

4723

4723

4723

Form 504		SURVEY & A. JAN 31 1928 Acc. No.
DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY		
State: <u>S. W. Alaska</u>		
11-5813		
DESCRIPTIVE REPORT.		
A		
Hydrographic Sheet No.		4723
LOCALITY:		
<u>Prince William Sound</u>		
<u>Latouche Passage to</u> <u>Evans Bay Sawmill Bay</u>		
1927		
CHIEF OF PARTY:		
<u>R. R. Lukens</u>		

Note by Chief of Party
Hydro. Sheet A

As stated in the descriptive report, the work on this sheet was done under adverse conditions. Upon arrival at the working grounds it was found that no beach triangulation was available and that control would have to come from mountain stations. A party ascended Evans about 1700' el. and found that the station was covered by 6 or 8 feet of snow and ice.

It was then decided to start the survey from a local plane table traverse. This was done. After the hydrography was finished, the triangulation was executed and several of the signals in the traverse were located. The detailed topography was done later by another party. By this time some of the whitewash signals (put up in the rain) were nearly gone and some confusion resulted.

In plotting the smooth sheet, it appears that there is some error in the area southwestward from the southwestern entrance, for the angles taken during the hydrography do not quite fit the topographic location of the signals. A comparison with the old survey on a 1:40,000 scale failed to reveal any serious differences so it is thought that the discrepancies are only minor ones. The topography here was controlled by ranges and resections and should have been good. It was done by Lieut. Ratti. I had no knowledge of any irregularities on the topographic sheet until after the end of the season when the office work was taken up.

The hydrography was done by Lieut. Grinell and was his first work as officer in charge. - He had a green party to break in. The records are not as complete as desirable, but I noted that Lieut. Grinell's work improved steadily during the season. A finished hydrographer can not be made over night, and considerable allowance must be made for a new man. There are a lot of things that must be kept in mind by an officer in charge of a hydrographic launch.


R.R. Lukens.

DESCRIPTIVE REPORT

To Accompany Hydrographic Sheet No. A

Evans Bay

Str. SURVEYOR - - R. R. Lukens, Chief of Party

Work executed under instructions dated February 3rd, 1927.

General Description:- Evans Bay is the only open bay on the east side of Evans Island. It is considerably used, as there are four canneries and an oil dock of the Standard Oil Co. For this reason, there was a very close development made by the hydrographic party. The system of sounding lines was run normal to the general trend of the shore, where possible. The sounding lines were spaced 100 meters within the bay and thru all approaches, and 200 meters in the outermost portions in Latouche Passage and Elrington Passage.

The bottom throughout the area was generally rocky and rather uneven and broken. There is a small passage to the north of O Po; it is blocked by a smooth rounding shoulder, 15 meters to the east of the small island 190 meters north of O Po. This shoulder bares 0.8 feet on the plane of M. L. L. W. The local fishermen take their very small boats thru this passage on half to high tide. The Delta was taken thru this place many times on various stages of the tide (see sounding volume 7 - "n" day, page 36, for note). The rest of the passage is clear and fairly deep. It is not recommended to any but those familiar with the place, and then only for very small boats on half tide or more.

Dangers:- A search was made for a rock reported by the Captain of the S. S. Yukon to have been struck by his ship. The ranges given the hydrographic party by men on the San Juan Dock at the time of the accident were inaccurate, and the rock was not located by the sounding party on the ranges given in the area 400 meters N.W. of O Wet. When the entire bay was swept by the wire drag, this rock was found, and is marked by a black can buoy # 3, 648 meters, $91-1/2^{\circ}$ true from O Flag.

add
A rock had been reported to the northwest of the San Juan Fishing and Packing Co. and had been temporarily marked by a red nun buoy #2, located 194 meters, 54° true, from O Flag. The hydrographic party made a thorough search in the vicinity and found a shoal spot, with $3-2/6$ fathoms upon it, but not as shoal as reported. The wire drag located this shoal and this buoy, N - 2, was moved by the U. S. Lighthouse Service to mark the new location, 344 meters, 56° true, from O Flag. (See wire drag Record).

A rock awash and a sunken rock, outside the line of the face of the dock at Port Benny, were located and are shown on the sheet, 222 meters and 273 meters respectively, N.W.S. W. of Δ Ben. These were located by sextant fixes, by nosing the Delta upon the rock on a rising tide.

There is a rock having 15 feet over it and marked by a red nun

several

There is a reef, 140 meters E. (true) from Δ Ten, and 245 meters N. E. (true) from \odot Up, running inshore toward \odot Spot. The rocks are awash at L L W and are marked by a small wooden barrel buoy at the outer edge of the reef, placed by the Franklin Packing Co., as the rock is just on the line of the face of their dock.

buoy # 2, 178 meters, 110° true, from O Crab. The rock extends as a ridge averaging about 3-1/2 fathoms from the buoy location, about 100 meters N E, toward the head of Crab Bay. ✓

A 5 fathom spot was located by the hydrographic party 532 meters, 120° true, from Δ Shum. No less depth than this was found after a thorough hand lead investigation of the area. The wire drag swept over this spot set for 30 feet effective depth. ✓

There is a rock having 6 feet over it, and marked by a black can buoy #1, 476 meters, 48° true from O Har. The buoy is about 40 meters N E of the rock. The channel into Evans Bay thru the western entrance rounds this buoy. ✓

In Johnsons Cove, there is a somewhat broken line of rocks, all outcrop of the same ledge that makes the group of islands, upon one of which Δ Shum is located - extending to the sunken rock 80 meters South of O Rob. There is clear water and good channel for small boats between the line of rocks and the shore line and a good channel to the southeast of the same line of rocks. The saltery at the head of this cove is deserted and unused and in a rather dilapidated condition. The cove is not used much now except by small boats as an anchorage. ✓

The lines run in Latouche Passage, 880 meters to the E S E of O Due and O Shag were run to develop a 15 fathom spot on a cross line; no less than 15 fathoms was found anywhere, and the bottom samples were all sand, with no indication of rock in the region. ✓

Currents, Tidal:- Within the bay, the tidal currents are moderate and not of sufficient velocity, even on springs, to affect the navigation. However, in the passage between O Har and O Dig, locally known as the Western Entrance, there are moderate tide rips and boils around the reef marked by the can buoy # 1 and the rocks north of O Dig.

During the high springs, the current thru this pass attains a velocity of 3 to 4 knots. There were no current velocity measurements made here, but the Delta barely made headway against it on full flood and full ebb. A portion of the tidal water from Prince William Sound ebbs to the S W and floods to the N E in Latouche Passage. The stream divides, part going thru Elrington Passage. On both ebb and flood, along-shore currents have been noticed along the north side of Bettles Island, joining into the stream, ~~thru~~ thru the Western Entrance and thru the opening just west of Bettles Island. On the higher high tide, there is a considerable current stream thru "the narrow passage" just north of O Po.

There are swirls and eddies in abundance in the channels between the group of small Islands in Latitude $60^{\circ} - 02'$ and Longitude $148^{\circ} - 03' - 04'$.

Current observations were made in Elrington Passage by a party on the launch Helianthus. The current station was in the southern part of the passage and was not within the limits of this sheet.

Anchorage:- There are no especially good anchorages in Evans Bay. The SURVEYOR anchored in a 12 fathom spot due east of O Flag about 900 meters, with a mud bottom, about 100 meters inside the range when the tangent at O Lit closes on the tangent at O Slim, and when rocky reef bears S (true), 150° mag., distant about 480 meters.

There^{is} another anchorage in Crab Bay, in about 6-1/2 fathoms,* mud bottom, midway and on the range between the cannery dock (O Crab) and the point of trees at O Hem. This is somewhat used by the fishing boats though many lay in the bight between O Tie and O Crab in about 3 - 5 fathoms, gravel bottom. There are several piles in this bight to which cannery boats are made fast thru the winter.

*Very close to
the four rocky
spots. J.B.M.*

San Juan boats are laid up in the bight between Bar and Way, where there are many piling to which small boats may be made fast. Also a few dolphins and piles in the vicinity of O Dol. The bight between O Bar and O Way has a shipway, on which small boats are hauled. It is here that the C & G S launch "Alpha" has been hauled out for storage.

Survey Methods:- The survey party arrived on the working grounds April 21, 1927. At that time an effort was made to recover Δ Evans, but the snow was so deep on the summit that the station was not located. However, in the absence of geodetic control, a plane table traverse from O Flag to O End was used as a base for plane table triangulation in Evans Bay proper, Crab Bay, to Shun, then traverse from Shun to O Big. The triangulation was carried thru the West Entrance, then around the east side of Bettles Island by traverse along the east side of Bettles Island, and continued triangulation to locate the signals around Elrington Island to O Big.

This topographic work was carried on at various times by S. B. Grenell, H. O. Westby and L. P. Sowles. The hydrographic party then located all the signals in the Elrington Passage west of O Big and north of O Pin by sextant triangulation, by landing an officer with a sextant to observe the angles at the signal to the other signals, using the three point fix when a strong fix was available, if a check could be obtained by another fix. This was plotted directly on the boat sheet and the hydrography was done upon these signals.

As soon as the snow on the peaks cleared sufficiently, a quad was observed and the base, Δ Ten - Δ Shun was computed and plane table topography carried then on the regular topographic projection by A. P. Ratti, on the launch Helianthus.

In smooth plotting, some of the cuts taken by the hydrographic party to locate the signals in the vicinity of the islands in Elrington Passage would not fit the topographic location. An attempt was made to swing them to fit, but this became too involved an adjustment so that all the cuts were rejected and the topographic locations used throughout. This resulted in some small changes from the boat sheet, but these did not alter materially the distribution on the soundings to cover the area.

This adjustment, moreover, would have been too costly of time to make it economically advisable, considering the small magnitude of the errors and the minor importance of the area affected in and around this small group of islands.

The topography was accepted as correct and the smooth plotting was done upon these topographic locations.

The hydrography was accomplished by the steam launch Delta. The sounding machine was steam operated by a Dake engine and was located on a platform constructed out over the stern. The soundings were called through a speaking tube to the recorder who had taken his place near the plotting table and the officers taking angles. This arrangement was found, during the course of the survey, to be thoroughly efficient and well adapted to hydrography. The warmth from the boiler contributed materially to the operating comfort of the Coxswain, the plotter and the recorder, and is believed to have added considerably to efficient output of the party, during the cold weather of late April and May. The use of the launch is to be recommended, in the cold, windy weather encountered in this vicinity.

12 and 14-pound leads were found to be of sufficient weight to obtain a sounding quickly and yet not too heavy for speedy return to the surface.

The shoal soundings in Crab Bay and in the western end of Evans Bay, and the development of the shoal indications SSE of Δ Shum and NE of \circ Wet were taken with the regulation hand lead. The launch location was controlled by sextant angles to topographic signals on shore, by the three point fix.

New Names:- The passage between \circ Har and \circ Dig, is locally known as and generally spoken of as the "Western Entrance".

Geographic Names:-

Evans Bay
Evans Island
Elrington Passage
Elrington Island
Bettles Island
Latouche Passage
Crab Bay
Johnson ~~Bay~~ Cove

Respectfully submitted,

Approved

L. P. Sowles

L. P. Sowles
Aid. C & G Survey

STATISTICS FOR HYDROGRAPHIC SHEET NO. A

1927	Letter	Position	Soundings	Miles.	Sta.	Launch	Vol.	Remarks
April	29	a	213	302	10.5	Delta	1	
	30	b	119	159	4.2	"	1	
May	2	c	25	81	1.4	"	2	
	3	d	17	10	0.0	"	2	Location of reefs bare at low water
	5	e	313	313	11.9	"	2-3	
	6	f	117	117	4.6	"	3	
	9	g	45	45	1.8	"	3	
	11	h	162	316	12.1	"	304	
	12	j	113	194	6.9	"	4	
	13	k	107	244	9.1	"	4	
	14	m	75	176	6.4	"	4-5	
	16	n	105	152	9.5	"	5	
	17	p	128	146	13.1	"	5	
	18	q	139	230	14.7	"	5-6	
	19	r	104	172	12.1	"	6	
20	s	138	251	11.6	"	6-7		
21	t	38	58	3.4	"	7		
23	u	72	136	10.6	"	7		
TOTALS		2030	3102	143.9				

Copy for Record Section files.

11

February 15, 1928.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 4723

Locality: PRINCE WILLIAM SOUND, ALASKA.

Chief of Party: R. R. Lukens, 1927.

Plane of reference is M L L W

4.6 ft. on tide staff at San Juan, Evans Bay.

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 each 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.

Section of Field Records.

Report on Hydrographic Sheet No. 4723.

Latonche Passage to Evans Bay.

Prince William Sound Alaska.

Surveyed in 1927.

Instructions dated February 3, 1927 (Surveyor)

Chief of Party R. R. Lukens.

Surveyed by S. B. Gronell and L. P. Sowles.

Protracted and soundings plotted by L. P. Sowles.

Verified and inked by J. D. Torrey.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development conform to the requirements of the General Instructions.
3. The plan and extent of development satisfy the specific instructions except that the channel between Bettles Island and Johnson Cone, the small area just north of signal "White" which shows a least depth of 12 fathoms and the ridge east of signal "Shag" showing a least depth of 15 fathoms should have been more closely developed.
4. Sounding line crossings are adequate.
5. The development is sufficient for drawing the usual depth curves except in and around the foul areas.
6. The protracting and plotting by field party excellent.
7. Junction conditions with adjacent sheets cannot be reported until those sheets are completed.
8. No additional work appears necessary unless the Wire Drag sheets covering this area develop danger conditions other than those shown on this sheet. Inspected by Shallowitz.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. ^A 4723

4723

State ~~S. W.~~ Alaska

General locality Prince William Sound

Locality ~~Evans Bay~~ Latouche Passage to ^{Sawmill Bay} Evans Bay

Chief of party B. R. Lukens

Surveyed by S. B. Grenell + L. P. Sowles

Date of survey April 23 to May 30, 1927

Scale 1:10,000

Soundings in Fathoms

Plane of reference M. L. L. W.

Protracted by L. P. Sowles. Soundings in pencil by L. P. Sowles

Inked by J. U. Torrey. Verified by J. U. Torrey.

Records accompanying sheet (check those forwarded):

Des. report, _____ Tide books, _____ Marigrams, 1 Boat sheets,

7 Sounding books, _____ Wire-drag books, _____ Photographs.

Data from other sources affecting sheet

Remarks: