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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

O. Pittman
Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

Hyd. Sheet No. *3538*^{2a}
1914

LOCALITY:

Head of Passage
Canal.

1914

CHIEF OF PARTY:

J. T. Rude

11-4645

3538^A

H. 3533^a.

The sheet and accompanying tracing are satisfactory, except that the shoreline should be shown.

Sheet examined in Div.
of Hyd'y & Top'y.

DESCRIPTIVE REPORT.

to accompany

Hydrographic Sheet No

3538^a

Scale 1:10,000

Head of Passage Canal, Alaska.

Supplementing work of 1913, along the shore at the head; along the south shore, and over the shoal three miles from the head of the Canal.

Steamer TAKU,

Season 1914.

Gilbert T. Rude, Chief of Party and Hydrographer.

D E S C R I P T I V E R E P O R T .

to accompany

Hydrographic Sheet No

3538^a

S c a l e - 1 : 10,000

Head of Passage Canal, Alaska

Along the shore at the head; along the south shore and
Over the shoal three miles from the head.

Steamer TAKU, Season 1914.

Gilbert T. Rude, Chief of Party and Hydrographer.

Limits of Sheet:

The hydrography on this sheet supplements work done by the party on the TAKU during the Fall of 1913, whaleboat work along the south shore; along the shore at the head, and steamer work over the shoal three miles from the head.

General Description of Coast:

A general description of this Canal was given in Season Report dated November 27th, 1914. It was thought that a more comprehensive and a clearer report could be made taking the Canal through its whole length.

Outlying dangers and Islands:

The upper end or head of the Canal covered by this sheet is free from outlying dangers. The only shoal is the one just west of Station Saw. This was thoroughly developed with the resulting least depth of 29 feet at lower low water. This depth was obtained by

feeling around with the handlead in the dinghy, following the lead to the summit of the shoal.

Emerald Isle, named by this party, is the only island within the limits of the sheet. It lies close inshore on the south side of the Canal between stations Dab and Saw. It is shown, with its elevation, on Topographic Sheet No. D, Passage Canal.

Currents:

No current observations were made, but no strong currents were noticeable in the Canal.

A theory of the general trend of the currents through the whole length of Passage Canal was embodied in Season Report dated November 27th, 1914. It was given for the whole Canal rather than for the different sheets.

Weather:

The weather was reported on in the Season Report and was taken up for the Canal in general, covering all the sheets of this vicinity. Ice conditions were also reported on.

No foggy weather was experienced during the past summer down on the water level. Banks of fog at times lay in the upper valleys and up in the hills in calm weather following rainy easterly weather.

Description of Shore:

The shores bordering these waters are generally steep, with no outlying rocks nor reefs.

The land rises directly from the water to an elevation of from two to four thousand feet, heavily wooded on the south side to an elevation of about one thousand feet; at the head and on the north side

the lower elevations are sparsely covered by a stunted, sub-arctic growth. The higher elevations are bare or snow covered rock over the whole of the canal.

Anchorage:

Good anchorage in ten to twenty fathoms, sticky bottom, with swinging room for two maximum size ships, and one up to three hundred and fifty feet in length and twenty-six feet draft, may be had on the shoal area on the south side of Passage Canal about three miles from its head. This anchorage was used by the Taku during both easterly and westerly weather ^{out} with ~~good results~~ experiencing any discomfort in the Fall of 1913; but has never been used by any vessel yet during winter weather.

An anchorage of small extent may be found for very small launches at the head of the Canal in the hollow on the north side. This has been used by the Taku's Launch and by other small launches having business at the head of the Canal.

Watering Places:

On both sides of the Canal are a number of Falls from any of which fresh water may be taken in small boats. These falls are so numerous and conspicuous that special mention of any one is hardly necessary. The Taku took water from the small falls on the south shore, back of the rock on which Station Ped is located, which is shown on Topographic Sheet of this vicinity, executed in the Fall of 1913 by the party on the TAKU. This stream is the most convenient to the anchorage mentioned under the first paragraph of Anchorages.

Sailing Directions:

Sailing Directions covering the Canal as a whole and its approaches are given in Season Report Dated November 27th, 1914.

Ports:

There are no towns or docks in the Canal. A trading post was established in the Spring of 1914 near the shore at the head of the Canal. It consists of one large log cabin, a few tents and two board houses. No supplies of any amount can be purchased at this place and it is doubtful if any can be, as no stock seemed to be on hand.

Bottom:

The bottom is for the most part blue glacial clay, changing in-shore to rocky, except off the deltas where it changes from blue clay to gravel.

The passage is deep, averaging one hundred fathoms, the deep water extending practically from shore to shore.

Control and signals:

This work is controlled by the main scheme of triangulation executed by the party on the TAKU during the season of 1914, together with intersection stations Sharp, Tag, Trap, Trip, Sip, Mike, Moraine, But, Stew, Far, Rag, Isle and Dalg; and also the following stations located by plane table: Quartz and Big. The former was located by the party on the Taku in 1914 and shown on Topographic Sheet D of this year; the latter was located by the TAKU's party in the Fall of 1913 and shown on that topographic sheet.

Aids to Navigation:

At the present time no aids to navigation ~~are~~ have been established in the Canal. Should it become important commercially a buoy should be placed on the four and three quarter fathom spot on the shoal on the south side three miles from the head of the Canal.

Methods:

No unusual methods were adopted on this survey. A cosmos sounding machine was used on the TAKU for all the deep work, the steamer backing up for each cast.

A Bassnett Pressure Tube was used along the shores and over the shoal on the south side in depths less than thirty-five fathoms. A handlead was used on the Taku "cartwheeling" the shoal on the south side of the Canal. Whaleboat work, using handlead, was done along the south shore and at the head of the Canal.

The small boat work will show the possibility of building docks, parallelling the shoreline at the head on the south side along the edge of the flats at Whittier Delta. A small dock could also be built in the hollow between Stations North Base and Sip.

Respectfully submitted,

Albert T. Rade.

Chief of Party and Hydrographer.

Date 1914	Letter	Vol	Pos	Sdgs	Miles	Vessel
July 31	a	1	84	196	12.7	Taku
Aug 1	b	1	89	155	8.8	Taku
July 30	a	1	171	715	14.3	Whaleboat
July 31	b	1	35	107	2.6	Whaleboat
Aug 7	c	1	52	238	4.5	Whaleboat
<i>Total</i>			431	1411	42.9	

Soundings in fathoms.

Plane of Reference : Lower low water, Passage Canal Bay Tide Staff.

Staff located in Passage Bay, Passage Canal, and its position shown on Topographic Sheet No.D, Passage Canal work.

Plane of Reference, Reading on gauge ---4.1 ft.

Lowest tide observed, reading on gauge --- ft.

Highest tide observed, reading on gauge ---- ft.

Note:
Information regarding lowest and highest tide may be found on marigram tabulations on file in Washington office.

VEC
Jan. 26, 1915
L. P. S.

HYDROGRAPHIC SHEET 3538a.

Passage Canal, Prince William Sound, Alaska,
by Assistant G. T. Rude in 1914.

TIDES.

	Passage Bay ft.
Mean lower low water, or plane of reference on staff	4.1
Lowest tide observed " "	1.2
Highest " " " "	18.6
Mean range of tide	9.6