

5117

Diag. Cht. No. 1240-2

Form 504
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DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. PATTON, Director

U. S. COAST & GEODETIC SURVEY
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AUG 12 1931

State: South Carolina

Acc. No.

DESCRIPTIVE REPORT

~~Topographic~~

Hydrographic

Sheet No. 1 5117
Field #1.

LOCALITY

PORT ROYAL SOUND

SKULL CREEK AND VICINITY

1931

CHIEF OF PARTY

C. A. Egner

5117

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.
5117

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. 1

REGISTER NO. **5117**

State South Carolina
General locality Port Royal Sound
Locality Skull Creek and Vicinity
Scale 1:10,000 Date of survey April - May, 1931
Vessel M. V. NATOMA
Chief of Party C. A. Egnor
Surveyed by George R. Shelton
Protracted by E. F. Hicks Jr.
Soundings penciled by C. A. Egnor
Soundings in ~~fathoms~~ feet
Plane of reference M. L. W.
Subdivision of wire dragged areas by
Inked by
Verified by
Instructions dated January 13, 1931
Remarks:

D E S C R I P T I V E R E P O R T
T O A C C O M P A N Y
H Y D R O G R A P H I C S H E E T N O . 1
S K U L L C R E E K A N D A P P R O A C H E S , S . C .

AUTHORITY:

This survey was made in accordance with General Instructions for project No. 73, dated January 13, 1931.

LIMITS:

The area covered by this sheet consists of the whole of Skull Creek, North and South entrances of Mackay Creek, the East entrance to May River and the North end of Calibogue Sound.

METHODS:

All the soundings were taken with the hand lead, the usual method being employed. The general system of lines paralleled the channels, enough cross lines were run to develop any doubtful spots. The lines were spaced fifty meters or closer to insure complete developments of all channels.

CONTROL:

The signals used were located by topography and third order triangulation.

DANGERS:

There are no dangers to navigation if the present marked channel through Skull Creek is followed.

An oyster shell bank upon which beacon No. 1 is standing extends southeast from the beacon and bares at low water a distance of 100 meters. This bank rises abruptly from a depth of 23 feet in the channel. The water to the eastward of beacon No. 1 is very shallow. Care should be exercised in navigating the main channel south of this beacon as it is quite narrow.

Coast Pilot Notes previously submitted refer to the alternate channels which may be used between the islands and the shore east of beacon No. 1, thereby shortening the distance. As was pointed out, the controlling depth is less in these channels than in the marked main channel; likewise they are much narrower and care must be exercised in avoiding the shoal spit extending south from the point of the island 400 meters east of beacon No. 1. Six feet is obtained 300 meters due south of this point (@ CON) gradually shoaling to the point. The east bank should be favored bound north after passing beacon No. 4.

An oyster shell bank bare at low water stands 250 meters S SE of beacon No. 4. The west bank should be favored somewhat rounding the point? 200 meters south of beacon No. 4, then follow a mid channel course to pass between beacons No. 3 and No. 6.

CHANNELS:

The controlling depth through the present marked channel is 17 feet.

There are two other channels near the North end of Skull Creek which are used by small craft. The least water is eight feet.

The controlling depth at the North entrance of Mackay Creek is seven feet.

The controlling depth at the South entrance of Mackay Creek is eleven feet. A sand bar extending in a southerly direction off Bull Point must be avoided. There is another sand bar beginning at the bend in the creek and extending for about one-half mile northwest. This bar may be passed on either side. - 16 JDU

Thirty feet may be carried up May River to the limit of this survey. The channel is about 250 meters off the south shore of the River.

The least water in Calibogue Sound from the entrance to May River south, to the limits of this sheet is thirty-one feet. The least water from May River to the north end of the Sound is twenty-five feet.

Jarvis Creek was sounded to the Oyster factory one and one-quarter miles from the entrance. Heavily laden oyster barges are taken up this creek at high tide. The entrance is severely restricted at low tide.

Many of the channels back of islands bordering the main channel are navigable at high tide with small boats. Most of these bare at low water.

SUGGESTION REGARDING
LIGHTED BEACON SOUTH:

Due to the shoal water which extends into the channel from Ferry Point, the lighted beacon ▲ SOUTH were much better placed 200 meters N x W (true) from its present location. At present there is a tendency for boats to turn too soon into Skull Creek after passing this lighted beacon.

DEPTH CURVES:

Except in places where no confusion would result, the depth curves have been left off this sheet until after review in the office. Soundings are so numerous in places that the curves would only make these areas more congested.

ANCHORAGES:

There is good anchorage at the junction of Skull Creek, Mackay Creek and Calibogue Sound. Likewise a good anchorage is found inside the north entrance to Skull Creek.

STATISTICS:

| | |
|-------------------------------------|-------|
| Positions | 1950 |
| Soundings | 9857 |
| Statute miles of sounding lines. | 185.4 |
| Area in square statute miles | 3.5 |

Respectfully submitted,

George R. Shelton
George R. Shelton,
Lieutenant (j.g.)

Approved and forwarded:

C. A. Egnor
C. A. Egnor
Chief of Party.

STATISTICS FOR SHEET # 1, HYDROGRAPHIC

| Date 1931 | Volume | Boat | Stat. mi. of sndg. lines | No. of sndgs. | No. of m positions | Day |
|--------------|--------|----------|-----------------------------|------------------|-----------------------|-----|
| April 9 | 1 | Launch | 4.1 | 158 | 26 | a |
| 10 | 1 | Launch | 2.7 | 96 | 16 | b |
| 13 | 1 | M/sailer | 17.8 | 923 | 156 | c |
| 16 | 1 | Launch | 5.6 | 244 | 45 | d |
| 17 | 1 | Launch | 6.5 | 269 | 49 | e |
| 17 | 2 | Launch | 11.2 | 658 | 106 | e |
| 21 | 2 | M/sailer | 15.3 | 873 | 173 | f |
| 22 | 2 | Launch | 3.3 | 140 | 27 | g |
| 22 | 3 | Launch | 11.2 | 628 | 125 | g |
| 23 | 3 | M/sailer | 20.1 | 993 | 201 | h |
| 24 | 4 | M/sailer | 21.0 | 931 | 205 | j |
| 27 | 4 | M/sailer | 13.0 | 652 | 132 | k |
| 27 | 5 | M/sailer | 3.5 | 218 | 46 | k |
| 28 | 5 | M/sailer | 15.5 | 1039 | 197 | l |
| 29m | 5 | M/sailer | 10.4 | 600 | 130 | m |
| 29 | 6 | M/sailer | 2.2 | 132 | 32 | m |
| 30 | 6 | M/sailer | 6.2 | 344 | 84 | n |
| May 15 | 6 | M/sailer | 11.2 | 682 | 146 | p |
| 18 | 6 | M/sailer | 4.6 | 277 | 54 | q |
| TOTALS..... | | | 185.4 | 9857 | 1950 | |

Section of Field Records.

Report on # 5117

Chief of Party C.A. Egner

Protracted by E.F. Hicks Jr.

Verified and Inked by J. Walker

Surveyed in April and May 1931

Surveyed by G.R. Shelton

Soundings plotted by

C.A. Egner.

I. Sounding Records.

The records were neat and legible.

A few bottom characteristics were recorded on a, b, and c days but none at all on the rest of the work.

Many turns in the line were not indicated.

II. Protracting.

The protracting was fairly good. Due to the congestion of the work some of the sounding lines and position numbers were hard to follow.

III. Soundings.

The soundings were plotted according to time. Most of the fractions shown by the field party were omitted by the writer as not being critical.

The crossings were mostly very good; few varying by more than a foot or two.

IV. Conformity to general instructions.

no geographic names were shown on the smooth sheet by the field party.

The shoreline was inked in with too heavy a line.

The descriptive report for the topo sheet (T4608) describes the shoreline as consisting of a marsh line, and, in most cases, of a recessed tree line, both delineating high water; and also says the grass line was taken as marsh high water line although at extreme high water some marsh areas are covered by water. Some positions plot between these two high water lines. The soundings were inked in with no attempt made at revising the shoreline other than to erase it where soundings fell on top of it. The reviewer is to attempt an adjustment of the shoreline and try to determine the true high water line.

V. Overlap.

There are no contemporary sheets joining this one.

VI. Curves.

The low water line is shown as a black dotted line by order of Capt. Ellis and Capt Sobieralski. This was done because, should

the sheet be photographed, the usual yellow curve would show up as a black line which might be confused with the two high water lines. The dotted line is a combination of the low water line as shown on the topo sheet and low water as determined by hydrography.

Respectfully submitted

J. Walker
Oct. 12, 1931

File in descriptive report

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 82-DRM

WASHINGTON

SECTION OF FIELD RECORDS

Review of Hydrographic Sheet No. 5117

Port Royal Sound, South Carolina - Skull Creek and vicinity

Chief of Party, C. A. Egner, comdg. M. V. "NATOMA"

Surveyed by George R. Shelton

Protracted by E. F. Hicks, Jr.

Soundings plotted by C. A. Egner

Verified and inked by J. T. Walker

1. The records conform to all the requirements of the General Instructions.
2. The development is complete.
3. The specific instructions were carefully followed.
4. Owing to the uneven character of the bottom, which consists mostly of narrow ridges and valleys, comparisons of crossings and closely parallel lines are of little value. Where comparisons are available they are adequate.
5. The usual depth curves can be completely drawn.
6. The junctions with adjacent sheets are, under the circumstances, satisfactory. No overlap was applied, the most recent sheet having been executed more than a decade previously and therefore not considered as contemporaneous. The changeable character of the bottom also makes it undesirable to show overlaps.
7. No further surveying is required to fully develop important areas within the limits of the sheet with the exception of the shoal area at $32^{\circ}14'.8$, $80^{\circ}45'.1$, where the least water in the channel exists.
8. Remarks:
 - (a) The specific instructions called for a complete survey in this area. Unless exception is made for individual soundings this survey should supersede all previous work.
 - (b) A comparison was made with chart No. 1240 and found to be in good general agreement. Following are instances of variation:

- 1) Chart soundings 24 and 23 in Skull Creek between Beacons No. 5 and 7 are originally from H. 805 surveyed in 1861 and 1862, and indicate by comparison with this sheet that the channel has shifted away from the bank further into mid-stream.
- 2) In Calibogue Sound, lat. $32^{\circ}11'.25$, long. $80^{\circ}47'.23$, the chart shows 69 feet clear in the channel. The effective depth as shown on this sheet is 67 feet.
- 3) May River as far as covered by this survey shows no change. The formation of the bottom is essentially the same with depths corresponding with present chart depths except in the case of the 13 foot sounding in lat. $32^{\circ}12'.6$, long. $80^{\circ}47'.7$ and the 8 foot sounding, lat. $32^{\circ}12'.5$, long. $80^{\circ}48'$. This survey shows slightly deeper water.
- 4) A 19 foot shoal spot was discovered close to the spot on the chart indicating 26 feet of water. (Lat. $32^{\circ}11'.77$, long. $80^{\circ}47'.1$). The channel from this point northward to Jarvis Creek shows no change in depth as compared with the chart.
- 5) The channel of Mackay Creek rounding Bull Point shows no change in depth. The shelf between the edge of the channel and Bull Point, however, shows a gradual shoaling since the early surveys were made. Two chart soundings of 19 feet, lat. $32^{\circ}13'.5$, long. $80^{\circ}47'.48$ and lat. $32^{\circ}13'.72$, long. $80^{\circ}47'.4$ are replaced by a 15 and a 16 foot sounding respectively on this sheet.
- 6) The development of Jarvis Creek is the first made by the Coast Survey, earlier surveys having omitted this work.
- 7) The chart shows 3 feet of water on the bar in Mackay Creek (lat. $32^{\circ}14'$ approx.) between the main channel and the east bank. It has become considerably shoaler and more extensive. This sheet shows it bare 2 feet at mean low water.
- 8) The Skull Creek channel north of Hog Island carries 26 feet of water according to the chart. This sheet shows at this spot a depth of 24 feet. Two additional sounding lines at this point would have filled the small gaps caused by the concentration of hydrography in mid-stream and given a better development. The spacing, however, is not open enough to require further work.
- 9) The effective depth in the channel north of Hog Island is 21 feet, though there is deeper water. This differs slightly from the chart which shows 23 feet.
- 10) North of Beacon No. 7 (Skull Creek) the effective depth of the channel is 20 feet. The chart shows 23 feet.

11) West of Beacon No. 5 the channel seems to have shoaled somewhat since the early surveys. The deepest water, according to the sheet, that can be carried through the channel is 18 feet as compared with 24 feet indicated on the chart. North of Beacon No. 5 the channel seems to have deepened. The chart shows 18 feet and the sheet develops an effective depth of 19 feet.

12) Four 17-foot soundings were obtained approximately 120 meters east by north of Beacon No. 6 restricting the effective depth of the channel. The chart shows 18 feet through this part of the channel.

13) The chart shows 10 feet and 9 feet close to the east bank opposite Beacon No. 6. According to the sheet this isolated deep has shoaled considerably and appears at present to be broken up into separated depressions.

14) 12 feet can be carried through Eastern channel entrance at lat. $32^{\circ}15'$, long. $80^{\circ}44'.8$ between small marshy island and the east bank of Skull Creek. The chart shows 15 feet.

15) The main channel between Beacon 4 and Beacon F "1" has filled in slightly. The chart shows 19 feet while the sheet shows a controlling depth of 16 feet.

16) North of Beacon No. F "1" the channel has shoaled slightly as indicated on this sheet. The controlling depth is 19 feet at a point where the chart shows 21 feet. (Lat. $32^{\circ}15'.26$, long. $80^{\circ}45'.12$.)

- (c) Comparison with previous surveys - A comparison was made with H. 4154. The most recent survey in this area, executed in 1920, and found to be in excellent agreement where overlap occurs.

Earlier surveys, H. 804, 805 and T. 1195, showing hydrographic development, were compared with this survey and found to be in fair agreement. Several changes in the relative position of the channels were discovered and some variations in depth, all noted above under paragraph "b" for the attention of the cartographer. They were, however, only such changes as would be expected in this locality over a period of 70 years, the interim between past surveys and the present.

- (d) Slight changes have taken place in some of the marshy islands in Skull Creek since the earlier surveys were made. For up-to-date information concerning topography refer to topographic sheet No. 4608, surveyed in 1931 by this party.
- (e) The treatment of the shoreline on this sheet is not in accordance with standard practice. Only one heavy shoreline can be shown on the chart, but this sheet shows two lines both of which are about twice as thick as is customarily used in delineating the high water line. As the outer edge of the marsh will be charted as the high water line the inner tree line should have been omitted.

It is realized that a marshy area such as this presents a very difficult problem for the surveyor, but an effort should have been made by the field party to indicate which line should be considered as the high water line, instead of leaving it to the judgment of the office compiler.

There are several instances where sounding lines show several feet of water inside of the marsh line as transferred from the topographic sheet. In each case the marsh line has been moved inshore of the soundings, and corresponding changes have been applied to the topographic sheet.

9. The character and completeness of the surveying are excellent. This is true also of the field drafting, with the exception of the shoreline.

10. Reviewed by H. E. MacEweⁿ, November 1931.

Inspected by E. P. Ellis.

Approved:

A. M. Bohieralski
Chief, Section of Field Records

E. P. Borden
Chief, Section of Field Work

80
14

August 29, 1931

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 5117

Locality Skull Creek and Vicinity, S. C. ✓

Chief of Party: C. A. Egner in 1931

Plane of reference is mean low water, reading

- 1.4 ft. on tide staff at Skull Creek (North Entrance)
- 12.1 ft. below B. M. 1
- 3.7 ft. on tide staff at Skull Creek (South Entrance)
- 18.9 ft. below B.M. 1

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.



Chief, Division of Tides and Currents.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. **5117**

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

| | |
|---|-------------|
| Number of positions on sheet | 1950 |
| Number of positions checked | 661 |
| Number of positions revised | 19 |
| Number of soundings recorded | 9857 |
| Number of soundings revised | 13 |
| Number of signals erroneously plotted or transferred | 0 |

Date: **Oct. 12, 1931**

Cartographer: **J. T. Walker**