

5520

U. S. COAST & GEODETIC SURVEY  
LIBRARY AND ARCHIVES  
SEP 27 1934  
Acc. No. \_\_\_\_\_

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

**DESCRIPTIVE REPORT**

~~Topographic~~ } Sheet No. 4 5520  
Hydrographic }

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State South Carolina

LOCALITY

St. Helena Sound

Coosaw River

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1933-34  
1934

CHIEF OF PARTY

Lt. I. E. Rittenburg

5520

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

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REG. NO. 5520

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. 5520

State South Carolina

General locality St. Helena Sound

Locality Coosaw River

Scale 1-10,000 Date of survey Dec. 1933- Feb., 19 34

Vessel Shore Party 15

Chief of Party I. E. Rittenburg

Surveyed by J. A. McCormick

Protracted by A. O. Dority

Soundings penciled by A. O. Dority

Soundings in ~~fathoms~~ feet

Plane of reference M. L. W.

Subdivision of wire dragged areas by

Inked by IRVIN MICHAELSON

Verified by IRVIN MICHAELSON

Instructions dated Nov. 2, 19 33

Remarks:

To: Mr. Bacon  
From L. S. S.

GEOGRAPHIC NAMES  
S. C.

Survey No. H 5520

Chart No. 1240-1

Date. October 12, 1934

Diagram No. 1240-2

*Names underlined in red approved Oct 15, 1934*  
*J.B.*

- \* Approved by the Division of Geographic Names, Department of Interior.
- Ø Not Approved by the Division of Geographic Names, Department of Interior.
- R 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
✓ J.B.	-----	<u>Jack I.</u>	-----	-----	32° 30.4' 80° 41.0'
✓ J.B.	-----	<u>Brickyard Pt.</u>	-----	-----	32° 30.0' 80° 40.2'
✓ J.B.	-----	<u>Coosaw River</u>	-----	-----	32° 31.5' 80° 40.1'
✓ J.B.		<u>Mc Calleys Creek</u>			32° 31' 80° 43'

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET, FIELD NO. 4.

COOSAW RIVER, PROJECT HT 160.

1. Instructions.

This survey was made in accordance with instructions of Nov. 2, 1933. ✓  
*except as noted in the review. H.M.M.*

2. Survey methods and control.

Control was based on triangulation executed by C. A. Egner in 1931-33. ✓  
Supplemental stations were located by topographic methods.

This sheet is joined on the south by Sheet No. 3, on the west by Sheet No. 5 and a proposed sheet of the M. V. Natoma will effect a junction on the east. ✓

Hydrography was controlled exclusively by three point fixes taken on well located signals. Due to the lack of shoreline photography at the time of this survey, sounding lines were run as close to the actual shoreline as it was possible to maneuver the launch in order to have an approximate location for the guidance of the hydrographer. These inner lines should check the photographs closely and there should be no cases of soundings occurring inside the shoreline except in the locality between signals BAR and MUD where a line was run over marsh grass which was submerged at extreme high water.

3. Discrepancies.

None.

4. Channels.

*with local knowledge on this sheet. H.M.M.*  
Critical depth of 8 feet for the passage from Brickyard Creek entrance to the eastern extremity of the sheet is found at positions 73-76R, southeast of signal DON, and between positions 35 and 36E at Buoy C5. This depth can also be carried from Buoy N8 to Whale Branch Bridge providing the navigator is sufficiently familiar with the shoals between Buoy N8 and signal DOC. This channel is not recommended except on a rising tide or an extreme low tide when the shoals are visible. The channel into McCalley's Creek is extremely precarious and is not recommended for anything except small boats.

*from DON, channel probably deepens to a controlling depth of 12 feet just N of Buoy C5 (lat. 32°30.4, long. 80°38.1) H.M.M.*

5. Dangers.

One of the principal dangers is the section of the Brickyard Creek channel southwest of signal DON. A 5 foot spit projects from the north and a 6 foot spit from the south leaving a narrow passage with depths of 9 and 10 feet. As mentioned before, the passage from Buoy N8 to signal DOC is extremely hazardous on account of the shoals on both sides.

*lat. 32°30.2  
long. 80°40.6 ✓*

6. Comparison with old surveys.

Discrepancies with the previous surveys are too numerous to mention in detail. This is not unusual in view of the fact that the last surveys were made in 1860-1872. Some of the more glaring differences are as follows:

- 1. Chart shows  $\frac{1}{2}$  foot sounding in vicinity of position 12J. Latest soundings show nothing less than 6 feet.  $32^{\circ}30.6, 80^{\circ}38.4$  ✓
- 2. Chart shows a bank, bare at low water, between positions 59 and 60J. Latest soundings show a minimum depth of 6 feet.  $32^{\circ}30.6, 80^{\circ}39.4$  ✓
- 3. Chart shows a bank, bare at low water, in the vicinity of position 55C. Latest soundings show nothing less than 10 feet.  $32^{\circ}30.7, 80^{\circ}40.1$  ✓
- 4. Banks shown on chart as bare at low water in vicinity of signals EX and TEL are not quite as extensive in the latest survey.  $32^{\circ}31.2, 80^{\circ}40.2$  ✓
- 5. Changes in McCalley's Creek are numerous. Shoreline appears to be considerably different than that of the old survey. Consequently, differences in depth are to be expected. ✓

Considerable dredging for phosphate rock was done in the Coosaw River during the pre-war period and continued until shortly after the World War. This will account for some of the differences between the old and new surveys and also for the uneven bottom.

7. Tides.

A portable automatic gage was maintained at Hutton's Dock on the south shore of Chisolm I. Signal DOC marks the exact location of the gage. This gage was used for all sounding on this sheet with the exception of the first few days and the last day. Parris I. standard gage was used for the first days and the portable automatic gage at Brickyard Point was used for the last day.

8. Landmarks for charts.

There are no landmarks of sufficient prominence for charting in this locality.

9. Statistics.

Statute miles of sounding lines	<u>223.9</u>
Number of soundings obtained	<u>6372</u>
Number of positions taken	<u>1793</u>

*J. A. McCormick*  
J. A. McCormick,  
Surveyor, C. & G. S.

Approved:

I. E. Rittenburg, Lieut.,  
Coast and Geodetic Survey,  
Chief of Party.

Shoreline applied to this sheet by  
party of Benjamin H. Rigg.

Section of Field Records

*Verification* Report on H-5520.

1. In general the records conform to the requirements of the hydrographic manual. In the sounding records-notes in the "Remarks" column were frequently misleading. Instead of "Line bends left" or "Line turns left about" for example, the notes read simply, "Line begins" and "Line ends." This caused considerable loss of time in verification. *Lat. & long. positions called for in review.*

2. The usual depth <sup>curves</sup> can be completely drawn.

3. For the most part, soundings were correctly plotted. The projecting was good. In view of the remark concerning dredging for phosphate rock in the descriptive report (par. 6), the crossings were good *as noted in the review.*

4. The field drafting was fair. Position and day letters were too large. The constant use of leaders from the notation to the position was often a cause of confusion. Then, too, position and day letters were placed too close to the position, obscuring the sounding and making for illegibility. Bottom characteristics as they pertained to sand, shell and mud banks were all inked in blue, and were changed to black by the verifier. Some small changes and additions were made to the shore line. *noted in review, June.*

5. There are no contemporary adjoining surveys with the exception of H-6025. *the junction* Since this sheet has not yet been verified, no junction was made.

~~(Appro. EISE 0 Oct.)~~

6. Remarks. Attention is called to a "rock Awash" ( $32^{\circ}30.6'$ ) ( $80^{\circ}39.1'$ ) *OK June*

Respectfully submitted,

*I. Michaelson*  
12/14/04

I. Michaelson.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5520

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

Number of positions on sheet	1793
Number of positions checked	167
Number of positions revised	2
Number of soundings recorded	6372
Number of soundings revised	33
Number of signals erroneously plotted or transferred	-----

Date: Dec. 14, 1934

Cartographer: Irvin Michaelson

Verification of protracting	) by IRVIN MICHAELSON	Time:
Verification & inking of rocks and shoals)		Time: } 47 hrs.
Verification of inking by IRVIN MICHAELSON		Time:
Review by	H. W. Murray	Time: 12 "

November 8, 1934

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in  
5 volumes of sounding records for

HYDROGRAPHIC SHEET 5520

Locality Coosaw River, St. Helena Sound, South Carolina

Chief of Party: I. E. Rittenburg in 1933-34  
Plane of reference is mean low water, reading  
3.8 ft. on tide staff at Huttons Dock  
13.5 ft. below B.M. 1

0.5 ft. on tide staff at Parris Island  
13.0 ft. below B.M. 1

1.5 ft. on tide staff at Brickyard Point  
11.7 ft. below B.M. 1

Height of mean high water above plane of reference is approximately 7.2 feet.

Condition of records satisfactory except as noted below:

*H. A. Manna*  
Acting Chief, Division of Tides and Currents.



Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY No. 5520 (1933-34)

Coosaw River, South Carolina  
Surveyed 1933 and 1934  
Instructions dated November 2, 1933 (NATOMA)

Hand Lead Soundings - 3 Point Control on Shore Signals.

Chief of Party - I. E. Rittenburg.  
Surveyed by - J. A. McCormick.  
Protracted and soundings penciled by - A. O. Dority.  
Verified and inked by - Irvin Michaelson.

1. Condition of Records.

The records are neat, legible and conform to the requirements of the Hydrographic Manual except as follows:

- a. Plotting and checking of control points such as hydrographic, ~~and~~ topographic and triangulation signals were covered by a combined note: "Signals plotted" and "Signals checked" instead of the usual stamp which lists these items separately. As a result, ~~it~~ is not definitely clear as to whether the note applies to one or all types of control.
- b. No chart containing objects for locating Aids to Navigation for use by the Lighthouse Bureau was forwarded to this office.
- c. Triangulation stations were shown on the sheet without the dates of establishment. These were added in the office.
- d. At the beginning and ending of each days' work or when the general locality of the work changed during the day, the approximate latitude and longitude of the position should have been recorded.(Par. 75a).

2. Compliance with Instructions for the Project.

The plan, character and extent of the survey satisfy the instructions for the project.

3. Sounding Line Crossings.

Such cross lines as were run or result from the work agree within 1 to 2 feet with the main system of lines.

4. Depth Curves.

Within the limits of the survey, the usual depth curves may be satisfactorily drawn including the major portion of the zero foot curve.

5. Junctions with Contemporary Surveys.

- a. The junction with H-6025(1934) on the south is satisfactory.
- b. The junction with H-5560(1934) on the west will be considered in the review of that survey.
- c. The junction on the east with the work of the NATOMA will be considered when that work is received from the field.

6. Comparison with Prior Surveys.

a. H-742(1860)

Soundings of this survey in the area east of Long.  $80^{\circ}40.7'$  vary from 1 to 8 feet shoaler in some localities and 1 to 13 feet deeper in others than those of the present survey. A few spots are practically unchanged. The excessive changes are due in part to dredging operations for phosphate rock. (See D.R. page 2). Among the more important changes are the following:

- (1) In lat.  $32^{\circ}30.5'$ , long.  $80^{\circ}38.3'$ ; a least depth of  $\frac{1}{2}$  feet (charted) was obtained on H-742(1860) whereas 6 feet was the least depth obtained on the present survey.
- (2) In lat.  $32^{\circ}30.5'$ , long.  $80^{\circ}38.8'$ ; the old survey shows a shoal bare at MLW (charted) whereas the least depth on the present survey is 6 feet, with several 2 foot soundings 100 meters southward.
- (3) In lat.  $32^{\circ}31.0'$ , long.  $80^{\circ}40.4'$ ; two intersecting lines of the old survey show depths of 13 to 15 feet whereas depths on the present survey vary from 0 to 5 feet in this vicinity.

b. H-743(1860)

The few soundings of this survey which fall within the limits of the present survey in the vicinity of Brickyard Point vary from 1 to 4 feet deeper in some spots and about 2 feet shoaler in others than those of the present survey.

c. H-1155b (1875).

Soundings of this survey in the area west of long.  $80^{\circ}39.2'$  vary from 1 to 3 feet shoaler in some localities and 1 to 6 feet deeper in others than those of the present survey. A few spots are unchanged. Most of the shoals (bare at MLW) in the area between Long.  $80^{\circ}39.7'$  and  $80^{\circ}41.9'$  vary from 1 to 2 feet deeper in some localities and shoaler in others. A few are practically unchanged. The small island (charted) in lat.  $32^{\circ}31.9'$ , long.  $80^{\circ}42.9'$  is breaking down as the least depth obtained on the present survey is 1 foot.

7. Comparison with Charts No. 437 and 435.

a. Hydrography.

Within the area of the present survey the above charts are based on surveys discussed in the foregoing paragraphs and a U. S. Engineers' Survey of 1930-31 (B.P. No. 23807) in the general vicinity of Brickyard Creek and eastward in which soundings are generally in good agreement with those of the present survey except that the area in lat.  $32^{\circ}30.3'$ , and between long.  $80^{\circ}39.4'$  and  $80^{\circ}40.2'$  has deepened 1 to 4 feet. There are no important shoals on this blueprint which have not been fully covered on the present survey. The latter supersedes the Engineer's survey for charting purposes.

b. Aids to Navigation.

Buoys shown on the above charts have been located on the present survey in positions varying from 70 to 140m. from their charted positions, with the exception of C"5" which was located on the present survey about 600m. ENE of its charted position. Its source is unknown but was shown on the Standard No. 437 (1908). The buoy has undoubtedly been moved though this office has no record of the change. The controlling depth leading to Brickyard Creek is 8 feet and the present position of the buoys properly mark the features intended.

8. Field Plotting.

Field protracting and plotting were accurate and conform to the requirements of the Hydrographic Manual except as follows:

a. Position day letters and numbers were excessive in size. A number of these were changed in the office.

b. Bottom characteristics pertaining to detached shoals were inked in blue instead of being left in pencil. There were revised in the office.

9. Additional Field Work Recommended.

This survey is complete. No additional field work is required.

10. Superseding Previous Surveys.

Within the area covered, H-5520(1933-34) supersedes the following surveys for charting purposes:

H-742 (1860) In part.  
H-743 (1860) " "  
H-1155b (1873) In part.

11. Reviewed by Harold W. Murray

January 31, 1935.

Inspected by - A. L. Shalowitz.

Examined and approved:

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

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

*J. S. Borden*  
Chief, Section of Field Work.

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

Applied to chart 794 Oct. 11, 1935 H.E.M.

25 Jan 13, 1936  
C.A.S.