

5189

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

State: S.W. Alaska

DESCRIPTIVE REPORT

~~Hydrographic~~ } Sheet No. 24 5189

LOCALITY

Entrance to Cook Inlet

Barren Islands

1931

CHIEF OF PARTY

H. B. Campbell

5189

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5189

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. 24

REGISTER NO. 5189

State S.W. Alaska

General locality Entrance to Cook Inlet

Locality Barren Islands

Scale 1/20,000 Date of survey July-Sept., 19 31

Vessel U.S.S. DISCOVERER

Chief of Party H.B. Campbell

Surveyed by L.D.G., H.A.K., G.A.N., F.B.Q., H.F.G.

Protracted by G.A.N.

Soundings penciled by G.A.N.

Soundings in fathoms ~~###~~

Plane of reference MLLW

Subdivision of wire dragged areas by

Inked by S.E. McElsson

Verified by S.E. McElsson

Instructions dated April 10, 1931, 19

Remarks:

DESCRIPTIVE REPORT

to

Accompany Hydrographic Sheet No. 24
Scale 1:20,000

Barren Islands Southwest Alaska

Project No. 57

H.B. Campbell, H. & G. Engineer

Chief of Party

Hydrographers

L.D. Graham, H. & G. Engineer
H.A. Karo, " " " "
G.A. Nelson, Jr. H. & G. "
F.B. Quinn, " " " "
H.F. Garber, " " " "

Tender WESTDAHL
Port Motor Sailer.
" " "
" " "
Starboard Motor Sailer.

Instructions dated: March 21, 1930 and April 10, 1931.

Date of Survey: July 10 to September 19, 1931.

LIMITS: This sheet covers all the Barren Islands and makes junction
with smaller scale sheets of the present season on all sides.

METHODS: The close inshore work was done with the ship's launches
using hand lead or wire soundings. The remainder of the work mostly
outside the twenty fathom curve was done by the WESTDAHL using the fatho-
meter type 412-H. The work of both motor sailers was done under daily
supervision and inspection. The work of the WESTDAHL on this sheet was
inspected twice a week.

5192
✓ 5193

The signals were located by means of the plane table with adequate control by triangulation.

DISCREPANCIES: Steep slopes are encountered about a mile south of Sugarloaf Island and account for the failure of fathometer soundings to check the vertical casts. The discrepancy here is considerable but an examination of the topographic sheet will show many slopes in this locality which exceed in steepness that indicated by the discrepancy referred to.

DANGERS: There were fewer dangers found than were expected in such a rugged country.

The worst danger is the rock awash at lower low water a little over a mile north of West Amatuli Island. There is another rock awash about 1/4 mile north of the northwestern point of Ushagat Island.

ANCHORAGES: The best anchorage for small vessels is Amatuli Cove. Willie Waws are encountered here at times. A heavy swell comes through the passage between East and West Amatuli Island with northeast winds, but most of this can be avoided by anchoring close in near the head of the bight in about eight fathoms mud and rock bottom. A larger vessel can find fair shelter in the lee of Ushagat Island, but must be prepared to move if the wind shifts.

The WESTDAHL rode out a moderate westerly gale anchored close in shore in the southerly bight of Ushagat Island, (north of Sud Island) just inside the ten fathom curve, sand bottom, smooth seas, but heavy winds at times.

Either bight in the western shore of Ushagat Island furnishes good shelter in easterly weather.

COMPARISON WITH PREVIOUS SURVEYS: The old survey made in 1907, Sheet 2918, was only a reconnaissance survey. The principle Islands, rock and dangers, however, are quite accurately shown for a survey of this nature.

The rocks awash shown on Sheet 2918 extending some 1/4 mile off the western side of Sugarloaf Island were not found, and are believed to have been mistaken for heavy tide rips in this vicinity. A shoal with a least depth of 10-1/2 fathoms was found 1/2 mile west of the southwest point of this island.

The least depth found in the channel between East and West Amatuli Islands was 11 fathoms. The Coast Pilot mentions 7 fathoms when the southwest peak of East Amatuli bore about 103° true but no indication of this 7 fathom spot was found. The bottom is gravel and it is thought that eleven was probably confused with seven.

CURRENTS: Strong tidal currents are encountered among the Barren Islands. The flood tide sets in a northwesterly direction and appears to be stronger than the ebb. It is estimated that the current reaches a velocity of nearly 4 knots on a spring tide. With strong winds at this stage of the tide very heavy tide rips, dangerous to small boats are encountered. Great difficulty was encountered by the surveying party in running straight sounding lines on account of rips and swirls set up by the current.

*Approved & Forwarded
H. Blomfield
Comd'g Officer.*

GEOGRAPHIC NAMES:

No new place names are shown on this sheet. ✓

STATISTICS

SHEET #24
WESTDAHL

DATE	LETTER	VOLUME	POSITIONS	SOUNDINGS			STATUTE MILES Sounding Line	
				Wire	H.L.	Echo		
Aug. 25	a	8	231	-	-	818	63.0	
" 26	b	8&9	268	41	-	823	64.0	
" 27	c	9	238	48	-	655	57.1	
Sept. 3	d	9&10	243	41	-	787	60.3	
" 4	e	10&11	242	24	-	838	68.0	
" 7	f	11	22	7	-	59	4.5	
" 8	g	11	194	63	-	604	49.8	
" 9	h	11&12	261	17	-	968	70.4	
" 10	j	12	233	10	-	894	63.0	
" 11	k	12&13	230	40	-	752	60.0	
" 15	l	13	193	62	-	531	42.5	
" 16	m	13&14	289	55	-	885	68.3	
" 17	n	14&15	222	20	-	726	58.4	
				2866	428	-	9340	729.3

PORT MOTOR SAILER

H.A.Karo
F.B.Quinn
G.A.Nelson

July 10	a	1	32	-	143	-	5.1	
" 11	b	1	139	73	430	-	19.6	
Aug. 18	c	1	134	106	310	-	22.4	
" 22	d	1&2	138	171	143	-	18.7	
" 24	e	2	144	157	195	-	18.5	
" 25	f	2	140	138	220	-	20.5	
" 26	g	2&3	152	215	94	-	21.2	
" 27	h	3	142	171	175	-	21.9	
Sept 11	k	3	103	91	183	-	13.8	
" 18	l	3	79	89	15	-	5.1	
" 19	m	3	36	63	-	-	2.4	
				1239	1274	1908	-	169.2

STARBOARD MOTOR SAILER

H.F. Garber

DATE	LETTER	VOLUME	POSITIONS	SOUNDINGS		STATUTE MILES	
				Wire	H.L.	Echo	Sounding Line
Aug. 18	a	4	113	197	147		21.6
" 19	b	4	127	221	143		25.2
" 20	c	4&5	149	284	99		26.5
" 21	d	5	143	296	31		23.4
" 22	e	5	159	258	39		17.6
" 24	f	6	155	220	106		19.3
" 25	g	6	145	250	72		21.6
" 26	h	7	158	260	57		22.9
" 27	j	7	171	316	33		22.5
Totals:			1320	2105	727		200.6
Grand Totals:			5425	3807	2635	9340	1099.

FATHOMETER CORRECTIONS

HYDROGRAPHIC SHEET #24
Project #57

In obtaining fathometer corrections for this sheet all comparisons were listed and by inspection corrections were selected which seemed to be the average during the time the soundings were taken, allowance being made for uneven bottom. Corrections for salinity and temperature were not made as the corrections would be negligible in these depths. A mean correction cannot be taken for a whole day as the zero of the fathometer shifts during the days work.

FATHOMETER CORRECTIONS

HYDROGRAPHIC SHEET #24.

PROJECT #57

Pos.	V.C.	Fath.	Corr.
13 a	47.2	46.5	0.7
36 a	55.0	55.0	0
	55.9	55.5	0.4
59 a	30.0	29.0	1.0
	51.0	50.0	1.0
77a	47.2	46.0	1.2
92 a	31.1	30.0	1.1
134 a	35.5	35.1	0.4
176 a	38.3	37.5	0.8
190 a	29.7	29.0	0.7
220 a	29.0	29.0	0
231 a	22.4	21.0	1.4

Positions 1 - 45 Add 0.5 Fath.

" 45 - 231 " 1.0 "

Pos.	V.C.	Fath.	Corr.
14 b	20.0	20.0	0
26 b	37.2	37.0	0.2
32 b	46.0	45.5	0.5
39 b	39.0	39.0	0
45 b	41.9	41.5	0.4
60 b	28.1	27.5	0.6
95 b	83.5	82.0	1.5
102 b	65.5	65.0	0.5
103 b	64.5	64.5	0
110 b	27.4	27.0	0.4
168 b	53.0	52.0	1.0
203 b	35.7	35.0	0.7
209 b	61.4	61.5	-0.1
221 b	46.1	45.5	0.6
245 b	60.3	59.5	0.8
258 b	58.0	57.0	1.0
	60.0	60.0	0
259 b	54.0	54.0	0
268 b	32.0	32.5	-0.5

Add 0.5 fathoms all day.

Pos.	V.C.	Fath.	Corr.
1 c	25.3	25.5	-0.2
14 c	22.3	22.0	0.3
15 c	59.1	58.0	1.1
20 c	68.6	68.0	0.6
44 c	42.0	42.0	0
62 c	73.0	72.0	1.0
74 c	54.2	53.0	1.2
81 c	44.6	43.5	1.1
93 c	34.0	32.5	1.5
103 c	45.0	44.0	1.0
124 c	31.8	30.5	1.3
148 c	60.5	59.5	1.0
173 c	39.5	38.5	1.0
197 c	41.0	39.5	1.5
204 c	30.6	29.0	1.6
229 c	55.6	53.0	2.6
238 c	26.4	25.5	0.9

Positions 1 - 14 Add 0 fathoms.

" 14 - 52 " 0.5 "

" 52 - 185 " 1.0 "

" 185 - 238 " 1.5 "

Pos.	V.C.	Fath.	Corr.
2 d	36.0	35.0	1.0
3 d	36.3	35.5	0.8
7 d	29.3	29.0	0.3
12 d	28.0	27.5	0.5
18 d	30.5	29.5	1.0
26 d	35.4	34.5	0.9
106 d	35.5	34.5	1.0
152 d	26.8	24.0	2.8
172 d	46.4	44.5	1.9
187 d	49.6	47.0	2.6
200 d	44.5	42.0	2.5
214 d	47.5	45.0	2.5
232 d	46.8	44.5	2.3
243 d	22.2	21.0	1.2

Positions 1 - 15	Add	0.5 fathoms
" 15 - 125	"	1.0 "
" 125 - 136	"	1.5 "
" 136 - 180	"	2.0 "
" 180 - 232	"	2.5 "
" 232 - 243	"	2.0 "

Pos.	V.C.	Fath.	Corr.
1 e	23.9	23.5	0.4
7e	17.1	16.5	0.6
	17.3	16.5	0.8
31 e	44.5	43.5	1.0
60 e	38.3	36.0	2.3
79 e	36.3	34.0	2.3
109 e	12.0	10.0	2.0
113 e	19.6	18.5	1.1
116 e	26.0	24.5	1.5
121 e	26.7	25.5	1.2
135 e	39.7	39.0	0.7
159 e	30.9	28.5	2.4
197 e	30.8	29.0	1.8
242 e	13.5	11.0	2.5

Positions	1 - 7	Add	0.5	fathoms
"	7 - 40	"	1.0	"
"	40 - 50	"	1.5	"
"	50 - 109	"	2.0	"
"	113 - 145	"	1.0	"
"	145 - 242	"	2.0	"

Pos.	V.C.	Fath.	Corr.
2 f	14.3	13.5	0.8
3 f	15.6	14.5	1.1
4 f	19.5	18.0	1.5
15 f	38.4	36.5	1.9

Positions	1 - 4	Add	1.0	fathoms
"	4 - 21	"	1.5	"

Pos.	V.C.	Fath.	Corr.
1 g	10.9	10.5	0.4
31 g	18.2	16.5	1.7
32 g	18.5	17.0	1.5
40 g	21.1	20.0	1.1
57 g	20.9	19.0	1.9
65 g	24.9	23.0	1.9
76 g	27.5	26.0	1.5
90 g	47.2	46.0	1.2
98 g	46.0	45.0	1.0
143 g	30.4	28.5	1.9
188 g	22.3	21.0	1.3

Positions	1 - 9	Add	0.5	fathoms
"	9 - 28	"	1.0	"
"	28 - 194	"	1.5	"

Pos.	V.C.	Fath.	Corr.
1 h	25.3	23.5	1.8
14 h	54.7	53.5	1.2
34 h	41.5	40.0	1.5
35 h	50.0	49.0	1.0
47 h	50.5	49.5	1.0
76 h	48.7	47.0	1.7
109 h	31.1	28.5	2.6
	33.0	31.0	2.0
123 h	48.5	46.0	2.5
124 h	54.0	51.5	2.5
145 h	43.0	41.5	1.5
146 h	44.0	42.0	2.0
198 h	54.0	52.5	1.5
225 h	66.0	64.0	2.0
244 h	52.0	50.0	2.0
245 h	27.9	26.0	1.9
261 h			

Positions	1 - 34	Add	1.5	Fathoms
"	34 - 50	"	1.0	"
"	50 - 76	"	1.5	"
"	76 - 261	"	2.0	"

Pos.	V.C.	Fath.	Corr.
1 j	29.0	27.5	1.5
15 j	50.4	48.0	2.4
39 j	48.8	47.0	1.8
74 j	38.2	36.5	1.7
88 j	55.0	54.0	1.0
129 j	51.4	48.5	2.9
141 j	26.0	25.0	1.0
183 j	50.6	48.5	2.1
233 j	24.9	23.0	1.9

Positions	1 - 10	Add	1.5	Fathoms
"	10 - 74	"	2.0	"
"	74 - 141	"	1.5	"
"	141 - 233	"	2.0	"

Pos.	V.C.	Fath.	Corr.
1 k	27.4	25.5	1.9
12 k	24.1	22.0	2.1
25 k	27.0	24.5	2.5
36 k	14.3	12.0	2.3
37 k	18.2	16.0	2.2
61 k	18.0	16.0	2.0
76 k	18.5	16.0	2.5
94 k	20.3	18.0	2.3
103 k	21.3	18.5	2.8
119 k	24.3	22.0	2.3
126 k	10.5	8.0	2.5
195 k	21.5	18.5	3.0

Positions	1 - 126	Add	2.0 fathoms
"	126 - 150	"	2.5 "
"	150 - 230	"	3.0 "

Pos.	V.C.	Fath.	Corr.
8 1	21.8	21.0	0.8
27 1	13.0	12.5	0.5
28 1	17.5	16.5	1.0
37 1	24.8	23.5	1.3
38 1	29.0	28.5	0.5
61 1	17.0	17.0	0
70 1	23.0	22.5	0.5
76 1	23.9	23.5	0.4
82 1	21.5	22.0	-0.5
88 1	22.3	22.5	-0.2
97 1	22.3	23.0	-0.7
109 1	27.7	29.0	-1.3
112 1	19.6	18.5	1.1
113 1	18.2	17.0	1.2
118 1	20.6	19.5	1.1
119 1	27.7	26.5	1.2
129 1	29.0	28.5	0.5
136 1	30.5	30.0	0.5
176 1	35.3	36.0	-0.7
193 1	25.8	25.0	0.8

Positions	8 - 37	Add 1.0 fathoms
"	38 - 76	" 0.5 "
"	76 - 97	Zero
"	97 - 109	Subtract 1.0 fathoms.
"	109 - 112	Zero
"	112 - 122	Add 1.0 fathoms.
"	122 - 193	" 0.5 "

Pos.	V.C.	Fath.	Corr.
1 m	29.1	29.0	0.1
6 m	30.2	30.0	0.2
13 m	20.7	20.0	0.7
14 m	20.0	19.0	1.0
18 m	22.0	21.5	0.5
38 m	34.5	34.0	0.5
58 m	40.3	39.0	1.3
62 m	29.5	28.5	1.0
72 m	22.8	22.0	0.8
98 m	40.2	39.0	1.2
127 m	34.2	32.5	1.7
128 m	14.2	13.0	1.2
131 m	15.2	14.0	1.2
150 m	17.2	16.0	1.2
152 m	15.7	14.5	1.2
158 m	15.3	14.5	0.8
168 m	22.0	20.0	2.0
171 m	17.5	15.5	2.0
185 m	23.0	21.0	2.0
194 m	13.5	12.5	1.0
211 m	18.9	17.5	1.4
238 m	31.5	29.5	2.0
252 m	28.3	26.0	2.3
289 m	29.3	27.5	1.8


Positions	1 - 8	Add	Zero
"	8 - 48	"	0.5 Fathoms
"	48 - 160	"	1.0 "
"	160 - 165	"	1.5 "
"	165 - 190	"	2.0 "
"	190 - 220	"	1.5 "
"	220 - 289	"	2.0 "

Pos.	V.C.	Fath.	Corr.
1 n	31.5	31.5	0
2 n	26.8	27.0	-0.2
13 n	33.6	34.0	-0.4
18 n	22.5	22.0	0.5
36 n	30.5	30.0	0.5
43 n	44.0	44.0	0
57 n	36.5	36.0	0.5
63 n	17.7	17.5	0.2
64 n	18.1	17.5	0.6
84 n	33.9	33.0	0.9
85 n	17.5	17.0	0.5
91 n	24.7	24.0	0.7
92 n	24.8	24.0	0.8
97 n	20.0	19.5	0.5
111 n	32.7	31.5	1.2
135 n	39.3	38.0	1.3
140 n	30.3	29.0	1.3
171 n	34.1	33.0	1.1
222 n	49.7	48.5	1.2

Positions	1 - 15	Add Zero
"	15 - 100	" 0.5 Fathoms
"	100 - 222	" 1.0 "

APPROVAL OF CHIEF OF PARTY

Sheet No. 24 and accompanying records have been inspected and approved by me. The work of both motor sailers was done under daily supervision and inspection. The work of the WESTDAHL on this sheet was inspected twice a week. No further hydrography is considered necessary in the area covered by this sheet.



H.B. Campbell
Chief of Party, C. & G.S.

August 3, 1932.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
15 volumes of sounding records for

HYDROGRAPHIC SHEET 5189

Locality Vicinity Barren Islands, S. W. Alaska

Chief of Party: H. B. Campbell in 1931

- * Plane of reference is mean lower low water, reading
- 3.0 ft. on tide staff at No. 1 at Barren Islands
- 20.7 ft. below B. M. 1
- 5.2 ft. on tide staff No. 2 at Barren Islands
- 20.7 ft. below B. M. 1

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

H. B. Campbell
aty Chief, Division of Tides and Currents.

*The tide reducers are either from direct observations at Barren Islands
or from other stations reduced to its datum and range.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5189

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

Number of positions on sheet	5476
Number of positions checked	997
Number of positions revised	12
Number of soundings recorded	16262
Number of soundings revised	124
Number of signals erroneously plotted or transferred	None

Date: 23 Jan., 1933

Cartographer: E. C. McElroy

Section of Field Records

Sheet No #5189

Surveyed in 1931

Chief of Party - H. B. Campbell

Surveyed by - Party of

U. S. B. Discoveries

Contracted by - E. H. Nelson

Soundings plotted by - E. H. Nelson

Verified & Inked by - E. H. Nelson

1. The records conform to the requirements of the general instructions.
2. The plan and character of development fulfill the requirements of the general instructions.
3. There are no series of cross lines, but those that do cross are found to be satisfactory.

4. The usual depth curves can be completely drawn within the limits of the sheet.

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

6. The office draftsman did not have to do over any part of drafting done by field party except as noted on statistic sheet; and to transfer a great many topographic features that were omitted from the hydrograph sheet.

7. There are no junctions with adjacent sheets at this time because the adjacent sheets have not been verified and inked. However, ~~this~~ the junctions will be investigated upon completion.

of the adjacent sheets.

8. Remarks:

On page 40 of volume no 8 between position 221 and 222 a sounding of questionable doubt was found. However it was interpreted ~~to~~ read as 18 fathoms in order to agree with boat sheet and adjoining hydrography.

Respectfully submitted,
E. M. Glisson

Section of Field Records

Review of Hydrographic Sheet No. 5189.
Barren Islands, Entrance to Cook Inlet, Alaska.
Surveyed July-September 1931.

Instructions dated March 21, 1930 and April 10, 1931 (Discoverer)

Chief of Party - H. B. Campbell.
Surveyed by - L. D. Graham, H. A. Karo, G. A. Nelson, F. B. Quinn,
H. F. Garber.
Protracted and soundings plotted by - G. A. Nelson.
Verified and inked by G. C. McGlosson.

1. The records conform to the requirements of the Hydrographic Manual.
2. The plan and extent of development satisfy the specific instructions. The area westward of the north point of Ushagat Island should have had more development.
3. Soundings are generally consistent considering the very irregular bottom in this locality. The depths off the east end of Ushagat Island are very irregular, one fathometer line showing considerable less water than the machine soundings by the motor sailer closer inshore. There are however no cross lines to check the accuracy of the hydrography, and the fixed positions agree with the time and course.
4. Depth curves can be drawn satisfactorily. The inshore curves are necessarily incomplete.
5. Junction with H. 5193 is satisfactory except that there is a 35 very close to a 24 on this sheet (H. 5189) in lat. $38^{\circ}51.'85$ long. $152^{\circ}12.'5$. The other soundings in the vicinity are in fair agreement.

To northward and eastward this sheet joins H. 5192 which has not yet been verified and inked.

6. Comparison with previous survey. - The survey of 1907 (H2918) shows a few soundings in the area covered by H. 5189, but can hardly be called more than a reconnaissance. The reef shown extending westward of Sugarloaf Island probably is the rock awash at $\frac{1}{4}$ tide off signal. Safe or else tide rips were mistaken for breakers as the descriptive report suggests. Other dangers are substantially as charted except that the sunken rock symbol on the chart is to be replaced by rock awash symbols in several places. Chart 8554 shows 7 fathoms in the channel between East and West Amatuli islands whereas the controlling depth developed by the present survey is 11 fathoms. (See Inspector's note below).

7. The field drafting was in conformity with the Manual - except that the office had to transfer a great many topographic features that were omitted from the hydrographic sheet.

8. Recommendation.- This sheet (H. 5189) should supersede all previous information for charting purposes in the area covered by it.

H. 5189.

A further development of the area westward of the north point of Ushagat Island, especially in the passage between the offlying rocks and the point is desirable. Wire drag surveys are indicated over practically the entire area if this region becomes important commercially. ✓ JAB

9. Reviewed by R. J. Christman, Feb. 24, 1933.

Inspection Note: The 7 fathom sounding noted in par. 6 above was charted from Graves Alaska Coast Pilot Notes, 1910. The sounding was located by one bearing only. In view of the doubt as to its existence it should be omitted from the chart. The locality of the sounding should be listed in the areas to be dragged when opportunity offers.

E. P. Ellis.

Approved: *L. O. Colbert*
L. O. Colbert, Chief, Field Records Section.

J. S. Borden, Chief, Section of Field Work, H&T.

G. W. de

Chief, Div. of Hydrog and Topog

W. W. Pugh
Ch. of charts

Suggested Coast Pilot note:

The passage between the northern end of Ushagat I. and the inlet one mile to the westward should not be attempted until surveyed in more detail.

J. S. Borden