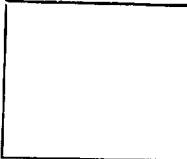


5561

U. S. COAST & GEODETIC SURVEY  
LIBRARY AND ARCHIVES  
DEC 1 1934  
Acc. No. ....

Form 504  
Ed. June, 1928

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



State: South Carolina

DESCRIPTIVE REPORT

Topographic } Sheet No. 6  
Hydrographic }

LOCALITY

Port Royal Sound

Bread-River

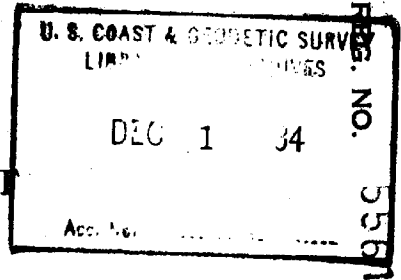
193 4

CHIEF OF PARTY

Lt. I. E. Rittenburg

5561

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY



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. 6

REGISTER NO. 5561

State South Carolina

General locality ~~Port Royal Sound~~ Broad River

Locality Broad River, ~~near Broad River~~ *near mouth to Whale Branch*

Scale 1:10000 Date of survey Jan. Feb. 19 34

Vessel ~~Shore Party # 15~~

Chief of Party L. E. Rittenburg

Surveyed by J. A. McCormick, W. C. Huebner

Protracted by J. A. McCormick, A. O. Dority

Soundings penciled by A. O. Dority

Soundings in ~~fathoms~~ feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by

Inked by *H L Flemer*

Verified by *H L Flemer*

Instructions dated Nov. 2, 1933, 19

Remarks:

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEETS FIELD NO. 6, H-5561  
BROAD RIVER AND ADJACENT WATERWAYS, SO. CAR.. PROJECT H. & T. # 160.

1 Instructions.

This survey was made in accordance with instructions of Nev. 2, 1933.

2 Survey Methods and Control. Junctions.

Control was based on the triangulation executed by C. A. Egner, in 1931 and 1933. Supplemental stations were located by intersections by means of a plane table and alidade.

This sheet is joined on the north by sheet number 5, on the south by sheet no. 8, and on the southwest by sheet no. 11.

Hydrography was controlled entirely by three point sextant fixes taken on well controlled objects. Standard methods were used throughout. As in the case of preceding sheets the shoreline photography was not available at the time the survey was made. Approximate contours of the shoreline were obtained by the hydrographer for his own guidance by running lines as close as possible to the beach at High Water. In practically all cases the low water was obtained by the hydrographic party.

3 Discrepancies.

None.

4 Channels.

7 feet may be carried in Euhaw Creek to Lat. <sup>32 25</sup> 32-21.8 Long. 80-51.0. This depth is found between positions 81 - 82 V and is in the narrow but navigable channel on the north side of the small marsh island on which signal Ex is located. 6 feet is found at positions 24 - 27 V day and is the controlling depth to the limit of the survey of this creek. 4 feet is the limiting depth in the south arm of Euhaw Creek and is found at position ~~81~~ 91 Q day.

3 feet may be carried from the main arm of Euhaw Creek into Hazzard Creek, this depth being found at the entrance between positions 4-5 V day.

3 and 4 feet may be carried in Hazzard Creek, critical depths being found in several places.

12 feet may be carried in Boyd Creek to the limit of this survey. Critical depth is found at position 213 S. The remainder of Boyd Creek was surveyed on Sheet No. 5.

4 feet may be carried into Cole Creek to within a few hundred meters of the limit of this survey. Critical depth is between positions 195-196 S day.

18 feet may be carried in the Broad River between the northern and southern extremities of this sheet. This critical depth appears in several places.

5

#### Dangers.

There is a considerable shoal spit making out from the south end of the marsh island at Lat. 32-28.3 Long. 80-48.7. It extends in a SSE ' ly direction. It is easily avoided. ✓ ✓

There is a large shoal area on the west side of the Broad River just south of the entrance to Boyd Creek. Large patches of sand bare at low water. ✓ ✓

Another large shoal area extends from signal Lud to the southward for a distance of over two miles. Banks bare at low water occur in several places. The lower end of this shoal endangers the entrance to Euhaw Creek. Signal He is on a shell bank in an opening from Broad River into Euhaw Creek. This opening is so obstructed with shell banks that no effort was made to sound it. ✓ ✓

There are numerous shoals in the creeks on this sheet, all are well defined.

6

#### Comparison with previous surveys.

The last survey of this area was made in 1865. Therefore comparisons can only be very general at best. There seem to be no great discrepancies although there is a shifting of two or three hundred meters in the positions of various shoals. ✓ ✓

7

#### Tides.

*Wharf is better H.S.*

A portable automatic tide gage was maintained in operation at Cornings Dock, ( shown on sheet # 5 ) in Whale Branch during the entire period of this survey. This gage was used for all the reductions. In addition a standard gage was maintained at Parris Island to serve as the standard station. ✓

8

#### Landmarks for charts.

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

9

#### Statistics.

Statute miles of sounding lines.	413.7
Number of soundings obtained	8787
Number of positions taken	2774

J. A. McCormick,  
Surveyor.

I. E. Rittenburg, Lieut.,  
Chief of Party.

DISCREPANCIES -

Lat.  $32^{\circ} 23.9'$  Long.  $80^{\circ} 50.0'$  ✓  
Positions 91-93n

Lat.  $32^{\circ} 23.8'$ , Long.  $80^{\circ} 49.5'$  ✓  
Positions 59 & 60 n

Lat.  $32^{\circ} 24.5'$ , Long.  $80^{\circ} 49.9'$  ✓  
Position 73n

In all of these localities the positions fell slightly inside compiled shoreline. Lt. S. B. Grenell states. "Along the south bank of the Broad River the control was excellent but the pictures were dim and the shoreline indefinite and ragged. Further south the pictures improved in quality but the control was scattered and the plots insecure. Also one flight west of ~~Chechessa~~ <sup>Cheghesse</sup> Creek had one wing which was exposed apparently on a sticking shutter so the plot was made virtually on three wings.

All of these things make me feel that the shoreline is probably in error where there was disagreement and every effort has been made to correct the topography."

This party has checked the protracting of all the positions in question and found them to be correct. The fixes were also investigated and found to be strong.

These discrepancies are probably due to errors in either radial plot or in the topography or combination of the two. Since the radial plot and compiling have been checked and there is no way to check the

topography, it is recommended that the hydrography be fitted to the compiled shoreline in this area. *Mr Jones states that the airphoto compilation will be adjusted to the hydrography when this area is reviewed by the air photo section.*

Lat.  $32^{\circ} 24.0'$ , Long.  $80^{\circ} 48.5'$ . *RH*

This area is no doubt covered by marsh grass that shows above the water at partial stages of the tide. The edge of this marsh grass would be the real shoreline as seen by the mariner. It is recommended, ✓

therefore, that the shoreline as shown on the smooth sheet be accepted  
and the minus soundings be rejected.

*Benjamin H. Higg.*

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. ....5561

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

Number of positions on sheet	2774..
Number of positions checked	.176...
Number of positions revised	...2..
Number of soundings recorded	8787.
Number of soundings revised	...5..
Number of signals erroneously plotted or transferred	...0..

Date: Jan. 26 1935

Verification by H. L. Flemer

Time: 85 hrs.

Review by R. J. Christman

Time: 17 1/4 hrs.

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

GEOGRAPHIC NAMES  
 SOUTH CAROLINA

Survey No. H 5581

Chart No. 1240

Date. Dec. 28, 1934.

1934  
 Diagram No. 1240-2

*Names underlined in red approved Dec. 29, 1934, subject to further inquiry regarding possessive 's'*  
 \* Approved by the Division of Geographic Names, Department of Interior. *Harlow Bacon.*  
 \* Not Approved by the Division of Geographic Names, Department of Interior. *Letter the names so that "s" can be added if this is correct spelling H.B.*  
 R, Referred to the Division of Geographic Names, Department of Interior.

Status	Name on Survey	Name on Chart or <i>Progressive Military Map</i>	New Names in local use	Names assigned by Field	Location
	<u>Broad River</u> ✓	same "			
	<u>Boyd Cr.</u> ✓	"	Boyd's Cr. PMM.		
	<u>Cole Island</u> ✓	"	Coles I. PMM		
	<u>Cole I. Idg.</u> ✓ <i>Full name → Cole Landing</i>	<u>Cole Landing</u>	Coles Landing PMM		
	<u>Hazzard Cr.</u> ✓	same	Hazzard's Cr. PMM		
	<u>Euhaw Cr.</u> ✓	Euhaw Creek	PMM.		
	<u>Port Royal Island</u> ✓	same	PMM.		
	<u>Lemon Island</u> ✓	"	PMM		
	<u>Cole Cr.</u> ✓	"	Coles Cr. PMM		
	<u>Twin Harbors</u>	?			



LAC

December 28, 1934

Division of Hydrography and Topography:

✓ Division of Charts:                    Attention: Mr. E.P. Ellis

Tide Reducers are approved in  
7 volumes of sounding records for

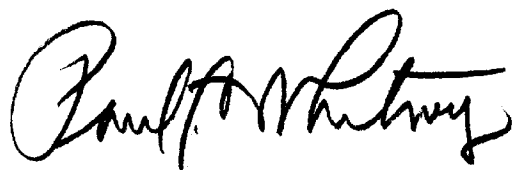
HYDROGRAPHIC SHEET 5561

Locality            Broad River, South Carolina

Chief of Party:    I E Rittenburg in 1934  
Plane of reference is    mean low water reading  
2.0 ft. on tide staff at    Cornings Dock  
16.3 ft. below B.M. 1

Height of mean high water above plane of reference is 7.9 feet.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

# Report on # 5561

Chief of Party - I. E. Rittenberg

Protracted by J. A. McCormick  
A. O. Dority

Verified and inked by H. F. Linn

Surveyed in Jan Feb  
1934

Surveyed by  
J. A. McCormick  
W. C. Huebner

Soundings plotted by  
A. O. Dority

The records conform to the requirements of ✓  
the general instructions.

The usual depth curves can be drawn ✓

The field plotting was complete ✓

Some additional topographic detail ✓  
was added to the sheet.

The junctions with contemporary surveys,  
appear to be satisfactory

Remarks.

Position 106 N Lat  $32^{\circ}23.1'$  Long  $80^{\circ}48.7'$

falls in an area of 30' soundings. If the

course from 3 to 4 P is curved slightly in

the direction of the river bend and 106 N

plotted using the original angles and

signals skip, Ex. How there will be no ✓

discrepancy in this area.

The two  $\frac{1}{2}$  foot soundings 135 A ✓  
Lat  $32^{\circ}27.8'$  Long  $80^{\circ}48.58'$  are apparently correct.

An exact comparison with the topo sheets could not be made because of the difference in scale. There is, however, no apparent conflict in shore lines except at the small marsh island at Lat.  $32^{\circ} 24.6$  Long  $80^{\circ} 49.8'$

Several recoverable signals (form 524) are described in the files but no lighthouse service chart was found. no lighting aids in this area therefore no special chart required. RFB

Submitted by  
H. L. Flemer

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5561 (1934)

Broad River, Lemon Island to Whale Branch, South Carolina.

Surveyed January-February 1934.

Instructions dated Nov. 2, 1933 (I. E. Rittenburg)

Hand Lead Soundings - 3 Point Fixes on Shore Signals.

Chief of Party - I. E. Rittenberg.

Surveyed by - J. A. McCormick and W. C. Huebner.

Protracted by - J. A. McCormick and A. O. Dority.

Soundings penciled by - A. O. Dority.

Verified and inked by - H. L. Flemer.

1. Condition of Records.

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

a. No "Approval of records" was submitted by the Chief of Party as directed in par. 174, Part I of the Manual.

2. Compliance with Instructions for the Project.

The plan and extent of the development conforms to the instructions except that the survey has not been carried to the head of navigation in Euhaw Creek and there is no adjoining survey in this area.

The survey should have been extended to the limits of navigation in the several openings into Euhaw Creek between Latitudes  $32^{\circ}24'$  and  $32^{\circ}25'$ .

No survey was made of the stream entering the Broad River at lat.  $32^{\circ}24'.3$ , long.  $80^{\circ}47'$ . The survey shows a channel entrance depth of 7 feet.

3. Sounding Line Crossings.

The agreement in depths at crossings is very good being generally less than 4% of the depth.

4. Depth Curves.

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

5. Junction with Contemporary Surveys.

The junctions with H. 5562(1934) to the south in Broad River and with H. 5563(1934) in Hazzard Creek are satisfactory.

Junction to the northward in Broad River and Boyd Creek will be considered in the Review of H. 5560(1934).

6. Comparison with Prior Surveys.

a. H. 831(1862-3), H. 869(1865).

Extensive changes have taken place since these surveys were made. The most notable are as follows:

(1) In lat.  $32^{\circ}23'.8$ , long.  $80^{\circ}47'.4$ , the present survey shows depths of 21 to 28 feet where H. 869(1865) shows shoal water with least depth of 5 feet. On the new survey irregular bottom with least depth of 7 feet lies about  $\frac{1}{2}$  mile southeast of the former 5 foot spot. The irregular bottom about  $\frac{1}{4}$  mile northward of the 5 foot spot covers about the same area but differs in detail.

(2) The position and extent of the areas bare at MLW northward of the entrance to the Euhaw Creek have changed and the point of the shoal as represented by the 12 foot curve has receded about 400 meters.

(3) The middle ground in lat.  $32^{\circ}25'$ , long.  $80^{\circ}48'.5$  has practically disappeared but the irregular bottom on the east side of the river is still in evidence though greatly changed in detail.

(4) The Broad River northward of lat.  $32^{\circ}27'$  seems to be deepening and the extensive area with depths less than 18 feet has broken up into a number of detached shoalings.

These surveys show any number of depths shoaler than those of the present survey, but in these areas general changes are indicated and the old soundings have been disregarded. Because of the evidence that radical changes have occurred throughout practically the entire area of the present survey in Broad River, H. 831(1862-3) and H. 869(1865) should be superseded within the area covered by H. 5561(1934).

b. T-1195(1870-71).

This survey is a combined topographic and hydrographic survey on a scale of 1-20,000. It shows the lower part of Euhaw Creek and the channel north of Lemon Island. The hydrography is very open but the channel depths appear to be about the same as at the present time. The new survey is in much greater detail and should supersede the above survey for charting.

7. Comparison with Chart No. 571 and No. 437.

Within the area of the present survey the charts are based on surveys discussed in the foregoing paragraphs and contain no additional information that needs consideration in this review.

There are no floating aids to navigation within the area of the present survey.

8. Field Plotting.

The protracting of positions and the penciling of soundings were very well done.

Some additional topographic details were added to the sheet from the air photo compilation.

9. Additional Field Work.

In the area covered by the present survey no additional work is deemed necessary. The survey is very satisfactory except for the omissions noted in paragraph 2.

10. Superseding Old Surveys.

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

H-831 (1862-3) in part.  
H-869 (1865) entirely  
T-1195(1870-71) in part, (hydrography only).

11. Reviewed by R. J. Christman, March 1935.

Inspected by R. L. Johnston.

Examined and approved:

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

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

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

*Shade*  
Chief, Division of H & T.

Applied to Cht. 571, Apr. 18, 1935

K. Reynolds

Applied to chart 794, Oct. 8, 1935. - H. MacEwen

258-13, 1934  
L.S.