2687

Diag. Cht. No. 1241-1

Treasury Department,
U. S. COAST AND GEODETIC SURVEY.

O H Tittmann
Superintendent.

State: Georgia

DESCRIPTIVE REPORT.

Hydrographic *Sheet No.* 2687

LOCALITY:

Saint Catherine Sound, Channel Entrance

1904

CHIEF OF PARTY:

W. C. Parker, Asst

2687

No. L. & T. & A.

FORM 65.—Field Letter.

Post-Office Address:

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COAST AND GEODETIC SURVEY

2-647

U. S. COAST AND GEODETIC SURVEY,

SEP 13 1 37 PM 190

Washington D. C.

Sept 12, 1904

FILE:
REFERRED:
ASSIGNED:

To the Superintendent,
U. S. Coast & Geodetic Survey,
Washington D. C.

Sir:-

The following descriptive report refers to hydrographic sheet No. 2687 of St. Catherines Sound, Georgia.

The work on this sheet extends from longitude 81° 00' to longitude 81° 10', along the channel course from a point one mile east of the 30 foot contour at sea to the mouth of the North Newport River in St. Catherines Sound.

Four lines of soundings were taken the entire length of the channel, eight from buoy No. 3 to the mouth of the Sound, and additional lines where required. A system of lines at right angles to the channel course from buoy to buoy at intervals not exceeding 200 meters

and usually less than 100 meters apart. Closer developments were made at the danger points and wherever the depths changed rapidly.

The least depth found on the bar was eleven feet along a narrow ridge at right to the channel about 300 meters west of the sea buoy.

The channel shoals gradually from the 30 foot contour up to this point. For a distance of half a mile the depths run from eleven to twelve feet and then increase gradually to twenty feet at buoy No. 3. From buoy No. 3 the depths increase to 34 feet near buoy No. 5, where there is a second bar running west by north with a least depth of 19½ feet. This bar is about 300 meters across in an east and west direction with a steep slope on the west side. After crossing this bar the channel reaches its maximum depth of 50 feet and runs deep into the Sound.

The channel is broad and of fairly uniform cross-section up to a point about halfway between the first two

buoys. Between buoys No. 3 and No. 5 the channel is about 300 meters wide with the best water in mid channel. A mile west of No. 5 the channel branches and passes on both sides of the middle ground in the mouth of the Sound. Along the north and south sides of the channel west of buoy No. 3 there are two nearly continuous lines of breakers. On the south side the shoals are bare at low water.

This survey shows some important changes have taken place since the original survey was made; but no more that might be expected in this formation of fine sand and mud. There has been no natural movement of the axis of the channel, but the depths and contours have changed some.

The bar appears to have moved slightly to the eastward and has a uniform depth of from eleven to twelve feet; the last of the twelve feet soundings are passed one mile west of buoy No. 1.

Just west of No. 3 there is a dangerous five foot shoal extending north nearly to the sailing course between Nos. 3 and 5.

West of No. 5 the changes are more marked. The middle ground from this buoy to the mouth of the Sound has been cut down to a least depth of 19½ feet, at a point one half mile west of the buoy; but there is a 17 foot hump close to the buoy. In the mouth of the Sound between Ossabaw and St. Catherine's Islands the middle ground has shifted a little to the southward and has been cut down to a least depth of 12 feet. The middle ground in the mouth of the North Newport River has been built out towards this shoal leaving a narrow passage not over 18 feet deep between them.

The bottom of the whole area is for the most part sandy and of uniform contour.

The currents in the Sound have a tendency to cut away the land on the south side of entrance and to build down on the north side. The north end of St. Catherine's Island has been cut away about 100 metres since the last survey, and the shore line is still receding slowly but steadily. A strong, deep current washes this shore, and it would undoubtedly cut into the shore faster if it

were not for the heavy timber extending more below the high water line.

The south point of Ossabaw Island extends 400 metres south of the old shore line, and is covered with dense trees and bushes. A chain of sand dunes parallel the south and east sides a few yards back from high water mark.

The currents usually set diagonally across the channel off shore; but as the channel approaches the Sound the currents take more nearly a channel course and finally run fair with the channel after passing buoy No. 5.

The buoys are all small and difficult to pick up except in the most favorable light. Buoy 2 has dragged from its original position and now lies at the mouth of Walburg Creek.

The channel from the sea to the Sound appears to be used very little, no vessel entered during the time this party was at work there.

There are several old plantations on the rivers emptying into the Sound, but these

are either abandoned or else kept up only as game preserves. There are no towns nor settlements in the sound.

Small sailing craft to and yachts cross the sound frequently in taking the inside route from Savannah to southern points. The usual route south from the mouth of the Bear River is to give buoy No. 1 a wide berth and cross due south to St. Catherine's Island, then by way of Walburg Creek keeping a mid channel course. North Newport River is not used as much as Walburg Creek, probably because of the unmarked shoal in the mouth of the river. There is plenty of water close to the shore of St. Catherines Island except at the mouth of Walburg Creek; where the other bank should be favored slightly.

The Light House Board intends to build a lighthouse on either St. Catherine's or Ossabaw Island but the exact location has not been selected yet.

Respectfully
W. E. Parker
Asst. C. & G. S.

REPORT
HYDROGRAPHIC SHEET
NO. 2687.
St. Catherines Sound,
Ga.
Aid Parker,
1904.

FIELD WORK: The use of auxiliary gauge on portion of the work remote from principal gauge gave excellent results, as is shown in crossing, where work is otherwise good. The importance of such data, however meagre, is well illustrated by conditions shown to exist on the bar where the possible difference in crossings due to using uncorrected readings on principal gauge would have been as great as 4 ft. in a depth of only 2 fathoms.

As an example, the crossing 111-112 C and 31-32 D. The sounding on former at the crossing reduces to 13.0 ft. by corrected tides and the latter to 13.1 ft. If reduced by the uncorrected readings of principal gauge they become 14.6 ft. and 11.6 ft. respectively, a difference equal to 23% of the depth and that too, over the most important locality covered by the survey.

The sounding lines are not well distributed- the shoals and bar should have been better developed.

The poor crossings to westward of buoy No. 5 are evidently due to the unusually strong current perpendicular to boat's course and the excessive speed of boat. The records of F day show that the boat was held 3 points off at 6-1/4 knots to make good her course on the normals, which indicates a current of over 3.5 knots, conditions under which it is not possible to do work of any value (To which attention has been directed before).

The soundings were recorded fathoms, feet and tenths in depths of over 9 fathoms. They should be fathoms and feet or feet and tenths and never otherwise. Many of the apparent errors in depth are due to this easily corrected fault.

One leadsman appears to have called his readings 1 fathom too deep or shoal at times.

The tides should be recorded feet and tenths- not hundredths.

OFFICE WORK: In protracting and plotting the sheet, the position numbers and letters should have been so placed that they would not be obliterated by the soundings. The sounding figures are very badly made and are not nearly heavy enough to meet the requirements. the fractions are improperly formed, 1/2 being easily mistaken for 12, etc. (Fairly good examples of well inked hydrographic sheets can be found in the Archives).

Character of bottom should be inserted on sheet.

J. T. W. (Signed).

11/2/04.

See particularly paragraph marked in red pencil.

11/2/04. C.B. (Signed).