4045

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State: Georgia

11—5613

DESCRIPTIVE REPORT.

Hyd. Sheet No. 4045

LOCALITY:

Turtle River

1918-19.

CHIEF OF PARTY:

W. H. Kearns.

Descriptive Report to Accompany Hydrographic Sheet **4045**

Tuntle River Georgia.

(1) Under orders dated October 26 1918, the shore party under W.H.Kearns executed the work on this sheet in the time available.

(2) The work was requested by the Chief of the Construction Division of the U.S.Army and financed by the Army to the extent of Funishing all of the labor and launch.

The work was being done in order to help ascertain the amount of dredging necessary to make the river navigtable to large ships .

(3) General

The sheet was a 5000 scale projection simalar to that of the Topographic Sheet

The soundings are in feet aa entered on the smooth sheet.

The Tide Saffs for this work were located at Grispen Island and Southern Railway Docks.

The Plane of Reference for these staffs was established by simultaneous observations with a Tide Staff at Brunswick.

(4) Organization of Party,

The party was organized at Brunswick Georgia and consisted of William H.Kearns Jr.H.& G&E. Chief of Party, and E.H.Bernstein ,Aid.

Two Puerto Ricans were used on A,B, and C days and on subsequent days for recorders

Mr. Bernstein did the recording.

Mr Kearns took right angle and plotted and Mr. Bernstein didthe recoding and took left angle.

The leadsman was a negro Paerto Rican who had never before worked on aounding launch but was the only labor available. This man being new at the work required constant watching as he occasionally made errors in the readind of his leadline. A spare American negro was used as leadsman on F day.

The coxwain of the launch was a white man who was engineer of the launch.

Survey Methods

All work was done with a hand leadline with sextant fixes.

Ranges were used throughout the work. The method used was to converge the range lines on a distant object which was near the center of curvature of the river at that particular section. Using this distant object as a Back range, boats with flags in them were used for front ranges. Two boats were used for this work, each one alternatively. To space the lines evenly, the boats were tied by a light rope 200 feet long so that each boatman could row ahead and stretch out the line, so as to be on the next range.

Attention is called to Positions 60B to 70B crossed by lines 70E to 74E and 78E to 80E, the crossing of which do not check very well. Both sets of lines were on ranges were held by a competent coxwain, both lines were sounded by the same leadsman and the same leadline was used only it was remarked after B day. However the leadline was tested on both days. On B day we had a different launch and the leadsman was away up forward from the chief of Party, but the junior officer was at hand to check up the leadline

Half ways from Signal Pil to Signal Dol the river is the shoalest of any place in it from Crispen Island down to the Limits of the sheets but a good channel could be dredged out thru there that would not require much excavation.

Most of the bottom is soft mud except around the several sand bars.

There is a strong current in the river ranging from three to four Miles per hour on the ebb tide, whereas on the flood tide there is not so much c current. There exists a very remarked wind tide in this river. When the wind is blowing from the northwest the tides do not rise so very high but have a very low runout whereas when the wind is blowing from the southeast, the tides rise very high and do not run out so far.

Respectfully submitted,

William H. Fearns

Jr.H.& G.Engineer,

Chief of Party.

ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO. 5-EMK

LIBRARY

Place with descriptive report
of hydrographic sheet No. 4045

Drawing Section.

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

March 6, 1919.

Division of Hydrography and Topography: HCQ

Division of Charts:

Tidal reductions are approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 4045

Turtle River, Georgia
W. H. Kearns in 1918

Plane of reference is
Mean low water, reading

5.5 ft. on tide staff at Southern Ry. Docks.
3.7 ft. on tide staff No. 1 at Crispen Island.
0.5 ft. on tide staff No. 2 at Crispen Island.

L. P. Shidy

Acting Chief, Section of
Tides and Currents.

ADDRESS
U. S. COAST AND GEODETIC SURVEY
WASHINGTON, D. C.

REFER TO No. 12-CA[illegible].

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

June 2, 1919.

To: The Superintendent, Coast and Geodetic Survey.

From: William H. Kearns, Jr. H. & G. E. - Office.

Subject: Reconciliation of inadequate crossing of sounding lines in Turtle River.

In compliance with your orders of May 22, 1919, I proceeded to Washington, D. C. and reported to you on May 30th, and conferred with the different Chiefs of Departments in the office in regard to the sounding lines on the Turtle River.

2. I report that I have investigated the leadline for B day and found that on that date I had copied leadline correction wrongly in the record book from the fly leaf of angle book where it was originally entered.

3. On B day at the finish of the day's work, after arriving back to the dock, the recorder had proceeded along with the record book, so that I personally measured the leadline and entered it in the fly leaf of angle book No. 77986 with the intention of transferring it later to its proper place. However, when the transfer was made the headings on the columns were entered wrongly so that the plus correction existed where the minus should have been, and the leadline correction was applied the wrong way. Upon investigating here and comparing it with the original entry, I found this to be the case. At the time I did not have chance to copy check this entry because I had many other duties and had no one to assist me during the latter part of my work.

4. I have plotted the lines in question on another sheet of tracing paper after the leadline correction has been applied with the right sign, and the lines now appear to cross adequately.

5. The launch used on this day was the COSINE, borrowed from the U.S.E.D. This was a twenty foot boat of slow speed and of six horsepower. During the soundings on this day a strong ebb tide of two or three miles per hour was running in the river and it was necessary to hold the boat several points up into the current. On E day a launch BOB was used, this launch is twenty-six feet long and of about twelve horsepower.

6. The leadline used in this work was of very poor material. It was furnished me by requisition from the office and was not made up. For a week before marking I towed it behind the launch and stretched it with a block and then marked it, tested it, and later remarked it. After B day it was remarked again and after that date was not subject to such changes as on the first two days of the work.

7. The leadsman was a Porto Rican, spoke English poorly, and had never sounded previously. However, it was not possible to procure a satisfactory man for the sounding lead in Brunswick during that time because of the abundance of war work and high wages paid for ordinary labor in the town.

8. On A, B, and C days a Porto Rican recorder was used, later an officer recorded while taking left angle.

9. In consequence with my investigation I have changed the heading for the entry on B day so that the leadline correction will be applied with the proper sign.

William H. Kearns.

William H. Kearns,
Jr. H. & G. Engineer.

Lead line corrections used in reducing the soundings in Turtle River, Georgia. Season 1918.

A day, Nov. 25.

M	L	L-M
2 ft	2.4	+0.4
6	6.1	+0.1
9	8.1	-0.9
12	11.6	-0.4
16	15.2	-0.8
18	16.9	-1.1
21	19.6	-1.4
24	22.3	-1.7
26	23.9	-2.1
30	27.4	-2.6
33	30.0	-3.0

B day, Nov. 27.

M	L	L-M
6 ft	6	0
12	12	0
18	19	+1
24	26	+2
30	33	+3
36	40	+4
42	47	+5
48	54	+6

C day, Dec. 3

Lead line correct

D day, Dec. 6.

M	L	L-M
6 ft	6.0	0
12	12.5	+0.5
18	18.5	+0.5
24	24.8	+0.8
30	30.9	+0.9
36	37.0	+1.0

E day, Dec. 7.

M	L	L-M
6 ft	6.0	0.0
12	12.5	+0.5
18	18.5	+0.5
24	24.8	+0.8
30	30.9	+0.9
36	37.0	+1.0

F day, Dec. 16.

M	L	L-M
6.ft	6.2	+0.2
12	12.6	+0.6
18	18.6	+0.6
24	24.7	+0.7
30	30.7	+0.7
36	36.8	+0.8

G day, Dec. 23.

M	L	L-M
6 ft	6.2	+0.2
12	12.6	+0.6
18	18.6	+0.6
24	24.7	+0.7
30	30.7	+0.7
36	36.7	+0.7

H day, Dec. 26.

M	L	L-M
6 ft	6.0	+0.0
12	12.5	+0.5
18	18.7	+0.7
24	24.8	+0.8
30	30.8	+0.8
36	37.0	+1.0

J day, Dec. 27.

M	L	L-M
6 ft	6.0	±0.0
12	12.5	+0.5
18	18.7	+0.7
24	24.8	+0.8
30	30.8	+0.8
36	37.0	+1.0
42	43.0	+1.0

K day, Dec. 30.

M	L	L-M
6 ft	6.0	0.0
12	12.6	+0.6
18	18.7	+0.7
24	24.8	+0.8
30	30.8	+0.8
36	37.0	+1.0

L = true length on tape
D = distance on lead line

** **

Corrections applied to certain lead line readings on the several days.

Feet	A day	B day	C day	D day	E day	F day	G day	H day	J day	K day
6 ft	+0.1	0.0	0.0	0.0	0.0	+0.2	+0.2	0.0	0.0	0.0
12	-0.4	0.0	0.0	+0.5	+0.5	+0.6	+0.6	+0.5	+0.5	+0.6
18	-1.1	+1.0	0.0	+0.5	+0.5	+0.6	+0.6	+0.7	+0.7	+0.7
24	-1.7	+2.0	0.0	+0.8	+0.8	+0.7	+0.7	+0.8	+0.8	+0.8
30	-2.6	+3.0	0.0	+0.9	+0.9	+0.7	+0.7	+0.8	+0.8	+0.8
36		+4.0	0.0	+1.0	+1.0	+0.8	+0.7	+1.0	+1.0	+1.0
42		+5.0							+1.0	
48		+6.0								

Reconciliation of Sounding line crossings on Turtle River Sheet.

No 1. 7 ft Discrepancy

Appears to be on edge of bank and seems hydrographically possible due to sand bar continuing in that direction.

No 2 7 feet

There appears to be no crossing here.

No 3 — 3 feet

I think this appears possible and plausible from the nature of the soundings around. Farther up the river are logs along the beach and it is possible that a snag might exist at this point.

No 4 4'-3'-7'

Crossings are hydrographically possible because the bottom here is shelving and drops off abruptly so that a difference of 4 or 5 feet in distance, which could not be plotted on the chart would at this point give this much in depth. The diagonal line ~~seems~~ is running along the edge of the bank and at this point the contours show abrupt changes

No 5 4'-9'-3'-4'-5'-6'-13'-4'-6'

Crossings will automatically be adjusted when the original leadline correction, which was erroneously transcribed in the field is applied properly.

No 6 — 15'

Sounding on Pos 30 E is probably 4-3 instead of 3-4 because the surrounding soundings are that. The leadsman talked broken English ~~and it was not correct~~ and it was hard at times to understand him and I recommend this sounding be rejected

William H. Kearns