

5449

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Form 504
Ed. June, 1923

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton, Director

State: South Carolina

DESCRIPTIVE REPORT

Topographic } Sheet No. 4 5449
Hydrographic }

LOCALITY

Lower Ashley River.

Charleston, S. C.

19 34

CHIEF OF PARTY

Lt. M. O. Witherbee.

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SHEET NO. 4

DATE OF INSTRUCTIONS - November 2, 1953.

SURVEY METHODS - Standard Coast Survey methods were used with the exceptions noted below. Lines were controlled by three point sextant fixes taken on objects located by triangulation and topography. ✓
Depths were measured by lead line read to the nearest foot in deeper areas and the nearest half foot in shoal areas.

James Island Creek -- Hydrography in this creek was controlled by three point sextant fixes taken on signals located by Radial Plot. ✓

Orange Grove Creek -- Hydrography in this creek was controlled by the shoreline transferred from a Radial Plot sheet. See boat sheet and notes in the sounding record for positions. ✓

DISCREPANCIES -

Notes by the Smooth Plotter -- In lat. $32^{\circ} 49.9'$, long. $79^{\circ} 58.1'$, a 14' sounding on line 104 -- 105k falls outside of a 22' sounding on line 105 -- 106f. In order to check the position as plotted on the boat sheet, it will be necessary to change the right angle of the fix on 105k from $51^{\circ} 53'$ to $49^{\circ} 53'$. *or use one of the other dolphins.* As there is no reason to warrant this change, and as the bank lining the channel *for the right object* at this point is steep, it is recommended that the 14' sounding be charted. *Replotted with L and true on line extended from pos 104.* ✓

In lat. $32^{\circ} 50.0'$, long. $79^{\circ} 59.2'$, line 74 -- 75k crosses 169 -- 170e with a 4' sounding between a 9' and 10' sounding. As this area is of little importance, it is recommended that the 4' sounding be charted. ✓

CHANNELS - The channel marked by Old Town Range has numerous 19'

soundings just to the west of the range. This would limit the draft at mean low water to 19'. In the vicinity of Duck Island, the shoals on the south side of the island are building up, and those on the north side are eroding.

The channel to the westward of Duck Island has filled up considerably and now carries a limiting depth of 4'. An 8' channel has cut through the shoal making north from Duck Island where 5' is now shown on chart No. 470.

DANGERS - Numerous stubbs of pilings, the remains of former docks, occur along the shore from signal Ash, lat. $32^{\circ} 48.1'$ to signal Dol, lat. $32^{\circ} 50.2'$. These ruins of old docks were located by fixes and described in the sounding record as well as plotted on the boat sheet.

COMPARISON WITH PREVIOUS SURVEYS - Previous survey of this area was in 1894 on a 1-10,000 scale. ^{in 1921 scale 1-20000 (44187)} Wappoo Cut was surveyed by R. F. A. Studds in 1928. Marked differences occur between the present hydrographic survey and the depths as shown on chart No. 470. The 12' curve has changed considerably in lat. $32^{\circ} 48'$, long. $79^{\circ} 58.3'$ just north of the Seaboard Air Line Ry. Bridge. A shoal is building to the north at this point. Many changes have occurred in the vicinity of Duck Island and the channel to the westward as far as beacon No. 6.

Accabee Flats were not sounded as the entire area bares at low water and is covered by a large number of oyster shoals. The most prominent of which are the two now shown on the chart as Sisters Rocks. It was found impossible to get a launch across these flats at any stage of tide without going aground. The low water line was sketched on the boat sheet between East Marsh Island and Beacon No. 4. There are numerous oyster shoals in this area that expose at half tide.

STATISTICS -

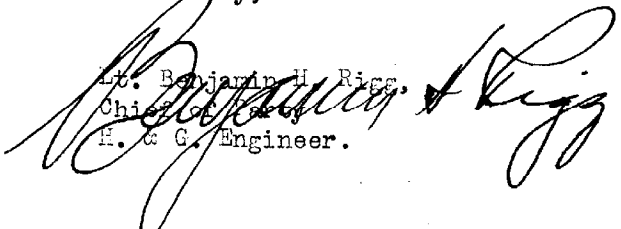
Vol No.	Statute Miles	No. of Soundings	No. of Positions
1	37.7	1882	317
2	35.9	2034	268
3	33.5	2134	312
4	35.8	2057	304
5	28.3	1680	313
6	<u>3.3</u>	<u>225</u>	<u>32</u>
	174.5	10012	1546

Respectfully Submitted by,

G. A. Stanton

Lt. M. O. Witherbee,
Chief of Party
H. & G. Engineer

Forwarded by,


Lt. Benjamin H. Rigg,
Chief of Party
H. & G. Engineer.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
MAY 23 1934
REG. NO. 5449
Acc. 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. **5449**

State South Carolina

General locality Charleston, S. C.

Locality Lower Ashley River

Scale 1-10,000 Date of survey Dec., Jan. & Apr., 1933-34.

Vessel Shore Party No. 2

Chief of Party Lt. M. O. Witherbee

Surveyed by G. A. Stanton

Protracted by Henry L. Beck, Jr.

Soundings penciled by Henry L. Beck, Jr.

Soundings in ~~fathoms~~ feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by _____

Inked by Mark S. Gurnee

Verified by Mark S. Gurnee

Instructions dated November 2, 1933

Remarks: Survey and descriptive report under direction of Lt. M. O. Witherbee. Smooth plotting under direction of Lt. Benjamin H. Rigg.

August 17, 1934

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 5449

Locality Lower Ashley River, Charleston, S. C.

Chief of Party: M. O. Witherbee in 1934

Plane of reference is mean low water reading

2.8 ft. on tide staff at Virginia-Carolina Chem. Co. Wharf

14.0 ft. below B. M. 1

1.7 ft. on tide staff at Ashley River Highway Bridge.

31.2 ft. below B. M. 1

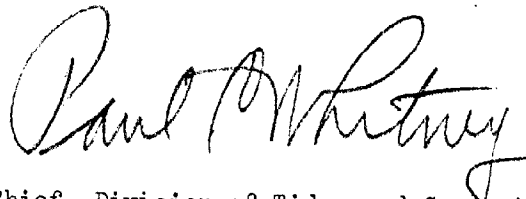
2.3 ft. datum tabul's at Charleston (Custom House)

10.9 ft. below B. M. 6

3.7 ft. on tide staff at Bees Ferry Bridge

8.6 ft. below B. M. 1

Height of mean high water above plane of reference is 5.4 ft.
at Virginia Carolina Chem. Co. Wharf and at Bees Ferry Bridge; 5.1
ft. at Ashley River Highway Bridge and 5.2 ft. at Charleston (Custom House).
Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents

Verificaction Report H. 5449.

1. Conformity to Hydrographic Manual.

The records are neat and legible and conform to the requirements of the Hydrographic Manual. ✓

2. Depth Curves.

The zero, six, twelve, eighteen, and thirty foot depth curves appear on this sheet. In many areas, due to congestion, intermediate curves have been omitted, and along the shores the curves are not continuously indicated. In the several smaller creeks, only effective curves have been drawn. ✓

3. Field and Office Plotting.

The field plotting was satisfactory. Contrary to paragraph 155 of the Hydrographic Manual, minus one half foot soundings were plotted as such. These were corrected to follow the instructions. ✓

The smooth sheet was carefully checked with the boat sheet. Only about three per cent of the positions were protracted, and these in critical areas. Only three positions were discovered incorrectly plotted, and these were corrected. ✓

4. Junctions.

Junction has been made with H. 5456 on the northwest. The agreement is good. The only other contemporary adjacent sheet, H. 5433a, has not as yet been verified. ✓

5. Remarks.

Two topographic names have been omitted temporarily from this sheet, to wit: "Sister's Rocks" and "West Marsh Island".

Sisters' Rocks were not located by the Hydrographic Party, although mentioned in the Report, nor do they appear on the partially completed air photo compilation - T. 5176. West Marsh Island does not appear complete either on the Hydrographic sheet or T. 5176. In view of probable changes, further information is being requested from the air photo party in the field, and when received, such information pertaining to these two features should be added to this sheet. *shown on boat sheet as shoals RFB*

A wreck appears on the Chart No. 1239 just west of Black Can Buoy. Number One (Lat. $32^{\circ}46'.2$, Long. $79^{\circ}56'.7$). No mention of this wreck appears in the sounding records.

A spit exists at the north end of Duck Island, as located by "Shoals awash" at positions 119e and 144e. Apparently the low water line extends some distance from the north end of the island, ~~but it is incompletely located by the Hydrography and does not appear at all on T. 5176.~~

shown complete on boat sheet RFB

The two soundings referred to in the Descriptive Report under "Discrepancies" have been inked. Neither sounding is considered improbable. The crossings are in good agreement.

*see Review
par. 3 -*

Mark S. Gurnee

Submitted by - M. S. Gurnee,
Sept. 1934.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. ~~1~~ 5449

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

Number of positions on sheet	.1546.
Number of positions checked	...50.
Number of positions revised3.
Number of soundings recorded	10,012.
Number of soundings revised	...30. (Approx)
Number of signals erroneously plotted or transferred

Date:.....

Cartographer:.. *M. S. Gurhee*

Verification of protracting
Verification & inking of rocks and shoals) *by*

Verification of inking by

Review by *R. J. Christman*

M. S. GURHEE

Time:

Time: 5 1/4 Hrs.

Time: 20 hrs.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5449 (1933-4)

Lower Ashley River,-----Charleston, South Carolina.
Surveyed Dec. 1933 to April 1934
Instructions dated Nov. 2, 1933(Witherbee)

Hand Lead Soundings-----Three Point Control on Shore Objects.

Chief of Party- M. O. Witherbee
Surveyed by-G. A. Stanton
Protracted by-Henry L. Beck, Jr.
Soundings penciled by-Henry L. Beck, Jr.
Verified and inked by- M. S. Gurnee

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual.

2. Compliance with Instructions for the Project.

The plan and extent of the survey, satisfy the instructions for this project with the exception that no reason appears for the small holiday in the work in the vicinity of the west side of Hampton Park Bridge.

3. Sounding Line Crossings.

Depths at sounding line crossings are in good agreement. The discrepancy noted in the Desc. Rep. as existing at lat. 32-49.9 long. 79-58.1 was probably due to the use of a wrong dolphin for the right object. Both boatsheet and record show the boat made practically a straight course between 103 and 105K, therefore 105 was plotted by left angle and time on line extended from pos. 104K and the discrepancy disappears.

The discrepancy noted in the Desc. Rep. as existing at lat. 32-50.0 long. 79-59.2 where a 4 foot sounding falls between a 9 and a 10 foot sounding was probably a misreading of the leadline by 1 fathom (reading 1 fathom instead of 2 fathom.) The 1894 survey, though no sounding falls on the exact spot, shows $8\frac{1}{2}$ to 10 feet of soft mud bottom in the vicinity. The 4 foot sounding has been omitted from the smooth sheet.

4. Depth Curves.

Within the limits of the survey the usual depth curves may be satisfactorily drawn, including portions of the low water curve.

5. Junction with Surveys.

(a) H 5456(1934) joins to the northwest. The area is well covered and agreement in depth is good.

(b) The junction with H 5433(1934) will be considered in the survey with that sheet.

6. Comparison with Prior Surveys.

(a) H 4908 (1928) is a large scale (1-5000) survey at the entrance to and including Wappo Creek. The agreement of depths in the channel of Ashley River is good. The channel into Wappo Creek has changed slightly in details becoming somewhat narrower and deeper. An examination of the air photo indicated that several of the smaller islands on the north side of the entrance have disappeared.

(b) H 4189 (1921). This survey shows parts of the Ashley River, Wappo Creek and James Island Creek on scale 1/20000. South of lat. 32-48, the present survey is in fair agreement in the deeper areas or channels, but shows minor changes in details. North of lat. 32-48 greater changes are indicated especially in the vicinity of Duck Island where the shoal area has built up to the eastward.

(c) H2187 (1894), H 2222 (1895).

These surveys show the same general conditions as H 4189(1921) but with more detail due to the larger scale (1-10000), and closer development. In the area beyond the 1921 survey, several changes are noted when compared with H 5449(1933-4). Among these are the following:

1. The channel to the westward of Duck Island is now much narrower and practically closed to navigation at its southern end.
2. A six foot depth on H 2187(1894) falls in depths of 8 to 9 feet on the present survey (lat. 32-49 +1710m long. 79-59+1050m) . The original record of H 2187(1894) shows this is a $6\frac{1}{2}$ foot sounding with 7 foot depths inshore from the $6\frac{1}{2}$.
3. A $5\frac{1}{2}$ foot sounding about 650 meters to the westward of the above $6\frac{1}{2}$ also falls in deep water on the present survey. It may be a mis-reading of the leadline by 1 fathom. Neither of these two soundings is being carried forward to H 5449(1933-4)
4. Sisters Rocks are in a slightly different position on the 1933 survey. The Descriptive Report describes them as the most prominent of the oyster rocks on the Accabee Flats. No fixed positions for them is given in the records but they were transferred from the boat-sheet where apparently they had been carefully located and sketched. The position of these rocks on H 2187(1894) depended on an estimated distance from the sounding boat and the record refers to them as an oyster bank. The new location should be used for charting.

(d) H881(1865), H 254(1851). Due to the changeable character of this area no detailed comparison is deemed necessary with surveys removed in time as much as these are.

7. Comparison with Chart No. 470.

(a) Charted aids to navigation agree with the location shown on the sheet except:

- (1) The HS can buoy northeast of Duck Island is about 150 meters to the southeast of the charted position.
- (2) The N 6 buoy eastward of red beacon No. 6 is located about 230 meters northeast of its charted position.

7. (b) The wreck in lat. 32-46.2 long. 79-~~57~~⁵⁶.7 is not mentioned in the records of the 1933-4 survey. It was charted from N M 38 of 1928 which describes it as a boiler nearly awash at low water. The original obstruction buoy was discontinued on Feb. 27, 1934 and the lighted obstruction buoy established 200 feet northeast of the submerged marine boiler (N M 10 of 1934) The wreck symbol should be retained on the charts.
- (c) Details of the highway drawbridge (lat.32-47) have changed, the opening being located farther to the east, near the middle of the channel.
- (d) The inspection report for the airphoto compilation (T 5179) notes that the charted 3 foot boulder near the end of the old wharf in lat. 32-48.3 is an old boiler.
- (e) No authority for charting Sisters Rocks as islands, or rocks bare at high water, was found. Air photos that were taken soon after high tide show no evidence of their existence. These rocks should be charted as shown by the present survey (H 5449)

8. Field Plotting.

field plotting was satisfactory.

9. Additional Field Work Recommended.

None.

10. Superseding Old Surveys.

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

H4908 (1928) in part
 H 4189(1921) in part
 H 2187(1894) in part
 H 2222(1895) in part
 H 881(1865) in part
 H 254(1861) in part

11. Reviewed by-R.J.Christman October 1934.

Inspected by-A. L. Shalowitz.

Examined and approved:

K.T. Adams
 K. T. Adams,
 Chief, Section of Field Records.

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

J.C. Albert
 Chief, Division of Charts.

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

Applied to drawing of chart #470 Feb. 7, 1935
g. H. S.

25 Feb 24, 1936
EMG

Applied to chart 1239 Apr. 1937 S. M. A.