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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

Hyd. S. Sheet No. *3208*

LOCALITY:

Wrangell Straits

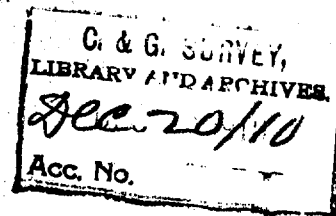
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CHIEF OF PARTY:

R. B. Herickson

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Descriptive Report
to
accompany
Hydrographic Sheet No. 6.
Wrangell Straits,
S.E. Alaska.
U.S.S. "GEDNEY"
1910.
R.B. Derickson, Asst., Comdg.
Chief of Party.

RBD

Report to accompany Hydrographic Sheet No.6. Northern
part of Wrangell Straits from Frederick Sound to Turn Pt.

In this work the following signals 2, 4, 6, 8, 10, 12, 14, 15, 13, 11, 9, 7, were old signals determined by the Army Engineers in 1902 and were recovered. Signals Lew, Grain, Boat, 5' were determined by triangulation. Signals B, C, D, E, were also determined by triangulation but as they were not in the regular triangulation scheme, are considered Topographic signals and are marked as such. (Signal 5' is called 5 in the records).

All soundings are with the hand lead except a few in Frederick Sound which were over 20 fathoms when the machine was used.

Kelp was always noted in the records; it was also noted whether the kelp was heavy or light. Single stalks of kelp are found sometimes when there is no shoal and where there was no difference in the character of the bottom, in this case they were not noted.

The shoal at the north entrance was thoroly investigated both by running lines over it and with the boats stopped at slack water. An extensive search was made for a rock which was reported by the Commander of the Steamer "Humboldt", supposed to be on a line between 5 $\frac{1}{2}$ and the beacon on Prowley Pt. The Steamer "Humboldt" grounded on a minus tide drawing 16 feet of water. No evidence of a shoal was found in the place indicated. A drag was used and the spot thoroly investigated.

Afterwards the commander of the "Humboldt" admitted that he was further in towards the east shore. In that place sounding of the depth stated was found.

Another place which was especially developed was a spot showing 13 feet on the chart which is about 300 meters in a westerly direction from signal 5'. This spot was thoroly investigated with hand lead and drag and no indication of a shoal was found. The bottom slopes off gradually into deeper water.

The drag mentioned above consisted of a 9 foot pipe with a lead line fast to each end; it would work only with the boat drifting slowly. The tidal currents are very strong in this part of the Narrows, about 2 to 4 knots in the wider part and 4 to 6 knots in the narrow entrance between Petersburg Wharf and Prolewy Point. Tide rips and swirls occur over the shoals, especially over the shoal in the north entrance off Prolewy Point. The tidal current is not strong in the vicinity of Petersburg Wharf, as it is cut off by the rocky point just north west of it.

All the positions plotted are pricked thru and marked by their respective numbers. The positions on(u)day are marked with a circle and not pricked thru. This was done in order that the positions could be more easily found by the draftsman, as the lines are very thick in this locality.

A large and extensive shoal called the "middle ground" which lies between signals 7 and 8 was also thoroly developed.

There is a passage on either side of this shoal, but the passage on the west side which is marked by the buoys No's. 9 and 11 is the only one used by large vessels. It is not possible to give a description of the East passage at this time before the soundings are reduced and plotted, but it appears to be intricat- ed and the bottom covered with boulders, while the West passage is straight with a mud bottom. Vessels using this West passage plow thru the mud at times when there is less water than the steamer is drawing. Samples of the bottom on the Shoal (Middle Ground) taken up with a bucket were found to be large gravel with small loose round boulders.

AIDS TO NAVIGATION.

A red buoy outside the entrance in Frederick Sound, black spar channel buoys No's. 9, 11, 7; buoy No.7 frequently tows under even with an ordinary tide. While the work was in progress a dolphin was put in by the Light-House Department. This dolphin is 37-1/2 feet high measured from the ground, and is to be lighted. The following angles were taken from the top of the dolphin:

| | | | | |
|----------|---------|---|----------|----------|
| Sta. 10, | 90° 22' | } | Sta. 8, | 180° 05' |
| Sta. 9, | + 4 | | Sta. 10, | |
| Sta. 8, | 89 32' | | - 3 | |

The red buoy mentioned above in Frederick Sound is not of much value to navigation, it was noticed that vessels pass continually on the wrong side, ^(West Side) of this buoy, and a direct course from the buoy for the entrance of the Narrows would take a vessel right over the shoal in the center of the entrance.

A valuable aid to navigation would be a dolphin at the edge of the kelp patch off signal Grain and approximately in the position of the following angles:

| | |
|-------|----------|
| "2" | 114° 40' |
| Grain | |
| "C" | 51° 50' |

There is a narrow deep channel on this side of the entrance and by keeping such a dolphin close on the port side entering, and on the starboard side leaving, a steamer could enter or leave the port at any stage of the tide. The reason that it would be preferable to have this dolphin on this side instead of on the shoal is that the current is much less here than on the shoal. This would lessen the danger of the dolphin being taken out by logs or other drift. In addition to this the ground which is sand is more suitable for driving than on the shoal where it is rocky. A dolphin similar to those driven in other parts of the Narrows would be the most suitable mark for this point, as a dolphin can be easily seen at night, whereas a buoy, besides the possibility of it towing under or changing its position, is extremely difficult to pick up, and as this is a very critical place on account of the narrowness of the channel and strength of the currents the mark here should be both permanent and conspicuous.

CURRENT OBSERVATIONS.

On September 9th, Current Observations were taken. The Launch was anchored in mid-channel half way between signals 4 and 5 and observations taken every 15 minutes, for 12 hours.

covering during this time three periods of slack water, the greatest velocity recorded was 3.7 knots per hour on the flood tide. The position of the current station is plotted on the smooth sheet and marked "Current Station" in pencil. During the progress of the sounding a number of current observations were made with the launch stopped and drifting, some of these were made only for current observations and are copied from the Sounding Records into the Current Record; at other times the current observations were simultaneous with the ordinary sounding lines drifting, and are in the Sounding Record only, and a note is made, "boat drifting"; on some of these lines a current velocity of 4.1 knots was obtained.

ANCHORAGES.

Large vessels anchor just south-east of the entrance about off signal "B" while waiting for the tide to enter the Narrows. The bottom shoals up gradually and there are no dangers. Vessels sometimes anchor inside off the Cannery Wharf or off the Mill Wharf, the latter is the better anchorage, as the tide is not so strong there as it is off the Cannery Wharf; there is considerable tide however, in both places, and in large tides a ship is very liable to drag. Small fishing craft anchor between the Mill Wharf and the Cannery Wharf. A large flat makes out opposite the town, and most of the small craft anchor on the edge of this flat.

The work on this sheet No.6, is contained in Soundings Volumes 1 to 7-1/2. Volumes 3, 4, and 5, also contain work

on Sheet No. 5. This was unavoidable for the reason that the location of the work had to be changed in order to take advantage of favorable tide conditions. The books which contain work on different sheets are marked clearly on the title page outside and in. A blue checkmark indicates that the position is plotted on Sheet No.5, and a Red checkmark on Sheet No. 6.

The Sailing Directions already published in the Coast Pilot give a clear passage over this portion of the Narrows, with exception of direction for entering from Frederick Sound, a mid-channel course will lead over the 2 fathom shoal. A course entering the Narrows should slightly favor the east point passing east of the shoal mentioned above.

Respectfully submitted,

J. M. Coleman

Mate, C. & G. Survey,

Hydrographer.

Approved,

R. B. Benson

Asst., Comdg.
Chief of Party.

List of Permanent Positions determined and table of Statistics attached to this report.

3208

LIST OF PERMANENT POSITIONS DETERMINED.

| Object | Lat. | D.M. | Long. | D.P. | Height | Remarks. |
|--------------------------------|---------|------|----------|------|----------------------------|--|
| White Beacon North Entrance | 56° 49' | 796 | 132° 56' | 712 | 40' approx. | White-washed and lighted. |
| Stake Light Frame. | 56 49 | 502 | 132 56 | 842 | 20' above M.H.W. | Frame white- washed, platform and yardarm. |
| White Beacon off Petersburg | 56 48 | 1700 | 132 58 | 117 | 40' approx. | Beacon white- washed. |
| S.E. Cor. Mill Wharf. | 56 48 | 1085 | 132 57 | 870 | 30' approx. | Auto. Tide Gauge well on S.E. cor. Mill Wharf. |
| Dolphin. | 56 48 | 542 | 132 59 | 322 | 37-1/2' from the ground | Platform on top, Lighted. |

For positions of permanent marked stations see List of Geographic Positions rendered with Triangle Computations of Wrangell Straits.

For positions of permanent objects on shore determined by plane-table see List of Geographic Positions rendered with plane-table sheet "C" North Entrance to Wrangell Straits.

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3208

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Title for
Hydrographic Sheet No. 6.
Wrangell Straits,
S.E. Alaska.
From Frederick Sound to Turn Point
J.M. Coleman, Mate, in charge,
of Sounding Launch #117.
Str. "Gedney"
Hydrographic Survey made between August 15,
and October 11, 1910.
Scale 1:5000
R.B. Derickson, Asst., Comdg.
Chief of Party.

3208

STATISTICS.

C. & G. SURVEY,
LIBRARY AND ARCHIVES.
DEC 10 1911
Acc. No. _____

| Date | Color | Letter | Vol. | Pos. | Sdgs. | Mls. | Boat. |
|----------|-------|--------|-------|------|-------|------|-------------|
| Aug. 15, | Green | a | 1 | 67 | 333 | 3.5 | Launch 117. |
| " 16, | " | b | 1 | 197 | 1044 | 12.0 | " 117. |
| " 17, | " | c | 1 | 103 | 592 | 6.5 | " 117. |
| " 17, | " | c | 2 | 105 | 549 | 8.5 | " 117. |
| " 18, | " | d | 2 | 84 | 442 | 4.0 | " 117. |
| " 19, | " | e | 2 | 110 | 688 | 7.7 | " 117. |
| " 19, | " | e | 3 | 64 | 290 | 3.2 | " 117. |
| " 23, | " | f | 3 | 148 | 613 | 8.5 | " 117. |
| " 24, | " | g | 3 | 30 | 102 | .5 | " 117. |
| " 25, | " | h | 4 | 19 | 113 | .5 | " 117. |
| Sept. 2, | " | j | 5 | 165 | 671 | 10.0 | " 117. |
| " 3, | " | k | 5 | 73 | 306 | 5.5 | " 117. |
| " 3, | " | k | 6 | 90 | 315 | 6.5 | " 117. |
| " 6, | " | l | 6 | 204 | 851 | 14.0 | " 117. |
| " 7, | " | m | 6 | 101 | 403 | 6.0 | " 117. |
| " 7, | " | n | 7 | 91 | 302 | 6.5 | " 117. |
| " 8, | " | s | 7 | 94 | 430 | 4.0 | " 117. |
| " 20, | " | t | 7 | 39 | 197 | 2.5 | " 117. |
| " 22, | " | u | 7 | 17 | 89 | ..25 | " 117. |
| " 22, | " | u | 7-1/2 | 33 | 145 | 2.0 | " 117. |
| Oct. 10, | " | f' | 7-1/2 | 33 | 100 | .25 | " 117. |

TOTAL. 2009 9090 120.6

RSD

Soundings shown in feet.

Hyd Sheet No. 3208 (Survey of 1910) Jan. 1, 1911.

A further examination of the middle ground should be made from the 3 foot spot near buoy #11 to the 5 foot spot to the southward. The 4 foot shoal about 400 meters north of $\Delta 7$ should also be examined. The depth of 4 feet at this point is probably incorrect as the sounding was taken at the beginning of a line and other soundings in the close vicinity show nothing less than 22 feet.

With the exception of the two spots mentioned above the area within the limits of the work is very well covered.

H. L. Simons

(Work of Aug 28-29, 1911)

Sept 29, 1911.

The 3 and 4 foot spots have been carefully examined and as such depths were found to exist. This examination also develops the crossover at black buoy #11 and shows a maximum depth of 9 feet on the bar.

H. L. S.

Verified; (Survey of 1910 and also supplemental work of 1911) Nov 13, 1911.

R. L. Johnston

VEC
Feb. 17, 1911.

HYDROGRAPHIC SHEET 3208.

J. E. D. W.
C. B.
2/25/11

Wrangell Strait, S. E. Alaska, Frederick Sound
to Turn Point, by Asst. R. B. Derickson in 1910.

TIDES.

| | Petersburg ft.. |
|---|--------------------|
| 3 feet below mean lower low water or plane of reference on staff | 0.5 |
| Lowest tide observed | " " 1.0 |
| Highest " " | " " 21.8 |
| Mean range of tide | 13.8 |

Coast and Geodetic Survey
FEB 24 1911
TIDAL DIVISION.

VEC
Jan. 20, 1912.

Duplicate.

HYDROGRAPHIC SHEET 3208.

Wrangell Strait, S. E. Alaska, Frederick Sound
to Turn Point, by Asst. R. E. Derickson in 1910.

TIDES.

| | Petersburg ft. |
|---|-------------------|
| 3 feet below mean lower low water or plane of reference on staff | 0.5 |
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| Mean range of tide | 13.8 |

The original note for this sheet was furnished
Feb. 17, 1911. Tidal Division.

Coast and Geodetic Survey

JAN 20 1912

TIDAL DIVISION