5281

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ..... Office No. 5281

LOCALITY

State Alaska

General locality South End

Locality of Duke Island

Dixon Entrance

1932

CHIEF OF PARTY

G. C. Jones

LIBRARY & ARCHIVES

DATE .....

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U. S. COAST & GEODETIC SURVEY
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JUL 8 1933
Acc. No. .....

Form 504
Ed. June, 1928

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

State: Alaska

DESCRIPTIVE REPORT

5281

~~Topographic~~ / *Hydrographic* } *Sheet No.* 4.

LOCALITY

South end Duke Island - Dixon Entrance - S. E. Alaska.

19 32.

CHIEF OF PARTY

G. C. Jones.

U. S. GOVERNMENT PRINTING OFFICE: 1930

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
JUL 8 1933
Acc. No.

REG. NO. 5281

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. 4

REGISTER NO. 5281

State ~~XXXX~~ Alaska

General locality ~~XXXXXXXXX~~ Duke Island,

Locality Kelp Island to Hassler Reef

Scale 1:20,000 1:10,000 Date of survey April 21-June 7, August - Sept., 192 33.

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

Chief of Party Jack Senior, G. C. Jones

Surveyed by H. E. Finnegan, E. B. Latham, E. B. Lewey, H.O.Fortin

Protracted by W. Weidlich, H.O.Fortin, E.B.Lewey

Soundings penciled by Jack Senior, H.O.F., E.B.L.

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

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by H.W.Murray

Verified by H.W.M.

Instructions dated March 24, 1932 & March 16, 1933, 192

Remarks: Part of this work on sheet No. 4 was done in 1932 and is covered by a separate Hydrographic Title Sheet.

GPO

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 4,

SOUTH END DUKE ISLAND - DIXON ENTRANCE

S. E. ALASKA.

1932.

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

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 4

SOUTH END DUKE ISLAND - DIXON ENTRANCE, S. E. ALASKA.

AUTHORITY:

Director's Instructions dated March 24, 1932, Project No. HT-99.

SCALE:

The scale of that part of the sheet beginning at Longitude 131°14.2' to Longitude 131°17.6 West and from Latitude 54°51.7' to Latitude 54°53.3' North, which included the entrance to Kelp Island Passage, Kelp Bay, Judd Harbor, and Kelp Island Passage proper is 1:10,000. The remaining part of the sheet, beginning at Longitude 131° 17.6' to 131°33.0' West and from Latitude 54°48.3' to Latitude 54°55.0' North is on a scale of 1:20,000.

All soundings are plotted in fathoms and fractions thereof.

LIMITS AND GENERAL DESCRIPTION:

This sheet includes the hydrographic survey of the entrance of Kelp Island Passage, Kelp Bay, Judd Harbor, Kelp Island Passage proper, Northumberland Bay, Reef Bay and that part of Dixon Entrance as described in the limits above.

The hydrography from Longitude 131°14.2 to Longitude 131°15.6' West and from Latitude 54°51.7' to Latitude 54°52.7' North was done by the launch "DELTA", (red letter day) with Mr. Ernest B. Lewey, in charge. The remainder of the sheet was done by gas launch "TENDER NO. 2", (Green letter day) with Mr. Henry O. Fortin, in charge.

The Eastern entrance of Kelp Island Passage, including the vicinity South and Westward thereof to Longitude 131°18.0' West and Latitude 54°51.0' North connects with hydrographic sheet No. 3 of the 1932 Season.

A connection was also made at Longitude 131°32.0' West and Latitude 54°50.0' North with photostat hydrographic sheet No. 3787. All other connecting soundings along the Southern limits of the sheet were stepped up and taken from chart No. 8075.

Hydrographic sheet No. 1 H-5263 (1932 Season) of the combined surveys of the U.S.C. & G.S.S. SURVEYOR and DISCOVERER, connects with this sheet South of Sister Islands, Southwestward to Club Rocks.

Due to adverse weather conditions a gap extending from Longitude 131°22.5' to Longitude 131°32.0' West and from Latitude 54°49.6' to Latitude 54°54.0' North, was left unsounded.

METHODS:

The approved methods of the Service were used throughout, except in the case of Tender No. 2. At the time this work was being done Tender No. 2, with hand lead sounding equipment was the only launch available. Different experiments were tried with this launch such as removing the wooden housing to make it easier to handle in a running sea and at the same time to give it greater buoyancy, and seaworthiness. As this launch has no reversible wheel, a device consisting of a cast iron pipe, four inches in diameter, mounted on iron bark bearings, was secured back aft. To the ends of this pipe, by means of angle iron were fitted two wooden paddles, about eighteen inches square. By means of light tackle secured to the middle of the piping the fins or paddles could be cleared of the water or lowered to any angle, thus retarding the launch to any speed desired. In taking soundings over fifteen fathoms the clutch was merely thrown out and by means of the fins it was found that the launch would come to a stop within a few seconds, thus enabling the leadsman to obtain perpendicular soundings.

Two twenty fathom lead lines, accurately measured and secured together, with a ten pound lead, were used in obtaining soundings up to forty fathoms. However the average depth on all the soundings was probably between ten and fifteen fathoms. All machine sounding were taken by the steam launch "DELTA", with Mr. Ernest B. Lewey, in charge. A fourteen pound lead attached to regular stranded sounding wire was used in all vertical casts in depths over fifteen fathoms, and was operated by means of an efficient steam sounding machine, located aft. Hand lead soundings from the "DELTA", were taken at the beginning and end of all lines inshore, and especially in important or critical places in depths of water under fifteen fathoms.

Tender No. 2 and the Delta, worked from the chartered launch "CAPON", which was one of the several units of the U.S.C. & G.S.S. EXPLORER,

Least depths on shoals were found by drifting over the shoal area and in most cases taking numerous soundings by means of two hand leads, one forward and one aft.

Angles were taken at an average length of six feet from where the soundings were taken.

All sounding lines were run in a direction deemed most feasible with the direction of the shore line, or in the case of the sounding lines South and West, of Cape Northumberland in a line approximately fair with the current.

All lines in Kelp Island Passage were run fifty meters apart. One hundred meter lines were run at the eastern entrance to the Passage, except close inshore and in Kelp Bay where fifty meter, or less, lines

were run. Twenty-five meter lines were run in Judd Harbor. On the remainder of the sheet all lines were run two hundred meters apart, except in depths under ten fathoms where one hundred meter lines were run.

CHARACTERISTICS OF THE SHORE LINE AND BOTTOM:

The shoreline is rocky and steep; except the portion between station "LOT" and triangulation station "FELL", 1932, here a rocky ledge extends as far as 250 meters offshore in a Southerly direction. The shore line is fringed with kelp throughout.

The shore line in Kelp Island Passage is rocky with some boulders, except in the heads of the small bights where sand and some tidal flats with grass are found. The shoreline from Northumberland Bay Westward to the entrance to Hall Cove is very rocky and abrupt. From Hall Cove Westward the shore line is quite flat with numerous ledges running out as far as three-quarters of a mile.

In general, the bottom is rocky and irregular. The area one-third of a mile Northeast of Kelp Bay is sandy and fairly even. Depths, excepting dangers, vary from six to thirty fathoms.

The bottom in Kelp Island Passage is muddy, sticky, sandy, and rocky close inshore and around the small islets. On the remainder of the sheet the bottom in general is rocky with small patches of sand scattered here and there. In the small bays and bights sand with some mud is found.

The bottom in general is very irregular.

CURRENTS:

No current observations were taken in this locality, except from observations while sounding.

A fairly strong current averaging from one to two and one-half knots runs in a Westerly direction through Kelp Island Passage. The general direction of the current South of Cape Northumberland, is Westerly close inshore to a Southwesterly direction further out in Dixon Entrance. The speed of the current varied from about one to approximately two and one half knots.

TIDES:

A portable automatic tide gauge was in operation in Kelp Island Passage, and all tide reducers were taken from its record covering the period during which soundings were taken.

ANCHORAGES:

Small craft may anchor in Kelp Bay, the small bay on the East side of Kelp Island. Latitude 54°52.2', Longitude 131°15.4'. Depth is 4 to 8 fathoms with sand and small gravel bottom. This anchorage affords good protection from West and South. Three mooring piles are placed in the Southern side of the Bay, 90 meters West of station "ECT", in approximately two fathoms of water. When moored to these piles, good protection is obtained from all directions. A barge, operated by a fish buyer, is generally moored to these piles during the summer months. Consequently, the bay is usually crowded with trollers from June to September.

A very good anchorage for small and medium sized craft can be obtained just Southeast of a piling in Judd Harbor, Longitude 131°15.6' West, Latitude 54°53.2' North, in four fathoms of water, muddy, sandy bottom, free from all winds. In entering this anchorage, the Northerly shoreline should be favored on account of the sunken rock which lies 120 meters off the Eastern shore line just before entering the entrance to the harbor. Sailing directions for entering this harbor were given in the "Coast Pilot Notes", as per letter dated January 11, 1933.

A good anchorage can be had in the center of Kelp Island Passage in Longitude 131°16.6' West and Latitude 54°52.5' North, in fourteen fathoms of water, muddy, sticky bottom, free from all strong winds. Care should be taken in entering this anchorage from its Eastern entrance on account of the reef that lies 270 meters Southeast of a small group of islands, and from a small ledge that extends 65 meters off-shore directly South of the above named reef. This passage can be used by small craft at any tide, and by medium sized craft only at half or high tide. The Western entrance should never be attempted except with local knowledge. Due to the back swells from a Southeasterly storm small craft are not advised to anchor here.

A fair anchorage may be had in the head of Northumberland Bay, longitude 131°16.8' West, and Latitude 54°52.7' North, in seven fathoms of water, muddy bottom, but free only from Northerly and Westerly winds.

The little bay just northwest of Cape Northumberland is not recommended for anchorage, although small craft can find protection from a Northerly wind and fair protection from a Westerly wind.

KELP:

All dangers on this sheet are marked by kelp, especially in depths of four fathoms or under. Very heavy kelp beds were encountered South and West of Hall Cove. No great difficulty was experienced in going through these kelp beds during the months of August and September. However, sounding should not be taken in these kelp beds except at half rising tides. Some of the smaller kelp beds were almost washed away

by severe storms in late summer and early fall, so care should be taken in navigating these waters during this time in case some danger would not be marked by kelp.

DISCREPANCIES:

Not Plotted

Between position 49 w, and 50 w, 430 meters 295°(true) from station "ABET", a 7-1/2 fathom sounding was obtained. In all probability this sounding was 11-1/2 fathoms as enough soundings between 25 d', and 36 d', were taken to prove this.

COMPARISON WITH PREVIOUS SURVEYS:

Although a thorough search was not made for the sunken rock as shown on chart No. 8075 just West of Club Rocks, I believe enough soundings were taken to prove that it does not exist. Beside this no indication of kelp was noted in this locality.

TP 37

REMARKS:

None of the sounding area beginning at Longitude 131°27.0', Latitude 54°54.0' and extending in a Southwesterly direction to Longitude 131°32.0' West and Latitude 54°50' North has been developed. I believe that a system of lines spaced two hundred meters apart is sufficient for the area beginning South of Hall Cove and extending Westward to the limits of the sheet. Most all this area is foul and covered with kelp beds. If desired a few lines can be run through the kelp beds at a half or higher rising tide to determine the depths therein. Considerable valuable information could be obtained if a couple of days were spent in this locality in locating rocks, reefs and limits of ledges, at a low or minus tide before attempting the final hydrography.

Done in 1933.

The two rocks located at Longitude 131°31.9', Latitude 54°53.3' and Longitude 131°33.9' and Latitude 54°52.8' were located by the means of several cuts taken to the rocks. I believe that a more definite and satisfactory location should be taken of these rocks when the hydrography is extended into their immediate locality.

Done in 1933.

I believe that a better determination can be had of the rock in the breakers at Longitude 131°22.1' and Latitude 54°49.8' just South of White Rocks.

Done in 1933.

Two soundings, one 16 fathoms at Longitude 131°22.1' Latitude 54°49.4' and one 15 fathoms at Longitude 131°21.7' and Latitude 54°49.1' were not further investigated due to lack of time, and also that since their depth is of such nature, it was deemed best not to develope them.

Not necessary.

Although an attempt was made to obtain up and down sounding there is some doubt in my mind how much a bight there was in the lead line when a knot or two current was running. The lead line appeared in a perpendicular position and the leadsman was instructed to disallow a little for such a bight, yet I feel as though a few check lines should be run by means of a sounding machine to verify some of the soundings over fifteen fathoms. A few check soundings taken. Satisfactory.

Topographic signals "END", "EMO", and "TIME", are shown as located on the insert, scale 1:10,000. In reality they belong to the scale 1:20,000.

No bottom at 42 fathoms was encountered at Longitude 131°31' West and Latitude 54°50.6' North. It is recommended that machine soundings be taken in this area to determine the true depths. Donein 1933.

GEOGRAPHIC NAMES:

All new geographic names are hereby referred to topographic field sheet No. "D", which covers this entire territory.

DANGERS AND OBSTRUCTIONS:

All dangers are marked by kelp, except where the kelp has been washed away by severe storms in late summer or early fall.

1. Rocky reef, 2 feet above mean high water at highest point, 155 meters, 179° (true) from station "TOL".

2. Sunken reef covered 2-4/6 fathoms at M.L.L.W., 480 meters, 232° (true) from triangulation station "FELL", 1932. Position 74 c.

3. Rock baring 4 feet at M.L.L.W., 1080 meters, 174° (true) from triangulation station "FELL", 1932.

4. Shoal covered 9-1/2 fathoms at M.L.L.W., 627 meters, 108° (true) from station "SID". Rocky Bottom. Position 33 h.

5. Rocky reef baring 1 foot to 3 feet at M.L.L.W., 530 meters, 130° (true) from station "SID". Reef is approximately 100 meters long extending in a North and South direction.

6. Shoal covered 3-5/6 fathoms at M.L.L.W., 610 meters, 158° (true) from station "SID". Rocky bottom. Position 23 g.

7. Reef extending 180 meters, 41° true from station "EVA".

8. Shoal covered 1-2/6 fathoms at M.L.L.W., 210 meters, 45° (true) from triangulation station "KELP", 1932. Position 65 h.

9. Sunken rock covered 2 feet at M.L.L.W., 120 meters, 303° (true) from station "DOC". Position 11 k'. No kelp.

10. Rock bearing 12 feet at M.L.L.W., 198 meters, 64° (true) from station "GO". Position 41 q, Surrounded by kelp.

11. Reef bearing 3 feet at M.L.L.W., 220 meters, 100° (true) from triangulation station "GID". Position 1 h. Surrounded by kelp.

12. Sunken rock covered 8 feet at M.L.L.W., 208 meters, 283° (true) from triangulation station "GID", position 12 v, A few pieces of kelp.

13. Least depth on shoal area of 4/6 fathom, 150 meters, 155° (true) from signal "ROCK". Position 13 d', rocky bottom, thick kelp.

14. Least depth on shoal area, 3-1/6 fathoms, 630 meters, 265° true from signal "DAS". Position 21 d'. Rocky bottom.

15. Rock bearing 2 feet, 570 meters, 306° (true) from station "ABET". Position 2 h. Surrounded by kelp.

16. Rock bearing 1 foot at M.L.L.W., 660 meters, 289° (true) from triangulation station "FIN". Surrounded by kelp.

17. Least depth of 1-2/6 fathoms on shoal area, 600 meters, 289° (true) from triangulation station "FIN". Position 41 d', rocky bottom, kelp.

18. Least depth 1-1/2 fathoms, on shoal area, 470 meters, 258° (true) from triangulation station "FIN". Between position 74 and 75 w, Rocky bottom, kelp.

19. Sunken rock covered 4 feet at M.L.L.W., 560 meters, 220° (true) from triangulation "FIN". Position 55 g'. Surrounded by kelp.

20. Least depth 3-2/6 fathoms on shoal area, 770 meters, 234° (true) from triangulation station "FIN". Position 65 g'. Rocky bottom.

21. Least depth 2-2/6 fathoms on shoal area, 700 meters, 300° (true) from triangulation station "SISTER". Position 2 e'. Rocky bottom, kelp.

22. Least depth 1-5/6 fathoms on shoal area, 360 meters, 336°

(true) from station "KING". Position 17 f'. Rocky bottom, kelp.

23. Least depth of 4 fathoms, 600 meters, 281° (true) from station "KING". Position 26 f'. Rocky bottom.

24. Rock covered 3 feet at M.L.L.W., 630 meters, 196° (true) from station "KING". Position 59 f'. Surrounded by kelp.

25. Rock covered 4 feet at M.L.L.W., 1840 meters, 219° (true) from station "KING". Position 62 e'. Kelp. (On June 18th, a reconnaissance party reported in this immediate vicinity a rock covered 3 feet.)

26. Least depth 2-2/6 fathoms, 1820 meters, 216° (true) from station "KING". Position 34 e'. Rocky bottom. Some kelp.

27. Rock baring 3 feet at M.L.L.W., 2520 meters, 208° (true) from station "KING". Kelp.

28. Rock baring 1 foot at M.L.L.W., 2560 meters, 209° (true) from station "KING". Kelp.

29. Least depth 3-2/6 fathoms on shoal area 2470 meters, 30° (true) from triangulation station "CLUB". Position 144 c', rocky bottom. No indication of kelp.

30. Rock covered 9 feet at M.L.L.W., 2650 meters, 24° (true) from triangulation station "CLUB". Position 81 e'. Rocky bottom. No indications of kelp. (A reconnaissance party on June 18th, reported a depth of 6 feet in this immediate vicinity.) assumed 4 to be (+) with approx 1 foot MLLW

31. Least depth of 3 fathoms on shoal area 820 meters, 29° (true) from triangulation station "CLUB". Position 102 c'. Rocky bottom. Same kelp.

32. Least depth of 11 fathoms on shoal area 930 meters, 45° (true) from triangulation station "CLUB". Position 46 c'. Rocky bottom.

33. Rock bares 4 feet at M.L.L.W., 1230 meters, 156° (true) from triangulation station "WHITE".

34. Least depth of 2-2/6 fathoms on shoal area 1350 meters, 156° (true) from triangulation station "WHITE". Position 93 e'. Rocky bottom. Kelp.

35. Least depth of 2 fathoms on shoal area, 720 meters, 184° (true) from triangulation station "WHITE". Position 120 e'. Rocky bottom. Kelp.

36. Sunken rock covered 2-4/6 fathoms, 1820 meters, 261° (true) from triangulation station "CAPE". Position 98 h'. Rocky. Kelp patches of small extent.

37. Rock bares4 feet at M.L.L.W., 1650 meters, 265° (true) from triangulation station "CAPE". Surrounded by kelp.

38. Rock covered 5 feet at M.L.L.W., 910 meters, 286°(true) from triangulation station "CAPE". Position 79 h'. Rocky. Kelp.

39. Rock bares2 feet at M.L.L.W., 1360 meters, 293° (true) from triangulation station "CAPE". Kelp.

40. Sunken rock covered 2 feet at M.L.L.W., 980 meters, 320° (true) from triangulation station "CAPE". Kelp.

41. Least depth of 2 fathoms on shoal area, 510 meters, 262° (true) from triangulation station "CAPE". Position 62 j'. Rocky bottom, kelp.

42. Least depth of 4-1/2 fathoms on shoal area, 360 meters, 181° (true) from triangulation station "CAPE". Position 135 f'. Rocky bottom.

43. Least depth of 1 fathom on shoal area, 1020 meters, 117° (true) from triangulation station "CAPE". Position 181 f'. Rocky bottom, kelp.

44. Least depth of 1-5/6 fathoms on shoal area, 1320 meters, 98° (true) from triangulation station "CAPE". Position 35 h', Rocky, kelp. (On June 18th a reconnaissance party recorded a depth of 5 feet in this immediate vicinity.

45. Least depth 1-4/6 fathoms on shoal area, 1390 meters, 96° (true) from triangulation station "CAPE". Position 33 h'. Rocky bottom, kelp.

46. Least depth 2-1/2 fathoms on shoal area, 830 meters, 276° (true) from triangulation station "CAPE", between Positions 35 and 36 m. Rocky bottom, kelp.

47. Least depth 2-1/6 fathoms on shoal area 960 meters, 89° (true) from triangulation station "CAPE", between positions 37 and 38 y. Rocky bottom, kelp.

48. Reef bares6 feet at M.L.L.W., 400 meters, 34° (true) from triangulation station "CAPE".

49. Least depth 2-1/6 fathoms on shoal area, 1020 meters, 73° (true) from triangulation station "CAP". Position 179 w. Rocky bottom, heavy kelp.

50. Least depth 1-5/6 fathoms on shoal area, 840 meters, 167° (true) from triangulation station "EON". Position 120 q'. Rocky bottom, kelp.

51. Least depth 4-2/6 fathoms on shoal area, 760 meters, 271° (true) from triangulation station "FIN". Position 26 g'. Rocky bottom.

52. Least depth 3 fathoms on shoal area 730 meters, 108°(true) from triangulation station "BITE". Position 7 g'. Rocky bottom.

53. Rock bares 5 feet at M.L.L.W., 900 meters 90° (true) from triangulation station "BITE".

54. Sunken rock covered 1 foot at M.L.L.W., 90 meters, 355° (true) from station "WO". Position 1 r. No kelp.

55. Least depth 6-1/2 fathoms on shoal area 490 meters, 318° (true) from triangulation station "FIN". Position 34 d'. Rocky bottom.

56. Least depth 1-4/6 fathoms on shoal area 880 meters, 120° (true) from triangulation station "BITE". Position 53 d'. Rocky bottom, kelp.

All other rocks, reefs and ledges are close inshore and are properly penciled with notations on the smooth sheet.

Respectfully submitted,

Henry O. Fortin

Henry O. Fortin,
Jr. H. & G. Engr.

APPROVAL SHEET

Under dangers and obstructions, paragraph 30, page 8, and paragraph 44, page 9, the reconnaissance depths, which were obtained at minus tide and noted in these paragraphs are quite dependable, but the fixes taken then were not so accurate on account of tangents of different rocks and points being used.

It is hereby recommended that the lower depths be used.

APPROVED AND FORWARDED:

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

STATISTICS

HYDROGRAPHIC SHEET NO. 4

DATE	VOL.	DAY	BOAT	STAT. MILES	POS.	SOUNDINGS HAND-MACH	AREA	MILES TO & FROM WORK
			Tender					
Aug. 5	1	a	# 2	6.4	28	111		22.0
6	1	b	"	8.1	33	124		9.3
8	1	c	"	12.9	63	219		13.7
9	1	d	"	10.0	60	227		21.1
10	1	e	"	15.5	87	248		18.9
11	1&2	f	"	17.8	108	358		12.4
12	2	g	"	13.3	88	277		12.4
16	2	h	"	10.0	90	290		24.5
23	2	j	"	4.6	65	236		7.3
24	2&3	k	"	9.5	102	358		11.0
25	3	l	"	8.4	115	360		0.4
26	3	m	"	10.7	85	254		8.7
29	3	n	"	4.0	59	183		0.9
30	3	p	"	5.2	81	221		1.6
Sept. 1	4	q	"	8.3	135	345		7.2
2	4	r	"	12.7	157	553		11.0
6	4	s	"	6.3	64	205		2.7
7	4&5	t	"	16.5	129	335		5.9
8	5	u	"	5.2	52	120		12.0
9	5	v	"	1.5	27	27		5.0
14	5	w	"	16.2	181	594		7.3
15	5&6	x	"	15.4	140	344		3.8
17	6	y	"	15.0	136	423		9.5
19	6	z	"	17.6	166	356		6.2
20	6	a'	"	17.9	136	235		9.7
21	7	b'	"	7.7	76	99		5.7
23	7	c'	"	14.3	159	240		9.1
26	7	d'	"	4.4	64	86		4.2
27	7	e'	"	14.4	204	220		12.3
28	7&8	f'	"	11.9	186	225		10.5
Oct. 4	8	g'	"	8.3	144	206		13.6
5	8	h'	"	15.0	191	454		9.8
6	8	j'	"	7.6	103	187		10.8
7	8	k'	"	2.1	21	21		15.7
Totals:				354.7	3535	8741		336.2

STATISTICS

HYDROGRAPHIC SHEET NO. 4

(CONTINUED)

DATE	VOL.	DAY	BOAT	STAT. MILES	POS.	SOUNDINGS HAND	SOUNDINGS MACH	AREA	MILES TO & FROM WORK
Aug. 23	1	a	DELTA	3.2	64	229	---		2.2
24	1	b	"	5.5	71	131	83		3.0
25	1	c	"	6.8	94	182	65		2.2
29	1	d	"	2.0	31	103	---		1.5
30	1	e	"	2.6	49	153	---		3.0
Sept. 6	2	f	"	3.8	52	96	52		2.8
14	2	g	"	12.3	181	224	196		4.0
15	2	h	"	4.2	99	207	56		4.0
26	2	j	"	1.8	48	83	3		2.0
Totals:				42.2	689	1408	455		24.7

SUPPLEMENTAL

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SHEET NO. 4,

DIXON ENTRANCE,

S. E. ALASKA,

1933.

SUPPLEMENTAL DESCRIPTIVE REPORT

SHEET NO. 4 (1932), COVERING HYDROGRAPHY IN 1933.

LIMITS AND GENERAL DESCRIPTION:

Hydrography completed in 1933, on sheet No. 4 (1932), was in the unfinished area along the South shore of Duke Island, North side of Dixon Entrance, from Longitude 131°22.5' to Longitude 131°36.0' West, and from Latitude 54°47.5' to Latitude 54°56.0' North.

METHODS:

The approved methods of the Service, were used throughout.

Boats used were the chartered launch "Capon","Tender No. 1", and a skiff. The latter was used for hydrography in the shallow water in Hall Cove.

Machine soundings were generally employed in depths over fifteen fathoms, and hand soundings in lesser depths.

Mr. H. E. Finnegan, and Mr. E. B. Latham, respectively, were in charge of the "Capon" and Mr. E. B. Lewey was in charge of "Tender No. 1".

The area on the whole was covered with a system of two hundred meter sounding lines. Lines were split where there was any indication of dangers and additional developement was done at critical depths. Sounding lines were run in the most feasible manner, for the most part normal to the shore, but with lines running North and South in the area adjacent to, and West of, West Rock. The North and South lines were used on account of rough seas, coming in such a direction as to cause excessive rolling had the lines been run Northeast and Southwest, (the general direction of the system).

The bottom is rocky and irregular.

CURRENTS:

Currents with an estimated maximum velocity of from 2 to $3\frac{1}{2}$ knots are prevalent over the entire area, generally setting from East to West, with maximum current on the ebb tide. The currents are especially strong in the vicinity of West Rock, and over Hassler Reef.

TIDES:

An automatic portable tide gauge was in operation in Kelp Island Passage during the time the hydrography was in progress and reducers were taken from its records.

ANCHORAGES:

There are no recommended anchorages in the area covered by this hydrography. An investigation was made of an apparent anchorage located Northwest of the large wooded island West of Hall Cove, Latitude 54°53.7' North, Longitude 131°24.8' West, but no anchorage was found. The only entrance, which is narrow and tortuous, and also bare at low water, is West of triangulation station "FOUL". The basin inside is for the most part bare at low water and at high water the outlying reefs are covered so they offer no protection.

Hall Cove, a long arm laying West of Mount Lazaro, affords good anchorage for small vessels when once inside, but can be entered only on a rising tide, near high water, and requires local knowledge. Anchorage is two miles North of the entrance, in three fathoms of water, muddy bottom, completely landlocked.

The soundings in Hall Cove, were taken near high water and reduced from the Kelp Passage gauge but it appears that there is probably a little more water at low tide than shown, on account of the very narrow and shoal entrance.

AGREEMENTS WITH ADJOINING SURVEYS:

Connections with adjoining surveys were generally satisfactory, considering nature of bottom and other conditions.

REMARKS:

Rocks located at Latitude 54°53.3' North, Longitude 131°31.9' West, paragraph two of the 1932 report were located and appear under the heading "Dangers and Obstructions".

Rock mentioned in paragraph three of the 1932 report, in Latitude 54°49.8' North, Longitude 131°22.1' West, just South of White Rocks, was located and appears under "Dangers and Obstructions".

Several soundings with machine in areas over twenty fathoms indicate that the soundings taken in 1932 are correct.

No-bottom soundings in Latitude 54°50.6' North, Longitude 131° 31.0' West, were covered with machine soundings, and depths obtained.

INVESTIGATION OF DANGERS TAKEN FROM CHART:

Sunken rock in Latitude 54°48.7' North, Longitude 131°29.4' West, 400 meters East by South from triangulation station "WEST" was investigated and no indication of it could be found. It is recommended that this rock be removed from the chart.

The two fathom sounding shown at Latitude 54°48.2' North, Longitude 131°30.0' West, on chart No. 8075, was developed, and a least depth of three and one sixth fathoms at M.L.L.W., was obtained on this shoal. The bottom here is very irregular, with large boulders, and it is possible that the two fathom depth exists although deeper soundings were taken in the locality.

A four and one-half fathom shoal shown on chart No.8075 Latitude 54°51.2' North, 131°26.8' West, was investigated and could not be located. It is thought that the position is in error and the sounding represents the shoal with least depth of three and one-half fathoms at M.L.L.W., in Latitude 54°52.0' North, Longitude 131°27.8' West. [Pos. O.K. Verified on this survey by a 7 fm. undeveloped shoal. A.L.S.]

A rock, baring one foot at M.L.L.W., in Latitude 54°51.4' North, Longitude 131°30.3' West, or 3-3/4 nautical miles South of Leas Rock, and a sunken rock 575 meters North of it, with a least depth of 1-1/6 fathoms, were found and located.

Several rocks transferred from chart No. 8075 and the old surveys in the vicinity were investigated and found not to exist. The investigation consisted of running over the position of the rock and looking for it. The following are the positions of these rocks:

1 Lat. 54°51.5' N.,	Long. 131°29.5' W.
2 Lat. 54°51.5' N.,	Long. 131°30.6' W.
3 Lat. 54°51.35' N.,	Long. 131°30.6' W.
4 Lat. 54°51.5' N.,	Long. 131°30.45' W.

It is recommended that these rocks be removed from the chart.

A sunken rock, shown in Latitude 54°51.6' North, Longitude 131° 30.8' West, was sounded on and not located. It is recommended that it be removed from the chart.

The following rocks, shown on chart No. 8075 and hydrographic sheet No. 3781, were investigated and results were as follows:

16182? not charted

1. Rock awash, Latitude 54°53.5' North, Longitude 131°30.0' West, soundings taken on position. No rock there. Removal from chart recommended.

2. Rock awash, Latitude 54°54.3' North, Longitude 131°29.6', West, soundings taken on position. No rock there. Removal from chart recommended. #22

3. Rock awash Latitude 54°54.6' North, Longitude 131°29.8' West, soundings taken on Position. No rock there. Removal from chart recommended. #28

4. Rock awash, Latitude 54°54.6' North, Longitude 131°32.8' West, sunken rock covered four feet at M.L.L.W., found. Substitute sunken rock for rock awash. #33, Rem. (changed to * at extreme low tide) #33

Various other positions of rocks and dangers transferred from chart and sheet No. 3781, were found correct or very near correct and are treated under "Dangers and Obstructions".

Sunken rock, Latitude 54°51.6' North, Longitude 131°31.9' West, soundings taken on rock. No rock there. Removal from chart recommended.

Rock awash, Latitude 54°51.3' North, Longitude 131°31.9' West, soundings taken on position. No rock there. Removal from chart recommended.

not charted. These rocks cannot be identified

DANGERS AND OBSTRUCTIONS:

Hassler Reef. An extensive shoal area with depths of from 2 to 6 fathoms at M.L.L.W. Located in Latitude 54°51' to 54°54' North and Longitude 131°33' to 131°36' West.

Rock baring 12 feet at M.L.L.W., in Latitude 54°52.9' North, Longitude 131°34.0' West. This rock is known as West Bee Rock, and is surrounded by heavy kelp. The position found agrees satisfactorily with the position shown on chart No. 8075 and hydrographic sheet No. 3781. #14

2 3/4 fm least depth obtained by Ad. Wk. in 1935. See #19 D.R. Ad. Wk.

East Bee Rocks. A group of four rocks baring 4 to 13 ft. at M.L.L.W., in Latitude 54°53.1' North to 54°53.2' North, Longitude 131° 31.9' to 131°32.0' West, surrounded by heavy kelp. Position agrees satisfactorily with previous determinations. #21

Sunken rock covered four feet at M.L.L.W., in Latitude 54°54.6' North, Longitude 131°32.8' West.

Rock baring one foot at M.L.L.W., in Latitude 54°55.7' North, Longitude 131°31.0' West. Rock surrounded by kelp.

Shoal with least depth of two and four-sixth fathoms at M.L.L.W., in Latitude 54°53.8' North, Longitude 131°30.0' to 131°30.1' West.

Shoal with least depth of three and one-half fathoms at M.L.L.W., in Latitude 54°53.7' North, Longitude 131°31.8' West.

Shoal with least depth of one and four-sixth fathoms at M.L.L.W., in Latitude 54°53.3' North, Longitude 131°29.7' West.

Rock baring one foot at M.L.L.W., in Latitude 54°51.4' North, Longitude 131°30.3' West, or 3-3/4 nautical miles South of Leas Rock, and a sunken rock with a least depth of 1-1/6 fathoms 575 meters North.

Shoal covered 3-1/6 fathoms at M.L.L.W., in Latitude 54°48.2' North, Longitude 131°30.1' West.

Sunken rock covered 1-1/2 feet at M.L.L.W., in Latitude 54°49.8' North, Longitude 131°22.3' West, or 775 meters South-Southwest of triangulation station "WHITE".

Shoal with least depth of three and one-half fathoms at M.L.L.W., in Latitude 54°52.0' North, Longitude 131°27.8' West.

There are also numerous rocks and reefs in the area between Hall Cove and Point White, and extending as far as one and three-quarters miles off-shore.

Respectfully submitted,

Ector B Latham

Ector B. Latham,
Jr. H. & G. Engr.,
U.S.C. & G.S.S. EXPLORER.

LIST OF SIGNALS
USED
HYDROGRAPHIC SHEET NO. 4.

TRIANGULATION STATIONS

CLUB 1932
FOUL 1932
HALL 1932
LAND 1932
LAZARO 1907
POINT 1932
SISTER 1932
SEAL 1932
WEST 1932
WHITE 1932

HYDROGRAPHIC STATIONS

JIG
SAW

TOPOGRAPHIC STATIONS

BUTT
BUNT
CUL
CAT
DOBB
DOOR
EACH
EAL
FAKE
GAPE
JOHN
JADE
KING
KIRK
KILN
LIFE
LEAS
LAZE
MADE
MUR
NAME
NARD
PETE
WIN
ZARO

STATISTICS

HYDROGRAPHIC SHEET NO. 4 (1932)

APRIL 21, to JUNE 7, 1933.

DATE	VOL.	DAY	BOAT	STATUTE MILES	POS.	SOUNDINGS HAND	SOUNDINGS MACH.	MILES TO & FROM WORK.
April 21	1	A	Capon	16.1	88		161	13.7
" 22	1	B	"	19.3	93	29	150	14.9
" 23	1	C	"	11.5	117	67	140	18.5
" 25	1	D	"	14.1	112	48	146	23.0
" 26	2	E	"	7.8	50		96	19.5
" 27	2	F	"	19.2	125	109	170	17.6
" 28	2	G	"	17.6	98	58	158	50.0
May 4	2	H	"	11.1	66	24	109	15.0
" 5	2&3	J	"	16.2	94	54	144	23.0
" 7	3	K	"	12.6	69	230		26.0
" 8	3	L	"	18.5	100	81	188	23.5
" 9	3	M	"	10.3	91	98	112	51.3
" 16	3&4	N	"	16.3	95	156	120	25.5
" 17	4	P	"	17.5	94	95	156	19.7
" 19	4	Q	"	17.7	88	96	137	26.5
" 20	4	R	"	15.0	79	155	98	29.0
" 22	4	S	"	5.4	35	27	67	14.5
" 24	5	T	"	8.4	53	167		14.0
June 4	5	U	"	9.2	72	238		21.0
" 5	5	V	"	15.8	71	121	101	27.5
" 6	5	W	"	6.3	44	132	1	24.0
April 21	6	a	Tender No.1	17.4	127	402		9.0
" 22	6	b	" "	19.2	128	446		13.0
" 23	6	c	" "	16.0	110	375		18.6
" 25	6&7	d	" "	12.0	107	272		15.5
" 26	7	e	" "	0.0	6	2		15.1
" 27	7	f	" "	15.3	118	362		19.9
" 28	7	g	" "	9.8	86	251		13.4
May 5	7	h	" "	14.8	103	244	83	19.5
" 7	7&8	j	" "	6.3	41	46	89	13.0
" 8	8	k	" "	17.7	120	388	51	16.4
" 9	8	l	" "	20.3	132	393	83	17.2
" 16	8&9	m	" "	19.7	132	334	91	18.0
" 17	9	n	" "	8.2	79	250		24.1
" 19	9	p	" "	5.7	119	145	59	21.6
" 20	9	q	" "	13.6	132	112	208	19.0
June 7	10	r	" "	9.2	87	357		21.4
	TOTALS:			491.1	3361	6364	2918	753.7

APPROVAL NOTE

TO ACCOMPANY DESCRIPTIVE REPORT

FOR HYDROGRAPHIC SHEET NO. 4 (1932)

SOUTH COAST OF DUKE ISLAND.

Soundings taken in 1932 have their position numbers lettered in green, except for the sub-plan, which was done in 1932, and is lettered with blue ink. Last year's work was reviewed by Lieutenant Commander G. C. Jones, and approved by him. The descriptive report was written by Lieutenant Henry O. Fortin.

Work done in 1933 has its position numbers lettered with red and blue ink, and is described in a supplemental report, written and signed by Lieutenant (j.g.) Ector B. Latham, with the collaboration of Lieutenant (j.g.) Ernest B. Lewey, and is attached to the original report.

Junction with previous work is satisfactory, considering the irregular nature of the bottom. The present work was carried to the westward, practically to the edge of the sheet, making a wide overlap with sheet No. 3781. The fixes at the western limits are necessarily rather weak but are probably more accurate than the previous survey. Soundings were carried to the south practically to the limits of the sheet and well into clear water. The southern limit was blocked off so as to make junction easy and certain.

Discrepancies or uncertainties in 1932 work, listed in that report, were investigated and cleared up this year.

The sheet and records for 1933 work have been examined by me and are approved.

Jack Senior

Jack Senior,
Commanding Officer,
U.S.C. & G.S.S. EXPLORER.

Ketchikan, Alaska

June 26, '33

Note: Items marked thus: *, have been transferred to H-5281 in red.

82-AAP

August 14, 1933.

Notes on preliminary review of H. 5281

1. 10 fm. sounding on H-5281 in lat. 54° 50' 950 m., long. 131° 35' 280 m., Chart 8075 shows 9 fm. a little to the eastward (auth. 9½ from H. 2142). No additional work necessary. New delineation should supersede old.

2. 16 fm. sounding on H5281 in lat. 54° 49'.9, long. 131° 31'.5 (pos. ~~par.~~ 10e. green) should be further examined. existence confirmed by finding another least depth of 15 fm.

3. Vicinity of 12 fm. sounding on H5281 in lat. 54° 48' 1000 m., long. 131° 30' 00 m. H. 5268 shows an 8½ fm. spot here undeveloped and a further examination was called for in review of that sheet. Should be examined. least depth obtained was 9 fm.

4. Charted sunken rock about 480 meters E by S of West Rock (authority H. 2142) was not found on present survey. Development adequate. Should be ~~removed~~ REMOVED from chart.

5. Charted 2 fm. sounding (auth. H. 2142) in lat. 54° 48'.1, long. 131° 30' was developed and a least depth of 3 1/6 fm. found. The 2 fm. sounding was verified in the old records (pos. 14 f, green). It does not appear that the new survey covered the spot intensively. No additional work is recommended, but the 2 fm. sounding should be replotted on a larger scale (H. 3781) and brought forward to the new survey. *

6. Sunken rock (not charted) about 480 meters W by S of West Rock (auth. H. 1618a) was not found on this survey. It is considered that between this survey H. 5281 and H. 5268 enough lines have been run in the vicinity of the rock to insure its non-existence. It should therefore be disregarded from charting in the future. No additional work necessary.

7. Bare rock (not charted) about 1100 meters northwest of West Rock (from H. 1618a). This rock is considered disproved by H. 5281 and H. 5268 and need not be considered further. No additional work necessary.

8. Bare rock (not charted) about 1100 meters W by S. of West Rock (auth. 1618a). This rock may be an awash rock and may not have been seen on the present survey when the work was done during a 12 foot tide. The spacing in the immediate vicinity of the rock is wide (450 meters) and the 12 fm. indication on H. 2142 lends some support to its possible existence. Additional work recommended.

9. 8½ fm. shoal in lat. 54° 50'.2, long. 131° 23'.3 (pos. 147 e, green) is indicated in the records as the shoalest of many soundings, although in point of time only 2 minutes were spent "feeling around". Additional development would be desirable on this spot.

7½ fm. least depth obtained

10. 4½ fm. shoal. Charted in lat. 54° 51'.2, long. 131° 26'.8 was located on the present survey with a depth of 7 fms. There is no development ~~on this~~ on the 7 fm. spot and no indication of the party having "felt around". The 4½ fm. sounding was obtained by "The Explorer" in 1907 (see Chart Letter 821, 1907) and located by two fixes. The area should be further examined, since no definite location exists for the shoal, insofar as a large scale sheet is concerned. Pending this examination the 4½ should be carried forward to the new survey and shown in close proximity to the 7 fm. spot.

11. 3½ fm. shoal in lat. 54° 52'.0, long. 131° 27'.8 (H-5281). Many more soundings taken than indicated on sheet. No additional work necessary.

12. The charted 5½ fm. sounding in approximate lat. 54° 51', long. 131° 35' is from H. 3787 (surveyed in 1915, pos. 11-0). It was a single sounding on line without development. The sounding falls in 8½ to 10 fm. on the present survey. It appears to be a small detached rocky shoal, and because of the broken ~~branch~~ character of the area nearby, it is recommended that a further examination be made here. If no additional work is done ~~here~~, the sounding should be brought forward to the new survey.

13. The ¼ fm. charted sounding about ½ mile NNW of Bee Rock in approx. lat. 54° 53'.3, long. 131° 34'.3 is from chart letter 340 of 1915 (C. G. Quillian). This rock is also referred to in the descriptive report of H. 3787 (survey of 1915), but it neither appears on the sheet nor could it be found in the sounding records for that sheet altho the descriptive report says the rock "was cut in when bare on a minus tide". The sounding falls close to a 2 fm. spot on the present survey, but there is plenty indication of shoaler water. This rock should be re-located.

14. The position of West Bee Rock as given on H. 3787 agrees adequately with that given on the present survey.

15. The charted 3¼ fm. in approx. lat. 54° 52'.3, long. 131° 34'.5 is from H. 3787 (3 2/6 fm. pos. 66M). It falls in depths of 4½ to 5 fm. on the present survey. The 3 2/6 should be carried forward to the present survey.

16. The charted 3 fm. sounding in approx. lat. 54° 53'.4 long. 131° 33'.4 is from H. 2142 (pos. 76 - 77 E', red). It falls close to 3 5/6 fm. depths on the new survey. This sounding should be carried forward to the new survey. It can be first plotted on H. 3787 which has all the old control ~~on it~~ and then transferred to H. 5281.

17. The charted rock awash at L. W. in approx. lat. 54° 53'.3, long. 131° 33.4 could not be found in the records for H. 2142. It is shown on H. 2142 as a red circle, the symbol which has been used on the sheet for a rock awash. No note, however, appears on the sheet. It falls in depths of 5 fms. on H. 5281. The present field party searched for the rock during a 2½ foot tide and saw no indication of it nor was there any kelp in the vicinity (see pos. 36 n. blue). Recommended that rock be ommitted from future charting

~~It is recommended that it be omitted from future charting.~~

18. The charted 3½ fm. in approximate lat. 54° 51'.6, long. 131° 35' is from H. 2142 (pos. 31 - 32 D' red.) It falls in undeveloped depths of 4 2/6 fms. on the new survey. No additional work is recommended, but the 3½ should be carried forward to the new survey by first plotting it on H. 3787 and then transferring.

19. Hassler Reef. The least depth found on the present survey is 3 4/6 fms. which checks generally with previous depths. There is a statement in the Supplemental Descriptive Report, page 4, that Hassler Reef is an extensive shoal area with depths of from 2 to 6 fathoms at MLLW. The reef is not fully developed, and a further examination should be made to determine whether there is less than 3 fms. on the reef. This is considered important from a cartographic standpoint as the drawing of the 3 fm. curve would accentuate the existence of the reef.

20. The charted 3½ fm. in approximate lat. 54° 51'.9, long. 131° 35'.4 is from H. 2142 (pos. 81 - 82 F' red). It marks the northwest extremity of Hassler's Reef and falls in depths of 5 fms. on the new survey, (H. 5281). The 3½ should be replotted on H. 3787 and transferred to the new survey (H. 5281). 3 2/6 Actual.

21. East Bee Rocks (vicinity lat. 54° 53', long. 131° 32'). The charted delineation around these rocks (auth. H. 2142) should be superseded by the new survey H. 5281.

22. The charted rocks awash in approximate lat. 54° 54'.2, long. 131° 29'.7 and lat. 54° 54' long. 131° 29' comes from Topo. 3522 (survey of 1915). These rocks fall in depths of 14 fms. and 6 fms. respectively on the present hydro. sheet. An examination of the cuts to the several rocks on the 1915 topo. sheet shows these two rocks to have been determined by only two cuts which could have easily been confused. With the same cuts, it is possible to obtain two rocks that agree almost perfectly with the rocks awash located on the present survey in lat. 54° 54'.9, long. 131° 29'.1 and lat. 54° 54'.3 long. 131° 29'.2. It is recommended that the two rocks be removed from the chart and a suitable note placed on the topo. sheet. No additional work necessary.

23. The charted 3½ fm. sounding in approximate lat. 54° 53'.55, long. 131° 29'.3 is from H. 2142 (pos. 84 E' red). It falls on the present survey in depths of 8 to 10 fms. but is on the axis of a two fm. shoal nearby. No additional work is recommended, but the 3½ should be replotted on H. 3787 and transferred to the new survey H. 5281.

24. The charted 1½ fms. in approximate lat. 54° 53'.9, long. 131° 29'.4 is from H. 2142 (pos. 48 E' red). It falls on the present survey in an undeveloped area in depths of approximately 10 fms., but is close to the axis of a shoal area found on the present survey. No additional work is recommended, but the 1½ should be replotted on H. 3787 and transferred to the new survey.

Old Datum of T-3522

25. The charted rock awash in approximate lat. 54° 53'.9, long. 131° 28'.1 is from T-3522. This rock was not found on the new survey, but falls close to a reef in depths of about 5 fms. No additional work necessary, but the rock should be carried forward to the new survey.

26. The charted bare rock in approximate lat. 54° 54'.0, long. 131° 29'.7 is from H. 2142. As near as can be determined this is the rock that was cut in from positions 78 - 81 D', red (sheet 2142) about 1 mile away and referred to in the sounding records as "Rock B". It was located during a 5.7 foot tide, but no mention is made as to how much the rock was bare at the time. It falls in depths of about 21 fms. on the new survey. If the cut from 78 D' is erroneous then the party may have been cutting in the a rock awash about 500 meters to the southeast, which rock was located on the present survey during a 2 foot tide. If there is another rock it would have been bare almost 4 feet more than it was when located on the 1892 survey, and could hardly have been missed on the present survey. The rock from H-2142 should not be used for charting. No additional work necessary.

27. The charted 3 fm. sounding in approximate lat. 54° 54'6 long. 131° 30'0 comes from H. 1618a (survey of 1883). It falls in depths of 9½ fms. on the present survey, but there is an indication of shoaler water existing and it is recommended that the vicinity of the 9½ fm. sounding on H. 5281 be further examined before final disposition is made of the 3 fm. Because of the reconnaissance nature of the 1883 survey, it would be difficult to know just where to transfer the 3 on the new survey. Therefore, if a further examination in the vicinity of the 9½ fm. sounding fails to disclose shoaler water, the 3 should be disregarded in future charting.
or actual depths found

28. The charted rock awash about one tenth mile to the northeast of the 3 fm. sounding mentioned in ¶27, apparently also comes from H. 1618a. It is, however, shown thereon as a sunken rock, probably a generalized symbol for rocky areas. The immediate vicinity was examined on the present survey at a zero tide for this charted rock and the least depth found was 11 fms. It is therefore recommended that the rock awash be disregarded in future charting, particularly since a further examination is recommended on the charted 3 fm. (see ¶27, above).

29. The charted rock awash in approximate lat. 54° 54'.9 long. 131° 29'.7 is from T-3522 (survey of 1915). On the present survey the rock falls in depths of about 9 fms. and about 10 meters off a line that was run during a 1 foot tide (see line 54 - 55 g, blue) and about 90 meters off a line run at exactly M. L. L. W. (see line 22 - 23 g, blue). In neither case is any mention made of a rock. It is noted, however, that at about 400 meters to the southeastward of this rock, there is a rock awash at M. L. L. W. that was located on the present hydrographic survey, (see pos. 1 g, blue), but which is not shown on the 1915 topo. survey (T-3522). There is a possibility that the 1915 topographer confused these two rocks and that only one rock exists as shown on the present hydrographic survey. It is recommended that an additional examination be made at the topographic position of the rock to determine its existence or non-existence, and when this is done the 4 1/6 fm. sounding (pos. 25 g, blue) on the present survey about 170 meters to

the westward of the rock awash should also be examined for less water. If no additional work is done in the vicinity of the rock then it is recommended that it be carried forward to the new survey.

Two shoal depths of 3 & 1/2 fms obtained.

30. The 10 fm. indication on the present survey in lat. 54° 54'.4 long. 131° 30'.6 should be further developed. Test depths of 1½ fms obtained

31. The charted 3 fm. sounding in approximate lat. 54° 54!.8 long. 131° 31'.1 is from H. 2142 (pos. 2 - 3F', red). It falls in approximately five fathom depths on the present survey and very close to a 4 fm. indication on that survey. Since no development was made here, it is recommended that the area between the 3 fm. sounding and ⊙ Leas be further examined to fully develop the ridge and to enable the drawing of all the depth curves. If depths comparable to the 3 fm. are not found here, then the 3 fm. should be replotted on H. 3787 and transferred to the present survey (H. 5281).

Two shoal spots obtained with least depths of 2½ fms about 450 m. apart.

32. The charted 5¼ fms. in approximate lat. 54° 55'.2 long. 131° 31'.9 is part of an undeveloped rocky shoal on H. 3781 (pos. 82 - 83 K, blue). If falls on the new survey in an undeveloped shoal area with a least depth of 7¼ fms. The 5¼ (5 5/6 actual) should, of course be retained, but because the shoal was never fully developed and because of its importance to navigation thru Sealed Passage, it is recommended that additional work be done here to determine the least depth on the shoal.

Least depth of 5¾ fms obtained.

33. The charted ½ fm. in approximate lat, 54° 54'.6 long. 131° 32'.9 is from H. 3781 (pos. 2k, blue) where it is shown as a sunken rock, covered 3½ feet at M.L.L.W. This rock falls close to a 1 1/6 fm. sounding on H. 5281 (pos. 71 - 72 n, blue) and close to a ¼ fm. sounding (0.4 foot actual) on H. 2142 (pos. 13c, green). Since the surveyor in 1915 (H. 3781) was very close to the rock during a minus tide (+3.5 feet) his description of the rock is probably the correct one. It is therefore recommended that the rock be carried forward to the new survey as a rock awash "Awash at extreme low tides". No additional work necessary.

34. The charted sunken rock in approximate lat. 54° 54'.5 long. 131° 32'.7 is also from H. 3781 (pos. 2k, blue). This rock was located by an estimated distance of about 150 meters from pos. 2k. It falls on the present survey in depths of 5 fms, but is very likely the 4/6 fm. sounding located at pos. 75 n, blue of the present survey. The 1892 survey (H. 2142) shows a ¼ fm. sounding here (1 foot actual, pos. 12 c, green). It is recommended that the rock from the 1892 survey be replotted on a large scale and transferred to H. 5281 as a rock awash with the notation "Awash at extreme low tides". No additional work necessary.

35. The charted bare rock in approximate lat. 54° 49'.6 long. 131° 21'.8 is from H. 2142. It was located by cuts from positions 26 to 29 W, red and is referred to as "Reef No. 3". According to the sounding records it is bare 6 feet at M.L.L.W. and therefore should have been charted as a rock awash. This delineation agrees with the rock awash found on the present survey. No additional work necessary.

36. The charted delineation around Vancouver Id. off Cape Northumberland appears to have its authority in H. 1618a. As this appears to be a generalized representation only, it is recommended that the new survey supersede the details shown on the present chart.

37. The charted sunken rock in approximate lat. 54° 48'.7 long. 131° 21'.5 comes from H. 2142, where it is shown as a bare rock. No authority could be found in the sounding records for that sheet and it may have been transferred from H. 1618a where it is shown as a sunken rock. Two cuts from Mt. Lozaro in 1908 to the right and left tangents of "5th rock", appear to cut through this rock, although these cuts may be to shoal area off the southernmost of the Club Rocks. The rock falls in depths of 20 fathoms on the new survey. In view of the triangulation cuts it is recommended that the area be further examined before the rock is expunged from the chart.

No indications found

38. The charted 12 fm. sounding in approximate lat. 54° 48'.8 long. 131° 22'.2 is from H. 2142 (pos. 1 U, red). It falls in depths of 19 to 20 fms. on the new survey, and if correct indicates a fairly steep slope. It is recommended that the area surrounding the 12 be further examined and when this is done the area immediately to the northward for a distance of about 800 meeters be also examined.

No indications found.

39. The charted islet in approximate lat. 54° 50'.4 long. 131° 20.3 comes from H. 2142, (survey of 1892) where it is shown in red. It appears to have been transferred from some other source, but no record could be found of it. It did not appear on the 1895 edition of Chart 8100, but was first charted on the issue of 1899. No authority could be found for it between these dates. It falls on the present survey in depths of ~~12~~ fathoms, even bottom. It may be a misplacement of one of the shoals to the northwest or southeast that may have been seen breaking. It is recommended that the area be examined during a low tide and if no rock is seen here, it should be removed from the charts upon statement of field party making this inspection.

Existence disproved by subsequent.

40. The charted rocks in approximate lat. 54° 51'.1 long. 131° 20'.4 comes from H. 1618a (survey of 1883) and is a crude representation of the rocks found on the present survey. The latter should supersede all former charting.

41. The charted bare and sunken rocks in approximate lat. 54° 50'.7 long. 131° 20'.1 is from H. 1618a. The present survey shows no bare rock in this vicinity but there are several sunken rocks. It is recommended that the area be examined at low tide and if no rocks are visible, the new survey should supersede the present delineations on the charts.

No additional rocks found

42. The charted rock awash in approximate lat. 54° 51'.5 long. 131° 18'.7 comes from H. 1618a. The rock may have been a generalized symbol for a rocky area marked by kelp. It was not found on the present survey and falls in depths of 8 to 9 fathoms. However, there is an undeveloped 3 2/6 fm. sounding (pos. 115 y, green) on the present survey surrounded by deeper water, that falls very close to the supposed location of the rock. It is recommended that an additional examination be made on the 3 2/6 spot before the rock is removed from the charts.

Least depth of 15 fm obtained.

43. The charted group of rocks awash in approximate lat. 54° 51'.1 long. 131° 18'.7 originates with H. 2142 (pos. 65 d, blue) where it is referred to as "passing to southward of a group of rocks". The height of the tide at the time was 14 feet, so in all probability there were some bare rocks in the group. The delineationon the present survey bears this out and it should supersede all previous delineations.

44. The charted sunken rocks running northwest of the west end of Kelp I. comes from H. 1618a. These rocks should be superseded by the more exact delineations on the present survey.

45. The charted rocks (bare, sunken and awash) in approximate lat. 54° 51'.2 long. 131° 19'.0 to 131° 19'.4 originates with H. 1618a and do not agree with the location and characters shown on the new survey. It is considered that the new survey gives a complete delineation of these rocks, and should supersede all previous chartings. This is based on the fact that the hydrographer was in the vicinity at low tide and would have seen any additional rocks awash that existed. (see pos. 12 W, green and 1 - 14 x, green).

46. The undeveloped 2 5/6 fm. sounding obtained while on sounding line (pos. 11-12x, green) on the present survey in lat. 54° 51' - 1050m. long. 131° 19' ~~51m.~~ should be further examined. by "feeling around".

47. The two charted bare rocks in approximate lat. 54° 49'.8 long. 131° 19'.6 have for their source H. 2142. They were located from cuts taken on positions 18 - 28 W, red. They are erroneously charted as bare rocks and should have been charted as rocks awash, since they both bare about 6' at M.L.L.W. A replotting of these rocks on a larger scale and a transfer to H. 5281 places them to the northward and westward of the two rocks awash found on the present survey. However, since the latter rocks bare 1 and 3 feet at M.L.L.W., the topographer would have surely seen any other rocks close by that were bare a greater amount. It is believed that the delineation on the new survey is the correct one, and while no additional work is recommended, an inspection of the area should be made at low tide and if more rocks are found to exist than are shown on the new survey they should be located.

48. The charted rock awash and bare rock in approximate lat. 54° 49'.8 long. 131° 20'.1 are from H. 2142 (pos. 22 and 23 e, blue). If the old sheet had been plotted correctly the bare rock and rock awash would have been reversed. A replotting of these rocks on a larger scale, places the cut to the bare rock from pos. 22, e thru the southernmost of the two rocks mentioned in ₱47, above. Although the note on the sounding record says, "Highest point of reef is about 4 feet above H.W.M.", it is believed that this refers to the water level at the time. That would make it agree with the rocks mentioned in ₱47. The note further says "reef extending N. W. and S. E. length of reef about 100m". This agrees in direction and length with the rocks mentioned in ₱47 and it is possible that since the stage of the tide was lower on e day than on W day (see above paragraph) that the two rocks appeared as one continuous reef. Regarding this bare rock (?) the inspection mentioned in ₱47 should dispose of this rock as well.

Notes on preliminary review of H. 5281 - 8

The rock awash was located on pos. 23 e, blue by an estimated distance of 200 meters, the rock being "just awash" at a 2.5 foot tide. A replotting of this rock on a larger scale and a transfer to the present survey places it in depths of 13 to 17 fathoms. It is recommended that the area be further examined, preferably at a low tide, and a final recommendation made as to the disposition of the rock.

49. The charted rock awash in approximate lat. 54° 52'.8 long. 131° 23'.7 is from T-3522 (survey of 1915). It is not shown on the present survey. The soundings in the vicinity of the rock were taken during a 10 foot tide and the rock may be covered at that stage. No additional work necessary. Rock should be carried forward to new survey.

50. The charted group of bare, sunken and awash rocks in approximate lat. 54° 53'.0 to 54° 53'.5 long. 131° 26'.6 to 131° 27'.8 have for their source H. 2142. The positions and cuts in the sounding volumes were replotted on a larger scale (see position 89 - 97E', red and 78 - 80 D', red) and a thorough study made of these rocks in relation to the rocks located on the new survey. While such inconsistencies, as rocks baring 9' at M.L.L.W. (see pos. 42 - 43, e, green, H. 5281) were cut in on the old survey during a 12 foot tide (see pos. 90 E' red, H. 2142), could not be explained, it is believed that the new survey represents conditions as they actually exist and it is recommended that for this area it supersede the delineations on the old survey. No additional work necessary.

51. The charted bare rock in approximate lat. 54° 53'.0 long. 131° 26'.8 comes from H. 2142, but no reference could be found to it in the sounding records. It is shown on the sheet in andindefinite manner, but is clearly marked "Rock". It falls on the present survey on a shoaling depth of 5 to 6 fathoms. It may be a rock awash, and it is recommended that an examination be made here. Rk not found but shoal with least depth of 3½ fms obtained about 300m to the NE.

52. The 3½ fm. shoaling on the new survey in lat. 54° 53' 710m. long. 131° 27' 70m. as well as the shoaling for about 500m to the southeastward should be further examined. The shoal soundings were found on the regular system of lines without any development. Two shoal spots with least depths of 1¼ + 5 fms. found.

53. The charted 3 fm. sounding in approximate lat. 54° 53'.4 long. 131° 26'7 and the charted 3 fm. in approximate lat. 54° 53.5 long. 131° 27'.9 are from H. 2142 (pos. 92 E', red and 89 E', red, respectively). Both soundings should be replotted on H. 3787 and transferred to the new survey, the sounding on 89E' being transferred as 2 5/6 fms.

54. The charted rock awash in approximate lat. 54° 51'.3 long. 131° 30'.7 comes from H. 2142 where it was located from cuts taken at positions 37x to 53 E, red and bares about 4 feet at M.L.L.W. This rock falls about 200 meters to the southwest of the northernmost rock shown on H. 3787 (only one rock could be accounted for in the records for H. 3787 - position 1 - 5 0, red); the other rock shown on H. 3787 is marked "Boat sheet" and was probably transferred from it. The location on H. 3787 agrees closely with the location of the rock on the present survey (H. 5281). Although the rock found on the present survey bares but 1 foot at M.L.L.W. while the rock on H. 2142 bares

∴ Rk confirmed baring 3½' MLLW

about 4 feet, it is reasonably certain that only one rock exists here, since the rock on the latest survey was located during a zero tide and from a position not more than 50 meters away (see Vol. 15 pg. 72, H. 5281). It is recommended that the new location and descriptive note supersede all previous delineations. No additional work necessary.

55. The charted rock awash in approximate lat. 54° 51',5 long. 131° 29',6 is traceable to H. 2142 where it is shown as a bare rock. It does not appear on any other survey and falls in depths of 23 fathoms on the present survey. An examination of the sounding records for H. 2142 shows that the rock was located from positions 12 to 16 V, red using the recorded signal "Van" as the left object. By using signal "Van ld." instead of "Van", two of the cuts ran thru the rock located by the same party on X day (see preceding paragraph). That "Van ld" is the signal observed upon is further borne out by the fact that the check angle on pos. 13 V, could not be used unless such change was assumed. In addition the soundings taken on these positions would be wholly inconsistent with the soundings on the present survey (8 to 12 fms on the old survey falling in depths of 16 to 21 fms. on the new unless it was assumed that signal "Van Id." was used. It is therefore recommended that this rock be disregarded in future charting. No additional work necessary.

56. The charted sunken rock in approximate lat. 54° 51'6 long. 131° 30',9 comes from H. 2142 where it is shown as a bare rock. An examination of the sounding records for that sheet shows that the rock was plotted from cuts taken on positions 38 to 43 X, red, to "broken water", and should have been shown on the sheet as a sunken rock. A replotting of these cuts on a larger scale places this sunken rock close to the 1 1/6 fm. shoal on the present survey and it is believed to be the same. It is recommended that the 1 1/6 fm. supersede all previous charting. No additional work necessary.

57. The undeveloped 6 fm. shoal on the new survey (pos. 96 f, green) in lat. 54° 51' 1000 m. long. 131° 30' 760 m should be further developed.

46 m least depth obtained

58. The charted rock awash in approx. lat. 54° 51'.4 long. 131° 30'6 comes from H. 2142 (1892) where it is shown as a "bare rock". No authority could, however, be found for its existence in the sounding records. It falls on the present survey in depths of about 11 fms. Since both the 1892 survey party and the 1933 survey party were in the immediate vicinity during low water and failed to mention the rock, it can be assumed that it is non-existent, and should be disregarded in future charting. No additional work necessary.

(Split lines nearby, P 68)

59. The charted rock awash in approximate lat. 54° 51'.1 long. 131° 31'.4 also comes from H. 2142 where it is shown as a "bare rock". This rock is also shown on H. 3787 as a rock awash in pencil and marked "boat sheet". No authority could be found in the records for either sheet regarding the rock, although the 1892 survey party was in the immediate vicinity at a 1 foot tide. The rock falls on the present survey (H. 5281) close to a 13 fm. sounding (pos. 99 - 100 f, green) surrounded by deeper water. The area was sounded in 1933 (see q day, blue) during a 6 foot tide. It is recommended that further examination be made at the location of the 13, 13 and 14 fm. soundings by feeling around for shoaler water, also that a lookout be kept at low water for indications of a rock awash at low tide.

No critical information obtained

60. The charted 3 fm. sounding in approximate lat. 54° 52'.5 long. 131° 33'.6 originates with H. 2142 (pos. 97 - 98 F', red). It falls in depths of 6 fms. on the present survey. If the passage between W. Bee Rock and Hassler Reef is a used passage then a further examination should be made in the vicinity of the 3 as well as in the vicinity of the 3 2/6 fm. sounding (marked by kelp) found on the present survey (pos. 80 - 81 L, blue) about 500 meters W N W of the above mentioned 3. If no additional work is done then the 3 fathom sounding should be replotted on H. 3787 and transferred to H. 5281.

61. The charted 3 fm. sounding about .4 mile to the northeast of the 3 fm. sounding referred to in the preceding paragraph also comes from H. 2142 (pos. 98 - 99 F', red). It should be replotted on H. 3787 and transferred to the present survey as 3 1/6. No additional work necessary.

62. The shoal area from ⊙ Leas to the northern limits of the sheet (approx. lat. 54° 55'.5 long. 131° 30'.5) should be further examined to determine the least depths and to permit the drawing of significant depth curves. The area is important for vessels going thru Sealed Passage and for launches following an inside channel. It is recommended that this area be further developed when work is extended to the north.

63. There is a discrepancy in the vicinity of ⊙ Leas (northwest end of sheet) between the rocks shown on the present survey and those shown on T-3522 (survey of 1915). Since the 1933 survey party examined the area at a minus tide (see pos. 3 - 6 e, blue) it would seem that they would have located all rocks awash in the immediate vicinity. If additional work is done in the area to the northward of ⊙ Leas (see ¶62, above), then it is recommended that the exact positions of the rocks from the 1915 survey be investigated. Otherwise the present survey should supersede the previous surveys.

64. The charted group of awash rocks in approximate lat. 54° 54'.5 long. 131° - 28'.5 comes from T-3522 (survey of 1915). Several of the rocks were not located on either the present hydrographic or topographic sheet. As these fall in an area not covered by the new hydrography or where covered was surveyed during a 12 foot tide (see pos. 73 - 79 d, blue), it is recommended that these rocks be carried forward on the new hydrographic survey. The rocks shown on H. 2142 in this area should be superseded. No additional work necessary.

65. The charted rock awash about .3 mile to the northeast of the east end of Kelp Island comes from H. 1618a. It falls in depths of about 22 fms. on the present survey, and the surveyor was in the vicinity during low water (see pos. 3 h, red). A rock awash was located on the present survey about 400 meters to the eastward. This is believed to be the same rock located on the old survey. It is recommended, that owing to the reconnaissance nature of H. 1618a, the new survey supersede all previous surveys in the vicinity for charting purposes. No additional work necessary.

66. Split lines should be run on either side of the 17 fm. soundings on H. 5281 in lat. 54° 50'.4 long. 131° 29'.5 and if less water is found it should be developed.

Notes on preliminary review of H. 5281 - 11

67. Split lines should be run in the vicinity of the 14 fm. soundings on H. 5281 in lat. 54° 51'.3 long. 131° 29'.7 and shoaler indications found should be developed. 8¼ fm least depth obtained also 8½

68. The split running southwestward from the rock awash in lat. 54° 51'.4 long. 131° 30'.4 should be developed by split lines.
Two shoals with least depths of 10 & 11 fm. obtained.

A. L. Shalowitz,

August, 1933.

Oct. 20, 1933

Section of Field Records

Report on H-5281

Kelp Island to Hassler Reef, Alaska

Instructions dated March 24, 1932 & March 16, 1933; Explorer

Surveyed in 1932 & '33

Chief of Party - Jack Senior and J. C. Jones

Surveyed by - H.E. Finnegan, E.B. Latham, E.B. Leavy & H.O. Fortin

Protracted by - W. Weidlich, H.O.F. and E.B.L.

Soundings penciled by - J.S., H.O.F. and E.B.L.

Verified and inked by - Harold O. Murray

1. The records conform to the requirements of the Hydro. manual.
2. The plan, character and extent of development satisfy the general and specific instructions except as noted in the Preliminary Review.
3. Sounding line crossings are satisfactory.
4. The usual depth curves may be drawn within the limits of the survey with the exception of the areas in which additional work is called for.
5. The field protracting and plotting of the 1932 season's work (10 Vols.) by H.O. Fortin was of as high a degree of accuracy as is humanly possible. By contrast the

remaining 10 volumes of the 1933 season's work was very poor. Sounding fractions were interchanged in spite of the proper classification and frequently omitted. In specific areas, such errors averaged 6 to 7 per page of sounding record. Spacing of soundings was better on the Boat Sheet than on the Smooth Sheet. Day letters of detached positions were very frequently labeled with the wrong day.

6. Topographic names, about 30 note relative to rocks awash and a considerable portion of the inshore reef line were transferred from the topographic sheet by the verifier.

7. In the vicinity of Hall Cove, positions 39 to 87 r (b/sc), Vol. #20, are of reconnaissance nature only. Of these positions, positions 45 to 87 r, not possessing sextant locations, were transferred direct from the Boat Sheet. (See field note, page 12 and 17 of Vol. #20).

8. Several rocks were correctly shown on the sheet as sunken rocks. In as much as the field party actually saw these rocks baring at tides of from ½ to 2 feet below the plane of M.L.L.W., the symbols were changed to rocks awash and the legend "awash at extreme low tides," appended. Between the current Topographic and Hydrographic sheets, information was obtained on over a hundred rocks.

9. <u>The Preliminary Review</u> of this sheet was executed in advance of the verification and inking. Information appearing

on the smooth sheet in red is in accordance with the recommendations contained therein.

Lack of sufficient data to correctly relate the projection of H-2142 (yr. 1892) to the current datum necessitated replotting of all work taken from that sheet to H-3781 and then transferred to H-5281. An advantage of a larger scale was obtained in the process.

10. Junctions with contemporary surveys.

Junctions on the northeast with H-5267 will be made when that sheet is verified.

The overlap with H-5268 near West Rock Island is satisfactory.

11. Respectfully submitted.

Harold W. Murray

TAC

August 22, 1933.

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
10 volumes of sounding records for

HYDROGRAPHIC SHEET 5281

Locality **Kelp Island to Hassler Reef, S. E. Alaska.**

Chief of Party: **G. C. Jones in 1932 and Jack Senior in 1933**
Plane of reference is **mean lower low water, reading**
3.0 ft. on tide staff at **Kelp Island Passage**
17.6 ft. below B. M. 1

Height of mean higher high water above plane of reference is 14.6 feet.

Condition of records satisfactory except as noted below:

H. A. Marmer
Chief, Division of Tides and Currents

5281
(Add'l Wk)

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
OCT 27 1933
Acc. No. _____

5281 (Add'l. Wk.)

Form 504
Ed. June, 1928

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

State: S. E. ALASKA

SUPPLEMENTAL

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic } Sheet No. 5281 (Add'l WK)
(Field Sheet #4)

LOCALITY

S. W. COAST DUKE ISLAND

S. E. Alaska

1933

CHIEF OF PARTY

JACK SENIOR, H. & G. E., C. & G. S.

U. S. GOVERNMENT PRINTING OFFICE: 1930

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. 5281 (Additional Work)

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. .....

REGISTER NO. 5281 (Additional Work)

State Alaska

General locality

Locality Shoal Areas South and West of Duke Island

Scale 20,000 Date of survey Sept. 7 to 23, 1933 192

Vessel Explorer

Chief of Party Jack Senior

Surveyed by H. E. Finnegan

Protracted by Harold W. Murray (Office)

Soundings penciled by H.W.M.

Soundings in fathoms XXXXX

Plane of reference MLLW

Subdivision of wire dragged areas by

Inked by H.W.M.

Verified by H.W.M.

Instructions dated Aug. 8, 1933 , 192

Remarks: This additional work is to be plotted on the original sheet, H - 5281

GPO

SUPPLEMENTAL REPORT

TO ACCOMPANY

HYDROGRAPHIC SHEET NO. 5281

(FIELD SHEET NO. 4)

S. W. COAST DUKE ISLAND

S. E. ALASKA

- 0 -

SEPTEMBER, 1933

80-DRM

August 22, 1933.

To: Chief, Division of Hydrography and Topography.

From: Chief, Division of Charts.

Subject: Review, hydrographic survey No. 5281, South of Duke Island.

There are attached notes on the preliminary review of H. 5281, area south and southwest of Duke Island, Southeast Alaska. The preliminary review of this sheet was made in order that the party in the field during the present season could make examination of any questionable points which might come up in connection with this sheet.

There are 68 paragraphs in this review, each covering a separate shoal sounding, shoal area or rock. The review covered all previous surveys and reports on hydrographic data within this area. Considerable time was spent in searching the old records. It is considered that many questionable sources have been run down and definite determinations made which will avoid referring back of this review for authority on any rock or shoal within the area of the sheet for charting or other purposes.

A master boat sheet has been prepared on which were transferred the shoreline and control from the smooth sheet. There have been placed on the sheet certain soundings or rock symbols covering 31 of the 68 paragraphs in the review. It is considered that these 31 paragraphs require additional investigation to clear up doubtful or undeveloped areas.

It is recommended that the boat sheet, with the attached copy of the notes on preliminary review, be forwarded to the Commanding Officer of the EXPLORER with instructions to perform such additional work as is indicated in the paragraphs determined by numbers on the boat sheet.

Chief, Division of Charts.

SUPPLEMENTAL REPORT

TO ACCOMPANY

HYDROGRAPHIC SHEET NO. 5281

(FIELD SHEET NO. 4)

S. W. COAST DUKE ISLAND

S. E. ALASKA

SEPTEMBER, 1933

INSTRUCTIONS:

The Director's letter, dated August 8, 1933, instructed that additional work on Hydrographic Sheet No. 5281 be accomplished in accordance with the notes on a preliminary review of the smooth sheet. The reference number of the review is 82-AAP, dated August 14, 1933.

BOAT SHEET:

The field work was completed on a boat sheet which had been prepared at the Washington Office. Instructions state that the records are to be forwarded to the Washington Office, where the additional work will be plotted on the smooth sheet.

TIDES:

No tide gauge was maintained in the vicinity of Duke Island while the additional work was being accomplished. Soundings are referred to Ketchikan tides, to which may be applied the factor obtained by a comparison, which was made early this season between Ketchikan and Kelp Island records. All information is now on file at the Washington Office.

WORK ACCOMPLISHED:

The numbers used in the following paragraphs correspond to the numbers of the paragraphs of the preliminary review.

All soundings on the boat sheet, referred to by this report, are reduced to M.L.L.W. by predicted tides.

Paragraph #1:

No additional work requested.

Paragraph #2:

This area was further examined. The 16 fathoms sounding was verified, but nothing shoaler was obtained.

Paragraph #3:

This area was further developed. A sounding of ~~8-5/8~~ 9 fathoms was found close to the previous 8-1/2 fathoms sounding. Nothing shoaler was obtained.

Paragraph #4:

No additional work requested.

Paragraph #5:

No additional work requested.

Paragraph #6:

No additional work requested.

Paragraph #7:

No additional work requested.

Paragraph #8:

Additional development work was done in this vicinity. There is no growing kelp here and the light swell which was running during the time of this development work showed no tendency to break.

Paragraph #9:

During a close development of this area the least water obtained was 6-5/6 fathoms. 7 fm.

Paragraph #10:

By a close development of this locality, several soundings of 5 fathoms were obtained about 150 meters south-west of the charted 4-1/2 fathoms sounding. This is evidently the same shoal area located by the EXPLORER in 1907; and the difference in location is probably caused by variation in the control used. It is possible that one of the present 5 fathom soundings may be further reduced when actual tide reducers for the day are applied. No kelp was observed in this area.

Paragraph #11:

No additional work required.

Paragraph #12:

In developing this area, 9 fathoms was the least water obtained in the immediate vicinity of the 5-1/2 fathom sounding found by the survey of 1915. However, there is shoaler water, varying from 6-5/6 fathoms to 5-4/6 fathoms, at a distance of 100 to 250 meters north of the plotted position of the 5-1/2 fathoms.

Paragraph #13:

There is a heavy growth of kelp covering an extensive area north-north-west of Bee Rock. Due to kelp winding around the shaft of the launch, it was difficult to maneuver in this locality. About two hours were spent in searching this area at a low stage of the tide. Bottom was easily visible and soundings were taken on the shoalest spots.

As a result of this search a 2/6 ~~1/6~~ fathoms sounding was obtained at a distance of 133 meters north-west 1/2 north of the location as given for the 1/4 fathom depth obtained in 1915.

A one fathom sounding was found 175 ~~85~~ meters south-east of the 1/4 fathom location, and a 5/6 fathom sounding ~~75~~ 200 meters south-south-east of the 1/4 fathom.

At the plotted position of the 1/4 fathom sounding no shoal spot could be observed although the bottom was easily visible.

Paragraph #14:

No additional work requested.

Paragraph #15:

No additional work requested.

Paragraph #16:

No additional work requested.

Paragraph #17:

No additional work requested.

Paragraph #18:

No additional work requested.

Paragraph #19:

Hassler Reef was further developed according to the instructions. The bottom over the reef is very irregular and there appears to be a number of high points with deep water between them.

Nothing less than 3-2/6 fathoms was obtained by this development.

Paragraph #20:

In the development of Hassler Reef a sounding of 3-4/6 fathoms was obtained 64 meters southeast of the 3-1/4 fathom sounding mentioned in paragraph #20 of the review.

Paragraph #21:

No additional work requested.

Paragraph #22:

No additional work requested.

Paragraph #23:

No additional work requested.

Paragraph #24:

No additional work requested.

Paragraph #25:

No additional work requested.

Paragraph #26:

No additional work requested.

Paragraph #27:

The least depth found in the vicinity of the 9-3/4 fathom sounding by this development was 10 fathoms.

Bottom was not visible and there was no growing kelp in this vicinity.

Paragraph #28:

This area was included in the development work mentioned in paragraph #27.

Paragraph #29:

No evidence was found of a sunken or awash rock in the area in which the rock awash symbol is plotted.

In the development of the area in the vicinity of the 4-1/6 fathom sounding, a least depth of 3 fathoms was obtained.

Paragraph #30:

In the development of this area, a shoal of considerable extent was found with two distinct high points:-

A sounding of ~~2-2/6~~ 1 1/2 fathoms in Latitude 54° 54' 45" , Longitude 131° 30'.6.

A sounding of 6-1/2 fathoms in Latitude 54° 54'.34, Longitude 131° 30'.6.

Paragraph #31:

The ridge extending south-south-west of Leas Rock was thoroughly developed and all members of the party kept a sharp lookout for growing kelp and for bottom, which might be visible.

A depth of 4 fathoms was obtained at the location of the 3 fathom sounding mentioned in paragraph #31. However, several shoaler soundings were found on the general ridge. These soundings and locations are as follows:

2-2/6 fathoms, 860 meters, 216° true from station LEAS
2-2/6 fathoms, 380 meters, 230° true from station LEAS
2-5/6 fathoms, 365 meters, 209° true from station LEAS.

Paragraph #32:

This shoal area was thoroughly developed.

A sounding of 6-5/6 fathoms was found at the plotted position of the 5-3/4 fathom sounding referred to in paragraph #32.

However, several depths of less than 6 fathoms were found on the shoal. The least depth found was 5-1/2 fathoms in Latitude 54° 55'.3, Longitude 131° 31'.9. This depth is 62 meters north-north-west of the plotted position of 5-3/4 fathoms.

Paragraph #33:

No additional work requested.

Paragraph #34:

No additional work requested.

Paragraph #35:

No additional work requested.

Paragraph #36:

No additional work requested.

Paragraph #37:

A sounding line was run over this area and a sharp lookout was kept for indication of shoal water. The soundings obtained agree with the general depths of the latest survey and no indications of shoal water were observed.

Paragraph #38:

This area and the area to the northward were developed. A slight indication of a shoal in the vicinity of the 12 fathom sounding was obtained by a depth of 17 fathoms between 18 fathom soundings.

GENERAL NOTE:

In planning an examination of the area covered by paragraphs #39, #41, #47 and #48 it was intended to visit them during zero or minus tides. The few such tides, as occured during the time available, were accompanied by severe storms and heavy seas, which prevented an examination with the small boats in use by the party.

Paragraphs #39 & #41:

The areas covered by these paragraphs were developed during a tide of 1-1/2 to 2 feet. There was a long moderate swell running. If rocks awash or sunken rocks with 1 to 2 fathoms over them existed, it is believed that the moderate swell (estimated to be 4 or 5 feet) would have caused breakers.

Paragraph #40:

No additional work required.

Paragraph #42:

This area was developed and the least depth found was 1-5/6 ~~1-4/6~~ fathoms in a very small patch of growing kelp. Location as follows:-

Latitude 54° 51'.45
Longitude 131° 18'.45.

Paragraph #43:

No additional work requested.

Paragraph #44:

No additional work requested.

Paragraph #45:

No additional work requested.

Paragraph #46:

The least depth found in this area by "feeling around" as instructed, was 2-~~2/6~~ 4/6 fathoms. 20 min.

Paragraph #47:

This area was examined while a long moderate swell was running. Soundings, positions and notes in the record books are believed to be complete. See paragraph (47-48)A below. per 47-49

Paragraph #48:

This area was examined in conjunction with the area mentioned in paragraph #47. Attention is called to the breaker which was located during this examination in Latitude 54° 49'.9, Longitude 131° 20'.2.

Paragraph #(47-48)A: (Additional notes regarding the areas covered by paragraphs #47 and #48).

During the month of June of the season of 1932 the EXPLORER began reconnaisance for triangulation and signal building on the south coast of Duke Island.

It is recalled that the area covered by paragraphs #47 and #48 was inspected by the writer, during a minus 3.5 foot tide. At that stage of the tide the rocks awash in Latitude 54° 49'.85, Longitude 131° 19'.7 appeared as a large reef. There were no other rocks awash in the area between the above mentioned reef and the breaker, located about

500 meters to the westward, in Latitude 54° 49'.9, Longitude 131° 20'.2. The breaker at that time (June, 1932) was covered by 2.5 feet of water. According to the rough log of the EXPLORER, this inspection occured on June 18, 1932, between 6:20 and 7:30 A.M.

There was no control at the time, and the visibility was poor due to rain and mist. However, fixes were taken on points and tangents.

Later the information was given to the hydrographer for comparison with his sheet. The objects used in the fixes could not be accurately identified but the positions did plot in the general area of the present location of the reef and breaker.

A new location of the breaker in Latitude 54° 49'.9, Longitude 131° 20'.2 was made during the current examination (September 23, 1933). Pos. 34-36

Information on the present boat sheet furnished by the Office does not extend far enough westward to show whether or not the breaker (a sounding of 1 fathom at M.L.L.W.) was plotted by the 1932 survey.

Paragraph #49:

No additional work requested.

Paragraph #50:

No additional work requested.

Paragraph #51:

This area was closely developed. Bottom was not visible and there was no growing kelp, nor other indication of a rock.

Paragraph #52:

In developing the area covered by this paragraph the following least depths were found:-

3¼ fathoms, Latitude 54° 53'.14, Longitude 131° 26'.6

1½, 1 and 0-5/6 fathoms, Latitude 54° 53'.22, Longitude 131° 26'.8

~~1-1/2~~ 1¼ fathoms, Latitude 54° 53'.36, Longitude 131° 27'.04.

Paragraph #53:

No additional work requested.

Paragraph #54:

No additional work requested.

Paragraph #55:

No additional work requested.

Paragraph #56:

No additional work requested.

Paragraph #57:

This area was developed. The least depth found was 4-~~2/6~~ 1/6 fathoms in Latitude 54° 51.'6, Longitude 131° 30.'7.

Paragraph #58:

No additional work requested.

Paragraph #59:

This area was developed, but no indications of a rock awash were observed.

Paragraph #60:

The 3 fathom sounding mentioned in this paragraph is plotted in blue on the sheet furnished this party, in Latitude 54° 52.'5, Longitude 131° 33.'25; but the position given in the review is Latitude 54° 52.'5, Longitude 131° 33.'6.

Both areas were investigated but no indications of a shoal were found in either position.

However, the following shoal depths were found:-

~~3-5/6~~ 3 fathoms in Latitude 54° 52.'48, Longitude 131° 33.'2. 76c

2 1/2 fathoms in a patch of growing kelp, in Latitude 54° 52.'44, Longitude 131° 33.'14. 77-79c

~~2-4/6~~ 2-5/6 fathoms in a patch of growing kelp, in Latitude 54° 52.'43, Longitude 131° 33.'16. 75c

The 3-2/6 fathom sounding, about 500 meters west-north-west of the charted 3½ fathoms, was developed as instructed. The least depth found was 3-1/6 fathoms.

Paragraph #61:

No additional work requested.

Paragraph #62:

No additional work requested by the present examination.

Paragraph #63:

No additional work requested by the present examination.

Paragraph #64:

No additional work requested.

Paragraph #65:

No additional work requested.

Paragraph #66:

This area was developed as instructed. Less water was not found.

Paragraph #67:

This area was developed and a least depth of ~~8~~ 8¼ + 8½ fathoms obtained.

Paragraph #68:

This area was developed and depths of 10 and 11 fathoms obtained.

Respectfully submitted,

Henry E. Finnegan,
H. & G. Engr., C. & G. S.,
U.S.C. & G.S.S. EXPLORER.

Approved & forwarded,

Jack Senior,
Commanding Officer,
U.S.C. & G.S.S. EXPLORER.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5281

Kelp Island to Hassler Reef, Duke I., Alaska.
Surveyed in 1932 and 1933
Instructions dated March 24, 1932 and Director's letter Aug. 8, 1933.

Hand Lead and Machine Soundings - Three Point Control

Chief of Party - J. Senior and G. C. Jones.
Surveyed by - Various field officers.
Protracted by - W. Weidlich, H. O. Fortin, E. B. Lewey & H. W. Murray.
Soundings plotted by - J. Senior, H. O. Fortin and E. B. Lewey.
Verified and inked by - H. W. Murray.

This sheet includes all the work originally done in 1932 and 1933 as well as the additional work in 1933 which was called for after making a preliminary review of the 1932, 1933 work before the sheet was verified and inked. (See notes on Preliminary Review attached to Descriptive Report).

The paragraph numbers in this review refer to the paragraph numbers in the preliminary review and to the paragraph numbers in the Descriptive Report for additional work (H. 5281). The following recommendations for the various cases represent the final dispositions of the survey. The chart referred to is the 1930 edition of Chart 8075. The replottings on larger scales noted in some of the paragraphs of the preliminary review refer to H. 3787 or H. 3781 which include the necessary old control. These ~~sound~~ replottings were removed after the necessary transfers to H. 5281 were made.

1. The 10 fathom sounding on H. 5281 in lat. 54°50'950 m., long. 131°35'280m should supersede the charted 9 fathom sounding (actual 9½ from H. 2142) a little to the eastward.

2. 16 fathom indication on H. 5281 in lat. 54°49'.9, long. 131°31'.5 examined. Existence confirmed but no less water found.

3. Vicinity of 12 fathom sounding on H. 5281 in lat. 54°48' 1000m., long. 131°30' 00m., was examined and a least depth of 9 fathoms found. H. 5268 shows 8½ fathoms in the same vicinity.

4. The charted sunken rock about 480m. east by south of West Rock (authority H. 2142) was not found in present survey. Should be removed from the chart. No additional work requested.

5. The charted 2 fathom sounding in lat. 54°48'.1, long. 131°30' (authority H. 2142) has been identified in the original sounding records and replotted on a larger scale and carried forward to the present survey. The least depth found on the present survey was 3 1/6 fathoms. No additional work was called for in the preliminary review of H. 5281.

6. The sunken rock (not charted) on H.-1618a about 480 meters west by south of West Rock is considered disproved by H. 5281 and H. 5268. No additional work was called for in the preliminary review of H. 5281. The rock should be disregarded in future charting.

7. The bare rock (not charted) about 1100 meters northwest of West Rock (from H. 1618a) is considered disproved by H. 5281 and H. 5268. No additional work was called for in the preliminary review of H. 5281. The rock should be disregarded in future charting.

8. The bare rock (not charted) about 1100 meters west by south of West Rock (from H. 1618a) is considered disproved by the additional work done. It should be disregarded in future chartings.

9. The $8\frac{1}{2}$ fathom shoal in lat. 54°50'.2, long. 131°23'.3, found on the original work of H. 5281 was further investigated in the additional work and 7 fathoms found.

10. The vicinity of the charted $4\frac{1}{2}$ fathom shoal in lat. 54°51'.2, long. 131°26'.8 (for history see preliminary review of this sheet) was further examined in the additional work and the 7 fathom sounding obtained in the original work was reduced to five fathoms. This five fathom sounding should replace the present charted $4\frac{1}{2}$.

11. The $3\frac{1}{2}$ fathom shoal in lat. 54°52'.0, long. 131°27'.8 was sufficiently developed on the original survey (H. 5281) and no additional work was called for.

12. The charted $5\frac{1}{2}$ fathom sounding in lat. 54°51', long. 131°35' (authority H. 3787) was further examined in the additional work but the least depth obtained was 9 fathoms. However, depths of 5 1/6 and 5 5/6 fathoms were obtained 100 to 250 meters north of the charted $5\frac{1}{2}$. The $5\frac{1}{2}$ fathom from H. 3787 should be retained and has been carried forward to H. 5281.

13. The charted $\frac{1}{4}$ fathom sounding about $\frac{1}{2}$ mile north northwest of West Bee Rock in approximate lat. 54°53'.3, long. 131°34'.3 (for history see par. 13, preliminary review, this sheet) has been further examined and soundings of 2/6 and 5/6 fathoms obtained in the vicinity. The delineation on H. 5281 should supersede the present charted delineation.

14. West Bee Rock was found to agree closely with that given on H. 3787.

15. The charted $3\frac{1}{4}$ fathom in approximate lat. 54°52'.3, long. 131°34'.5 (authority H. 3787). No additional work was requested on this spot. The $3\frac{1}{4}$ fathom has been carried forward to the new survey and should be retained on the charts.

16. The charted 3 fathom sounding in approximate lat. 54°53'.4, long. 131°33'.4 (authority H. 2142). No additional work was requested here. The 3 fathom should be retained on the charts and has been carried forward to the new survey.

17. The charted rock "awash at L.W." in approximate lat. 54°53'.3, long. 131°33'.4. No additional work requested here. No authority could be found for the rock in the sounding records for H. 2142 and no record could be found for the notation "awash at L.W.". The rock falls in depths of 5 fathoms on the present survey. The field party searched for it during a 2½ foot tide, but saw no indication of the rock, nor was there any kelp in the vicinity (see pos. 36 n, blue). The rock should be omitted from future charting.

18. The charted 3½ fathoms in approximate lat. 54°51'.6, long. 131°35' (authority H. 2142). No additional work requested here. The 3½ fathoms has been carried forward to the new survey and should be retained on the charts.

19. Hassler Reef. The additional work called for has been accomplished and nothing less than 3 2/6 fathoms found.

20. The charted 3¼ fathoms (3 2/6 actual) in approximate lat. 54°51'.9, long. 131°35'.4 (authority H. 2142). No additional work requested here. The 3 2/6 fathoms has been carried forward to the new survey and should be retained on the charts.

21. Vicinity East Bee Rock (lat. 54°53', long. 131°32'). No additional work requested here. The charted delineation around these rocks should be superseded by the new survey.

22. The charted rocks awash in approximate lat. 54°54'.2, long. 131°29'.7 and lat. 54°54', long. 131°29' (authority T. 3522) have been found to be the result of a confusion of planetable cuts and are doubtless the same rocks awash located on the present survey in lat. 54°54'.9, long. 131°29'.3 and lat. 54°54'.3, long. 131°29'.2. No additional work was requested here. Corrections have been made to the topographic sheet and a proper explanatory note added.

23. The charted 3½ fathoms in approximate lat. 54°53'.55, long. 131°29'.3 (authority H. 2142). No additional work requested here. The 3½ fathoms should be retained and has been carried forward to the new survey.

24. The charted 1½ fathoms in approximate lat. 54°53'.9, long. 131°29'.4 (authority H. 2142). No additional work requested here. The 1½ should be retained and has been carried forward to the new survey.

25. The charted rock awash in approximate lat. 54°53'.9, long.

131°28'.1 (authority T. 3522) was not found on the new survey but falls close to a reef in depths of about 5 fathoms. No additional work requested here. The rock should be retained and has been carried forward to the new survey.

26. The charted bare rock in approximate lat. 54°54'.0, long. 131°29'.7 (authority H. 2142) falls in depths of about 21 fathoms on the present survey. (For history see par. 26, Preliminary Review H. 5281). This rock is believed to be erroneously located and is believed to be the rock awash located on the present survey about 500 meters to the southeast of the above charted rock. No additional work was requested. The charted bare rock should be disregarded in future charting.

27. The charted 3 fathom sounding in approximate lat. 54°54'.6, long. 131°30'.0 (authority H. 1618a) was further examined in the additional work of 1933 but nothing less than 10 fathoms obtained. Because of the reconnaissance nature of H. 1618a, the 3 fathom sounding should be disregarded in future charting.

28. The charted rock awash about one tenth mile northeast of the above mentioned 3 fathom sounding appears to come from H. 1618a where it is shown as a sunken rock, probably a generalized symbol for rocky area. In view of the examination made in this vicinity on the original work, as well as the examination made close by in the additional work (see par. 27, above), the rock awash should be disregarded in future charting.

29. The charted rock awash in approximate lat. 54°54'.9, long. 131°29'.7 (authority T. 3522) was further examined in the additional work but its existence could not be confirmed. It is believed the topographer confused this rock with a rock about 400 meters to the southeastward or found in the original work on H. 5281. (For history of this rock see par. 29 "Notes on Preliminary Review of this sheet). The topographic rock should be disregarded in future charting.

The examination in the vicinity of the 4 1/6 fathoms, called for in the same paragraph, was made and resulted in finding a depth of three fathoms.

30. The 10 fathoms indication shown on the present survey in lat. 54°54'.4, long. 131°30'.6, was further developed in 1933 and least depths of $1\frac{1}{2}$ and $6\frac{1}{2}$ fathoms obtained. The $1\frac{1}{2}$ fathom sounding as compared to the former 10 fathom indication is an unusually important find.

31. The charted 3 fathom sounding in approximate lat. 54°54'.8, long. 131°31'.1 (authority H. 2142) falls in approximately five fathom depths on the present survey and near a 4 fathom indication. A further examination was requested in this area and

subsequently two shoal spots with least depths of 2½ fathoms were found about 420 meters apart. The present survey should supersede previous chartings in this area.

32. The charted 5⅔ fathoms (actually 5 5/6) in approximate lat. 54°55'.2, long. 131°31'.9 is part of an undeveloped rocky shoal (authority H. 3781) falling on the 1932 survey in depths of 7¼ fathoms. This area was re-examined and while no shoaler depths were obtained, the 5 5/6 fathom sounding was confirmed. The present development should supersede that of H. 3781.

33. The charted ½ fathoms in approximate lat. 54°54'.6, long. 131°32'.9 is from H. 3781 where it is shown as a sunken rock, covered 3½ feet at MLLW. This rock falls close to a 1 1/6 fathom sounding on H. 5281 and close to a ¼ fathom sounding (0.4 feet actual) on H. 2142. Since the surveyor in 1915 (H. 3781) was very close to the rock during a minus tide (+ 3.5 feet) his description of the rock is probably the correct one. The rock was therefore transferred to the new survey as a "rock awash" in red and a descriptive note "awash at extreme low tide" attached. No additional work was requested.

34. The charted sunken rock in approximate lat. 54°54'.5, long. 131°32'.7 (about 160 m. southeastward of the rock mentioned in paragraph 33 above) likewise comes from H. 3781 where it was located by an estimated distance of about 150 meters from pos. 2k. It falls on the present survey in depths of 5 fathoms, but is very likely the 4/6 fathom sounding located at pos. 75 n (blue) of the present survey. The 1892 survey(H. 2142) shows a ¼ fathom sounding here (1 foot actual). This rock on the 1892 survey was replotted on a larger scale and transferred to H. 5281 as a "rock awash" in red with the notation "awash at extreme low tides". No additional work was requested.

35. The charted bare rock in approximate lat. 54°49'.6, long. 131°-21'.8 (authority H. 2142) was located by cuts and is referred to as "Reef No. 3". According to the sounding records, it is bare 6 feet at MLLW and therefore should have been charted as a rock awash. This delineation agrees with the rock awash found on the present survey. No additional work was deemed necessary.

36. The charted delineation around Vancouver Id. off Cape Northumberland appears to have its authority in H. 1618a. As this appears to be a generalized representation only, it is recommended that the new survey supersede the details shown on the present chart. No additional work was requested.

37. The charted sunken rock in approximate lat. 54°48'.7, long. 131°21'.5 comes from H. 2142, where it is shown as a bare rock. No authority could be found in the sounding records for that sheet and it may have been transferred from H. 1618a where it is shown as a sunken rock. The rock falls in depths of 20 fathoms on the new survey. Additional work in this area gave no indications of the rock, nor was any kelp found. The rock should be omitted from future charting.

38. The charted 12 fathom sounding in approximate lat. 54°48'.8, long. 131°22'.2 (authority H. 2142) falls in depths of 19 to 20 fathoms on the 1932 survey. The area surrounding the 12 fathom sounding was re-examined in 1933 as well as the area immediately to the northward for a distance of about 800 meters, as called for in the preliminary review. 17 fathoms was the least depth found in the vicinity of the 12. It is recommended that the 12 fathoms be superseded by the present survey.

39. The charted islet in approximate lat. 54°50'.4, long. 131°-20'.3 comes from H. 2142 (survey of 1892) where it is shown in red. It appears to have been transferred from some other source, but no record of such source could be found. It did not appear on the 1895 edition of chart 8100, but was first charted on the issue of 1899. It falls on the present survey in depths of 12 fathoms, even bottom and may be a misplacement of one of the shoals to the northwest or southeast that may have been seen breaking. This area was re-examined in 1933 during a tide of 1½ to 2 feet, and no indications were found. The islet should be omitted in future charting.

40. The charted rocks in approximate lat. 54°51'.1, long. 131°-20'.4 come from H. 1618a (survey of 1883) and is a crude representation of the rocks found on the present survey. No additional work was recommended. The present survey should supersede all former charting.

41. The charted bare and sunken rocks in approximate lat. 54°50'.7, long. 131°20'.1 are from H. 1618a and were re-examined in 1933 during a tide of 1½ to 3 feet and a 4 to 5 foot swell. No additional information beyond that of the 1932 work was found. The present survey should supersede the present delineation on the chart.

42. The charted rock awash in approximate lat. 54°51'.5, long. 131° 18'.7 (authority 1618a) falls in depths of 8 to 9 fathoms. A 3 2/6 fathom sounding of the 1932 work nearby was re-examined and a least depth of 1 5/6 fathom found in growing kelp. The former rock is believed to have been a generalized symbol for a rocky area marked by kelp and should be removed from the chart.

43. The charted group of rocks awash in approximate lat. 54°51'.1, long. 131°18'.7 (authority H. 2142) have been confirmed. No additional work was recommended and the delineation on the present survey should supersede all previous delineations.

44. The charted sunken rocks running northwest of the west end of Kelp I. (authority H. 1618a) should be superseded by the more exact delineations of the present survey. No additional work was recommended.

45. The charted rocks (bare, sunken and awash) in approximate lat. 54°51'.2, long. 131°19'.0 to 19'.4 (authority H. 1618a) do not

agree in character and location as shown on the new survey. The delineation shown on the new survey was obtained at low tide and should supersede all previous chartings. No additional work was recommended.

46. An undeveloped 2 5/6 fathom sounding of the 1932 survey was re-examined and a least depth of 2 4/6 fathoms obtained.

47. The two charted bare rocks in approximate lat. 54°49'.8, long. 131°19'.6 (auth. H. 2142) should have been charted as rocks awash. (For history see par.47 of Preliminary Review this sheet). The original work on H. 5281 located two rocks awash to the southward and eastward. The additional examination called for in the Preliminary Review revealed one additional rock awash. The delineation on the present survey should therefore supersede all previous chartings.

48. The charted rock awash and bare rock in approximate lat. 54°-49'.8, long. 131°20'.1 (auth. H. 2142) were re-examined in 1933. (For history of these rocks, see par. 48, Preliminary Review, this sheet). The delineation shown on the present survey should supersede all previous chartings.

In the re-examination of this area a breaker was located in lat. 54°49'.9, long. 131°20'.2 (pos. 34 - 36j, purple). No depth was obtained but the D. R. (par. 47 - 48A pg. 7) of H. 5281, additional work, speaks of a depth of 2.5 feet at a minus 3.5 foot tide having been obtained by the EXPLORER in June 1932. A 1 fathom rok with notation "breaker" was therefore plotted at this position.

49. The Charted rock awash in approximate lat. 54°52'.8, long. 131°23'.7 is from T. 3522 (survey of 1915) and has been carried forward to the new survey and shown in red. No additional work was recommended.

50. The charted group of bare, sunken andawash rocks in approximate lat. 54°53'.0 to 54°53'.5, long. 131°26'.6 to 131°27'.8 have for their source H. 2142 and possess several inconsistencies. (For history, see par. 50, Preliminary Review, this sheet). It is believed that the new survey represents conditions as they actually exist in this area and should supersede the delineations on the old survey. No additional work was deemed necessary.

51. The charted bare rock in approximate lat. 54°53'.0, long. 131°26'.8 comes from H. 2142 and is clearly marked "Rock" but no reference could be found in the records regarding it. An additional examination was made in this area during a tide of 5 to 6 feet and no sign of a rock nor even a breaker could be seen. However, a shoal with least depth of 3 1/6

fathoms was found about 280 m. to the northeastward and still shoaler depths were found to the north and northwestward (see paragraph 52 below). The former charted bare rock should be discontinued in future charting.

52. The former 3 5/6 fathoms shoaling found on the 1932 survey was re-examined as well as the shoaling about 500 m. to the southeastward and shoaler depths of 1 4/6 and 5/6 fathoms found, respectively.

53. The charted 3 fathom sounding in approximate lat. 54°53'.4, long. 131°26'.7 and another in lat. 54°53'.5, long. 131°-27'.9 are from H. 2142. Both soundings were replotted on H. 3787 and transferred to the new survey in red, the latter sounding being transferred as 2 5/6 fathoms. No additional work was requested.

54. The charted rock awash in approximate lat. 54°51'.3, long. 131°30'.7 comes from H. 2142 (For history see par. 54, Preliminary Review H. 5281) and falls about 200 m. southwest of the northernmost of two rocks shown on H. 3787. The southernmost of the two rocks shown on H. 3787 is marked "Boat Sheet" and was probably transferred from it, since no authority could be found for it in the records. Since the location of the northernmost of the two rocks on H. 3787 agrees closely with the location established in the 1932 work and was reconfirmed in 1933 (not requested) the new location of the single rock on the present survey should supersede previous charting in this area.

55. The charted rock awash in approximate lat. 54°51'.5, long. 131°29'.6 is shown as a bare rock on H. 2142 and was located by cuts from a passing line. An examination of the line revealed uncertainty concerning a recorded signal. In addition, the soundings obtained were wholly inconsistent with that of the present survey (8 to 12 fathoms on the old survey falling in depths of 16 to 21 fathoms on the new). It appears that the cuts were taken to a previously located rock. (For history see par. 55, Preliminary Review, this sheet). The charted rock should be disregarded in future charting. No additional work was requested.

56. The charted sunken rock in approximate lat. 54°51'.6, long. 131°30'.9 comes from H. 2142 where it is incorrectly shown as a bare rock, the cuts in the sounding records being to "Broken Water". A replotting of the rock on a larger scale brings it close to a 1 1/6 fathom sounding and a breaker indication nearby on the 1932 survey. The 1 1/6 fathom soundings on the present survey should supersede the previously charted rock. No additional work was requested.

57. The undeveloped 6 fathom shoal in approximate lat. 54°51'.-1000 m., long. 131°30'760 m. was further developed in 1933,

as recommended, and a least depth of 4 1/6 fathoms obtained about 100 m. due north.

58. The charted rock awash in approximate lat. 54°51'.4, long. 131°30'.6, comes from H. 2142 where it is shown as a "bare rock". No authority could be found for its existence in the sounding records. Since both the 1892 survey party and the 1933 survey party were in the immediate vicinity during low water and failed to mention the rock, it can be assumed that it does not exist, and should be disregarded in future charting. No additional work was requested but in a re-examination of the area mentioned in paragraph 54 and56, above, the field party did not observe anything which would refute this contention.

59. The charted rock awash in approximate lat. 54°51'.1, long. 131°31'.4 comes from H. 2142 where it is shown as a "bare rock". It is further marked as a rock awash in pencil and marked "boat sheet" on H. 3787. However, no authority could be found for the rock in the records of either sheet. The rock falls close to a 13 fathom sounding of the 1932 survey. A re-examination was made in 1933 and no indications of the rock could be found. The rock should be disregarded in future charting.

60. The charted 3 fathom sounding in approximate lat. 54°52'.5, long. 131°33'.6 originates with H. 2142. It falls in depths of 6 fathoms in the present survey. A further examination of this sounding was made in 1933, as well as a 3 2/6 fathom sounding of the 1932 survey about 500 m. to the W.N.W. In the latter case, a least depth of 3 1/6 fathoms was obtained and in the former, three least depths of 2 1/6 fathoms outlining a shoal were obtained. In addition, split lines were run between the two shoals but no additional critical information was obtained. The development on the new survey should supersede previous charting in this area.

61. The charted 3 fathom sounding in approximate lat. 54°52'.9, long. 131°33'.15 comes from H. 2142. This sounding was replotted on H. 3787 and transferred to the new survey in red and as 3 1/6 fathoms. No additional work was required.

62. The development of the shoal area from ⊙ Leas to the northern limits of the sheet (approx. lat. 54°55'.5, long. 131°30'.5) is incomplete, but no further examination was recommended at the time of the preliminary review. When work is extended to the north it should include a development of this area.

63. There is a discrepancy in the vicinity of ⊖ Leas (northwest end of sheet) between the rocks shown on the present survey and those shown on T. 3522. The 1933 party examined the area at a minus tide and it would seem they would have located all the awash rocks. No additional work was called for in the Preliminary Review, as it was thought the further verification could be

accomplished when work is extended to the northward. For the present these rocks have been transferred in red, but should be removed if not verified in a future examination.

64. The charted group of awash rocks in approximate lat. 54°54'.5, long. 131°28'.5 come from T. 3522 (survey of 1915) and have been carried forward to this survey in red. They should supersede the rocks shown on H. 2142 in this area. Several of the rocks were not located on either the present hydrographic or topographic sheet. No additional work was recommended.

65. The charted rock awash about 0.3 mile to the northeast of the east end of Kelp Island comes from H. 1618a. It falls in depths of about 22 fathoms on the present survey and the surveyor was in the vicinity during low water. A rock awash was located on the present survey about 400 meters to the eastward which is believed to be the same rock. Owing to the reconnaissance nature of H. 1618a, the new survey should supersede all previous chartings in the vicinity. No additional work wasrequested.

66. Split lines were run on either side of the 17 fathom sounding on H. 5281 in lat. 54°50'.4, long. 131°29'.5, as recommended in the preliminary review. No shoal indications were found.

67. Split lines were run, as recommended, in the vicinity of the 14 fathom soundings on H. 5281 in lat. 54°51'.3, long. 131°29'.7 and least depths of $8\frac{1}{2}$ and $8\frac{1}{4}$ fathoms found.

68. The spit running southwestward from the rock awash in lat. 54°51'.4, long. 131°30'.4 on H. 5281 was further developed by split lines, as recommended, and least depths of 10 and 11 fathoms found as against previous indication of 20 and 21 fathoms.

Records.

The records of both the original work and the additional work conform to the requirements of the Hydrographic Manual.

Plan and character of development.

The plan and character of development fulfill the requirements of the Hydrographic Manual.

Specific Instructions.

The plan and extent of development satisfy the specific instructions.

Crossings.

Sounding line crossings are satisfactory.

Depth Curves.

The usual depth curves may be satisfactorily drawn within the limits of the survey.

Field Plotting.

Field protracting and plotting of the 1932 season's work was unusually accurate. By contrast, that of the 1933 season's work was very poor.

Work of Reconnaissance Nature.

In the vicinity of "Hall Cove", positions 39 to 87r (blue) are of reconnaissance nature only. Of these positions, 45 to 87r, not possessing sextant locations were transferred direct from the boat sheet. (See field note, pages 12 and 17 of Vol. No. 20).

Junctions with adjacent surveys.

The junction with H. 5268 in the vicinity of West Rock Island is satisfactory.

The junction on the northeast with H. 5267 is likewise satisfactory.

The junction on west with H. 3781 and 3787 (surveys of 1915) is satisfactory.

Additional Work.

For the completion of the area covered by this sheet, the following additional work is recommended:

1. A verification of the rocks awash transferred from T. 3522 (shown in red) in the vicinity of @ Leas (approximate lat. 54°55'.1, long. 131°30'.5.

2. A more complete development of the shoal area from @ Leas to the northern limits of the sheet to determine the least depths and to permit the drawing of the significant depth curves. This area is important for vessels going from Sealed Passage and for launches following an inside channel.

3. A development of the 16 fathom indication in lat. 54°51', long. 131°29'.6.

4. A development of the 4 2/6 fathom shoal in lat. 54°52'.5, long. 131°32'.2, as well as the area within the 5 fathom curve about .4 mile to the northeast.

5. A development of the 4½ fathom shoal in lat. 54°52'.3, long. 131°28'.1.

Note to Compiler.

The present survey with the indicated additions in red, should, within its limits, supersede the following prior surveys for charting purposes: H. 1618a (survey of 1883), H. 2142 (survey of 1892), H. 3781 (survey of 1915), and H. 3787 (survey of 1915).

Reviewed by - A. L. Shalowitz and H. W. Murray.

Examined and approved:

K. T. Adams,
Chief, Field Records Section.

Chief, Division of Charts.

Chief, Field Work Section.

Chief, Division of H. & T.

Comparisons of old depths and new depths resulting from additional work.

Paragraph No.	Old depths	New depths
2	16	16
3	12	9
8	no rock	no rock found
9	8½	7
10	7	5
12	6 1/6	5 1/6
13	2	2/6 ~~2 2/6~~ and 5/6
19	3 4/6	3 2/6
20	5	3 4/6
27	9 3/4	10
29	(no rock	no rock
	(4 1/6	3 and 1 5/6
30	10	1 1/2
31	4-5	two 2 1/2 fm. spots
32	7 1/4	5 1/2
37	no rock	no rock
38	19-20	17
39	no rock	no rock
41	no bare rock	no bare rock
42	3 2/6	1 5/6
46	2 5/6	2 4/6
47	1/6	rock awash MLLW
48		1
51	5-6	3 1/6
52	3 5/6	1 4/6 and 5/6
57	6	4 1/6
59	rock	no rock
60	6	3 1/6 and 2 1/6
66	17	no less
67	14	8 1/4
68	20?	10 and 11

T u C

J Murray

November 6, 1933

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 5281 (Additional Work)

Locality Shoal Areas south and west of Duke Island, Southeast Alaska.

Chief of Party: Jack Senior in 1933
Plane of reference is mean lower low water, reading
4.0 ft. on tide staff at Ketchikan
15.4 ft. below B. M. 22

Height of mean higher high water above plane of reference is 15.4 feet

Condition of records satisfactory except as noted below:

As received from field no tide reducers were entered in sounding books. However, reducers have been entered and checked in Division of Tides and Currents.

H A Marmer
Acting Chief, Division of Tides and Currents

PERCY IS

SEALED PASSAGE

Pt. White

Sealing Reef

Werlich I

Vegas Is

Ryus B.
(chart 8120)

Niquette Hbr.

Pond

Flag Pt.

Ray Anchorage

Morse Cove

Duke Hill
540

Duke Pt.

D U K E I.

H-5281 Add'l Wk. Sht

Bee Rocks

awash at lw

cov at ½ tide

bares 10 ft

Hassler Reef

Hall Cove

1778 Mt. Lazaro

Kelp I.

East

Cape Northumberland

Vancouver I

Sister Is

White Rk

Rock

West Rk
(12)

Club Rks
17 (18)

Yellow Rks
74 (26)

Note:
Numbers shown in red refer to
Paragraph Numbers in Review of H-5281.