

4170

U. S. G. SURV.
L. & S.
JUN 13 1921

Dwg. CN 1240-2

Acc. No.

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: *S. Carolina*

11-5613

DESCRIPTIVE REPORT.

Hgd. Sheet No. *4170*

LOCALITY:

St Helena Sound
St Helena Ad. Entrance
to Frank inlet.

1920 - 21

CHIEFS OF PARTY:

H. A. Suran, R. T. Lues, F. S. Borden

4170

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SHEET

ST. HELENA SOUND.
SOUTH CAROLINA.

Frank S. Borden,
Chief of Party.

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SHEET

ST. HELENA SOUND
SOUTH CAROLINA

This sheet includes the shoals of St. Helena Sound entrance between Fripp's Inlet and Hunting Island Lighthouse. It adjoins the work of the Str. ISIS to the eastward, the work of the Str. Endeavor to the northward and the work of the launch MIKAWA to the southward. The hydrography included on the sheet was done by the party on the Steamer Bache in 1920 and by the launches ELSIE and MIKAWA in 1921.

As regard the shape and size of the shoals there has been very little change since they were last surveyed. Their position however has changed considerably. In most cases these shoals have moved to the southward. The depth of water over them remains about the same.

A wreck with the foremast and boiler showing four feet above high water occupies a position four miles S. 27° E. of Hunting Island Lighthouse.

The sheet was started by the Str. Bache in 1920. Three day's work was done under unfavorable weather conditions. The work was taken up again by the party on the ELSIE in May 1921. Weather conditions were very unfavorable and with the exception of the last two days of field work in this area, soundings were made when considerable swell was running and when the sea was breaking in 10 feet of water. The shoals could only be worked on during extreme high tide and for this reason were not developed as closely as desired. Enough lines were run over them to show their general shape and enough soundings obtained to give an idea of how much water there is on them.

Soundings were reduced from tidal observations made at Peter's Pt., St. Pierre Ck., a reference plane for this station having been established in 1920 by the party on the Launch MIKAWA. It is my belief that the tides at Peter's Pt. are larger and later than they are in the area covered by this sheet. However this station was used for the reduction of the soundings made by the BACHE in 1920 and it was deemed advisable to have all the soundings on the sheet referred to the same plane.

A few lines were run over the work done last year by the Str. Bache, in accordance with verbal instructions. The crossings were satisfactory. The connection with adjacent work is satisfactory except in the locality of the main bar which work was done in 1916. It is my belief that the area in this locality has changed since that time.

Respectfully Submitted

Faust S. Borden
H. and G. Engineer,
C. and G. Survey.

*noted as
to water
to an oval
sheet
FMB*

STATISTICS SHEET
ST. HELENA SOUND, S.C.

Date	Day	Vol.	Positions	Soundings	Statute Miles	Vessel	Chief of Party
1920							Bache
Dec. 8	A	1	56	487	17.0	Motor Sailer	H.A. Seran
Dec. 9	B	1	43	479	14.7	"	"
Dec. 15	C	1&2	89	975	28.1	"	"
1921							
May 12	A	1	92	663	27.6	Elsie	F.S. Borden
May 19	B	1	92	618	29.3	"	"
May 20	C	1&2	87	706	26.5	"	"
May 24	D	2	64	548	20.9	"	"
May 25	E	2	54	419	17.5	"	"
1921							Mikawa
May 24	A	1	58	292	17.0	Motor Sailer	R.F. Luce
May 26	B	1	45	221	10.0	Mikawa	"
		TOTALS	-	(680)	(5408)	(208.6)	

June 24, 1921.

✓ Division of Hydrography and Topography:

Division of Charts:

Tidal reductions are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 4170

Locality: Off Hunting Island, St. Helena Sound, S. C.

Chief of Party: H. A. Seran, R. F. Luce, and F. S. Borden in 1920 & 1921.

Plane of reference is mean low water, reading

5.9 ft. on tide staff at Peters Pt., St. Pierre Creek (automatic gauge)

3.4 " " " " " " " " " (plain staff)

Condition of records: Satisfactory.

Hanna

Acting Chief, Division of Tides and Currents.

SECTION OF FIELD RECORDS

Report on Inking and Verifying Hyd. Sheet No. 4170

July 14, 1921.

1. Sheet 4170 is the combined work of three parties operating under Messrs. Luce, Borden and Serow. The area covered was not closely developed, being, it appears, in the nature of a revision survey. Closer lines would have been of material assistance in developing more accurate delineations of the depth curves.

2. The control, for the major part, was very good. However, several places were found where, for a half a dozen positions at times, there was a consistent shift of the line. The cause for this was not determined although it may be due to one of the following two causes.

(1) Where the fix was not very strong, distortion of the sheet may have been sufficient to throw the position out.

(2) The redetermination of \odot DUNE, which appears to have been erased and replotted on the smooth sheet.

3. Where the changes noted in P 2. were sufficient to warrant it, the incorrect positions were changed.

4. The records were in good condition and usually complete except for the launch work of the Str. Baake where more courses and bottom characteristics should have been noted.

5. The drafting work was good, but each position was not numbered as noted in the "Instructions for Field Work."

6. There are numerous cases of poor crossings. The cause of this is not apparent. It may be due to the considerable swell noted in the Descriptive Report.

Frank M. Albert

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

SECTION OF FIELD RECORDS.

REPORT ON HYDROGRAPHIC SHEET No. 4170.

Surveyed in 1920-21.

Chiefs of Parties; R.F.Luce, H.A.Seran and F.S.Borden.

Surveyed by R.F.Luce, F.S.Borden and R.D.Horn.

Protracted by F.S.Borden and W.F.Malnate.

Soundings plotted by F.S.Borden and E.M.Vincent.

Verified and inked by F.M.Albert.

1. The sounding records conform to the General Instructions except that the BACHE'S work (Borden in charge) omits the boat's courses throughout, and one day's work omits bottom characteristics.
2. The plan and character of development fulfill the requirements of the General Instructions except that one day's work under Luce and one day under Horn used 30 second intervals between soundings throughout the entire day's work, although most of the water was three fathoms or less in depth.
3. The plan and extent of the development satisfy the specific instructions.
4. The sounding line crossings are only fair, but the discrepancies are not sufficient to vitiate the sounding lines. The errors are due, no doubt, to the adverse conditions under which the field work was done.
5. The area covered by this sheet has an extremely irregular bottom. Owing to the sparse development, and in some cases errors of 1 to 3 feet in the soundings, it was difficult to draw the complicated depth curves with precision.
6. The field plotting was practically completed to the extent prescribed in General Instructions, and the office draftsman did not have to do any of it over. Each position was not numbered as directed by General Instructions.
7. On the southern edge of the sheet the junction with sheet 4153 is good, but neither sheet completely develops the bar at entrance to Fripp Inlet and consequently the available depth into the Inlet is not known. At

the northern limit of the sheet, ^{part of} the junction with sheet 4152 is not good. The development is not sufficient to indicate whether the discrepancies are due to changes in the bottom or to defective sounding

8. As the area covered by the sheet is not important, no further surveying is required. ✓
9. The character and scope of the surveying are good, considering the difficulties under which the field work was carried on. The field drafting is good.
10. Reviewed by E. P. Ellis, July, 1921.
11. Two copies of this report to be sent to the Division of Hydrography and Topography.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4170

State . . . SOUTH CAROLINA

General locality . . . ST. HELENA SOUND

Locality . . . ~~ST. HELENA ISLAND~~ *St Helena Sound Entrance to Fripp Inlet*

Chief of party . . . *R. F. Luce, H. A. Seran.*

Chief of party . . . *Frank S. Borden*

Surveyed by . . . *R. F. Luce, F. S. Borden, R. D. Horn*

Date of survey . . . *Dec. 1920 & May 1921.*

Scale . . . *1 : 20000*

Soundings in . . . *Feet*

Plane of reference . . . *Mean Low Water*

Protracted by . . . *F. S. Borden*

Protracted by . . . *W. F. Malnate*

Soundings in pencil by . . . *F. S. Borden*

Inked by . . . *J. M. Albert*

Verified by . . . *J. M. Albert*

Records accompanying sheet (check those forwarded):

Des. report, Tide books, _____ Marigrams, Boat sheets,

Sounding books, _____ Wire-drag books, _____ Photographs.

Data from other sources affecting sheet

Remarks: Sheet only partially completed by Field Party. (Instructions of Director.) .

* Tide book previously forwarded to office.

Applied to Chart 793 May 11, 1936 HEM as Given

4170

OCT 3 - 1921

U. S. SURVEY

OCT 3 - 1921

(ADDITIONAL WORK)

4170

(ADDITIONAL WORK)

Form 504
 DEPARTMENT OF COMMERCE
 U. S. COAST AND GEODETIC SURVEY

State: *South Carolina*

11-5613

DESCRIPTIVE REPORT.

Hyd. Sheet No. **4170**

LOCALITY:

St. Helena Sound -
Vicinity of Bar at
Entrance

1921

CHIEF OF PARTY:

R. F. Luce

Descriptive Report to Accompany Hydrographic Sheet "B",
St. Helena Sound, S. C.

The work was done by the parties from the Launch "MIKAWA", R. F. Luce, Hydrographic and Geodetic Engineer, Chief of Party, under Instructions of the Director, Coast and Geodetic Survey, dated August 18, 1921.

The hydrography was done by means of hand lead soundings from the Launch "MIKAWA" and from a 24-foot motor sailing launch, while running at a speed of about 5 nautical miles per hour, locations being obtained by simultaneous sextant angles taken from the boat on signals previously located during the previous field season, in the spring of 1921. Low water line was obtained on inshore shoals where there was a low water line by sextant angles taken at low water as given by the tide tables by an officer walking around the low water line.

A detailed descriptive report of this same area is given with Hydrographic Sheet 4170, executed by the Launch "MIKAWA" in the early part of 1921 and in the Fall of 1920.

Sounding lines were spaced 200 meters or less apart, usually less, according to the Instructions, and shoal areas were very carefully developed.

Far doing this work, an exceptionally smooth stretch of weather was experienced, and it is doubtful if better weather could ever be obtained for the work, as the area is a very exposed one, and considerable time might very well be lost or spent in waiting for only fairly smooth weather at any time of the year.

Soundings or positions were not plotted on the fair sheet in the field, as the fair sheet was retained in the Washington Office. This was in accordance with instructions.

In accordance with instructions, soundings were not reduced for tide in the field.

Soundings were recorded in the record books in fathoms and feet. Soundings in feet were plotted on all lines run on the boat sheet, the soundings being reduced for tide by tidal corrections obtained from tidal predictions, this was done in order to see where development was necessary, and to see if sounding lines crossed properly.

The tide gauge used for this work was a staff gauge maintained at Peters Point, St. Pierre Creek, the plane of reference of which was determined during the season of 1920 and the Spring of 1921.

R. F. Luce
R. F. Luce,
Chief of Party.

Statistics Sheet to Accompany Hydrographic Sheet "B",
 St. Helena Sound, S. C.
 Launch "MIKAWA", R.F.Luce, Chief of Party.
 STATISTICS.

Date, 1921.	Letter.	Volumes.	Positions.	Soundings.	Statute miles.	Boat used.
August 31.	A'	1	195	784	43.3	"MIKAWA"
September 1.	B'	1 & 2	195	785	44.0	"MIKAWA"
September 20.	C'	2	72	294	14.5	"MIKAWA"
August 31.	a'	1	162	918	32.6	Motor sailer
September 1.	b'	1	91	378	14.0	Motor sailer
September 2.	c'	1 & 2	33	196	6.6	Motor sailer
September 20.	d'	2	69	266	12.5	Motor sailer
Total,			817	3621	167.5	

R. F. Luce
 R. F. Luce,
 Chief of Party.

E.A.L.

COPY TO FIELD RECORDS.

Oct. 18, 1921.

Division of Hydrography and Topography:

✓ Division of Charts:

Tidal reductions are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 4170A

Locality: St. Helena Sound, South Carolina

Chief of Party: R. F. Luce in 1921

Plane of reference is mean low water, reading

3.6 ft. on tide staff at Peters Pt., St. Pierre Creek.

Condition of records: Satisfactory.

Harriman
Acting Chief, Division of Tides and Currents.

COPY TO FIELD RECORDS.

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Dec. 8, 1921.

Division of Hydrography and Topography:

Division of Charts:

Tidal reductions are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 4170a

Locality: **St. Helena Sound, South Carolina**

Chief of Party: **R. F. Ince in 1921**

Plane of reference is **mean low water, reading**

***3.4** ft. on tide staff at **Peters Pt., St. Pierre Creek**

Condition of records: **Satisfactory**



Chief, Division of Tides and Currents.

* Allowance made for difference in tide at place of soundings.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4170 (Additional work)

State South Carolina

General locality . St. Helena Sound.

Locality In vicinity of bar at entrance.

Chief of party R. F. Luce.

Surveyed by Launch "MIKAVE"

Date of survey . . August 31 to September 20, 1921.

Scale 1 : 20,000.

Soundings in

Plane of reference

Protracted by Soundings in pencil by

Inked by Verified by

Records accompanying sheet (check those forwarded):

Des. report, 1 Tide books, 0 Marigrams, 2 Boat sheets,

4 Sounding books, 0 Wire-drag books, 0 Photographs.

Data from other sources affecting sheet

Remarks:

Applied to Chart 793 May 11, 1936. H. E. MacEwan

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