

5175

5175

Form 504
Ed. June, 1928

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

U. S. COAST & GEODETIC SURVEY
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APR 19 1932

State: Alaska

Acc. No. _____

DESCRIPTIVE REPORT

Topographic } Sheet No. 5175
Hydrographic } Field #5

LOCALITY

Behm Canal

Candle I., to Skirt Pt.

1931

CHIEF OF PARTY

E.W. Eickelberg, F.L. Peacock

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. 5175

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. 5

REGISTER NO. **5175**

State ~~S. F.~~ ALASKA

General locality BEEM CANAL - ~~MANZANITA BAY - RUDYERD BAY~~

Locality ~~ALASKA~~ Candle I., to Skirt Pt.

Scale 1:20,000 Date of survey JUNE - JULY - AUGUST

Insert: 1:10,000 SEPTEMBER-OCTOBER, 19 31

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

Chief of Party E. W. EICKELBERG - FRED. L. PEACOCK

Surveyed by W. WEIDLICH & HENRY O. FORTIN

Protracted by W. WEIDLICH & HENRY O. FORTIN

Soundings penciled by W. WEIDLICH & HENRY O. FORTIN

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

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by _____

Inked by Harold W. Murray

Verified by H.W.M.

Instructions dated March 7th, 19 30

Remarks: _____

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 5

MANZANITA BAY - RUDYERD BAY

BEHM CANAL - S. E. ALASKA

- 0 -

E. W. EICKELBERG - FRED. L. PEACOCK

CHIEFS OF PARTY

SEASON OF 1931

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 5

BEHM CANAL - S. E. ALASKA

AUTHORITY:

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

SCALE:

1:20,000 and insert of Manzanita Bay and Passage, 1:10,000. Soundings are in fathoms. ✓

LIMITS:

The whole navigable area between Latitudes 55° 23' 30" and 55° 37' North, was covered by this survey and connects with hydrographic sheets No. 4 and No. 7. ⁵¹⁷⁶

5186

METHODS:

The approved methods of the service were used throughout with a few modifications on account of the very irregular bottom.

A considerable amount of development was done in this locality. Several new shoals were located and the depths of others reduced to much less. ✓

All launch work was performed with excellent fixes and lines run generally on ranges. This explains the lack of compass headings in the sounding volumes.

The launch "Delta" was used for the greater part of the survey and the letter days for this launch are shown in red. ✓

A ten pound hand lead was used in depths of less than 15 fathoms and in greater depths a steam sounding machine with an eighteen pound lead and stranded wire was used.

The lines are spaced about 300 meters apart with splits near the shores and in areas where much closer development was required on account of the nature of the bottom.

The sounding lines were run in an easterly and westerly direction with the exceptions of Manzanita Bay, Rudyerd Bay and the area in the vicinity of a group of islands south of Sargent Bay, where the lines run parallel with the meridian.

Numerous shoals and banks were developed with the sounding machine. In this case the lead was lifted a few feet off the bottom, yet taking great care that all soundings were up and down. Hundreds of soundings were taken, although only least depths obtained were recorded and plotted.

In shallow waters the shoals were developed with two hand leads and on very critical spots, with several hand leads.

If depths were not too great, the launch was anchored using a long anchor line and steaming around it. All soundings are vertical.

The launch "Delta" surveyed the area north of Shoalwater Pass and triangulation station VEX, connecting and overlapping with hydrographic sheet No. 4. 5186

- 0 -

The area south of triangulation station VEX including Shoalwater Pass, was surveyed by Tender No. 1, and connects and overlaps with hydrographic sheet No. 7. 5176

Lines were run in an easterly and westerly direction, with the exception of Shoalwater Pass, where the lines were run with the channel.

An eight pound hand lead was used in depths of less than 15 fathoms and in greater depths a motor driven sounding machine was used with a fourteen pound lead and stranded wire.

Lines are spaced about 300 meters apart with splits near the shores and in areas which required much closer development.

This work is indicated by blue lower case letters in records and on sheets.

- 0 -

CONTROL: Triangulation and topography furnish the necessary control.

TIDES:

An automatic portable tide gauge was in operation in Shoalwater Pass, and all tide reducers were taken from its records covering the period during which the soundings were taken.

KELP:

The area covered by the launch "Delta" is apparently free of kelp. A considerable amount of eel grass was found at the mouths of the larger streams and in the close vicinity of each.

CURRENTS:

No current observations were taken in this locality. The flood runs in a northerly direction and appears to be strongest near the shores of the mainland. The ebb, which runs in opposite direction is greatly influenced by winds and rains.

During the rainy season the ebb is strongest which is caused by the freshets of the large streams and at that time water is discolored making it impossible to see bottom even in very shallow water.

Exceptions were noted in the vicinity of New Eddystone Rock. On "d" day, while working south of the rock the current was running in a northerly direction in the west channel, but when sounding in the east channel conditions were found to be reversed.

The estimated velocity is from 1 to $1\frac{1}{2}$ knots.

BOTTOM:

The bottom is very irregular and no doubt resembles a great deal the contours on the land.

* On "l" day, position #59, a depth of 239 fathoms was obtained. While getting underway, the lead carried away with practically all the wire out.

These lines were re-run on "m" day and the deepest sounding was 192 fathoms, position 47 "m". On "z" day also this area was developed further and shoaler obtained.

The only explanation is, that the lead dropped into a chasm as shown below and as described in Mr. Fortin's descriptive report, covering hydrographic sheet No. 6.

* 239 rejected by A.M.S. with concurrence of E.W.E.



While developing shoals with hand lead and sounding machine, differences of several fathoms within the length of the launch were noted and recorded. See positions 25 "a"; 18 and 27 "x", and 35 and 38 "y".

The bottom characteristics in general are rocky and muddy in deeper water; rocky, muddy and sandy near the flats north of Tramp Point, and in Manzanita Bay and Checats Cove.

The shore line is rocky and very abrupt in many places with exceptions at the mouths of the larger streams, where there are mud flats and gravel beaches. ✓

DANGERS AND OBSTRUCTIONS:

This survey revealed numerous rocks and other obstructions. Depths of old charts were greatly reduced. The most important are enumerated below beginning at the north end of the sheet at the west shore of Behm Canal.

1. A group of rocks which bare at minus tides lie about 100 meters, 106° from signal MIX. Least depth obtained by the "Delta" was 2 feet as shown on scale of 1:20,000, position 1"b" red. The rocks shown on scale of 1:10,000 were located by topographer. ✓

2. A ledge extends for about 60 meters in a north-easterly direction from signal NOR. (Positions 29,30 & 31 "t" red). ✓

3. Foul area extends for some distance at the head of Sargent Bay from a group of rocky islets on which signal OS is located. Least depth obtained is 4 fathoms. (Position 33 "w" red). ✓
*2 fath and *
69-70 ✓*

4. A group of rocks which bare about 4 feet at M.L.L.W. lies about north-east and north of signal SUN. The north, east and south limits were located while signal building. Positions are entered in sounding volume No. 1, page 13, and designated a². On account of heavy winds and sea it was impossible to go into details. Regular sounding lines were run on "u" day, but it being high tide and the bottom not visible, nothing less than 2 feet was obtained. At this time, the weather was not any too favorable, wind and sea steadily increasing, making it difficult to keep the launch on the line. ✓

5. A foul area extends for about 140 meters from the north end of a wooded island on which signal OX is located. This foul area drops into much deeper water as shown on positions 88 and 89 "w" red. ✓

6. The area between the ^{two} westernmost of the islands is foul and studded with rocks which bare at M.L.L.W. ✓

7. A shoal with a least depth of 5-2/6 fathoms at M.L.L.W. lies 395 meters, 86° from signal OR. The bottom is rocky with no indication of any kelp. (Positions 101 and 102 "w" red). ✓

8. A rock which bares about 2 feet at M.L.L.W. lies about 220 meters, 23° from signal SU. This rock was located while signal building, and by searching the locality for the rocks at minus tides. (Position 2 "a²" red). ✓

9. A shoal with a least depth of 11 fathoms at M.L.L.W. lies about 240 meters, 136° from signal US. The bottom is rocky and very irregular. (Positions 26 and 27 "x" red). On position 27 "x" the sounding aft was 11 1/4 fathoms, forward; 16 fathoms. On position 18 "x" the sounding forward was 13 1/2 fathoms, aft; 17 fathoms. ✓

10. A shoal with a least depth of 9 3/4 fathoms at M.L.L.W. lies about 410 meters, 160° from signal US. (Position 153 and 154 "w" red). On "x" day nothing less than 10 fathoms was found. (Position 37 "x" red). ✓

11. A shoal with a least depth of 10 fathoms at M.L.L.W. lies about 260 meters, 246° from signal US. (Position 55 "x" red). The bottom is rocky and muddy. ✓

12. A shoal with a least depth of 3½ fathoms at M.L.L.W. lies about 370 meters, 75° from signal YES. The bottom is rocky. (Positions 43 and 45 "x" red). ✓

13. A foul area extends for about 300 meters north of signal YES. Position No. 74 indicates the northern limit. The area is covered with eel grass. ✓

14. A rock with a least depth of 2-2/6 fathoms at M.L.L.W. lies about 380 meters, 70° from signal VIS. The area is well developed, only the least depth being recorded and plotted. Position 108 "v" red). The bottom is not visible and no indication of any kelp. ✓

15. A shoal of considerable extent lies about 400 meters east and south-east from signal FOG. The bottom is very irregular as indicated at position 35 "y". The sounding forward is 15 fathoms while over the stern, 8½ fathoms. Position 38 "y", 8½ fathoms forward, and 13½ fathoms aft. The shoal has a least depth of 6½ fathoms, rocky bottom, and lies about 450 meters, 106° from signal FOG. ✓
p 55° 30' 44.7"

16. A shoal with a least depth of 11 fathoms at M.L.L.W. lies about 300 meters 94° from signal FISH. (Position 132 "l" red). The bottom is rocky. ✓
p 55° 30' 14"

17. A shoal with a least depth of 27 fathoms at M.L.L.W. lies about 1800 meters, 73° from triangulation station VEX. (Positions 78 and 79 "h" red). The bottom is rocky. ✓

18. A shoal with a small extent with a least depth of 7½ fathoms at M.L.L.W. lies about 170 meters, 0° from signal NAL. The bottom is rocky. (Position 36 "h" red). ✓
p 55° 28' 12.34"
λ 130° 33'

19. A group of rocks which bare at low tides, is surrounded by shallow water and lies about 1600 meters, 17° from the northern point of Entrance Island. ✓

20. A shoal with a least depth of 18 fathoms at M.L.L.W. lies about 360 meters, 275° from signal ALL. The bottom is rocky. (Positions 6 and 12 "h" red). ✓

21. New Eddystone Rock, a very prominent landmark is a shaft 235 feet high. Gravel spits extend in a east-south-easterly and west-south-westerly direction for about 400 to 500 meters.

The bottom is shallow and fairly uniform but drops off rapidly into deep water. New Eddystone Rock may be approached with safety at a distance of about 600 meters.

The sunken rock shown on Chart No. 8102 apparently does not exist. Considerable amount of time was spent in order to locate it and as the area was investigated at low tides and the bottom comparatively uniform, it may be taken for granted that the rock does not exist. The rocks located by the topographer are not a menace to navigation as they are well within the spits.

22.

A shoal with a least depth of 16 fathoms at M.L.L.W. lies about 475 meters, 13° from a rock on which signal PIR is located. The bottom is rocky. (Positions 90 and 91 "m" red).

✓ $\phi 55^{\circ} 30.56'$
 $\lambda 130^{\circ} 53.3'$

23.

The bottom in the immediate vicinity of New Eddystone Islands is very irregular.

(a) A shoal with a least depth of $8\text{-}3/4$ fathoms at M.L.L.W. lies about 310 meters, 27° from signal D0. (Position 123 "n" red).

✓ $\phi 55^{\circ} 31'$
 $\lambda 130^{\circ} 54.2'$

(b) A shoal with a least depth of $9\text{-}1/4$ fathoms at M.L.L.W. lies about 225 meters, 0° from signal D0. Rocky bottom. (Position 110 "n" red).

(c) A shoal with a least depth found of 17 fathoms at M.L.L.W. lies about 445 meters, 2° from signal D0. Rocky bottom. (Position 145 "n" red).

24.

A rocky patch which covers an area of about 30 square meters with a least depth of $2\text{-}4/6$ fathoms at M.L.L.W. lies about 640 meters, 358° from signal PA. The bottom is very irregular and drops off into $7\frac{1}{2}$ fathoms within a few feet. The area is well developed, numerous soundings were taken, only the least depths recorded and plotted. (Position 25 "a" red). The bottom is visible with no indication of any kelp.

25.

A shoal with a least depth of $9\frac{1}{2}$ fathoms at M.L.L.W. lies about 780 meters, 6° from signal PA. The bottom is rocky. (Position 16 "a" red). ✓

26.

The area between the northernmost of New Eddystone Island and the mainland is foul and blocked by two rocks which bare 5 and 16 feet at M.L.L.W. There is a small boat passage between these two rocks with a controlling depth of about $1\frac{5}{6}$ fathoms. ✓

The rock which bares 16 feet is marked by a spar lashed by fishermen to the rocks. The rock on which signal JOY is located is connected with the island at minus tides. ✓

27.

A shoal of considerable extent with a least depth of 33 fathoms at M.L.L.W. lies about 2700 meters, 331° from signal DO. The bottom is rocky. (Position 75 "j" red). ✓

This area is thoroughly developed as it lies north of Eddystone Rock and in the steamer track. Chart No. 8102 shows a depth of 41 fathoms. ✓

28.

A shoal of considerable extent and of great importance, as it offers a temporary anchorage during the summer months in Rudyard Bay, lies about mid-channel and north of signal GAT, near a small, but prominent land slide. The least depth obtained is 13 fathoms, about 250 meters, 350° from signal GAT. (Position 169 "p" red). The depths on this shoal range from 13 to 20 fathoms and it drops off rapidly into much deeper water, especially near the northern limits. This shoal runs in a north-north-westerly and east-south-easterly direction, and is about 300 meters long and 150 meters wide at its southern limits. The bottom is very irregular, rocky and muddy. ✓

The following dangers are those listed by Mr. Henry O. Fortin, Jr. H. & G. E., to be incorporated in this descriptive report:

1. A least depth of $8\frac{3}{4}$ fathoms on shoal area, Position 155 "g", hard bottom, 92° true, 330 meters from signal FOP. ✓

φ 55-25.85 x 130-58.70

Warp Core. ✓

2. A least depth of 5-2/6 fathoms ✓
on shoal area, Position 132 "g", hard bottom, 29° true, 190
meters from signal SOT.
3. A least depth of 89 fathoms on ✓
shoal area, Position 20 "m", muddy bottom, 55° 25' (365 m.)
North Latitude, 130° 56' (560 m.) West Longitude.
4. A rock baring 10 feet at M.L.L.W., ✓
140° true, 105 meters from signal VAN. *S. marginatus*
5. A reef baring 6 feet at M.L.L.W., ✓
174° true, 190 meters from signal TUG.
6. A reef baring 15 feet at M.L.L.W., ✓
225° , 95 meters from signal TUG. ✓
7. The southern extremity of a reef ✓
covered 4 feet at M.L.L.W., Position 29 "l", 166° true, 125
meters from signal POET.
8. ⁴ A very dangerous obstruction with ✓
a least depth of 5 feet at M.L.L.W. on a sunken rock, mid-channel, ✓
Positions 16 and 17 "l", 273° true, 190 meters from signal YAP. ✓
9. A sunken rock covered 10 feet at ✓
M.L.L.W. (Position 10 "a" blue), 88° true, 75 meters from sig-
nal OF. ϕ 55-28 K 130-55
10. A rock baring 1 1/2 feet at M.L.L.W., ✓
48° true, 75 meters from signal OF.
11. A least depth of 12 fathoms on ✓
Position 24 "n", on shoal area of small extent, 304° true, 150
meters from signal OJD. ϕ 55-27.8 K 130-54.55

ANCHORAGES:

Manzanita Bay is located along the west shore of Behm Canal and just north of Sargent Bay. It offers the best anchorage in this locality and was used to a great extent while working in this locality. This bay offers the best anchorage and protection from south-easterly winds in 20 to 23 fathoms, in a bight directly north of Sargent Bay. When entering this anchorage, care should be exercised to favor the east shores of the bay, in order to avoid several rocks which bare at low tides and which mark the extreme limits of the flats, bare at low water and located on the north-west side of the bay.

The head of Sargent Bay is not suitable for an anchorage on account of being exposed to southerly winds and having great depths.

A foul area extends from 100 to 200 yards from Tramp Point and continues for about a half a mile along the shore and into Sargent Bay. There are several shoals with depths of $3\frac{1}{2}$ and $2\frac{2}{6}$ fathoms about 450 yards off-shore.

Checats Cove offers good protection and anchorage to small vessels, from southerly winds, in about 8 to 10 fathoms, muddy bottom, about 100 to 200 yards north of the south entrance. Strangers should select an anchorage at low tides, as the flats extend for some distance and are then plainly visible.

A summer anchorage may be had in Rudyerd Bay about $\frac{1}{2}$ mile east of Point Louise and about 400 yards north of a small but prominent slide, in about 18 to 20 fathoms, hard bottom with occasional mud. The Steamer EXPLORER used this anchorage quite frequently and anchored on range as shown on the picture below. The range is; north point of the Punchbowl, small slide and green patches above. The small snow patch in range with point of Punchbowl was the range at the earlier part of the season.

See p. 10 for description



The following anchorages are those listed by Mr. Henry O. Fortin, Jr. H. & C. E., to be incorporated in this descriptive report:

Wasp Cove affords a good anchorage for small craft, 7 fathoms of water, soft bottom, but no protection from northerly winds.

The small cove at $55^{\circ} 24.5'$ North Latitude and $130^{\circ} 50.5'$ West Longitude, affords temporary anchorage for small craft, but quickly drops off to deep water.

A good anchorage may be had for small vessels in Shoalwater Pass at Latitude $55^{\circ} 25.2'$ North, and Longitude $130^{\circ} 53.8'$ West, in 27 fathoms of water, muddy bottom, but care should be taken in entering the south entrance on account of the sunken rock in mid-channel and other dangerous reefs.

An excellent, practically land-locked, anchorage for small vessels may be had at 55° 26.5' North Latitude and 130° 54.1' West Longitude, in 17 fathoms of water, muddy bottom. This anchorage should only be attempted with local knowledge and fair or high tide on account of the bars and narrow passages at both the south and north ends.

A good anchorage for very small craft may be obtained in the small cove at 55° 26.4' North Latitude and 130° 55.1' West Longitude, soft bottom with 3 fathoms of water.

CHANNEL:

The main channel of the canal is free from dangers.

New Eddystone Rock may be passed on either side, but should be given a berth of at least 600 meters in order to clear the gravel spits and to be sure of a safer course, the shores of either Revillagigedo Island or New Eddystone Islands should be favored.

The area east of New Eddystone Island should not be navigated by strangers except at low tides, when all obstructions are visible.

There is a small boat channel between the easternmost of New Eddystone Islands and the mainland, between two rocks which bare 5 and 16 feet at M.L.L.W., this channel is recommended only at low tides, and has a depth of about 1-5/6 fathoms.

The approaches to Rudyerd Bay are clear and the south shore may be passed close to.

The passage between Revillagigedo Island and a small group of wooded islands is clear, but the islands should be favored in order to clear the flats which extend for some distance. No attempt should be made to negotiate the channels between the islands in an easterly or westerly direction, as they are blocked by numerous rocks which bare at low tides.

A foul area extends for some distance from the north and south ends of the westernmost island.

The narrow channel west of Manzanita Island is easily negotiated by keeping in mid-channel. Its controlling depth is 1-2/6 fathoms. This channel is used to a large extent by small fishing vessels.

WEATHER:

The weather was favorable while the work was in progress, with the exceptions of a few afternoons, when the launch had to run for shelter. At the beginning of the days work, cold winds from the north were prevailing, shifting to south-east during the afternoon and increasing in strength to a moderate breeze about 3:00 P.M.

MINERAL SPRINGS:

Several springs were located immediately south of New Eddystone Rock and north of Ella Point.

Access to these springs can only be had at low tides. The water has a very pleasant flavor and resembles Vichy Water a great deal. One of the springs is covered several feet at high tides.

Respectfully submitted,


W. Weidlich

Approved and forwarded,


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

LIST OF STATISTICS

HYDROGRAPHIC SHEET NO. 5

Date	Vol.	Day	Boat	Stat.	SOUNDINGS			Naut. Miles To & From Wk.	Remarks	
					Miles	Pos.	Hand Mach.			
				Tender						
August	13	1	a	#1	25.1	136	34	159	4.5	Mr. Fortin
"	14	1	b	"	24.3	146	197	140	7.4	
"	15	1	c	"	12.4	91	36	150	5.1	
"	17	1	d	"	10.9	93	32	129	2.2	
"	18	2	e	"	27.4	169	25	197	2.2	
"	19	2	f	"	8.6	61	11	77	2.9	
"	20	2	g	"	19.5	184	30	224	5.5	
"	25	2	h	"	17.4	143	39	164	11.2	
"	26	3	j	"	21.4	171	197	288	3.2	
"	28	3	k	"	14.2	111	309	157	3.1	
Sept.	14	3	l	"	6.8	68	74	68	4.8	
"	14	4	l	"	6.5	83	286	43	8.4	
"	15	4	m	"	10.2	82	57	93	12.1	
"	22	4	n	"	3.0	28	4	42	15.5	
October	6	4	p	"	0.0	15	15	--	12.5	
Total:					207.7	1581	1346	1931	100.6	

June	18	1	a	DELTA	13.8	76	10	93	15.0	Mr. Weidlich
"	19	1	b	"	15.0	85	12	115	3.0	
"	20	1	c	"	11.5	65	10	73	5.2	
"	22	1	d	"	7.4	39	8	46	7.7	
"	23	1	e	"	17.2	120	20	142	5.5	
"	24	1&2	f	"	17.2	137	73	194	1.6	
"	29	2	g	"	8.3	96	410	54	0.4	
"	30	2	h	"	12.8	154	47	176	4.7	
July	1	2	j	"	3.2	18	1	25	6.2	
"	2	2&3	k	"	20.0	110	36	140	5.5	
"	6	3	l	"	11.2	60	10	62	4.7	
"	7	3	m	"	19.0	155	208	143	0.2	
"	8	3	n	"	16.0	187	70	268	1.3	
"	9	3&4	p	"	15.0	99	59	128	5.0	
"	10	4	q	"	16.1	111	76	175	6.1	
"	13	4	r	"	7.4	78	22	95	1.3	
"	14	4	s	"	15.2	180	78	238	8.0	
"	15	5	t	"	13.0	160	320	166	8.6	
"	16	5	u	"	13.2	154	100	207	8.1	
"	17	5&6	v	"	8.3	110	130	105	8.2	
"	28	6	w	"	11.9	161	250	116	10.0	
"	29	6	x	"	13.8	175	290	121	10.0	
"	30	6	y	"	2.5	48	40	25	7.6	
"	31	6&7	z	Tender #1	18.1	137	61	186	9.9	

(Continued)

Date	Vol.	Day	Boat	Stat.	SOUNDINGS			Naut.Miles	Remarks	
				Miles	Pos.	Hand	Mach.	To & From		Wk.
August	1	7	a'	DELTA	8.7	78	52	101	4.4	Mr. Weidlich
"	3	7	b'	"	21.0	117	91	168	9.3	
"	4	7	c'	"	18.9	108	19	167	10.8	
"	5	7&8	d'	"	16.5	137	142	176	8.0	
"	6	8	e'	"	13.0	106	155	92	19.0	
"	12	8	f'	"	6.2	80	16	92	8.2	
"	13	8	g'	"	15.0	141	31	155	11.5	
"	14	8&9	h'	"	16.0	163	55	199	10.7	
"	15	9	j'	"	7.2	78	--	94	4.5	
"	17	9	k'	"	15.0	163	181	167	11.0	
"	18	9	l'	"	18.0	155	82	226	10.0	
"	19	10	m'	"	10.1	126	44	168	5.8	
"	20	10	n'	"	18.0	208	118	235	6.5	
"	25	10	p'	"	<u>16.0</u>	<u>176</u>	<u>73</u>	<u>192</u>	<u>4.5</u>	
Total:					506.7	4551	3400	5325	268.0	

Oct. 22, 1932

Section of Field Records
Report on H-5175
Candle Id. to Skirt Pt., Behm Canal, Alaska
Surveyed in 1931
Instructions dated March 7, 1930

Chief of Party - E. W. Eichelberg & F. L. Peacock
Surveyed by - W. Weidlich & H. O. Fortin
Projected by - W. W. & H. O. F.
Soundings penciled by - W. W. & H. O. F.
Verified & Inked by - Harold W. Murray

1. The records conform to the requirements of the Hydrographic manual except that:-
 - a. Soundings were frequently entered & reduced in fm. & tenths, having been read from a lead line of like character.
 - b. In many volumes, the (-) sign was entered before the reducer whereas the heading of the columns had already denoted a negative nature.
2. The plan & character of development fulfill the requirements of the Hydrographic manual. Considering that over 6000 positions were taken, the resultant work is surprisingly free from confusion of signals.

3. The plan and extent of development satisfy the specific instructions.
4. There are few if any sounding line crossings.
5. Curves of from 20 to 200 fm can be satisfactorily drawn. The rapid slope of the bottom, scale & proximity of soundings varying by large amounts prohibit the complete and satisfactory drawing of the lesser curves.
6. The field plotting & plotting of soundings was of unusually high character. However, a few departures from the regular practice are as follows:-
 - a. Day letters of the first 10 volumes were recorded at every position instead of in accordance with FP 145, H.M.
 - b. In plotting detached soundings of shoal development, many positions were omitted. Since the verifier found that many of these positions fell outside the congested development and outlined the full extent of the shoal, the omitted positions were consequently plotted in the office. A typical example is F'day, Vol. #8 in Lat. $55^{\circ}31.5'$; Long. $130^{\circ}33.5'$
 - c. The transfer of topography to the smooth sheet was not so accurate.
 - d. In the transfer of signals to the Boat & Smooth Sheet, signal names were interchanged causing confusion in the records & in plotting.
7. The junction with H-5145 on the east is satisfactory.

no junction was effected on the north with H-5186
nor on the south with H-5176 as these sheets are ✓
in process of verification.

8. Rock discrepancies:

a. Lat. $55^{\circ}36'.9$, long. $130^{\circ}56'.58$. Rock bares 9' on T-4652
and 4' from note, pos 59f, Vol. #1. The 4' note was used. ✓

b. Lat. $55^{\circ}34'.06$, long. $130^{\circ}56'.26$. Rock bares 4' as
shown on the 1-20,000 scale and 3' on the 1-10,000 insert. ✓
The 3' note was used.

c. Lat. $55^{\circ}32'.57$, long. $130^{\circ}58'.2$. This rock was
assumed to be awash at MLLW, (See pos. 22, Vol. #1, p. 13)
as compared with the note of bare 2' MLLW of the Topo.

d. Lat. $55^{\circ}31'.68$, long. $130^{\circ}58'.27$. See pos. 70k, Vol. #2 ✓
for note of rock bare 13'.

e. Lat. $55^{\circ}29'.9$; long. $130^{\circ}58'.85$. Rock bares 8' on Topo. ✓
and 13' from pos. 137z, Vol. #7.

f. Lat. $55^{\circ}31'.1$, long. $130^{\circ}53'.85$. Rock bares 11' on Topo. ✓
and 5' according to pos. 6e, Vol. #7.

g. Lat. $55^{\circ}30'.86$, long. $130^{\circ}53'.04$. Rock bare 12' on Topo. ✓
and 11' according to pos. 25p, Vol. #4.

h. Lat. $55^{\circ}28'.9$, long. $130^{\circ}54'.54$. No information ✓
relative to these 2 rocks was found in the records.
The tide of 6c'day = 3', 3l'day = $2\frac{1}{2}'$ and 157h'day = 12'.

i. Lat. $55^{\circ}28'.05$, long. $130^{\circ}54'.92$. This rock is bare $1\frac{1}{2}'$ ft. ✓

on the topo. and according to pos. 17h, just awash with a tide of +2 ft. On 9a day, Vol. #11 it is bare 1 1/2' with a tide of +1 1/2'.

k. Lat. $55^{\circ} 24.1$, long. $130^{\circ} 53.64$. The topo. lists this reef as having 52'. Pos. 43j, Vol. #13, records the N.E. rock as having 62' and pos. 44 records the rock at the south end as having 7'.

l. The two rocks in lat. $55^{\circ} 33.34$, long. $130^{\circ} 54.72$ were transferred from the B. S.

9. Position discrepancies:

a. In the northern part of this sheet, the last 2 to 4 positions of most cross lines ^{near} on the western shore when checked by the verifier, plotted from 20 to 40 m. north of the plotted positions. In other lines, the difference was not so marked as to detect a uniform discrepancy. In midchannel, positions checked accurately and on the east shore, differences were not so marked.

The only reason which seems apparent is that the intersection of the left angle was estimated from a distance and a few meters to the northwest of the true signal.

b. The line 6-8d, lat. $55^{\circ} 25.67$, long. $130^{\circ} 58.2-58.7$ appears too shallow.

c. Pos. 12a with a sounding of 113 fm. in lat. $55^{\circ} \overset{27.95}{\del{37.78}}$,

long. $130^{\circ} 55' 32''$ appears too deep. ✓

d. Line 104-106 m in lat. $55^{\circ} 31' 78''$, long. $130^{\circ} 52' 8''$ causes a displacement in the curves. Pos. 58^a at fault ^{Ref}

e. Pos. 90 x 91 x in approx. lat. $55^{\circ} 31' 74''$, long. $130^{\circ} 58' 0''$ appears to be mislocated and was not plotted.

f. The sounding of 239 fm., pos. 59 l, Vol. #3 in lat. $55^{\circ} 32' 45''$, long. $130^{\circ} 57''$ is approved in the records and the position agrees excellently with the timing interval. ✓
However, a sounding of 173 fm from H-2108, falls about 150 m. to the S. E. within the area at present enclosed with the 200 fm. curve.

10. It is suggested that the name "Eddystone Island" be in the plural form.
11. The Reviewer's attention is called to the fact that sufficient time was not at the disposal of the verifier, to complete the curves on this sheet nor to verify the items of interest & importance listed in the Field Party's report. ✓

Respectfully submitted - Harold W. Murray

Section of Field Records

Review of Hydrographic Sheet No. 5175

Candle Island to Skirt Point, Behm Canal, Alaska

Surveyed June - October, 1931

Instructions dated March 7, 1930 (Explorer)

Chief of Party - E. W. Eickelberg, F. L. Peacock

Surveyed by W. Weidlich, H. O. Fortin

Protracted and soundings plotted by W. W. and H.O.F.

Verified and inked by Harold W. Murray.

1. The records conform to the requirements of the Hydrographic Manual except that the placing of the minus sign before the tide reducers is contrary to the usual practice.
2. The plan and extent of development satisfy the specific instructions.
3. Soundings are generally consistent, the large variations in depths in places are usually supported by other evidences of very irregular bottom. The sounding of 239 fathoms in lat. 55° 32.'6 long. 130° 57.'0 was specially noted O. K. in the record and is also mentioned in the Descriptive Report with a photograph illustrating a similar topographic feature. This sounding was rejected by A. M. S. with concurrence of E. W. E.
4. Depth curves have been drawn on the sheet, the lesser curves necessarily incomplete on account of the steep slopes.
5. Junctions with H5145 in Rudyerd Bay and with H5185 on the north are satisfactory. H5176 on the south has not yet been verified.
6. Comparison with surveys of 1891 (H2108, 2109, 2112 and T2062). This survey (H5175) shows much greater detail. In general less water on the banks was found by the closer development. A sunken rock covered by 4 feet of water at MLLW in the narrow channel of Shoalwater Pass (lat. 55° 24.'9 long. 130° 52.'65) is not shown on the former survey. The general agreement in depths is good except that on H2108 the soundings of 200 fathoms and over are from 10 to 20 fathoms too deep. The reason for this discrepancy is not definitely known. (See Review of H5174 for probable explanation).
7. Chart 8102 shows a sunken rock about 450 meters southwest of New Eddystone Rock. The authority was a section of old chart 8100 (Letter 457 of 1916) with the note "Rock covered 3 ft. reported P.D.". The position as given plots close to the edge of the reef, also there is a rock of this description northwest of New Eddystone Rock. In view of the special search made as noted in the Descriptive Report, it is believed

that H5175 shows an adequate representation of this area and the sunken rock as such should be expunged from the chart.

The sunken rock (covered 4 feet) in Shoalwater Pass noted in par. 6 is shown on Chart 8102 by the sunken rock symbol.

8. Recommendations.-

This sheet (H5175) should supersede all previous surveys for charting purposes of the area covered by it.

No further surveys are deemed necessary at this time. Only the wire drag will reveal the minimum depths on the numerous shoals.

9. Reviewed by R. J. Christman, Nov. 2, 1932.

Inspected: E. P. Ellis.

A. M. Sobieralski

August 19, 1932.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
14 volumes of sounding records for

HYDROGRAPHIC SHEET 5175

Locality **Candle Island to Skirt Point, Behm Canal, Southeast Alaska.**

Chief of Party: **E. W. Eickelberg in 1931**
Plane of reference is **mean lower low water, reading**
4.3 ft. on tide staff at Shoalwater Pass
14.7 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.

H = 21.0 (estimated)
HHW = 15.6
MHHW = 14.70

