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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

Superintendent.

State: Alaska

DESCRIPTIVE REPORT.

Sheet No.

LOCALITY:

Turnagain Arm

1912

CHIEF OF PARTY:

F. J. V. Hardy

11—4645

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

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Department of Commerce and Labor

COAST AND GEODETIC SURVEY

Descriptive Report to Accompany Hydrographic Sheets of

Turnagain Arm. 3431 + 3432

Owing to the very few days that the weather was such that any work could be done, and the strong tidal currents, against which a launch could make no headway, these sheets are far from being complete, but, owing to the constant changing of the sand-bars, the expense of completing this work does not seem warranted. This report was held back until conditions in the Arm this year were found out and compared with those existing last seaon. The captains of two of the launches running up the Arm told me that the channels were different this year than last. The channel from Bird Point along the northern shore to Glacier Creek has filled in, making it necessary to discharge freight about a half a mile from the bank where formerly it was discharged on the bank. The flats making off from Hope are higher than last season.

Most of the sand banks are made up of glacier slit brought down by the ice during the winter. With the exception of places on Chickaloon Flats they were found to be hard and easy to walk over. In going over them with a launch, there are often between soundings differences of one fathom, and at low water these steep banks can be heard breaking off and falling into the water sounding like small explosions of dynamite.

Water transportation on Turnagain Arm is limited to launches whose draft is not over six feet. During the summer of 1912 the mail boat from Seldovia made trips twice a month into the Arm carrying freight for

Hope, Sunrise, and Gerdwood. Besides this boat, two launches made trips from Knik and Susitna to Kern Creek, the northern terminal of the Alaska Northern Railroad from Seward. Most of the people coming into the Turnagain Arm, Knik Arm, and Susitna countries come this way, but practically no freight is shipped owing to the excessive freight rates on the railroad.

Sunrise, at one time one of the largest towns in Alaska, has one store,- which carries a good stock of goods,- and a population of four people. The prospectors come in quite often for supplies from the store. The numerous old houses, dance hall, saloons, etc., are the only signs remaining of its more prosperous days.

Hope, a more prosperous place than Sunrise, has a population of about twenty-five people, two stores, and one fairly good placer mine.

At Gerdwood there is another placer mine which is operated during the summer by about twenty people. There is also a small store there.

Kern Creek, the terminus of the Alaska Northern Railroad, has one road house, a store house, and a train shed.

A rush in the Turnagain Arm country occurred about 1898-1904, there being more or less rich strikes in placer mining made. At that time vessels drawing twelve and fifteen feet went into Sunrise and discharged where now the deepest draft that could be carried into Hope and Sunrise would be ten feet.

The weather experienced by the party on the YUKON during the summer of 1912 was very bad, indeed. An almost continual gale blew down the Arm from the glaciers at its head, making very damgerous tide rips and overfalls for small boats and launches,- especially during the run of the flood tide. By all people whom we met it was reported as the worst summer they have ever had. For six consecutive days the YUKON

and the launch CHASE lay at the anchorage north east of Burnt Island, the gale causing too heavy tide rips to run up to Sunrise.

Ice prevents navigation in the Arm from about October 31 to April 15.

Gull Rock is the most prominent land mark on the southern part of the Arm and is the cape to the eastward of the one shown with that name on chart 8553. In regard to the latter cape, I could find no two persons who agreed as to its name, and would suggest that it be called Entrance Cape.

The launches, on entering Turnagain Arm, wait at the anchorage described in the Coast Pilot on the west side of Fire Island until the tide is about two-thirds up on the large prominent rock, and then start into the Arm, which,under ordinary conditions with a six knot launch, gives them the flood as far as Sunrise, allowing them to stop at Hope,enroute.

The only anchorage found was N.E. of Burnt Island, shown on the hydrographic sheets. Protection from the strong Turnagain Arm cannon,as this wind is called, may be had here, but it is exceedingly uncomfortable during the first two hours of the flood, when the cannon is blowing strong. The launch CHASE nearly capsized there during a gale, and the YUKON often rolled her rails to the water. Good fresh water may be obtained here. For small launches, the best thing to do is to beach them in the bight west of Gull Rock on a gradual sloping smooth sand beach. Myself and a hydrographic party lay there two days in the launch ALPHA just afloat at half tide, when it was too rough to go up the Arm. There is not any fresh water there. Back of Entrance Cape(Gull Cape chart 8553) there is also a beach of the same nature where boats are often beached to get out of the weather. Fresh water can be had there it is reported.

In the extension of the railroad from Kern Creek to the Matanuska coal fields, I do not think it would be practicable to use water transportation for material into Turnagain Arm. The mud flats which bare, off the northern coast from Pt. Campbell east to Δ Dark for a distance of five miles would make it impossible to land material except at high water, and with the Turnagain Arm cannon blowing there is a very bad chop on these flats. From Dark to Toe there was a fairly deep channel, but the rips are bad there during the flood tide.

Tides. The flood comes in on spring tides in the form of a boar which varies from about three to six feet in height. This boar was seen while sounding in the ALPHA as far east as the wide and narrow channels in Long. 150 - 10'. It can be heard about half an hour before it reaches one, sounding like a breaker on the sea beach. It travels very slowly.

From the head of the Arm to Burnt Island at low water there is just a small stream, the water at the latter place being only slightly brackish on the big run outs.

Tide staffs were established at the anchorage near Burnt Island, at the entrance to Six Mile Creek(Sunrise), and at Kern Creek. Comparative readings were made at all three of these places from September 17th to 19th, 1912 with a staff connected with levels to the old B.Ms. on Fire Island.

The channel which looks so good on chart 8553 is blocked up at its eastern end by a sand bar, which bares at low water and is sketched in on the hydrographic sheet. The launches generally come in over it as they enter the Arm when there is tide to do so in safety. The CHASE, however, comes in the channel shown south of this

where eight fathoms is shown on chart 8553, and this was the channel I used on the YUKON.

There are docks at Sunrise and Hope. The latter is not used now as the mud flats have filled in so much that even the launches drawing four feet do not go alongside. The YUKON laid at the dock at Sunrise most of the season, where she was well protected. The cook was the only person left on board most of the season. Mr. Dailey and topographic party being out in one dinghy, Mr Button and triangulation party in the other, and Mr. Herberger, myself and hydrographic party in the ALPHA.

In accordance with your instructions of April 13th, 1912, every effort was made to complete the topography and the triangulation for the control of the latter. The hydrography was carried alogg at the same time, but a stretch of four good days were lost while running for coal to Seldovia. But the topographic and triangulation parties were in camp and took advantage of all good weather.

The head of the Arm is all very shoal water and a dinghy except on the higher high water cannot cross the Arm from Kern Creek to its head. It is to be regretted that the hydrography was not all completed, but owing to the many changes in the mud banks I think, as I have said before, that it does not warrant any more work.

Very Respectfully Submitted,

S. S. Dailey

Assistant, C. & G. Survey.

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May 29,1913

HYDROGRAPHIC SHEET 3432. of 3431

Turnagain Arm, Cook Inlet, Alaska, by Assistant J. E. Hardy in 1912.

TIDES.

	Burnt I. ft.	Sunrise ft.	Kern Creek ft.
Mean lower low water or plane of reference on staff	10.3	2.5	-12.8*
Lowest tide observed " "	6.5	4.8	4.8
Highest " " " "	45.7	39.6	20.6
Mean range of tide	28.0	30.3	30.3

Hyd. Sheet #3431

The positions on this sheet were plotted by the field party and accepted as correct. On numerous cases, however, where errors were thought possible, the positions were checked, and when found erroneous were either replotted or rejected.

The channels were not satisfactorily developed and the survey is far from being complete. The channels are changing continually and this year they are different from those of last (See Descript. Rep. #3431 page 1)

A few cross lines were run, but the crossings are not as good as might have been expected.

J. B. Shkeanin

Sept. 12 - 1913

Myd. Sheet #3432

The positions on this sheet were plotted in the field, but in verifying the projection and the position of the triangulation stations, it was found that △Walk was plotted wrong, and in consequence all sdg. positions depending upon △Walk had to be replotted.

A few positions, e.g. 19, 20, 21, 22 appeared to be very doubtful and were rejected.

In general the work is not complete for reasons mentioned in the descriptive report of the chief of the party.

J. P. McLean.

9/16 - 1913