5103

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Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton, ~~Director~~

State: Alaska

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic } Sheet No. 5103
Field # 6

LOCALITY

Behm Canal

Blind Pass to Claude Pt.

1930

CHIEF OF PARTY

F. W. Eickelberg

U. S. GOVERNMENT PRINTING OFFICE: 1930

5103

Form 537

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

REG. NO. 5103

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. 6

REGISTER NO. 5103

State Alaska

General locality Behm Canal, ~~S. E. Alaska~~

Locality Blind Pass to Claude Pt. ~~Behm Canal, Behm Narrows, Burley Pass, Hassler Pass.~~

Scale 1 : 20,000 Date of survey Sept. 9 to Oct. 15, 1930.

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

Chief of Party E. W. Eickelberg

Surveyed by W. Weidlich, J. C. Partington, H. O. Fortin.

Protracted by W. Weidlich, J.C.Partington, H.O.Fortin.

Soundings penciled by W. Weidlich, J.C.Partington, H.O.Fortin.

Soundings in fathoms ~~XXXXX~~

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by H. C. McGlasson

Verified by H. C. McGlasson

Instructions dated March 7, 1930.

Remarks:

U. S. GOVERNMENT PRINTING OFFICE

DESCRIPTIVE REPORT

to accompany
HYDROGRAPHIC SHEET # 6.

AUTHORITY:

The hydrography on this sheet was executed under instructions of the Director of the U. S. Coast & Geodetic Survey, and dated March 7th 1930.

SCALE:

1 ; 20,000 and soundings are in fathoms.

LIMITS:

This survey covers the area from the west end of Black Island, Behm Canal, and extends eastward as far as to a line drawn between stations DIN and GUL.

It includes Blind Pass, Bailey Bay, the northern part of Hassler Pass, and the western part of Bell Arm as far as station LYE.

The work connects with hydrographic sheets #4 and #5.

CONTROL:

Triangulation and topography furnish the necessary control.

METHODS:

The approved methods of the service were used throughout.

The work plotted with blue position numbers was done with Tender #1, a 35 foot gasoline launch, with J. Partington, Jr. H. & G.E., in charge. In depths up to 15 fathoms the soundings were taken with a ten pound hand lead. In deeper water a power driven sounding machine was used, with stranded wire and an eighteen pound lead. All soundings are up and down.

The lines are spaced about 200 meters apart with splits between near the shores. These lines run in northerly and southerly direction.

In Blind Pass the lines run in southwesterly and northeasterly direction and are spaced about 100 meters apart.

The work in Bailey Bay and Bell Arm was done with the launch "Delta". F. H. Fortin, Jr. H. & G. E. was in charge of this party and their work is indicated by purple lower case letters.

Lines run in northerly and southerly direction spaced about 100 meters apart. A sound-

ing line was also run along the shores of the bay.

In depths of less than fifteen fathoms a ten pound hand lead was used, while in greater depths a steam sounding machine with stranded wire and a fourteen or eighteen pound lead was in use. All soundings are up and down.

The remainder of the sheet was done with the steam launch "Delta" with W. Weidlich, Mate, in charge. The work is indicated by red lower case letters.

The lines are spaced about 200 meters apart with splits between in the constricted areas where the bottom is irregular and also near the shores as far as Curlew Point.

In Behm Narrows and to the eastern limits of the sheet a line of soundings was run along the shores as close as safety would permit and the line turns in most cases at points to avoid grounding the launch.

A ten pound hand lead was used in depths of less than fifteen fathoms and in greater depths a steam sounding machine with a fourteen or eighteen pound lead and stranded wire. All soundings are straight up and down.

CHARACTERISTIC OF THE BOTTOM:

The bottom is very irregular with the exception of the deep body of water between Hassler Pass and Bailey Bay and the area west of Claude Point.

In the last mentioned area the depths seldom vary more than 2 fathoms, which is, taking the other parts of Behm Canal into consideration, is something very unusual.

In the more constricted areas the bottom is very irregular, especially near the rocky shores.

While signal building on the north shores at low tides the shoreline was found to be very steep in places, dropping very often into very deep water.

On account of the north shores being covered with silt some signals were built under difficulties and loss of time as it was very hard to obtain a secure footing.

The photograph below gives a fair illustration of what may be expected below the water. This cliff is located immediately north of PIN with depths of 3 to 4 fathoms alongside.

Station PIN was nothing else but a small rag tied to the branches of an alder bush attached to the cliff. The height of the cliff is estimated to be from 75 to 100 feet.

Taking into consideration this and many other geological features it may be taken for granted that the same condition exists below the water. This, no douht, accounts for the irregular soundings obtained near the shores.

KELP:

Behm Narrows and adjacent waters is free from kelp. Some marine growth, resembling skunk cabbage, was found near station FOB and was covered with several inches of silt.

DANGERS AND SHOALS:

The western entrance to Blind Pass is marked by a rocky islet. About 50 meters east of the islet are two rocks which bare 9½ feet at M.L.L.W.

In entering Blind Pass from the westward use the channel south of the rocky islets and steer a mid-channel course between the islets and the south shore taking care to avoid the rocks which lie about 40 meters north east of the south shores. This channel should be used by small craft only and shelter may be found in either the north or south bight.

At the western end of Blind Pass in Latitude 55 degrees 53 degrees and 131 degrees 40 minutes and 760 meters the channel is closed except at high tides.

At M.L.L.W. this bar bares about 3 feet and is composed of sand and small boulders.

The east entrance is free of dangers.

Bailey Bay is deep and apparently free of obstructions.

Behm Canal is apparently free from dangers and shoals located in this survey are of such depths as not to interfere with navigation.

The shoals located by the launch "Delta" are enumerated below.

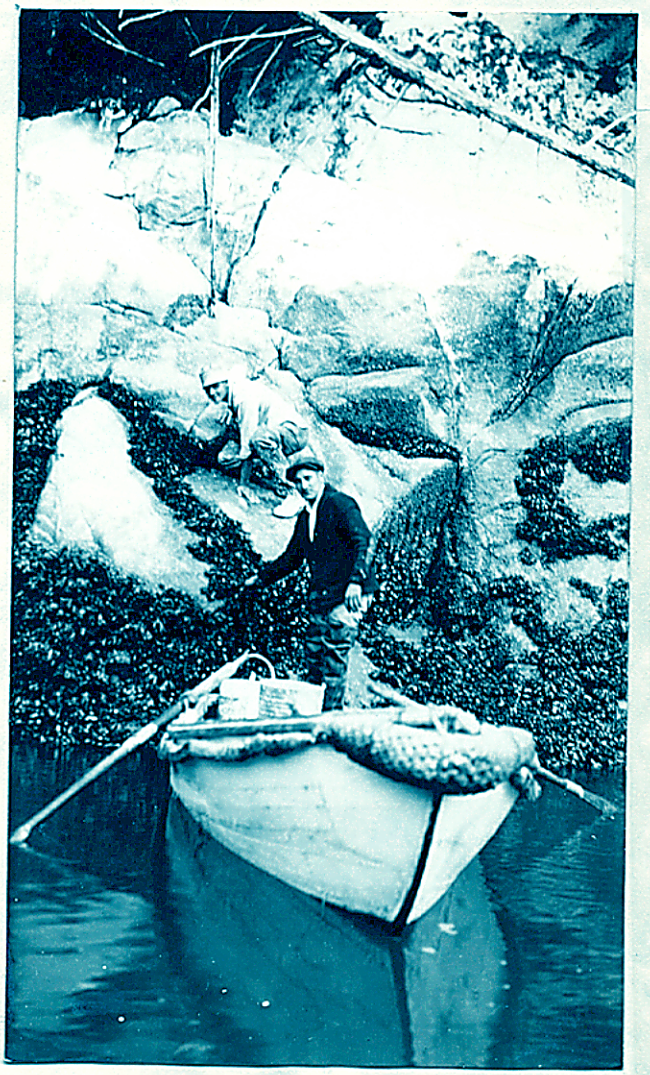
#1. A rocky patch with a least depth found of 10 fathoms at M.L.L.W. lies about 220 meters 295 degrees from YES. (Position 51 and 52 d. red) Bottom is rocky and very irregular in this vicinity. Attention is called to position 49 d. red, sounding forward 11 fathoms and 16.4 fathoms aft.

Numerous soundings were taken in this locality, only least depths being recorded and plotted.

#2. A shoal with a least depth found of 24 fathoms at M.L.L.W. lies about 360 meters 279 degrees from station WAS. (Position 165 m. red) The bottom is rocky. Area well developed by numerous soundings only those of least depth being plotted and recorded.

#3. A shoal with a least depth found of 24 fathoms at M.L.L.W. lies about 260 meters 208 degrees from station WAS. (Position 156 m. red) Bottom is rocky. Numerous soundings were taken, only least depths being recorded and plotted.

#4. Shoal water extends for about 120 meters from BIM in a southerly direction. Least depth obtained is 7¼ fathoms at M.L.L.W. (Position 143 m. red) Bottom is rocky.



#5. A shoal with a least depth found of $7\frac{3}{4}$ fathoms at M.L.L.W. lies about 250 meters $166\frac{1}{2}$ degrees from station FIB. The bottom is rocky and very irregular in this vicinity. Depths range from 7.4 to 11.4 fathoms within the length of the launch. (Position 61 h. red) This shoal is surrounded by much deeper water.

#6. A shoal with a least depth found of $6\frac{1}{2}$ fathoms at M.L.L.W. lies about 130 meters 272 degrees from station GUT. (Position 75 h. red)

#7. A shoal of small extent with a least depth of 14 fathoms at M.L.L.W. lies about 300 meters 279 degrees from station RIS. The bottom is rocky. (Position 42 m. red) Numerous soundings were taken although only the least depths were plotted and recorded.

#8. This shoal area extends for about 190 meters in a south westerly direction from station CUB. Least depth found at the extreme end is 3-1/6 fathoms at M.L.L.W. The bottom is rocky. (Position 92 m. red)

#9. A boulder of small extent(about the length of the launch) lies about 290 meters 262 degrees from station LEM. The least depth found was $9\frac{1}{4}$ fathoms at M.L.L.W. (POSITIONS 121 l. and 103 m. red) The bottom is very irregular in this vicinity. (Position 95 m.) Here the sounding aft with a hand lead was 13 fathoms while forward we obtained no bottom at 18 fathoms. Position 121 l. red. shows a difference of 3 fathoms, and within the length of the launch. This boulder is surrounded by much deeper water. Numerous soundings were taken in this locality on two working days, with only the least depths found being plotted and recorded.

The launch hung on to the rock for a short time in spite of the strong current. This rock was relocated by dropping the anchor over the side with 20 fathoms of line and drifting with the current.

CURRENT: A current station was occupied 52 hours and readings were taken every half hour. This station was located about half way between stations BIM and HEL, as indicated on the smooth sheet.

Maximum strength of current was not obtained at that time but author of this report is inclined to believe that the currents attain a velocity of more than $2\frac{1}{2}$ knots, depending a great deal upon the winds. Ebb and flood were observed to run at all times in a westerly direction and, judging from the tide rips in the vicinity of Gedney Island the floods meet in that vicinity, depending however a great deal upon the direction of the winds.

On h. day, at the beginning of the day's work, hydrography had to be discontinued on account of the strong current in the immediate vicinity of station POT. An attempt was made to run a sounding line near the shores using a hand lead. Speed was increased to about 3 knots, yet

the launch made no headway and, since at a much greater speed it is almost impossible to get up and down soundings, the launch shifted to the south shores and the work proceeded as usual. Judging from this, the current must have attained a velocity of at least 2½ knots and the conclusion is drawn that the current is much stronger at the north side of the Narrows.

It was also noticed while working in this locality that it took much longer to reach the working grounds than to return to the ship.

A strong westerly set was experienced west of Claude Point while developing the 9¼ fathoms spot. The only way to find the spot was to drop the anchor over the side to a depth of 20 fathoms and let the launch drift with the current which ran at an estimated velocity of about 2 knots. This method of relocating the boulder proved to be a success and it took only a few minutes to fetch up on the desired spot where some time had been spent previously running a system of regular sounding lines.

A strong westerly set was also experienced while developing a shoal between stations CRY and WAS and east of the latter station. Here it was only with difficulty that the launch held the position. The strength of the current was estimated to be from 2 to 3 knots.

TIDES:

A portable tide gauge was in operation at Yes Bay during part of the season and comparative readings were also taken from 52 hours.

ANCHORAGE:

The ship anchored for some time in a small bight south of Bell Island Hot Springs, about 200 meters SSE of a rock which bares at half tides. Depths range from 16 to 20 fathoms, with a muddy and rocky bottom.

Respectfully submitted,

W. Weidlich,
Mate, U.S. Coast & Geodetic Survey.

Approved and forwarded:

E. W. Eickelberg,
Commanding Officer,
U.S.C. & G.S.S. EXPLORER.

STATISTICS

TO ACCOMPANY HYDROGRAPHIC SHEET # 6

DATE	VOL.	DAY	BOAT	STATUTE MILES	POS.	SOUNDINGS HAND	SOUNDINGS MACH.	MILES TO & FROM WORK.
9- 9-30	1	a	DELTA	19.8	144	97	244	2.4
9-10-30	1	b	"	19.0	107	33	147	3.9
9-11-30	1	c	"	9.0	89	51	137	2.5
9-12-30	1&2	d	"	15.2	125	41	200	2.5
9-16-30	2	e	"	17.3	129	94	249	4.2
9-17-30	2	f	"	18.0	115	40	196	7.6
9-18-30	2&3	g	"	17.0	97	21	175	12.5
9-22-30	3	h	"	8.2	96	139	88	2.0
10- 6-30	3	j	"	6.0	63	106	72	2.4
10- 7-30	3	k	"	18.9	141	150	111	14.5
10- 8-30	4	l	"	17.0	166	139	255	11.5
10- 9-30	4	m	"	13.0	182	502	70	3.5
10- 6-30	1	a	Launch #69	7.4	42	4	87	5.0
10- 7-30	1	b	"	16.8	134	154	221	5.0
10-13-30	1	c	DELTA	7.8	89	20	136	5.5
10-14-30	1	d	"	17.2	125	151	127	6.5
10-15-30	2	e	"	6.3	84	85	116	6.0
9-16-30	1	a	Tender #1	14.0	81	---	170	10.0
9-17-30	1	b	"	17.1	127	---	199	11.5
10- 6-30	1	c	"	13.6	107	125	150	10.0
10- 9-30	1	d	"	1.0	11	32	---	5.0

APPROVAL SHEET

TO ACCOMPANY SHEET #6.

This sheet and the accompanying records have been examined and are approved.

The shoreline on this sheet was transferred by Mr. Fortin, who made a mistake in inking in the low water line. Where this line disagreed with the plotted hydrography the inked line was erased and the low water line was changed to correspond.

Signal END on this sheet was located by the topographer, but it falls off his sheet. He located it in a tracing from his other work and its position should be accepted as correct on the smooth sheet.

E. W. Eickelberg,
Commanding Officer,
U.S.C. & G.S.S. EXPLORER.

Section of Field Records

Sheet No 5103
Surveyed in 1930
Chief of Party E. W. Eichelberg
Surveyed by - W. Weidlich,
J.C. Partington, and H.O. Fortin.
Protracted by - W. Weidlich, J.C. Partington,
and H. O. Fortin.
Soundings plotted by - W. Weidlich,
J.C. Partington, and H.O. Fortin.
Verified & Inked by - S.P. McGlasson.

1. The records conform to the requirements of the general instructions. ✓

2. The plan and character of development fulfill the requirements of the general instructions. ✓

3. The sounding lines crossing are adequate. However there are few crossings except near the shore line and as this body of water has an extremely steep slope it is very hard to judge the crossings properly. ✓

4. The usual depth curves cannot be completely drawn within the limits of this

sheet. This is due to the fact that the bottom is very irregular and the rocky shoals do not permit the completion of the depth curves on the scale of this sheet.

5. The field plotting was completed to the extent prescribed in general instructions.

6. The office draftsman did not have to do over any part of drafting done by field party, except as noted on Statistic sheet.

7. The junctions with adjacent sheets were found to be satisfactory. However all adjacent sheets were not completed and a further study of these sheets will be made when they have been verified and inked.

Respectfully submitted,

L. C. McGlasson

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. H. 5103
Blind Pass to Claude Point, Behm Canal, Alaska.
Surveyed in 1930
Instructions dated March 7, 1930 (Explorer)
Hand Lead and Machine Soundings - Fixed Position Work

Chief of Party - E. W. Eickelberg.
Surveyed by - W. Weidlich, J. C. Partington, H. O. Fortin,
Protracted and soundings plotted by - W. W., J. C. P., H. O. F.
Verified and inked by - G. C. McGlasson.

1. The work conforms to both the requirements of the Hydrographic Manual and the Specific Instructions. There are no particular problems presented by this survey. Area surveyed is mostly deep water close up shoals. No shoals dangerous to navigation are involved. The area at the western entrance to Blind Pass should have been surveyed on a 1-10,000 scale in order to better delineate the channel thru here. While there is a bar across the Pass at low water, there is a considerable range of tide here making it a usable channel for small boats at high water. This area has been replotted in the office on a 1-10,000 and is shown on an insert on this sheet.

2. Junctions with Contemporary Surveys.

The junction with H. 5106 on the west is satisfactory.

3. Comparison with old surveys.

No detailed comparison has been made with the old surveys H. 2107, H. 2108 and T. 2063 except at the junction with the present survey where the agreement was found satisfactory. The first two sheets are on a scale of 1-40,000, with the exception of Blind Pass which is on a 1-20,000 scale but sparsely developed, and practically cover the entire area included in the present survey. Because of the larger scale and greater detail on the new survey together with the fact that no shoals of importance were developed on the old surveys, it was not deemed necessary to scrutinize the old work too closely. The work on these sheets (H. 2107 and H. 2108) that fall within the limits of the present survey can safely be superseded by the latter survey, which will become the basic survey for this area.

T . 2063 is a combination hydrographic and topographic sheet surveyed on a scale of 1-20,000. It satisfactorily joins the present survey at Bell Arm and Anchor Pass. Whether the field party intended this to suffice for the proposed new chart is not known, but it should be noted that notwithstanding the scale of the old survey, the entire survey consists of but 3 lines, a mud channel line and a line along each shore. It is in reality in no greater detail than the sheets H. 2107 and H. 2108 which the present survey covers.

4. Additional Work.

No additional work is recommended within the limits of the present sur-

H. 5103.

vey but it is strongly recommended, if not already contemplated, that the work in Bell Arm and Anchor Pass as shown on T. 2063 and the work in Behm Narrows (as shown on H. 2108) to the eastward of the limits of the present survey (H. 5103) be covered by a new survey on a scale of 1-20,000, commensurate with the work on the present survey (H. 5103). Done

5. Attention is called to the fact that a rock awash (bares 6' at M.L.L.W) about 90 meters N.E. of △ Blind (see insert) has been added to the smooth sheet on authority of note in sounding record between Pos. 7 and 8d. The rock was covered 1 foot at the time it was observed and was 30 meters away. It is barely possible this refers to the rock awash closer to the shore than the topographer located. The topographer was consulted relative to this and although he expressed some doubt as to the existence of a rock that far offshore, nevertheless did not feel justified in stating definitely that no such rock exists. The additional rock was therefore accepted.

6. Reviewed by - A. L. Shalowitz - August 1931.

Approved: A. M. Sobieralski. (signed)

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5103.

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	2254
Number of positions checked	660
Number of positions revised	15
Number of soundings recorded	5134
Number of soundings revised	67
Number of signals erroneously plotted or transferred	None

Date: 19 August, 1931

Cartographer: E. M. Glosson

80
16

May 26, 1931

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 5103

Locality **Blind Pass to Claude Point, S. E. Alaska**

Chief of Party: **E. W. Eickelberg**
Plane of reference is **mean lower low water, reading**
2.2 ft. on tide staff at **Yes Bay**
26.9 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.

Paul P. Whitney

Chief, Division of Tides and Currents.