5244

Form 504
Ed. June, 1928

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

State: S.E. Alaska

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic } *Sheet No.* 1. 5244

LOCALITY

Behm Canal & Revillagigedo Channel,

S. E. Alaska.

Twin Is. to Cove Pt. to Rudyerd I.

1932.

CHIEF OF PARTY

G. C. Jones,

U. S. GOVERNMENT PRINTING OFFICE: 1930

5244

Form 537
11—5812

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

REG. NO. 5244

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. 1

REGISTER NO. 5244

State Alaska

General locality Revillagigedo Channel and Behm Canal

Locality Twin Is., and ~~Cove Pt.~~ Lucky Cove, to Rudyerd I.

Scale 20,000 Date of survey May - June, 1932, 192

Vessel Explorer

Chief of Party G. C. Jones

Surveyed by W. Weidlich

Protracted by Field Party

Soundings penciled by Field Party

Soundings in fathoms ~~Feet~~

Plane of reference

Subdivision of wire dragged areas by

Inked by G. C. McGlasson

Verified by G. C. McGlasson

Instructions dated March 24, 1932, 192

Remarks:

GPO

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 1,

BEHM CANAL AND REVILLAGIGEDO CHANNEL

S. E. ALASKA.

AUTHORITY:

The hydrography on this sheet was executed under instructions dated March 24, 1932.

SCALE:

1:20,000. Soundings in fathoms and fractions thereof.

LIMITS:

The whole navigable area west and south of Rudyerd Island as far as station "NEW", was covered by this survey, extending to the westward to Longitude 131°18' West. This survey connects with hydrographic sheets No. 7 (1931) and No. 2 (1932).

METHODS:

The approved methods of the Service were used throughout.

A considerable amount of development was done in this locality. Several new shoals were located and the depth of others reduced.

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.

Tender No. 1, was used for the greater part of the work and the letter days for this launch are shown in blue lower case letters.

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

A considerable amount of trouble was experienced with the transmission gear of sounding apparatus and on June 18th, this launch was turned over to the ship for general overhauling.

The remainder of the survey was completed with the launch "DELTA" and the letter days of this launch are shown in red.

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 1,

BEHM CANAL AND REVILLAGIGEDO CHANNEL

S. E. ALASKA.

1932.

G. C. JONES, CHIEF OF PARTY, C. & G. S.

With this launch a ten pound hand lead was also used for depths of less than 15 fathoms and in greater depths a steam sounding machine with an eighteen pound lead and stranded wire. This sounding machine works very efficiently and with great speed.

The lines are spaced 300 and 150 meters and in Alava Bay, 100 meters apart and run in an Easterly and Westerly direction. In Revillagigedo Channel the lines run in a Northerly and Southerly direction, spaced 300 and 150 meters. A few additional lines were run in vicinity of Twin Islands.

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 and reefs were developed with two hand leads and in critical places with several.

CONTROL:

Triangulation and topography furnish the necessary control.

TIDES:

An automatic portable tide gauge was in operation in Alava Bay, near station "SUT", and all reducers were taken from its records covering the period during which the soundings were taken.

KELP:

All rocks and reefs are marked by kelp. The shores of the mainland and Revillagigedo Channel is fringed with kelp. Between Point Alava and Lucky Cove the kelp growing very profusely. Eel grass was found at the mouths of the smaller streams and at the edges of the numerous flats.

CURRENTS:

No current observations were taken in the locality covering this sheet. The flood runs in a Northerly direction and is greatly influenced by the strong Southerly winds.

The ebb runs in the opposite direction as far as Point Alava and then follows the south shore of Revillagigedo Island with increased

force, depending however upon the velocity of the Southerly winds.

The estimated velocity of the ebb is from 1 to 1-1/2 knots in the vicinity of Point Alava.

BOTTOM:

The bottom is very irregular and consequently the lines were run in the main channel much closer than originally intended, in order to obtain an intelligent depth curve.

Difference of several fathoms were recorded on numerous occasions and the most important are enumerated below.

1. Position 11 b, red, forward 8-5/6 fathoms, aft 13-5/6 fathoms.
2. Position 87 b, red, forward 7-5/6 and 10-2/6 fathoms, aft 7-1/2 fathoms.
3. Position 58 f, red, forward 1-5/6 and dropping off into 11 fathoms. (South of Twin Islands.)

Bottom characteristic in general is rocky with occasional sand near the shore, muddy in deeper water.

The shore line is rocky and abrupt in many places.

DANGERS AND OBSTRUCTIONS:

This survey revealed numerous shoals, rocks and other obstructions. Depths of old charts are greatly reduced. The most important are enumerated below beginning at the North end of the sheet.

1. A shoal with a least depth found of 27 fathoms at M.L.L.W., lies about 850 meters 140° from triangulation station "POD". (Position 63 and 65 h - blue.) Rocky bottom.

2. A shoal with a least depth found of 47 fathoms at M.L.L.W., lies about 710 meters 84° from station "RUN", bottom is rocky. (Postions 92 and 93 f - blue.)

3. A rocky patch with a least depth found of 1-5/6 fathoms lies about 190 meters 21° from station "CAB". (Position 38 p - blue). No surface kelp.

4. A rocky patch with a least depth found of 5-1/2 fathoms at M.L.L.W., lies about 140 meters 117° from station "CAB". (Positions 14 and 15 - p - blue.) This 5-1/2 fathom spot is surrounded by much deeper water.

5. The area between stations "ROK" and "MIL", is foul and covered with thick kelp. Bottom is very irregular. A rock which bares 6 feet at M.L.L.W. lies in the center. *reef*

6. A kelp patch with a least depth found of 1-2/6 fathoms at M.L.L.W., lies about 110 meters 45° from station "AM". (Position 70 b - red.)

7. A kelp patch with a least depth found of 2-1/2 fathoms at M.L.L.W., lies about 130 meters 180° from Station "IS". (Position 108 t - blue.) *106?*

8. A shoal with a least depth found of 16 fathoms at M.L.L.W., lies about 340 meters, 290° from station "IS". (Positions 105 and 106 c, red.) Rocky bottom.

9. A 7-1/2 fathom spot lies about 190 meters, 72° from station "BERG". Bottom is rocky and very irregular. This area is surrounded by much deeper water. (Position 87 b - red.)

10. A shoal with a least depth found of 8 fathoms at M.L.L.W., lies about 190 meters 90° from station "BEE". (Positions 110 and 112 t - blue.) A 7-1/2 fathom spot lies about 100 meters East of position. (Position 94 b - red.) Bottom is rocky and irregular.

11. A kelp patch of considerable extent covering a least depth found of 1-1/2 fathoms at M.L.L.W., lies about 380 meters 98° from station "BEE". (Position 73 t - blue.) Bottom is visible.

12. A shoal with a least depth found of 32 fathoms at M.L.L.W., lies about 1260 meters, 162½° from station "HIC". Bottom is rocky. (Positions 123 and 124 c, red.)

13. A shoal with a least depth found of 35 fathoms at M.L.L.W., lies about 1480 meters 11° from station "RED". (Positions 13 and 14 c - red.) Bottom is rocky.

14. A kelp patch covering least depth of 3 feet at M.L.L.W. lies about 170 meters 280° from station "EL". (Position 42 n - blue.)

15. A shoal of small extent, with a least depth found of 8 fathoms at M.L.L.W., lies about 170 meters 347° from "DAM". (Positions 15 and 19 b - red.) Bottom is rocky.

REVILLAGIGEDO CHANNEL.

16. A kelp patch covering a least depth of 3 fathoms at M.L.L.W., lies about 270 meters 221° from "DIK". (Position 14 x - Blue.) This area is not developed and does not lie in the path of important navigation.

17. A shoal with a least depth found of 31 fathoms at M.L. L.W., lies about 1150 meters 185° from signal "CON". (position 54 z - blue.) Bottom is sandy.

18. A shoal with a least depth found of 24 fathoms at M.L. L.W., lies about 2280meters 115° from signal "HOG". Rocky bottom. (Positions 109 & 110 z and 41 & 47 v - blue.)

19. A shoal with a least depth found of 28 fathoms at M.L. L.W., lies about 3020 meters 341° from station "MAST". Rocky bottom. (Position 120 z.)

20. A kelp patch covering a least depth of 1-5/6 fathoms at M.L.L.W., lies about 165 meters 200° from station "BIT". (Positions 58 and 59 f - red.) Bottom is very irregular and drops off into a depth of 11 fathoms.

ANCHORAGES:

Alava Bay, offers no anchorage on account of the great depths and being exposed to Southerly winds and swells.

Several shoals and a kelp patch with a depth of 1-1/2 fathoms over it, are located at the West entrance to Alava Bay. The East entrance is more or less foul and blocked by a reef which bares about six feet. The main channel is clear but leads into more congested channels with rocks at the extremities of the islands.

A possible anchorage for small boats may be had Northwest of the island on which station "SUT", is located.

The two narrow bights at the North end of Rudyerd Island, offer some shelter, with sufficient swinging room. Southeast winds blow home with considerable force, requiring much heavier ground tackle than is customary for small fishing boats to carry.

The chartered launch experienced some difficulties during one night to remain at this anchorage, although well moored and secured with several lines to the steep rocky shore.

An excellent small boat anchorage may be had in a bight South of Roe Point, East of the two wooded islets, near the South shore, in any desired depth. Bottom is rocky but sandy near the shore. The South and North entrances are clear, but the passage between the two islets should be avoided.

Small boats may find shelter East of the small wooded islet on which station "BO", is located. Bottom is rocky. The North entrance

is clear and recommended. The South entrance is narrow and a rock which bares at low tides lies near the shores of the main land. The current is quite strong at this anchorage with an estimated velocity of 1 to 1-1/2 knots. The chartered launch used this indentation for several nights, the small islet breaking the heavy swell running at that time.

Sykes Cove, offers shelter to small boats in any desired depth. There are two mooring piles and the Western one should be avoided as it is located near rocks which bare at low tide. Care should be exercised when entering this Cove from the South on account of a reef which extends for some distance from the point. The extreme end is marked by thick kelp. The extensive mud flats, about 100 meters from the piles are studded with numerous large boulders.

The Cove south of Point Sykes is blocked by rocks and the mud flats bare at low tides. The head of the Cove is used for storing floating fish traps.

The indentation North of triangulation station "NEW", offers a fair weather anchorage near the South shore in about 8 fathoms of water, sandy bottom. During Southerly winds a heavy swell piles in, making this bight anything but an anchorage.

Lucky Cove, is used to a great extent during the fishing season by small fishing vessels. On account of the deep water they anchor near the flats. This cove is exposed to Westerly winds which blow occasionally with considerable force. Floating fish traps are stored for the winter at the head of the Cove. There are several mooring piles at the edge of the flats.

CHANNELS:

The main channels of the surveyed area and Narrow Pass, are free from dangers.

WEATHER:

Weather has been unfavorable during the entire season, with prevailing Southerly winds. Moderate to fresh Northwesterly winds were experienced for a few days, with slightly clearing weather.

Respectfully submitted,

W. Weidlich,
Mate, C. & G. Survey.

APPROVED AND FORWARDED:

G. C. Jones,
Chief of Party, C. & G. S.,
Comdg., U.S.C. & G.S.S. EXPLORER.

STATISTICS

HYDROGRAPHIC SHEET NO. 1

DATE	VOL.	DAY	BOAT	STAT. MILES	POS.	SOUNDINGS HAND	SOUNDINGS MACH	AREA	MILES TO & FROM WORK
			Tender						
May 14	1	a	# 1	1.6	27	68	8		16.4
16	1	b	"	13.0	58	13	87		7.7
17	1	c	"	23.0	123	45	155		5.0
18	1	d	"	5.0	46	24	67		1.7
19	1	e	"	6.9	63	36	88		6.1
20	1 & 2	f	"	21.6	139	39	187		4.8
21	2	g	"	10.9	102	42	138		0.7
23	2	h	"	9.1	98	6	95		11.0
24	2	j	"	20.7	108	40	133		4.4
25	2	k	"	13.0	69	7	87		1.7
26	2 & 3	l	"	26.6	161	32	200		3.9
27	3	m	"	20.5	96	25	147		4.7
31	3	n	"	9.2	67	90	68		0.4
June 1	3	p	"	15.5	128	129	126		6.5
3	3 & 4	q	"	15.0	125	127	125		6.6
4	4	r	"	11.2	59	11	98		5.0
6	4	s	"	18.9	96	21	165		1.8
7	4	t	"	20.2	163	128	236		7.7
8	4 & 5	u	"	17.7	76	10	140		10.5
9	5	v	"	17.7	84	27	203		13.2
10	5	w	"	31.1	119	62	272		6.3
14	5	x	"	11.0	49	35	103		43.0
15	6	y	"	19.3	72	14	169		4.8
16	6	z	"	20.0	164	142	226		9.0
17	6	a'	"	27.4	87	25	194		5.7
18	6 & 7	b'	"	23.6	128	84	215		6.7
22	8	a	DELTA	10.0	50	15	91		3.2
23	8	b	"	18.5	155	171	200		7.0
24	8	c	"	10.4	157	128	163		12.4
25	8	d	"	14.0	64	28	114		5.8
28	8	e	"	5.9		144	81		7.2
July 14	9	f	"	7.8	70	56	101		12.8
Totals:				496.3		1824	4482 1824 6306		243.7

Section of Field Records

Sheet No H 5244
Surveyed in 1932
Chief of Party - S.C. Jones
Surveyed by - W. Weidlich
Protracted by - Field Party
Soundings plotted by - Field Party
Verified and Inked by - S.C. McGlamery

1. The records conform to the requirements of the general instructions. ✓ All of the topographic signals were checked by the office draftsman and were found to be fairly accurate. ✓
2. The plan and character of development fulfill the requirements of the general instructions. ✓
3. The plan and extent of development satisfies the specific instructions.
4. There are no series of cross lines however when they do cross they are found to be satisfactory. The bottom is very irregular and rocky consequently variations are noticeable in soundings but numerous developments

were made and shoal soundings were found to exist.

5. The usual depth curves can be completely drawn within the limits of the sheet. In close ✓ developments the curves were not completed but indications shown only.

6. The field plotting was completed to the extent prescribed in general instructions. An additional enlargement was made of the two narrow bights at the north end of Rudyerd Island.

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

8. The junctions with adjacent sheets were found to be satisfactory.

9.

Respectfully submitted,

E. L. McGlasson

SECTION OF FIELD RECORDS

Review of Hydrographic Sheet No. 5244
Twin Islands and Lucky Cove to Rudyerd Island, Revillagigedo Channel and Behm Canal, Alaska.
Surveyed May - June 1932
Instructions dated March 24, 1932 (Explorer)

Chief of Party - G. C. Jones.
Surveyed by - W. Weidlich.
Protracted and soundings plotted by - W. Weidlich.
Verified and inked by - G. C. McGlosson.

1. The records conform to the requirements of the Hydrographic Manual. In descriptive notes the word "shoal" is used where the word "bank" would have been more appropriate.

2. The plan and extent of development conform to the regulations and satisfy the specific instructions.

3. Soundings are consistent though the bottom is very irregular in many places. Additional development generally confirmed the large variation in depth revealed by the regular system of lines.

4. Depth curves can be drawn satisfactorily.

5. Junction with H. 5176 of the 1931 season's work is satisfactory. Junction with H. 5236 to the south is satisfactory except in lat. 55° 08'.5 long. 131° 09'.5 where the line 62a to 65a blue on H. 5247 either is misplaced or the soundings are too deep, as evidenced by the adjoining work on H. 5236 and the older surveys on H. 2109. As these soundings are not essential for charting purposes they were omitted from the smooth sheet.

No contemporary surveys were made to the southwest and west of this sheet. It slightly overlaps the surveys of 1915.

6. Comparison with H. 2109 (1891) shows good agreement in general depths. The closer development on H. 5244 revealed a number of banks and emphasized the irregularity of the bottom. The survey revealed a number of inshore dangers to navigation not now shown on Chart 8075. A shoal with least depth of 1½ fathom in the southern entrance to the western part of Alva Bay should be made a hand correction pending revision of the chart.

7. Field drafting was completed to the extent prescribed by the regulations and was satisfactory.

8. Recommendation. This sheet (H. 5244) should supersede all surveys prior to 1915 for charting the area covered by it. The wire drag surveys (1915) did not reveal any dangers to navigation in the portion of this sheet covered by them.

No further surveys are deemed necessary.

9. Reviewed by R. J. Christman, September 8, 1933.

H. 5244.

Notes on Inspection of Sheet.

A line of soundings on the present survey (pos. 52 to 58V, depths 38 to 49 fathoms) is consistently deeper than the overlapping 1915 survey (H. 3792) by 1 to 4 fathoms. From a study of the sounding records of the 1915 survey it appears that the soundings were taken with the vessel completely stopped and a check reading obtained for each sounding. Greater credence must therefore be given to the earlier work than to the later work, and the above mentioned line has been omitted from the smooth sheet.

Sheet inspected by A. L. Shalowitz, September 1933.

Examined and approved:

Chief, Field Records Section.

Chief, Chart Division.

Chief, Field Work Section.

Chief, H. & T. Division.

eae.

April 18, 1933.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
9 volumes of sounding records for

HYDROGRAPHIC SHEET · 5244

Locality **Twin Island and Cove Point to Rudyerd Island, Behm Canal, S.E. Alaska**

Chief of Party: **G. C. Jones in 1932**
Plane of reference is **mean lower low water, reading**
10.4 ft. on tide staff at **Alava Bay**
24.5 ft. below B. M. 1
Height of mean higher high water above plane of reference is 15.2 ft.

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 F. Whitney

Chief, Division of Tides and Currents.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5244.

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

Number of positions on sheet	3100
Number of positions checked	118
Number of positions revised	5
Number of soundings recorded	6316
Number of soundings revised	48
Number of signals erroneously plotted or transferred	None.

Date: 27 June, 1933

Jr Cartographer: G. C. McGlasson