

5470

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

State: South Carolina

DESCRIPTIVE REPORT

Topographic } Sheet No. 18 5470
Hydrographic }

LOCALITY

Charleston, S. C.

Kiawah River, Bohicket Creek,

Leadenwah Creek, Adams Creek.

19 34

CHIEF OF PARTY

Lt. M. O. Witherbee

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5470

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. 18

REGISTER NO. 5470

State South Carolina

General locality Charleston, S.C.

Locality Kiawah River, Bohicket Creek, Leadenwah Creek, ~~San Antonio River~~

Scale 1-21,390 Date of survey Mar. & April, 1934

Vessel Party No. 2

Chief of Party Lt. M. O. Witherbee

Surveyed by Mr. G. A. Stanton & Ensign E. B. Brown, Jr.

Protracted by C. J. Harryman

Soundings penciled by C. J. Harryman

Soundings in ~~cuttings~~ feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by

Inked by H. A. Bruder

Verified by H. A. Bruder

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.

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SHEET NO. 18

DATE OF INSTRUCTIONS - November 2, 1933.

SURVEY METHODS - All signals throughout this nineteen mile channel (Church - Bohicket Creek) except two or three at each end, were spotted on air photos then radial plotted on the celluloid projections. The boat and smooth sheets were made from tracings of the projection. The same method was used on Leadenwah Creek on this sheet.

Soundings were by lead line, and positions by sextant angles on signals wherever possible. There were numerous places where a fix could be had by angles. Many notes were recorded as to distance from shore line and courses. Estimated distances from shore line when under twenty meters should always be used. Time intervals between course changes should also be taken into account, as care was taken to maintain a uniform speed. Courses serve only as a guide. On zig-zag courses, the actual course will differ by as much as ten degrees from the compass course due to the strong tidal currents. Positions taken on signals checked the shore line remarkably well. This method requires much more time on the smooth sheet in making adjustments of the line, but it is a decided labor and time saver on control.

Green circles denote signals obtained by spotting on the photograph and located by Radial plot. It should be noted that the scale of the projection is 1-21390, the same scale as the photo compilation sheet of this area. This enabled the drafting section to transfer signals by pricking through from the celluloid sheet and it also allowed a very accurate transfer of shore line.

There are two boat sheets, field Nos. 18 and 18-A. Work was plotted on one smooth sheet, No. 18.

DISCREPANCIES - There are no discrepancies on this sheet, but running cross lines in a creek the width of Bohicket Creek is a mistake, especially on the scale of this survey. In smooth plotting, practically no weight was given to the soundings obtained on the criss-cross lines. The steep banks of the channel, allowance for turns, strong currents all added to the uncertainty of these lines. They were run primarily to determine the location of the channel and in cases where the lines paralleling the banks did not determine this, the criss-cross lines were used. In all cases, however, soundings taken on courses which parallel the channel should be given precedence.

DANGERS - In Bohicket Creek, lat. $32^{\circ} 41.3'$, long. $80^{\circ} 05'$, pilings, the remains of an old highway bridge, obstruct part of the channel. A sketch was drawn on the boat sheet.

CHANNELS - No attempt has been made to draw depth curves because of the width of the waterways and scale of the sheet.

Miawah River -- The channel is bold with 18' to 20' as far west as signal Any. From this point, numerous sand bars and oyster bars occur with deep water between. Hydrography was carried to the limit of Navigation, and an attempt was made to define the deepest water. The passage through to the sea is not navigable at low water. This waterway is used only by local watermen and is of no importance.

Bohicket Creek -- The channel, in general, in this creek follows the ebb tide bends with shoals on the points. An area in Church Creek goes completely dry at low water. Numerous docks along the creek are used by farmers for transporting farm produce to market. This practice is fast being abandoned for the quicker method of automobile trucks

as is evidenced by the dilapidated condition of the docks.

Adams Creek -- A single line was run in Adams Creek to determine the channel. The Channel is bold, narrow, and has a depth of 6' for $2\frac{1}{2}$ miles.

Leadenwah Creek -- Like the other creeks on this sheet, the channel of Leadenwah Creek is crooked and narrow, with depths ranging from 6' to 10' to near the upper limits of the creek.

COMPARISONS WITH PREVIOUS SURVEYS - These creeks have not been previously surveyed except at the mouths.

TIDAL INFORMATION - Tide reducers were obtained from the following sources:

Kiawah River - Kiawah tide staff - M.L.W. on staff, 5.0'.

Bohicket Creek - A portable automatic tide gauge at Church, Ravens Point - M.L.W. on staff, 4.31'.
Another tide staff at Church Creek Draw Bridge - M.L.W. on staff, 2.65'.
A standard automatic tide gauge at Rockville, M.L.W. on staff, 4.96'.

Leadenwah Creek and Adams Creek --
Rockville gauge was used.

The location and limits of the various gauges are noted on the boat and smooth sheets.

STATISTICS -

	Vol. No.	Miles	No. of Soundings	No. of Positions
No. 18	1	34.5	2079	206
	2	36.5	1912	294
	3	26.0	1579	256
	4	4.5	234	30
No. 18-A	1	38.7	1525	293
	2	5.6	262	62
		<u>145.8</u>	<u>7591</u>	<u>1141</u>

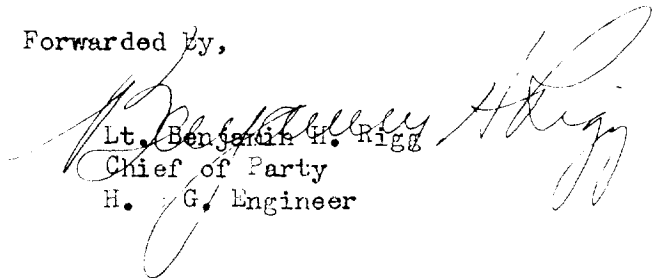
DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SHEET NO. 18
(Cont.)

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

Verification REPORT ON SHEET H-5470 ✓

Chief of Party--M. O. Witherbee
Protracted by--C. J. Harryman
Verified and inked by--W. A. Bruder

Surveyed in Mar. and Apr. 1934
Surveyed by G.A. Stanton and
E.B. Brown, Jr.
Soundings plotted by C.J. Harryman

1. The records conform to the requirements of the General Instructions. Note the repetition of a, b, c, d, e, days on the Hydro Sheet, due to the combining of two boat sheets.
2. Because of the narrow creeks and waters and smallness of the scale a selection of the usual depth curves had to be made. The depth curves showing the channel and shoal locations were given preference in all cases.
3. The field plotting was complete to the extent prescribed in the General Instructions with the exception of the following omissions:

- Lat. 32° 42.6')
Long. 80° 08.4') 11C Old dock at 0 LOT is not shown. The greater part of the docks mentioned in the sounding remarks are indicated on the smooth sheet by a dashed line extending inshore.
- Lat. 32° 42.6')
Long. 80° 08.6') 33C Small creek abeam on right (see sounding remarks) is not shown. Telephone line crossing overhead (see sounding remarks) is not shown.
- Lat. -40.8')
Long. -06.3') Shoal and island shown on the boat sheet is not shown on hydro sheet. These were penciled on the hydro sheet by the verifier. *Has been inked from boatsheet and notes in sounding records, agrees fairly well with air photo compilation.*
- Lat. -36.5)
Long. -09.5) Shoal shown on boat sheet; not on hydro. sheet. This was inked in on the hydro. sheet by the verifier.
- Lat. -37.3')
Long. -05.7') Island on boat sheet; not on hydro sheet. This was penciled on the hydro sheet. *This island has been added from the air photo compilation.*
- Lat. 32° 37.8')
Long. 80° 12.9') Two islands on boat sheet; not on hydro sheet. These were penciled on the hydro sheet. *Islands have been added from air photo compilation.*
- Lat. -37.0')
Long. 04.8') Island on boat sheet; not on hydro sheet. This was penciled on the hydro sheet. *Island has been added from air photo compilation.*

4. Throughout the whole sheet I occasionally selected different soundings or corrected those penciled by the field draftsman. All in all, his selection was very good.

The only noted correction was:

- Lat. -36.6')
Long. -07.4') N.W. shoreline as previously inked on hydro sheet overlapped positions 50C by ten meters. The sounding remarks indicate ten meters off shore. Hence this corrected shore line was penciled by the verifier. There is no topo sheet available at present in the office as it is in the field.

5. The junctions with adjacent sheets are satisfactory and complete with the exception of H-5465, at the Kiawah River, which has not as yet been verified.

6. REMARKS.

The following signals shown out in the water do not specify what they are nor is this shown on the records or on the boat sheet.

Lat. 32° -39.5')
Long. 80° -08.7')

o BID ✓

Lat. -37.2')
Long. 10.0')

o SAM ✓

Lat. -36.5)
Long. -09.4)

o ABE See sounding 350 = Dock not shown? ✓

Lat. -35.7')
Long. -10.6')

o ADAM " " 50 = " " " ? ✓

The topographic features on which these signals were located have been found on T. 5154 and were added to H. 5470 (1934)

Lat. -38.2')
Long. -12.1')

o Foot ✓

Lat. 32° 38.2)
Long. 80° 12.8)

o Fancy ✓

Lat. -37.8)
Long. -05.1)

o Egg ✓

Lat. -43.0)
Long. -05.5)

The information dealing with the clearness, etc. of the Church Creek Bridge was not inked as no authority could be found for it. The probable source, the topo. sheet, is at present in the field.

This note has been inked as there may not be any other authority for this information.

The shore line on Leadenwah Creek was taken off the first compilation of T-5155.

This first compilation was found to be in error, and a second compilation was made, hence there is some disagreement in shore line as shown on H-5470 as compared to present compilation of T-5155.

In case of conflict the shore line as shown on T-5155 will be considered as correct according to the Air Photo Section. *The scales of T. 5155 and H. 5470 are different. From measurements with proportional dividers, the differences in shoreline seem very small and have no effect on the hydrography.*

Respectfully submitted
Wallace A. Bruden

October 4, 1934

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *5470*

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

Number of positions on sheet	<i>.1141</i>
Number of positions checked	<i>.50</i>
Number of positions revised	<i>.0</i>
Number of soundings recorded	<i>.7591</i>
Number of soundings revised	<i>.22</i>
Number of signals erroneously plotted or transferred	<i>.0</i>

Date:..... *Oct. 4, 1934*

Cartographer:..... *Wallace A. Bruder*

Verification of protracting
Verification & inking of rocks and shoals } by *Wallace A. Bruder* Time: *25 hrs.*

Verification [&] of inking by *Wallace A. Bruder* Time: *75 $\frac{3}{4}$ hrs.*

Review by *R. L. Johnston* Time:

August 20, 1934.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 5470

Locality Kiawah River, Bohicket Cr., Leadenwah Cr., S. C.

Chief of Party: M. O. Witherbee in 1934

Plane of reference is mean low water reading.

5.0 ft. on tide staff at Rockville

14.2 ft. below B. M. 1

2.6 ft. on tide staff at Church Creek Highway Bridge

(Staff readings. Apparently no bench marks were established)

5.0 ft. on tide staff at Kiawah River.

(Staff readings. Apparently no bench marks were established)

Height of mean high water above plane of reference is 5.7 ft. at
Rockville; 6.9 ft. at Church Creek Highway Bridge; 5.5 ft. at
Kiawah River.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents

Section of Field Records

Review of Hydrographic Survey No. 5470 (1934)

Kiawah River, Bohicket and Leadenwah Creeks, Charleston, S. Car.

Instructions dated November 2, 1933 (NATOMA)

Surveyed Mar. Apr. 1934.

Hand Lead Soundings and 3 Point Fixes.

Chief of Party--~~M~~. O. Witherbee.

Surveyed by -- G. A. Stanton, E. B. Brown, Jr.

Protracted and soundings plotted by--C. J. Harryman.

Verified and inked by--W. A. Bruder.

1. Condition of Records.

The records are well kept and conform to the requirements of the Hydrographic Manual, except that when the work of the two launches (using separate boat sheets and working simultaneously) was combined on the one smooth sheet it would have been better to have used a different color for each launch instead of using the same color with duplicate day letters.

2. Compliance with Instructions for the Project.

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

3. Sounding Line Crossings.

The only cross lines run were zig zag lines which were mainly for the use of the field party in determining the location of the channel. Most of the development was done by sounding lines run parallel to the banks, which were always given preference over the criss-cross lines. The adjacent parallel lines agree as well^a may be expected in narrow streams of this kind.

4. Depth Curves.

The usual depth curves can be satisfactorily drawn.

5. Junctions with Contemporary Surveys.

The junction at Church Creek with H 5435 (1934) is satisfactory.

The junctions with H 5467 (1934) at Leadenwah Creek, Adams Creek, and Bohicket Creek are satisfactory.

The junction with H 5465 (1934) in Kiawah River will be considered in the review of that sheet.

6. Comparison with Prior Surveys.

There are no previous hydrographic surveys covering this area except for a small portion of Leadenwah Creek which was covered by H 1349^a (1875-6) This was a very sketchy survey, and while in general agreement with the new survey the detailed nature of the latter makes it unnecessary to consider the former in the future charting.

7. Comparison with Chart No. 1239.

The chart shows no soundings within this area. There are no aids to navigation within the area covered.

8. Field Plotting.

The prescribed amount of field plotting was well done by the field party. There are several islands inked on the boat sheets which were not shown on the smooth sheet. These were found to be over sights in the transfer from the compilation of the aerial topo sheets and have been added in the office.

9. Additional Field Work Recommended.

No additional field work is recommended, ~~however the field party should be consulted regarding the character of the signals mentioned in paragraph 1 of this review in the event the air pilots compilation (not available at this time) does not clear this up.~~

10. Superseding Old Surveys.

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

H 1349 ^a (1875-6) in part.

11. Reviewed by R. L. Johnston
Inspected by A. L. Shalowitz
Approved by K. T. Adams

October 1934.

Examined and approved:

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

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

L. O. Tolbert
Chief, Division of Charts.

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

Applied to Chart 792. December 9, 1936 H. M. A. Ewen
" " " 1239 April 1937 J. M. A.

25 Jan 23, 1936
LHG

Division of Investigation

Washington, D. C.

AMERICAN AND FOREIGN TRADING COMPANY

Attention: Mr. J. Edgar Hoover, Chief

of the Bureau of Investigation, Department of Justice

Dear Sir:

I am writing to you regarding the

matter of the American and Foreign Trading Company