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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

C. & G. SURVEY,
LIBRARY AND ARCHIVES
FEB 16 1911
Acc. No.

Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

Hyd 2 Sheet No. *3221*

LOCALITY:

*Tongass narrow - E.
Clump to one mile
south of Pennock Island*

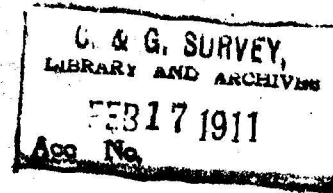
1900

CHIEF OF PARTY:

R. B. Herickson

3221

3221



Hydrographic Sheet No. 3221

From East Clump to one mile south of
Pennock Island,
Tongass Narrows,
S.E. Alaska.

June 30, to July 23, 1910.

U.S.S. "GEDNEY"

Scale 1:10000

R.B. Derickson, Asst., Comdg.

Chief of Party.

J.M. Coleman, Mate.

Hydrographer.

COAST AND
GEODETIC SURVEY

FEB 16 1911

REFERRED TO

Assistant in Charge.

3221

U. & G. SURVEY,
LIBRARY AND ARCHIVES

FEB 16 1911

Acc. No.

Descriptive Report

to

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Hydrographic Sheet No. 3221

Tongass Narrows,

S.E. Alaska.

1910.

Scale 1:10000

Survey Str. GEDNEY

R.B. Derickson, Asst., Comdg.

Chief of Party.

Descriptive Report to accompany Hydrographic Sheet No.3221
Tongass Narrows, S.E.Alaska.

This unfinished sheet is a common part of the hydrographic survey of Tongass Narrows started in 1906 by the party of Capt. E.F.Dickins, Assistant.

The area developed extends from Clump and Bar Points north of Pennock Island, thru the channel west of Pennock Island to Point Gravina, including the area for half mile south of Pennock Island. The original sheet was constructed to cover the entire area to Mountain Point, but owing to the transfer of the party to work in Wrangell Straits, this part is left for a future date.

With the triangulation data, and the signals extending from Clump Point to Mountain Point, the projection was constructed in the field on a scale of 1:10000, and all the sounding lines plotted in the field. The records containing the soundings and positions are in five volumes. Blue check marks were placed after each position. In accordance with authority granted in the Superintendent's letter of November 17, the sheet is forwarded to the Office to receive the soundings and be completed; it therefore only shows at present the positions of signals and sounding lines accurately plotted.

METHOD OF SURVEY.

The usual method of surveys was made in Launch No.27 alternating with Launch No.117. The positions on each line were

plotted on a rough boat sheet in order to give proper direction to each line. In general the lines were run parallel with the channel, the launch making on an average of one to two and a half miles per hour, depending a great deal on the direction and strength of the current. With the hand lead an average of three soundings per minute were taken, and one sounding every minute and a half with the machine. This gives an approximate space of 90 meters between each sounding with the machine, and 25 meters between each sounding with the hand lead. The sounding lines were run approximately 25 to 40 meters apart thru the main channel; and all places indicating shoal water were crossed with lines nearer together, with as many soundings as could be taken. In general the hand lead was used up to 20 fathoms, and the wire and reel for depths over 20 fathoms.



Sextants, Clocks, and Leadlines were standardized each day before work was started. The wire and reel were tested, the dial reading zero when the bottom of the lead was at the surface of the water. On several lines the wire was used thru shoal water to avoid delay in changing to the hand lead. All soundings with the machine were made while the launch was dead, or nearly so, in the water, and the wire vertical.

The development shown on this sheet includes the channel between the north end of Pennock Island and Pennock Reef. A clear channel of 5 fathoms of water and 300 meters wide was found, but it is not suitable for large vessels, and it cuts off very little distance from Ketchikan to the westward, where as

safe passage can always be made north of the buoy marking Pennock Reef.

Pennock Reef was well developed, and all lines in this vicinity were run to join, and partly overlap, some of the sounding lines in the survey of 1906.

Bar Point was developed so as to connect the sounding lines with the survey of last year and those of Capt. Dickins in 1906. At the south-east end of Pennock Island the lines were run in an approximate N.N.E. and S.S.W. direction, and were separated approximately 100 meters apart, care being taken to closely develop the reefs at the south and southeast points of Pennock Island.

At East Clump the point itself is fairly steep to, but the entire shoreline to the southward as far as station "Ruby" is foul for a distance of 50 to 100 meters off the high water line, with the exception of the coast at the narrows between Cove  and Point . The water here is about the same as that along the west shore. The flats at Clam Cove bare out a considerable distance and then drop abruptly to 3 and 5 fathoms. A detached shoal lies about 100 meters W.N.W. of station "Mate". It is bare to the main shore at extreme low water. There is also a sunken rock 50 meters north of signal "Cove". It is too near the shore to be of danger to navigation. Pennock Reef as shown on Chart 8094 bares about 2 feet at extreme low water. This shoal extends to the southeast, having 14 feet on it about 250 meters from the rock that bares. There is a flat extending

off Bar Point for approximately 400 meters. Since the survey developing this point, a red nun buoy No. 2 has been planted to mark the southwest point of the shoal. 100 meters north of signal "Ex" is a small rocky patch nearly dry at low water. This patch is an extension of the N.E. point of Pennock Island.

Thru the Narrows which are approximately 200 meters wide the water shoals to 5 fathoms. The mid-channel is clear, but vessels usually favor the N.E. side to avoid what appears to be a shoal about 200 meters S.E. x S. off signal Point. The least depth at the outer point on this shoal was 2 fathoms. A heavy growth of kelp covers this little patch, causing it to appear prominent from mid-channel. This shoal makes out from shore midway between signals Point and Short.

With exception of the foul ground at the south-west point of Pennock Island, the entire passage is free from dangers. The foul ground extends for a distance of 300 meters off the south of Pennock Island. 400 meters ~~west~~ ^{east} ^{SW} of signal "Noc" is a patch of rocks that bares 3 feet high at low water. The patch off the south end bares about the same height. At high water all these rocks are covered, and vessels rounding the south-east end of Pennock Island should keep at least 500 meters off. In the center of the west channel about 1/3 mile from the south end of Pennock Island, the water shoals to 15 fathoms with deeper water along each side.

TIDES.

During the progress of this work tides were observed on a plane staff at Clam Cove. The staff was determined by triangulation and is marked TIDE on the sheet. The zero of this staff is connected with the bench marks in Ketchikan, and the datum plane established in 1906 is used in reducing the soundings.

CURRENTS.

No regular current station was established owing to the suspension of the work. It is estimated that a current of 2 to 3 knots passes thru the narrowest stretch during the spring tides.

SHORELINE.

The limited shoreline transferred to this sheet was run in just before leaving the field in July, and is not completed. Half way between signals 'Wet' and 'Ruby' there is a small wharf for loading ore from the mines on Gravina Island. This wharf is in fair condition, has a fifty foot face, and carried 20 feet along its outer face.

It is respectfully recommended that this survey be completed, and that instructions for the proper location of current stations be included, in order to give the necessary time for determining the strength of the current thru the narrows. I also respectfully recommend that the hydrography and topography

include the area in the vicinity of Walden Rocks.

The published sailing directions of the Coast Pilot are good over this stretch of water.

As part of this report there is attached the sheet of Statistics covering the sheet herein described.

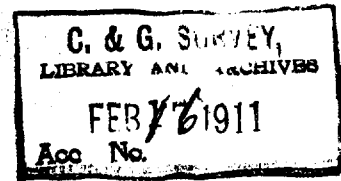
Respectfully submitted,

R.B. Johnston

Asst., Comdg.

3221

STATISTICS SHEET NO. 3221



Date 1910. Letter. Vol. Positions. Sdgs. Mls.Sdgs. Vessel.
Statue.

Date	Letter	Vol.	Positions	Sdgs.	Mls.Sdgs.	Vessel	Statue
June 30,	a	1	47	125	3.0	Launch #27	
July 1,	b	1	123	322	6.5	" "	
" 2,	c	1	113	398	5.5	" "	
" 6,	d	2	10	19	0.5	" "	
" 7,	e	2	104	331	10.5	" "	
" 8,	f	2	121	373	11.2	" "	
" 9,	g	2	91	232	9.5	" "	
" 19,	h	3	56	159	5.5	" "	
" 20,	i	3	95	418	6.0	" "	
" 21,	j	3	106	405	9.7	" "	
" 23,	k	4	109	313	10.5	" #117	
TOTAL			975	3095	78.4		

Tide Gauge located at Clam Cove.

Mar. 10, 1911

HYDROGRAPHIC SHEET 3221.

Tongass Narrows, S. E. Alaska, East Clump to one mile south of Pennock Island, by Asst. R. B. Derickson in 1910.

TIDES.

	Clam Cove ft.
Mean lower low water, or plane of reference on staff	3.3
Lowest tide observed " "	-0.1
Highest " " " "	22.6
Mean range of tide	13.3

Coast and Geodetic Survey

MAR 18 1911

TIDAL DIVISION

Verified by J. D. Torrey