3323

Diag. Cht. No. 8102-1

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

Superintendent.

State: Alaska

DESCRIPTIVE REPORT.

Hyd *Sheet No.* 3323

LOCALITY:

Southern entrance to Tongass Narrows, S.E. Alaska

1901

CHIEF OF PARTY:

R B Merrickson

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3323

Hyd. 3323.

SOUTH EASTERN ALASKA

Southern Entrance to Tongass Narrows,

including parts of

TONGASS NARROWS, ~~SUMNER STRAIT~~ Nichols Passage, and REVILLAGIGEDO CHANNEL.

~~##########~~

Str. GEDNEY, R. B. DERICKSON, Assistant, Commanding.

W. G. Will, Aid, Hydrographer in Charge.

Surveyed during September and October, 1911.

SCALE 1: 10 000

~~##########~~

Subplan of

VICINITY of CALIFORNIA and IDAHO ROCKS, in

TONGASS NARROWS.

SCALE 1:5000

Hyd. 3323.

DESCRIPTIVE REPORT to accompany Hydrographic Sheet of Southern Entrance to TONGASS NARROWS, South-eastern ALASKA, 1911.

The hydrographic survey of Tongass Narrows begun under Asst. E. F. Dickins in 1906 and continued under Asst. R. B. Derickson in 1910, was completed in 1911 and also extended well down Nichols Passage and Revillagigedo Channel. The part surveyed in 1911 covered that part of Tongass Narrows to the East of Pennock Island, Nichols Passage above Walden Rocks, and Revillagigedo Channel above Spire Island.

In Tongass Narrows the lines were run not over 50 meters apart; off the entrance to the Narrows and around Walden Rocks, 100 meters apart, and over the rest of it from 150 to 200 meters apart. The usual methods of surveying were used: soundings being located by sextant angles. All soundings were made from Launch No. 117. Whenever possible the hand lead was used; otherwise a sounding machine was used, the launch being stopped and backed at each sounding.

The shoal areas around California Rock, Idaho Rock, Walden Rocks, and Spire Island, and the one marked by an H. S. buoy off the entrance to the Narrows, were all carefully examined as to their extent and least depth. Following are the findings - the bearings are all referred to the true meridian.

A least depth of 13 feet was found on "Idaho Rock" about 30 m. N.E. of the light buoy marking it. It is at the end of a 6 fathom point about 150 meters wide ~~###~~ making 200 meters off from the shore.

California Rock has a least depth of 10 feet, with deep water all around it. It is 100 meters long in an E. and W. direction, and 70 meters wide. The H.S. can buoy marking it is at the N.E. corner of the shoal.

A least depth of 22 feet was found on the charted three and three-quarter fathom spot 400 meters W.N.W. of California Rock. The water is shoal between it and the shore.

Des. Report - II.

Directly across the [redacted] from the Southern end of Pennock Island and 110 meters off shore, [redacted] spot. It is 650 meters W.N.W. of signal "DEAD". It is the highest point of a shoal about 100 meters long and 40 meters wide lying parallel to the shore. There is from 5 to 6 fathoms all around it.

C.P. calls this Potter Rock with 15 feet on it.

Nothing less than 22 feet was found over the buoyed rock off the entrance to the Narrows. Two and a quarter fathoms is charted on it, but though the vicinity was very carefully sounded, nothing less than 22 feet, as mentioned above, was found. This least depth is at the buoy: 23 feet was found about 30 meters N.E. of the buoy. 400 meters S.S.E. of this rock is a 9 fathom spot that is apparently on the end of the same bank that this rock is on.

In the neighborhood of Walden Rocks several banks were found. Each was sounded over thoroly for the least depth. One with 71 feet least depth on it lies 600 meters S.xE. of Gravina Point. One with 62 feet on it lies 1000 meters N.W. of the largest Walden Rock, and one with 70 feet, lies 600 metere N.W.xW. of Walden Rock.

Besides these banks, which are not dangerous but cause exceedingly variable tidal currents in the vicinity, several rocks were found. One with a least depth of 6 feet lies 450 meters N.xW. of the Rocks, and one with 15 feet least depth, 350 meters N.W.xN. of them. There is also a rock which bares at low water lying some 150 metsrs W. of the northern end of the largest Rock. To the South and East of the Rocks, it is foul ground for about 200 meters.

The passage between Walden Rocks and Annette Island is clear and free from dangers as far south as surveyed, except for three rocks lying close together in a group about 1000 meters due South of Walden Rocks, and 1100 meters off shore from Annette Island. The water is foul about half way out to this group of rocks from Annette Island, though there is deep water the rest of the way. Walden Rocks should be given a berth of at least 250 meters

when using this passage.

Quite an extensive sheal area surrounds Bold and Spire Islands. A least depth of 22 feet was found 550 meters W.N.W. of Spire Island Light, and 68 feet was found 250 meters N. of the Light. A rock, bare at low water, lies 370 meters W.N.W. of the western end of Bold Island. Between these spots and Bold Island it is foul ground. now called Spire I.

A rock which bares at Lower Low water lies 120 meters N.xE. of Cutter Rock Spindle. There is 6 fathoms between it and the rock that bears the spindle.

Most of the signals used were at triangulation stations either of 1906 or 1910. Along the east side of the Narrows, towards Spire Island, and around Walden Rocks, the stations either could not be recovered or were insufficient; in which case topographic signals were used. A careful sextant triangulation was carried from the end of the 1910 triangulation to Spire Island Light, the sides being computed and the signals plotted by distances. The data for this triangulation will be found in Vol. 6 of the sounding records. These signals were later checked by the plane table.

The bottom is rocky for the most part. In the Narrows there is a light deposit of mud which affords a light holding ground. Fair anchorage for motor boats can be had close th the shore at many places - at the head of nearly every bight. The bottom in these places is usually sand or gravel.

There are no dangers in the Narrows other than those shown on the present chart. The 18 feet spot mentioned above "DEAD" is not shown on the chart, and most of the lesser rocks around Walden Rocks are shown out of their true position. Considerable discrepancy was found in the shoreline and indentations as shown on the charts, showing errors in the former survey. The shoreline is entirely rock bound.

Des. Report - IV

No regular current observations were made, but an estimate of two and a half to three knots ~~#####~~ at the strength of the tide, ~~#####~~.in the vicinity of California Rock, was made. The tides used for the reduction of the soundings were recorded on the automatic gauge on the Mill Wharf at Ketchikan. The datum plane established in 1906 was used for the reduction of soundings.

The sailing directions already published in the Alaska Coast Pilot, hold good over this sheet.

~~#####~~ The projection was made in the field to a scale of 1:10 000. A subplan was made on a scale of 1:5000 to cover the vicinity of California and Idaho Rocks, the development there being too close to be properly shown on the smaller scale. The signals were plotted directly from the triangulation data, or scaled off from the topographic sheet.

The records connected with this sheet comprise -
3 volumes of Sounding Records, also containing (in Vol. 3), the records of the sextant triangulation done.
1 volume of Level Records.
2 Tide Rolls from the Automatic Tide Gauge.

Jas. A. Smith

Aid, taking left angle in Hydrographic Party.
Also plotted soundings and some of the positions on the smooth sheet.

Revised and Approved,

R B Arvidson

Chief of Party, C. & G. Survey.

TABLE OF STATISTICS.

3323

Date.1911	Letter	Vol.	Positions	Soundings	Miles	Vessel.	
Sept. 5,	a	1	120	320	13.8	Launch	No.117.
" 6,	b	1	137	594	14.3	"	"
" 7,	c	1	103	313	9.2	"	"
" 8,	d	2	145	461	11.4	"	"
" 9,	e	2	118	244	11.5	"	"
" 11,	f	2	129	227	12.8	"	"
" 12,	g	3	67	162	7.5	"	"
" 15,	h	3	66	121	7.3	"	"
" 16,	i	3	93	208	8.8	"	"
" 18,	j	3	21	74	1.8	"	"
" 19,	k	3	51	95	3.7	"	"
" 20,	l	3	51	95	7.7	"	"
" 20,	l	4	48	88	6.1	"	"
" 21,	m	4	79	138	8.9	"	"
" 22,	n	4	99	163	10.6	"	"
" 23,	o	4	63	106	5.8	"	"
" 25,	p	4	42	79	4.6	"	"
" 27,	q	5	85	156	9.0	"	"
" 29,	r	5	96	154	7.5	"	"
" 30,	s	5	80	153	9.7	"	"
Oct. 2,	t	5	55	103	9.5	"	"
" 3,	u	6	31	58	3.3	"	"
" 4,	v	6	66	132	6.6	"	"
" 6,	w	6	28	47	3.8	"	"
" 9,	x	6	35	88	2.0	"	"
" 17,	y	6	21	37	2.7	"	"
TOTAL 26 days.		6	1928	4416	199.9		

STATISTICS.

No.2.

Plotted on Sub-plane: 3323

Day	Date	Positions.	Soundings.	Angles.
a	Sept.5	4-11 32-39 51-58 77-84 96-105	124	104
b	" 6	3-9 24-33 38-61 [redacted] 105	298	122
c	" 7	12-22 31-37 44-66 71-80 82-103	233	146
d	" 8	10-17 19-76	196	132
TOTALS.			851	504

3323

STATISTICS. No. 3.

The following soundings were omitted in plotting the smooth sheet for lack of space. Those soundings omitted from the main plan but plotted on the sub-plan were starred (#)

Soundings omitted on main plan.

	Positions	Soundings	Omitted		
			Sounding	omitted	#
a day	6		"	"	
	53-54	1st	"	"	#
	116-117	1st	"	"	
b day.	5		"	"	#
	5-6	1st	"	"	#
	11		"	"	
	51-52	5	"	"	#
	53		"	"	#
	53-54	4	"	"	#
	55-56	3	"	"	#
	64		"	"	
	76-77	4	"	"	#
	81-82	1st	"	"	
	82-83	3rd	"	"	
	86		"	"	
	⌧98		"	"	⌧On sub-plan sdg.98 was omitted.
	108		"	"	
	125		"	"	
c day.	97-98	1st	"	")	Were omitted from
	103	2	"	")	" subplan
	12		"	"	#
	44	3 rd	"	"	#
	83-84	2nd & 3rd	"	"	#
	90-91	1st	"	"	#
	96-97	2nd	"	"	#
	97-98	1st	"	"	
	99-100	2nd & 3rd	"	"	#
	100		"	"	#
	103	2	"	"	
d day.	22-23	1st	"	")	Were omitted from
	63-64	1st	"	")	" sub-plan)
	4-5		"	"	
	16-17	2nd	"	"	#
	21-22	2nd	"	"	#
	22		"	"	#
	22-23	1st	"	"	
	26		"	"	#
	26-27	both	"	"	#
	27-28	2nd	"	"	#

Continued

	Positions		Soundings	Omitted.	
d day.	28-29	1st	Sounding	omitted	#
(Con'd)	29		"	"	#
	29-30	5th	"	"	#
	30-31	1st	"	"	#
	31		"	"	#
	34		"	"	#
	35-36	2nd	"	"	#
	36		"	"	#
	36-37	both	"	"	#
	37-38	2	"	"	#
	44-45		"	"	#
	51-52	both	"	"	#
	52		"	"	#
	56		"	"	#
	59-60	2nd & 3rd	"	"	#
	60		"	"	#
	62		"	"	#
	63-64	1st	"	"	
	66-67	2nd	"	"	#
	67-68	1st & 2nd	"	"	#
	73		"	"	#
	81		"	"	
	87-88	3	"	"	
	101		"	"	
	108-109	5	"	"	
	110-111	4	"	"	
	111-112	12	"	"	
	112-113	3	"	"	
	127-128	2nd	"	"	
	128-129	3rd	"	"	
	129		"	"	
	129-130	2nd	"	"	
	130-131	1st & 3rd	"	"	
	133-134	3rd	"	"	
	135-136	1st	"	"	
	136	3	"	"	
	142-143	5th	"	"	
e day.	26		"	"	
	93-94		"	"	
	95		"	"	
f day.	46		"	"	
	100		"	"	
	108		"	"	
g day.	21		"	"	
	49		"	"	
h day.	45		"	"	
i day.	37-38		"	"	
	72-73	4th	"	"	
j day		None omitted			
k day.	25		"	"	
l day.	2-3		"	"	

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	Positions	Soundings	Omitted.
m day.	30-31	Sounding	omitted
	39-40	"	"
	70-71	"	"
n day.	32	"	"
	81	"	"
o day.	1	"	"
	~~3~~	"	"
	60-61 1st & 2nd	"	"
p day.	None omitted		
q day.	27	"	"
r day.	11-12	"	"
	38	"	"
	89	"	"
	90	"	"
	91	"	"
s day.	None omitted		
t day.	" "		
u day.	" "		
v day.	1	"	"
	1-2	2nd "	"
	4-5	2nd "	"
w day	None omitted		
x day.	4-5 3rd & 4th	"	"
	5-6	2nd "	"
	13-14	1st "	"
	22-23	1st "	"
	34-35	3rd "	"
y day	None omitted		

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Total Soundings 4416.

Soundings omitted from main plan 155

Soundings omitted altogether 93

Soundings plotted on main plan 4261

Soundings plotted on sub-plan 851

Total soundings plotted 5112.

MDH
March 15, 1912.

HYDROGRAPHIC SHEET 3323.

Tongass Narrows, Southeastern Alaska, by

Asst. R. B. Derickson, in 1911.

TIDES.

	Ketchikan.
	ft.
Mean lower low water, or plane of reference on staff	5.5
Lowest tide observed,	1.7
Highest " "	24.4
Mean range of tides,	13.1

Hyd Sheet # 3323.

The positions on this sheet were plotted by the Field Party and assumed to be correct.
The soundings were plotted by Field Party and were verified by and inked by N. L. Simmons and J. D. Torray
The curves were developed and inked by J. D. Torray
The work is good through and sufficient to develop all shoals.

J. D. Torray
6/8/12.

Chart 8080 applied re Walden Rocks area 4/67 C Thisfeldt