotted by - V. F. Simmons.  
Verified and Inked by - J. A. McCormick.

1. Condition of Records.

The records conform to the requirements of the Hydrographic Manual, except as follows:

- a. Signal names were not entered at the top of each page of the sounding records. (Par. 74).
- b. Result of examination of sextants, clock, and lead line was not entered at the end of the day's work. (Par. 65).
- c. Changes of course, estimated distances to shore and to objects near the sounding lines were not noted in the records.
- d. Evidence that hydrographic signals were checked in the field was lacking, as the initials of the checker were not shown on the sheet. This was done in the office, and signal WON was found to be 100 meters in error.

2. Compliance with Instructions for the Project.

In general, the plan and extent of development conform to the instructions for the project. Special attention is called to what is felt to be a serious omission by the Chief of Party affecting navigation in a very important channel. In lat. 32°02.1', long. 80°50.3' depths of 10 and 11 feet are shown very close to the Jones Island Range. If the position of the soundings are not in error, there is an extensive shoaling into the channel. This vicinity should have been examined to definitely disclose this apparent shoaling and if verified, a report should have been made immediately to this office for proper action.

3. Sounding Line Crossings.

Depths at crossings of sounding lines are in good agreement. A few differences in excess of 1 foot occur on the steep slopes of channel banks and at the sides of dredged cuts.



4. Depth Curves.

Within the limits of the survey the usual depth curves may be satisfactorily drawn, including the greater portion of the low water line.

5. Junction with Contemporary Surveys.

- a. The junction with H-5549 (1934) to the north and northwest is satisfactory.
- b. Junction with H-5550 (1934) to the west is satisfactory in general, but there is a discrepancy at the quarantine station.
- c. Junction with H-5599 (1934) in the channels to the southward is satisfactory, except that the entrance to the small creek in lat.  $31^{\circ}59.55'$ , long.  $80^{\circ}53.55'$  was not well covered.

6. Comparison with Prior Surveys.

- a. H-267 (1850), H-269 (1851), H-317 (1852), H-439 (1854), H-649 (1853-7), H-807 (1862), H-842 (1863), H-944 (1866-94), H-945 (1866-94), H-1264 (1875-89).

All these sheets represent surveys before the construction of the extensive improvements at the entrance to the Savannah River. Changes due to these improvements affect, directly or indirectly, the entire area of the present survey (H-5592 of 1934). None of the information on these sheets appears on recent charts, and no useful cartographic purpose would be served by listing the changes which have taken place since the several surveys were made.

- b. H-2194 (1894), H-2195 (1894).

These two sheets show the condition of the improvements at the mouth of the Savannah River in 1894 and were mostly compiled from information furnished by the U. S. Engineers. None of the information on the sheets is of present charting value except possibly the location of the two main training walls.

- c. H-2296 (1897), H-2470 (1900).

These sheets show changes due to the construction of the training walls. A later survey covers the area and these sheets have no present charting value.

- d. H-4154 (1920).

The part of this sheet north of the Savannah River is the authority for the present representation on the chart. The western part of this area is in good agreement with the present survey, but the channel into New River and the shoal areas adjacent to

it have changed materially. Off the entrance to the Savannah River and southward, many changes have taken place and the results of later surveys are now shown on the chart. In view of the larger scale and more intensive development on H-5592 (1934) no part of the above survey should be retained on the chart.

e. H-4481 (1925).

This sheet shows a part of the South Channel and the shoal area to the eastward of the entrance. In South Channel the shoal area on the north side of the channel has increased, but the channel depths are about the same. The charted sunken rocks in lat.  $32^{\circ}01.65'$ , long.  $80^{\circ}50.8'$  originate with this survey. No authority could be found for them in the sounding records, the topographic survey of that date, nor on the boat sheet, and they appear to be a sketchy location of the groin which is charted approximately 100 meters south of them from Bp. 24,731 (1931). The sunken rock symbols should be discontinued and the groin retained on the chart. In view of the larger scale and greater detail on H-5592 (1934) and because the area is very changeable, no part of the above survey should be retained on the chart.

7. Comparison with Chart No. 440.

a. Hydrography.

Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs, and on blueprints of U. S. Engineer Surveys covering the improved channel into the Savannah River. The latest engineer's surveys applied to the chart are EP 26726-27-28 (1933). A dredge is constantly at work in the channel and later blueprints are now in the files (EP 27643-4-5 of 1934).

It is noted that the shoal extending out from the northern end of Tybee Island has encroached considerably on the dredged channel into the Savannah River, the present survey showing depths of 10 and 11 feet practically on the Jones Island range. These soundings were taken on September 4, 1934, and are three months later than the latest Engineer's work in this section of the river (Blueprint 27645). The latter blueprint shows a slight encroachment but not to the extent as indicated by our survey. There is no record in this office at the present time that dredging has been done subsequent to the date of our survey. Because of its importance to navigation, this matter has been referred to the Engineers.

The south training wall is charted about 250 meters longer (to the eastward) than shown by the present survey. The blueprints indicate that the outer end of the wall may have been undermined by the current, as this part of the wall is shown by a broken line and sounding lines were run across its former position.

In the shoal area east of the north end of Tybee Island, the chart is based on the U. S. Engineer's survey of December, 1931 (EP 24731 and 2). Because of the changeable character of this area, the hydrography on this blueprint should be superseded within the area covered by the present survey, however the groins adjacent to the beach should be continued on the chart.

b. Aids to Navigation.

The lights on the Oyster Island range were discontinued in 1917, and the range is no longer in use. The rear range mark is charted as a landmark "Old Tower." The front range (signal Shell) is not charted.

The HS lighted buoy in South Channel at the entrance to Lazaretto Creek has been established since the present survey was completed.

Buoy C3 is charted about 650 meters westward and buoy C1 about 300 meters westward of the positions located by the present survey. The present survey's positions are in agreement with the locations given on the U. S. Eng. blueprints. Other buoys vary slightly from their charted positions, but not enough to be a menace to navigation.

8. Field Plotting.

The protracting was not well done. Out of 196 positions checked, 95 were revised in the office. The field draftsman failed to detect some errors in recording and in fixes, and did not replot all the positions depending upon signals whose positions had been corrected. Soundings apparently were spaced by eye instead of with spacing dividers and drafting in general was not satisfactory.

9. Additional Field Work Recommended.

Because the dredged channel in the Savannah River is maintained by the U. S. Engineers, no additional work is required.

10. Superseding Old Surveys.

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

H-267 (1850)	In Part	H- 945 (1866-1894)	In Part
H-269 (1851)	" "	H-1264 (1875-1889)	" "
H-317 (1852)	" "	H-2194 (1894)	" "
H-439 (1854)	" "	H-2195 (1894)	" "
H-649 (1853-7)	" "	H-2296 (1897)	" "
H-807 (1862)	" "	H-2470 (1900)	" "
H-842 (1863)	" "	H-4154 (1920)	" "
H-944 (1866-1894)	" "	H-4481 (1925)	" "

II. Reviewed by - R. J. Christman and R. L. Johnston, April, 1935.

Inspected by - A. L. Shalowitz.

Examined and approved:

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

*L. O. Pollock*  
Chief, Division of Charts.

*F. S. Bond*  
Chief, Section of Field Work.

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

Applied to Cht. 571, June 1, 1935

K. Reynolds

applied to chert 440. Sept. 3, 1936.

J. H. S.