

5150

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

R.S. Patton, Director

U. S. COAST & GEODETIC SURVEY
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State: Alaska

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 5150
Hydrographic } Field # 3

LOCALITY

Behm Canal

Channel Is., to Saks Cove

1932

CHIEF OF PARTY

E. W. Fickelberg

GOVERNMENT PRINTING OFFICE

5150

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 3

REGISTER NO. **5150**

State ~~S. E.~~ ALASKA

General locality BEEM CANAL

Locality Channel Is. to Saks Cove
~~CHICKANIN BEVER SAKS COVE~~

Scale 1:20,000 Date of survey MAY, JUNE, JULY, 1931

Vessel U.S.C. & G.S.S. EXPLORER

Chief of Party E. W. Eickelberg

Surveyed by Henry O. Fortin

Protracted by E. Rosen

Soundings penciled by R. C. Rowse

Soundings in fathoms ~~feet~~ & fractions thereof.

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by _____

Inked by _____

Verified by _____

Instructions dated March 7th, 1930

Remarks: _____

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 3

CHICKAMIN RIVER - SAKS COVE

BEHM CANAL - S. E. ALASKA

- 0 - 0 -

E. W. EICKELBERG - CHIEF OF PARTY

SEASON OF 1931

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 3

CHICKAMIN RIVER - SAKS COVE

BEHM CANAL - S. E. ALASKA

AUTHORITY:

Director's Instructions dated
March 7th, 1930, Project No. 56.

SCALE:

The scale of this sheet is
1:20,000.

LIMITS AND GENERAL DESCRIPTION:

The limits of this sheet are from
55° 43.5' to 55° 57.0' North Latitude, and from 130° 54.0' to
131° 12.0' West Longitude.

The length of the canal on this
sheet is fourteen miles, and the average width about one and
three quarter miles. Saks Cove located at 131° 08.0' West Longi-
tude and 55° 56.0' North Latitude is one and one half miles in
length and three eighths of a mile in width.

The cove at the mouth of the
Chickamin River, situated at 130° 57.0' West Longitude and
55° 48.0' North Latitude is two and one third miles in length
and three quarters of a mile in width.

Portage Cove, 55° 46.4' North
Latitude, 131° 03.0' West Longitude is one mile in length and
about one eighth of a mile in width.

This sheet connects with sheet
No. 2 at 55° 55.5' North Latitude and with sheet No. 4 at
55° 43.5' North Latitude.

CONTROL:

Triangulation and topography
furnish the necessary control.

METHODS:

The approved methods of the service were used throughout. All soundings were taken from the gasoline sounding launch Tender No. 1. Machine soundings were taken by means of a gasoline driven sounding machine which was located aft. A fourteen pound lead attached to regulation stranded sounding wire was used in all vertical casts in depths over fifteen fathoms. An eighteen pound lead was tried for awhile when taking deep soundings, but we found that the structure of the sounding machine on Tender No. 1 was such that it had difficulty reeling in the heavier weight, so the lighter weight was used with better success.

Hand lead soundings, using an eight pound lead, were taken at the beginning and end of each line and especially in important or critical places in depths of water under fifteen fathoms.

All sounding lines were run perpendicular to the shore lines, except in Saks Cove where they were run parallel to the shore line, and one hundred meters apart. The lines in the canal were run from three to four hundred meters apart, with splits run between out to the one hundred fathom curve.

CHARACTERISTICS OF THE SHORE LINE AND BOTTOM:

The shore line along both shores of the canal is rocky and quite abrupt, except at the head of the coves where the shore line is quite flat, due to streams running in at these points. The geographic formation is very irregular along the east shore, and this proved to be the same case with the marine features as shown by the depth curves along this shore. Between signals YAK and ZEB, Latitude $55^{\circ} 53.3'$ and Longitude $131^{\circ} 05.5'$ there is an indication of a submarine valley.

The bottom characteristic of the canal is muddy throughout. Where samples were found on the lead the predominating color was gray mud. The heads of the coves are of a sandy bottom, especially that of Chickamin River where it is intermixed with the gray silt that comes down from the glaciers. During the summer months the color of the water at the mouth of the Chickamin River, and for several miles north and south of the river mouth, is of a grayish color due to this silt.

As shown by the soundings, there is a remarked difference in the depth of the soundings just north-west of the mouth of the river. This in all probability is due to the silt depositing on the bottom of the canal and gradually filling in.

CURRENTS:

No current observations were taken in this locality, however, quite a strong current runs in this section of the canal, for at times it required quite a little maneuvering of the tender in order to obtain vertical soundings.

TIDES:

A portable automatic tide gauge was in operation at the head of Fitzgibbons Cove until June 23rd, when the portable automatic tide gauge at Shoalwater Pass was put in commission. All tide reducers were taken from these two gauges.

ANCHORAGES:

Saks Cove affords anchorage near its north end, in thirty fathoms of water, muddy bottom, but not much protection from a south-easterly wind. No dangers, except small flat at north-east corner.

Portage Cove bares at low water, but temporary anchorage may be obtained at the entrance in depths from three to ten fathoms of water with variable bottom, such as from mud, sand to hard

The large flats occupy nearly the whole of the bay at the mouth of Chickamin River and extend almost to the two points at the entrance from Behm Canal. Small craft can find temporary anchorage near the edge of the flat, sandy bottom from ten to twenty fathoms of water.

Temporary anchorage for small craft can be had at 55° 50.7' North Latitude, 131° 05.5' West Longitude, twenty fathoms of water, hard bottom, and at 55° 53.3' North Latitude, 131° 04.6' West Longitude, twenty fathoms of water, muddy bottom.

REMARKS:

Some difficulty was experienced in plotting this sheet, probably due to the fact that this was my first large sheet and that the boat sheet signals do not, in a number of cases, agree with the smooth sheet signals from ten to forty meters. However, the boat sheet was followed

closely and the plotting adjusted accordingly.

E. Rosen, the Boatswain, did the plotting under my supervision. His plotting is very carefully and neatly done, as has proven to be the case with previous sheets he has plotted.

DANGERS AND OBSTRUCTIONS:

The entire length of the canal on this sheet is free from all obstructions, except very close inshore and at the south end of Channel Islands. Saks Cove is free from all obstructions except the reef which will be mentioned below. Portage Cove goes bare at low tide and the flats at the mouth of the Chickamin River prevents navigation from going but a short distance beyond the two points at its entrance.

* To agree with sheet T-4636 and as plotted by F.P. J.V.T

1. $128^{\circ}30'$ * A reef baring four feet at M.L.L.W., 147° true, 55 meters from signal PUP.
2. A least depth of twenty fathoms at southern end of reef, 149° true, 130 meters from signal PUP, position 20 "g", rocky bottom.
3. A least depth of thirteen fathoms on shoal area, 112° true, 340 meters from signal MAP, position 32 "b", rocky bottom.
4. A least depth of seventeen fathoms, submerged ledge, 21° true, 220 meters from triangulation station JOT 1891.
5. Two rocks baring eleven feet at M.L.L.W., 113° true, 180 meters from signal RIB.
6. A least depth of seven fathoms, a shoal area of small extent, 124° true, 320 meters from signal TWO.
7. A least depth of twelve fathoms, a shoal area of small extent, 64° true, 250 meters from signal LET.
8. A least depth of ninety-seven fathoms, shoal area, 73° true, 630 meters from signal WAR.
9. Rocks bare three feet at M.L.L.W., 280 meters, 75° true from signal YET.
10. Rock covered one-half foot at M.L.L.W., 92° true, 130 meters from signal CAN. *Other shown this area at M.L.L.W. J.V.T*

11. Rocks awash at M.L.L.W., 162° true, 240 meters from signal AFT.

12. A rock baring two and one-half feet at M.L.L.W., 158° true, 440 meters from signal AFT.

13. A least depth of sixty-eight fathoms on shoal area, 49° true, 600 meters from signal CITY, position 18 "w", muddy bottom.

14. A least depth of eight fathoms, on shoal area, 150° true, 240 meters from signal FIB, position 25 "d", hard bottom.

15. Center of reef, rocks of which bare fifteen feet at M.L.L.W., 126° true, 175 meters from signal CHAN.

16. Southern end of reef, baring sixteen feet at M.L.L.W., 131° true, 250 meters from signal CHAN.

All other rocks and ledges are close inshore and are properly penciled on the smooth sheet.

There is a doubtful sounding, position 88 "c", south-west of signal EAT, Latitude 55° 54.9', Longitude 131° 07.9', of 290 fathoms. I sincerely believe that this sounding should be 190 fathoms, but as there are no other soundings in close proximity to prove this, the sounding was not changed.

There is also an indication of a deep chasm in that vicinity as the soundings between positions 108 and 109 "k" proved, and which has been described with picture illustrations in the descriptive report of Sheet No. 6.

Respectfully submitted,

Henry O. Fortin
Henry O. Fortin,
Jr. Hydro. & Geod. Engineer,
U.S.C. & G.S.S. EXPLORER.

Approved and forwarded,

G. C. Jones
G. C. Jones,
Commanding Officer,
U.S.C. & G.S.S. EXPLORER.

LIST OF STATISTICS

HYDROGRAPHIC SHEET NO. 3

Date	Vol.	Day	Boat	Stat. Miles	Pos.	SOUNDINGS		Naut.Miles To & From Wk.	Remarks	
						Hand	Mach.			
			Tender							
May	21	1	a	#1	11.0	78	12	73	1.8	Mr. Fortin
"	22	1	b	"	3.4	25	5	25	6.0	
"	25	1	c	"	15.4	101	17	112	6.0	
"	26	1	d	"	16.0	97	16	107	9.1	
"	27	1	e	"	20.1	116	24	127	5.8	
"	28	1	f	"	13.9	86	20	106	1.1	
"	29	1&2	g	"	10.3	88	99	114	1.4	
June	1	2	h	"	2.3	30	22	35	5.6	
"	2	2	j	"	18.9	132	71	190	5.3	
"	4	2	k	"	16.6	121	71	183	6.2	
"	6	2	l	"	4.7	51	10	66	8.8	
"	8	3	m	"	19.4	119	22	140	7.3	
"	9	3	n	"	16.5	142	57	207	8.0	
"	10	3	p	"	7.1	48	6	53	4.0	
"	11	3	q	"	16.8	141	66	219	8.3	
"	12	4	r	"	19.0	120	56	138	3.0	
"	15	4	s	"	9.8	69	155	63	5.8	
"	16	4	t	"	19.9	115	12	138	3.3	
"	18	4	u	"	5.2	31	3	31	1.2	
"	19	4	v	"	26.8	182	192	207	2.2	
"	20	5	w	"	7.2	91	4	102	7.4	
"	22	5	x	"	6.3	41	10	48	8.2	
"	23	5	y	"	17.8	121	37	168	8.9	
"	24	5	z	"	17.9	145	20	210	9.2	
"	25	5&6	a'	"	17.8	120	125	171	10.5	
"	26	6	b'	"	3.0	39	--	39	25.8	
"	29	6	c'	"	9.4	75	225	62	9.0	
"	30	6	d'	"	15.0	165	48	190	14.0	
July	1	6	e'	"	5.4	66	1	74	3.5	
Total:					372.9	2755	1406	3398	196.7	

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 82-DRM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

SECTION OF FIELD RECORDS

Review of Hydrographic Sheet No. 5150

Channel Islands to Sake Cove, Behm Canal, Alaska

Surveyed in 1931

Instructions dated March 7, 1930 (EXPLORER)

Chief of Party, E. W. Eickelberg
Surveyed by H. O. Mortin
Protracted by E. Rosen
Soundings plotted by R. C. Rowse
Verified and inked by J. D. Torrey

1. The records are in general conformity with the Hydrographic Manual except that the tide reducers in the first 4 volumes have the - sign entered before the numbers.
2. The plan and extent of the development fulfill the requirements of the specific instructions.
3. Soundings - There are practically no cross lines. The soundings are consistent among themselves. The 290 mentioned in the descriptive report has been plotted as 190 as recommended. The angle values of a few positions were arbitrarily changed by the field party while smooth plotting to make the positions agree with the boat sheet. The positions were close inshore and in this case do not affect the value of the hydrography.
4. Depth curves - The usual depth curves were drawn on the sheet. Channel sides are steep and the curves less than 5 fathoms are not continuous.
5. This sheet joins H. 5174 to northward and H. 5185 to southward. Definite junction will be shown after those sheets are verified.

A comparison with H. 2108 (surveyed 1891) was made. The channel depths are in substantial agreement. H. 5150 shows much more detail along the shoreline, also develops several banks not found by the former survey. The rock awash on H. 2108 close inshore near lat. 55°54', long. 131°06' is shown as a -1/6 fathom depth on H. 5150.

6. Recommendation: No current observations were made during the 1931 survey in this area. H. 2108 shows several current observations which it may be desirable to retain; for all other information this sheet should supersede the previous survey in the area covered.

7. Reviewed by R. J. Christman, May 1932.

Inspected by E. P. Ellis

Approved:

A. M. Sobieralski
Chief, Section of Field Records

F. S. Borden
Chief, Section of Field Work

March 23, 1932

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
6 volumes of sounding records for

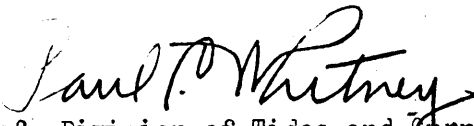
HYDROGRAPHIC SHEET 5150

Locality Channel Is. to Saks Cove, Behm Canal, S.E. Alaska

Chief of Party: E. W. Nickelberg in 1931
Plane of reference is mean lower low water, reading
4.1 ft. on tide staff at Fitzgibbon Cove
17.4 ft. below B. M. 1
4.3 ft. on tide staff at Shoalwater Pass
17.2 ft. below B. M. 1

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.


Chief, Division of Tides and Currents.