

7708

Diag. Cht. No. 8864-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. EX-2248 Office No. H-7708

LOCALITY

State Alaska - Aleutian Islands

General locality Hat Islands

Locality Kiska Island to Sea Lion Pass

1948

CHIEF OF PARTY

F.B.T.Siems

LIBRARY & ARCHIVES

DATE 26 AUG. 1949

80242

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. H-7708

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.

REGISTER No. **7708**

Field No. EX-2248

State Alaska - Aleutian Islands ✓

General locality ~~Aleutian Islands~~ Rat Islands ✓

Locality ~~Rat Islands~~ - Kiska Island to Sea ^{Lion} Lion Pass ✓

Scale 1:20,000 ✓ Date of survey 14 May to 28 September 1948 ✓

Instructions dated 3 February 1938; Supplemental Instructions 10 February 1948

Vessel EXPLORER and Launches No. 1, 2 and 3.

Chief of party F.B.T. Siems ✓

Surveyed by R. R. Moore, R. L. Pfau, G.C. Mast, C.R. Reed, H.C. Applequist, P. Taylor. ✓

Soundings taken by fathometer, graphic recorder, ~~hand level~~ ✓

Protracted by Wm.M.Martin

Soundings penciled by Wm.M.Martin

Soundings in fathoms ~~feet~~ at ~~MLLW~~ MLLW ✓

REMARKS: _____

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SURVEY H 7708

Field No. EX-2248

RAT ISLANDS

1948

Scale 1:20,000

USC&GSS EXPLORER, - F.B.T. Siems, Comdg.

Surveyed by: R.R. Moore, R.L. Pfau, G.C. Mast, C.R. Reed
H.C. Applequist, P. Taylor.

A. PROJECT:

Instructions Project CS-218, dated 3 February 1938; Supplemental Instructions, dated 10 February 1948.

B. SURVEY LIMITS AND DATES:

Locality - Inshore hydrography of southeast Kiska Island east from Long. 177°22.0'E, Little Kiska Island and the reef between Little Kiska Island and Rat Island to the 12.45 mile shoran circle from Station LITTLE.

This survey joins Sheet ^{H-7707 (1947-49)} EX-2148 on the southwest corner, on the west with ^{H-6933 (1943)} ~~EX-2700, 1944 & 1945~~, ^{H-7707 (1947-49)} ~~scale 1:10,000~~ on the northwest with Sheet EX-1148, and PI-2248, ^{H-7707 (1947-49)} on the north with PI-4148, EX-4247 and ~~EX-4148~~, ^{H-7707 (1947-49)} on the east with EX-2348, and on the south with EX-4148 and EX-4247. (See sheet layout 1948.) Hydrography was executed during the the period 14 May to 28 September 1948. Work was executed in conjunction with other surveys in the area. See Review, par. 4.

C. VESSEL AND EQUIPMENT:

The Ship EXPLORER, and ship's launches Nos. 1, 2 and 3 accomplished the hydrography. The ship sounded at slow speeds, in order to control the line better. The turning radius depends on the speed of the ship. At standard speed it is 275 and 360 meters to port and starboard respectively.

The ship worked on the offshore end of the lines off southeast Kiska Island, and on the offshore areas on both the north and south side of Little Kiska Island. Launch No. 1 worked mostly on the southeast of Kiska Island and around Little Kiska Island.

Launch No. 2 worked mostly on the inshore off SE Kiska Island, and the south side of Little Kiska Island. Launch No. 3 accomplished practically all the work on the reef between Little Kiska Island and the eastern limits.

Launches Nos. 1 and 3 accomplished all work from the ship. Most of the work executed by launch No. 2 was from a camp established in Kiska Harbor.

The 808 type fathometer was used exclusively for all soundings aboard the ship and launches.

The ship work was executed using the gyro compass. Frequent bearings were taken throughout the season to establish the gyro error. The compass maintained a constant 2° westerly error throughout the season. Launches No. 1 and 2 used magnetic compasses and ranges. Launch No. 3 used mostly shoran circles.

D. TIDE AND CURRENT STATIONS:

The reductions for tide were based on tidal data obtained from the portable automatic tide gage, operated in Gertrude Cove, Kiska Island.

Two current stations were occupied, at shoran stations ^{*}EDDY and PLUG. Data for these stations has been previously forwarded to Washington.

* Temp. ship stations (at anchor); ~~not~~ shown on smooth sheet

E. SMOOTH SHEET:

~~It will be necessary to lay the smooth sheet out on a skew, in order to take in all the work and not exceed the allowable limit. The work for this sheet is on five boat sheets. The fifth boat sheet has work for both sheets EX-2248 and EX-2348 on it. (Refer to sheet layout 1948.)~~
H-7708(1948) H-7646(1948)

F. CONTROL STATIONS:

Datum - North American 1927, local triangulation 1904, 1935, 1943, 1944, 1945 and 1948. Topographic sheets EX-B-1948 and EX-C-1948. (See list in volume 1.) Graphic control T-7116 and T-7118 (1948)

G. SHORELINE AND TOPOGRAPHY:

^{on boat sheet} The shore line of Little Kiska Island and part of east Kiska Island came from T-2657, the remainder of the shoreline was transferred from existing charts and is not considered adequate for charting purposes. Review, part.

The shoreline over most of the survey is steep and rocky with reefs and offlying rocks making it impossible to define the low water line with soundings.

The signals for hydrography were located by plane table on topographic sheets EX-B and C 1948.
graphic control T-7116 and T-7118 (1948)

H. SOUNDINGS:

All sounding was done with 808 type fathometer, by standard methods. Fathometer units were located in the bilges of all launches. No unusual methods were used to reduce any of the soundings.

Sounding lines were spaced in accordance with standard instructions; splits and a grid system of crosslines were used to develop shoals and passes.

I. CONTROL OF HYDROGRAPHY:

Both visual three point fixes and shoran control was used by the ship. However, most of the ship work is shoran controlled, supplemented by visual fixes wherever conditions permitted.

Visual fixes were used exclusively for control by launches No. 1 and 2.

Launch No. 3 used shoran control exclusively except in Tanadak Pass, where a shoran distance and an angle was used for most of the control.

For h, j and k days, August 4, 5 and 6, where shoran stations EDDIE and PLUG were furnished by the ship, the soundings do not agree. All other work in the area covered by the above days should be plotted on the smooth sheet previous to the work done using stations EDDIE and PLUG. It is recommended that the hydrography for h, j and k days then be plotted on an overlay and fitted to the smooth sheet by the depth curves. *work acceptably plotted*

For shoran corrections see attached shoran report. § Review, par. 7b.

J. ADEQUACY OF SURVEY:

* Review P's 6A. § 9.

The survey is considered complete, and is adequate to supersede prior surveys for charting purposes, except for the 4 fathom shoal shown on charts Lat. 51°58.3'N. Long. 177°46.2'E. which needs further development.

For h, j and k days, launch No. 3, around Tanadak Island where the ship was furnishing the launch a shoran station, the soundings do not agree on boat sheet, this is due to the ship swinging and the rough location on boat sheet of the ship station. It is believed the smooth plotting will correct all the displacement. (Smooth plotting O.K.)

Junctures with adjoining surveys are satisfactory, depth curves can be adequately drawn. No holiday or excessive differences exist.

K. CROSS LINES:

* Review, par. 2.

Adequate cross lines were run indicating close agreement. Also the splits in development show close agreement with soundings taken previously. (Review, par. 7b.)

L. COMPARISON WITH PRIOR SURVEYS:

A comparison with H-2700, scale 1:10,000 1904 and 1945 shows the following:

Photostat of	H-7708 HX-2248	Lat.	Long.
H-2700	2.8 reduced		
2 1/4 fms.	X fms.	51°56.3'N	177°38.2'

It is not recommended that the above 2 1/4 fms. ^{carried fwd. to present survey} sounding be removed from the chart. This was a difficult spot to get on due to currents, and being very small. It breaks in heavy weather. The rest of the area common to the two surveys are in close agreement.

M. COMPARISON WITH CHART:

Comparison with chart 9155, dated February 17, 1947 shows:

- ✓ 1. The 8 fathom shoal ^{charted in ϕ 51°53.28', λ 177°56.12'} 1.7 miles 277° from Sea Lion Rock on the chart, is shown on this survey as 9 fathoms 1.75 miles 285° true from Sea Lion Rock. _{84 smooth sheet.} See Review, par. 6 A.
- ✓ 2. The 20 fathom curve runs 1.0 mile west of Sea Lion Rock on the chart and 2.0 miles west on this survey. ✓
- ✓ 3. Sea Lion Passage is 2.9 miles wide. ^{7.946} The eastern limit is the 5 fathom shoal Lat. 51°53.4'N., Long. 177°56.6'E., and the western limit is the 8 fathom shoal Lat. 51°54.6'N., Long. 177°52.3'E. This 8 fathom shoal is shown on the chart as 10 fathoms. _{See also 58 fms ϕ 51 54.8 λ 177 51.4 on Kelp - revised 8.6 fms.} ✓
- ✓ 4. ^{33 fms. pres. survey} The 5 fathom sounding Lat. 51°56.6'N., Long. 177°49.7'E., and the ^{38 pres. survey} 17 fathom sounding Lat. 51°56.4'N., Long. 177°50.5'E., on the chart could not be found, and they are thought to be displaced. Concur. - Review, par. 5 b. ✓
- ✓ 5. The 4 fathom shoal ^{charted} ~~shows~~ in Lat. 51°58.3'N., Long. 177°46.2'E., was not thoroughly developed, a least depth of 12 fathoms was found. Review, This shoal should be further developed or gone over with a wire drag. _{par. 9.} ✓
- ✓ 6. The survey is in close agreement with the chart in Tanadak passage and Tanadak pass. ✓
- ✓ 7. The 18 fathom shoal ^{on the pres. survey} in Lat. 51°58.0'N., Long. 177°42.7'E. is shown on the chart as 21 fathoms. ✓

Comparison with chart 9124, dated February 9, 1948:

1. *see N(4) below* The 17 fathom sounding in Lat. 51°59.4'N. Long. 177°38.9'E Review, could not be found, the survey shows a general depth of 40 fathoms. par. 5b.
2. *see N(6) below* The 17 fathoms on chart Lat. 51°58.2'N. Long. 177°39.6'E. This survey shows 19 fathoms in a general depth of 24 fathoms. ¹⁸ slightly north in ϕ 51°58.4'
3. *see N(7) below* The 14 fathom spot ^{charted} north of Little Kiska Head in Lat. 51°59.0'N Long. 177°38.15'E. matches a least depth of 15 fathoms unreduced found in Lat. 51°58.8'N. Long. 177°38.5'E. ^{14 reduced} *for smooth sheet*
4. The survey south and west of Little Kiska Island to the western limit is in general agreement with the chart.

N. DANGERS AND SHOALS:

No new dangers or shoals were found except along the reef between Little Kiska Island and Rat Island. These were known to exist, and they are so numerous that the area is unsafe for navigation except through the passes, which have been discussed under Comparison with Charts.

Charted depths shoaler than found on new survey:

	Charted Fms.	Found Fms.	Lat.	Long.
(1)-	4 ✓	11 11 ¹¹ <i>?-see</i>	51°58.3'N ✓	177°46.2'E ✓
(2)-	8 ✓	13 8 ⁸ <i>(8' nearby)</i>	51°53.3' ✓	177°56.1'E <i>same as #1 pg. 4</i>
(3)-	5 ✓	34 ✓	51°56.7' ✓	177°49.7' ✓
(4)-	17 ✓	40 as	51°56.4' ✓	177°50.5' ✓
(5)-	17 ✓	40 ✓	51°59.4' ✓	177°38.9' <i>(Review, par. 5b.)</i>
(6)-	17 ✓	18-19 17 ¹⁸ <i>18</i>	51°58.2' ✓	177°39.6' <i>See #2 above (Ch. 9124)</i>
(7)-	14 ✓	14 14 ¹⁴ <i>14</i>	51°59.0' ✓	177°38.15' <i>See #3 above (Ch. 9124)</i>
(8)-	2 1/2 ✓	3 2 1/2 ³ <i>2 1/2</i>	51°56.3' ✓	177°38.1' ✓

It is recommended that the above charted soundings be removed except for (1) and (8) and be replaced by depths found on this survey. *Review, #s 5 & 6.* The other soundings are evidently displaced. All charted dangers, shoals, and bare rocks were found as charted, or shoaler depths were found except for those listed in L, M and N.

O. COAST PILOT INFORMATION:

See Coast Pilot Notes furnished by the Ship EXPLORER 1948 season.

P. AIDS TO NAVIGATION:

There are no aids to navigation in this area. ✓

Q. LANDMARKS FOR CHARTS:

There are no landmarks for charts within the area. ✓

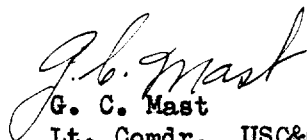
R. GEOGRAPHIC NAMES: 814 ✓

All geographic names were taken from the chart. No new names are submitted. ✓

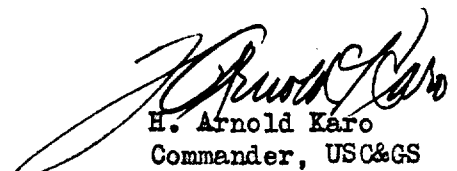
U. TIME MERIDIAN:

Time meridian used for sounding was 165° W from 14 May to 30 June, and from 1 September to 28 September, 180° W from 1 July to 31 August. ✓

Respectfully submitted,


G. C. Mast
Lt. Comdr., USC&GS

Approved and forwarded.


H. Arnold Karo
Commander, USC&GS
Comdg. Ship EXPLORER

FINAL CORRECTIONS

DRAFT & INITIAL

DATE 1948	DAY LETTER	VESSEL	POSITION	808 #72S FMS.
5-15	a	Launch #1	3-9	+0.1
			9-43	-0.2
			44-67	-0.5
			68-82	0.0
			82-85	-0.1
			86-88	0.0
5-17	b	"	1-33	0.0
			34-37	+0.2
			38-60	0.0
6-4	c	"	1-19	-0.2
			19-67	-0.3
			67-124	-0.2
6-5	d	"	6-68	-0.1
			69-140	0.0
6-7	e	"	1-162	0.0
6-11	f	"	1-9	0.0
			10-49	-0.2
			50-54	-0.1
			55-70	0.0
			71-end	+0.2
			6-21	g
			55-68	-0.1
			69-end	-0.2
6-24	h	"	All day	0.0
6-25	j	"	All day	-0.2
6-26	k	"	1-27	+0.1
			28-end	0.0
7-1	l	"	All day	0.0
7-7	m	"	1-79	0.0
			80-end	-0.1
9-17	n	"	All day	0.0
9-28	p	"	All day	-0.4
				808 # 49
8-16	a	Launch #2	1-33	0.0
			33-49	+0.2
			49-53	0.0
9-4	b	"	1-6	+0.2
			6-17	0.0
			17-116	-0.2
9-8	c	"	All day	0.0
9-9	d	"	1-77	0.0
			77-80	+0.2
			80-93	0.0
			93-97	+0.2
			97-179	0.0
			9-10	e

DATE 1948	DAY LETTER	VESSEL	POSITION	808 #60 FMS.		
5-14	A	EXPLORER	All day	+0.14		
5-15	B	"	1-12	+0.64		
			12-18	-1.66		
			19-22	+0.44		
			22-46	+1.84		
			46-47	+0.64		
			48-50	+0.24		
			51-107	+0.14		
			108-109	-0.86		
			110-131	+0.14		
5-17	C	"	1-2	+0.74		
			2-19	+0.24		
			20-27	+0.14		
			28-49	+0.04		
			49-94	+0.24		
5-26	D	"	1-3	+0.36		
			4-9	+0.26		
			10-16	+0.36	Position	NMC-2
5-28	E	"	1-15	-0.18	All day	+2.02
6-4	F	"	All day	+0.38		
6-5	G	"	All day	+0.44	All day	+2.44
6-7	H	"	All day	+0.32		
6-21	J	"	All day	+0.02		
6-24	K	"	All day	+0.57		
7-1	L	"	All day	+0.40	All day	+2.30
7-7	M	"	1-4	+0.32		
			4-10	+0.42		
	N	"	No soundings			
8-13	P	"	1-13	-0.13		
			13-19	+0.27		
			20-31	+0.07		
8-27	Q	"	1-4	-0.03		
			5-101	+0.17		
8-30	R	"	1-41	+0.22		
			42-62	+0.02		
			62-136	+0.22		
			137-end	+0.32		
9-9	S	"	1-67	-0.16		
			67-90	+0.04		
			90-155	+0.24		
			155-158	+0.04		
			159-168	-0.16		
9-10	T	"	1-17	0.0		
			17-32	-0.20		
			32-85	0.0		

DATE 1948	DAY LETTER	VESSEL	POSITION	808 # 50 FMS.
6-21	a	Launch #3	All day	0.0
6-25	b	"	1-115	0.0
			115-150	+0.2
6-26	c	"	All day	0.0
6-27	d	"	1-30	0.0
			30-43	-0.2
			43-54	-0.4
7-30	e	"	1-5	0.0
			5-140	+0.2
			140-171	0.0
			171-179	+0.2
			179-201	0.0
			201-219	+0.2
8-2	f	"	1-3	0.0
			3-30	+0.2
			30-58	0.0
			58-71	+0.2
			71-79	0.0
			79-106	+0.2
			106-131	0.0
8-3	g	"	1-53	0.0
			53-107	-0.2
			107-140	0.0
			140-151	+0.2
			151-164	0.0
			164-182	-0.2
8-4	h	"	1-56	0.0
			56-111	-0.2
			111-163	0.0
8-5	j	Launch #3	1-15	+0.2
			15-27	0.0
			27-40	+0.2
			40-58	0.0
			58-72	+0.2
			72-146	0.0
8-6	k	"	1-3	0.0
			3-5	-0.2
			5-10	0.0
			10-120	+0.2
			120-170	0.0
8-26	l	"	1-59	0.0
			59-110	-0.2
8-27	m	"	1-8	0.0
			8-85	+0.2
			85-121	0.0
			121-188	+0.2
			188-226	0.0
8-28	n	"	1-90	0.0
			90-92	-0.2
			92-131	+0.2
			131-142	0.0

DATE 1948	DAY LETTER	VESSEL	POSITION	808 #60 FMS.
8-30	p	Launch #3	All day	0.0
9-9	q	"	1-145	0.0
			145-197	-0.2
9-10	r	"	1-46	0.0
			46-89	-0.2
			89-108	0.0
			108-130	+0.2
			130-end	0.0

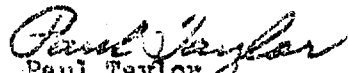
SHORAN CORRECTIONS:

The Shoran Zero Setting for both ship and Launch No. 3 were obtained by a comparison of the shoran distance and the computed distances from the ship to shoran stations. The ship's position was fixed by sextant angles on triangulation and topographic stations at the instant the shoran readings were made. Each computed distance was then reduced to the ship and launch antennas.

For the launch values obtained from stations TAR, SPRING and BIRD, the launch was in its chocks on the starboard side of the ship. Therefore, values obtained on certain headings had to be rejected because of interference of the ship's bridge with incoming pulses. For the launch zero settings for stations other than those three named above, the mean difference of the values obtained for the ship and those obtained for the launch were applied to the zero setting of the ship set to obtain the zero setting for the launch. No direct computations were made for the launch for stations other than TAR, SPRING and BIRD.

The final value as obtained in each case is the mean of all computations accepted. The number of values used in obtaining this mean is shown in parentheses in the following table.

The two values obtained for the same ship set on VEGA were caused by interference with the pulse transmission by Fender Hill, Filthy Hill and other high ground to the north. Therefore, for ship set number one the zero setting should be 99.786 when the ship is working to the eastward of a bearing of 310° true on VEGA and 99.810 when the ship is to the westward of that bearing.


Paul Taylor
Lt. Comdr. USCGS

USCGCSS EXPLORER
SIDRAN ZERO SETTINGS
Season of 1948

Shore Sets	Ship Set No. 5	Ship Set No. 1	Launch Set No. 5
# 1 Little		99.813 (31)	99.812 (a)
# 2 SILO (TAR)	99.834 (14)	99.839 (36)	99.839 (22)
# 3 (SPRING)		99.822 (27)	99.817 (26)
# 4 (VEGA) (SEALY)	99.824 (15)	99.786* (15) 99.810 (5)	99.806 (a)
#5 (GUL) (FLUG) (LUG) (EDDIE)		99.829 (b)	99.830 (b)
# 6 (BIRD)		99.811 (29)	99.801 (20)

(a) Obtained from ship values

(b) Values obtained from 1946 calibration

* Note: Use only on ship set No 1 to the eastward of a true bearing of 310° on VEGA.

H-7708 (1948)

HYDROGRAPHIC SHEET FIELD NO. EX-2248

The boat sheets and sounding volumes for this survey have been inspected and they are approved.

This officer was not aboard during the progress of the field work which was done under the supervision of Captain F. B. T. Siems.



H. Arnold Karo,
Commander, USC&GS,
Commanding EXPLORER.

Kiska Island to Sealton Pass.

Processing office notes.

Smooth Sheet.

The projection is hand made on Dietzgen paper D 117. This sheet was well advanced when the instructions to discontinue the use of this paper was received.

To control the shoran distance circles two points were computed along each of two radial lines from each shoran station, the distances along the radii between the computed points being even multiples of statute miles. When plotted on the smooth sheet the distances between these points were sub-divided into statute mile intervals. The distance circles were swung thru these points.

The triangulation is from pages 264, 265, 266, 271, 272, 275 and 417 of the Adjusted Triangulation of Alaska, Vol. 5 and from the field computations of points located by Siems, 1948.

Topographic signals are from T 7116 and T 7118. (1948)

Use of EXPLORER as shoran station.

In foggy weather Launch 3 sounded around the north, east and south sides of Tanadak Island. To assist in the work the ship acted as a shoran station taking up ^{*}positions Eddie and Plug. The ship designated this interval as "N" day altho it continued for three days. See Vol. 11. During this time the ship also observed current but those records were sent from the ship to Washington and the strength and direction of current at these points may be obtained from the current report.

** not shown on smooth sheet*

Overlays.

Four overlay tracings accompany the smooth sheet. All points were located by shoran. All positions and sounding lines appear on the smooth sheet.

The overlay showing positions 25 to 63 "f" day Launch 3 has only the adjusted positions of the sounding lines, the soundings being penciled on the smooth sheet.

The overlays 1 to 71 "g" day and 64 to 31 "f" day were plotted with the black latitude and longitude intersections in contact with smooth sheet lines. However, the soundings do not fit in these positions. The distances from Tar seem discrepant. If the positions are swung to eastward along the arc from Little the overlay soundings can be made to agree with those on the smooth sheet. The positions of best agreement are indicated by the red intersections on these two overlays.

(filed with verifier's report (Rm. 1107)

Review, par. 7b.

3.7⁵ Fm. shoal Lat. 51 56 Long. 177 49.4.

Attention is called to a shoal on the turn of the line between Pos. 79 & 80 "j" day, Launch 3, Vol. 17 P 63.

This object is noted in the record book at a depth of 1.5 fms. The fathogram should be examined. A reading of 3.7 fathoms seems very probable. It should have additional examination as it constitutes a danger to vessels rounding Tanadak I. to eastward.

Poor separation of kelp & bottom

Review, P's 7c. & 9.

The sounding was not entered on the boatsheet and surrounding depths are thirteen fathoms. A boatsheet note reads "investigate" but this has not been carried out yet.

Note also the following:

Lat.	Long.	Position.	Depth Fms.
51 56.1	177 49.0	37-38 k 35 k	2.4

Review, par. 9.

Heavy kelp indications make the depth uncertain. As above, the boatsheet note "Investigate" was not carried out.

51 58.3	177 46.4	217 1/2 e 96 n 92 n	11.4 8. 12.6 4.8 12.7 4.8
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These fathograms can be read 12.5, 13 and 13.5 fms. and the shoaler readings are doubted. However, the chart shows a P.A. reading of 4 fms. reported in 1943. Hand lead examination recommended. See also fathogram for rejected position 94 n day. (Keiphara - reads 12.5) See item 5 Paragraph M Page 4 of this report.

51 56.7	177 45.5	97-98 a	5.8
51 56.8	177 46.0	141-142 a	6.6 4.8

Very heavy kelp indications make these depths in Tanadak Pass doubtful. questionable

General.

Other features have been pointed out with lines on the smooth sheet or remarked in the sounding records. The heavy kelp areas produced obscure profiles. Many readings have been deepened or made shoaler. It is recommended that these changes noted in the record be again examined, particularly along the ridge from Sealion Rock to Little Kiska Island.

shoal sdgs. reexamined

Edgar E. Smith
Edgar E. Smith.
Capt. Engr.

8/19/49

H 7708
Ex 2248

Kiska Island to Sealion Rock.

Geographic names penciled on the smooth sheet.

Pacific Ocean

Kiska Island

Kiska Harbor

South Pass

North Pass

Little Kiska Island

Tanadak Island

Tanadak Pass,

Sealion Rock

Sealion ~~Rock~~ Pass

STATISTICS FOR HYDROGRAPHIC SHEET H **7708**

Field No. EX-2148

USO&GSS EXPLORER, F.B.T. Siems, Comdg.

VESSEL	DATE 1948	DAY	VOL.	STAT.MI.	POSITION
Launch #1	5-15	a	1	17.2	88
"	5-17	b	1	15.1	60
"	6-4	c	1 & 2	32.3	124
"	6-5	d	2	38.3	140
"	6-7	e	2 & 3	39.3	162
"	6-11	f	3	26.9	122
"	6-21	g	3 & 4	32.7	136
"	6-24	h	4	34.8	168
"	6-25	j	4 & 5	32.3	161
"	6-26	k	5	12.9	59
"	7-1	l	5	17.1	74
"	7-7	m	5	20.4	102
"	9-17	n	6	19.2	94
"	9-18	p	6	6.2	41
Launch #2	8-16	a	7	6.3	53
"	9-4	b	7	18.9	116
"	9-8	c	7	12.0	96
"	9-9	d	7 & 8	33.6	178
"	9-10	e	8	—	3
EXPLORER	5-14	A	9	15.6	59
"	5-15	B	9	37.1	131
"	5-17	C	9 & 10	43.7	94
"	5-25	D	10	8.0	16
"	5-28	E	10	9.1	15
"	6-4	F	10	18.6	54
"	6-5	G	10	4.5	14
"	6-7	H	10	11.4	25
"	6-21	J	10 & 11	18.2	66
"	6-24	K	11	2.8	9
"	7-1	L	11	12.9	30
"	7-7	M	11	3.5	11
"	8-4,5,6,	N	11	—	—
"	8-13	P	11	8.6	31
"	8-27	Q	11 & 12	35.9	101
"	8-30	R	12	52.8	162
"	9-9	S	12 & 13	53.0	168
"	9-10	T	13	22.4	85
Launch #3	6-21	a	14	21.8	180
"	6-25	b	14	26.6	150
"	7-26	c	14 & 15	19.5	83
"	7-27	d	15	14.2	54
"	7-30	e	15 & 16	50.6	219

VESSEL	DATE 1948	DAY	VOL.	STAT.MI.	POSITION	
Launch #3	8-2	f	16	27.0	131	
"	8-3	g	16 & 17	29.2	182	
"	8-4	h	17	33.7	163	
"	8-5	j	17 & 18	32.1	146	
"	8-6	k	18	39.1	170	
"	8-26	l	18 & 19	23.0	110	
"	8-27	m	19	53.6	226	
"	8-28	n	20	23.9	142	
"	8-30	p	21	8.0	54	
"	9-9	q	21	41.1	197	Sq.Stat.
"	9-10	r	21 & 22	30.3	150	Miles
				<hr/>		
				1247.3	5405	97.9

7708

TIDAL NOTE

Soundings on hydrographic survey EX-2248 were reduced from tide data obtained from portable automatic tide gage operated in Gertrude Cove, Vega Bay, Kiska Island, Lat. $51^{\circ}56.2'N$ Long. $177^{\circ}27.5'E$.

The mean lower low water of the staff was 4.4 feet. No time or height corrections were applied to the observed tides.

Time meridian for operation of the gage was $165^{\circ}W$ from 7 May to 7 July, and $180^{\circ}W$ from 7 July to 27 September.

A few tides were missed on the gage the latter part of August and the gage was removed before sounding was completed. The reducers for the missed tides were obtained from the Washington Office.

GEOGRAPHIC NAMES

Survey No. ~~XXXXXX~~
H-7708

Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>			(for title)								1
<u>Alutian Islands</u>			"	"							2
<u>Rat Islands</u>			"	"							3
											4
<u>Kiska Island</u>									US&B		5
<u>Kiska Harbor</u>									"		6
<u>South Pass</u>									"		7
<u>North Pass</u>											8
<u>Little Kiska Island</u>									US&B		9
<u>Tanadak Island</u>									"		10
<u>Tanadak Pass</u>									"		11
<u>Sea Lion Pass</u>											12
<u>Sea Lion Rock</u>									US&B		13
<u>Pacific Ocean</u>											14
											15
											16
(See chart 9180 for placement of names)											17
											18
<u>Gertrude Cove</u>			(location of tide gage)								19
											20
											21
											22
											23
											24
											25
											26
											27

Names underlined in red are approved. 9-22-49 L.H.

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7708....

Records accompanying survey:

Boat sheets ⁴....; sounding vols. ²²....; wire drag vols.;
 bomb vols.; graphic recorder rolls ⁴ envel.
 special reports, etc.

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

Number of positions on sheet		5405	
Number of positions checked		337	
Number of positions revised		313	by Sharon dist. corr'n
Number of soundings revised (refers to depth only)		270	(115 from initial corr'n)
Number of soundings erroneously spaced		63	
Number of signals erroneously plotted or transferred			
Topographic details	Time	4	hrs
Junctions	Time	44	hrs
Verification of soundings from graphic record	Time	24	hrs
<i>Plotting corrected Sharon fixes</i>		35	hrs
Verification by <i>A.P. STIPNI</i>	Total time	366	hrs
	Date	9/22/50	
Reviewed by <i>V.A. Winsmore</i>	Time	45	hrs
	Date	3 Nov. 1950	

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

22 September 1949

~~Division of Hydrography and Topography~~

Division of Charts: R. H. Carstens

Plane of reference approved in
22 volumes of sounding records for

HYDROGRAPHIC SHEET 7708

Locality Rat Islands, Aleutian Islands

Chief of Party: F. B. T. Siems in 1948
Plane of reference is mean lower low water, reading
4.4 ft. on tide staff at Gertrude Cove
7.3 ft. below B. M. 2 (1947)

Height of mean high water above plane of reference is 3.2 feet.

Condition of records satisfactory except as noted below:

E. C. McKay
Section
Chief, ~~Division of Tides and Currents~~

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7708

FIELD NO. EX-2248

Alaska, Aleutian Islands, Rat Islands, Kiska Island to Sea
Lion Pass
Surveyed in - May - September, 1948 Scale 1:20,000
Project No. CS-218

Soundings:

808 Fathometer

Control:

Shoran
Sextant fixes on shore signals

Chief of Party - F. B. T. Siems
Surveyed by - R. R. Moore, R. L. Pfau, G. C. Mast
C. R. Reed, H. C. Applequist, P. Taylor
Protracted by - W. M. Martin
Soundings plotted by - W. M. Martin
Verified and inked by - A. R. Stirni
Reviewed by - T. A. Dinsmore, 3 November 1950
Inspected by - R. H. Carstens

1. Shoreline and Signals

The portions of shoreline shown and the signal control are from graphic control surveys T-7116 and T-7118 (1948). Completion of the shoreline is deferred until air photographic compilations are available for this area.

2. Sounding Line Crossings

Considering the irregularity of the bottom, depths at crossings are in good agreement. Discrepancies in depths at crossings, however, did exist in some localities before the positions discussed in paragraph 7b were replotted.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated except in foul inshore areas where detailed development was impracticable because of reefs and offlying rocks.

The present survey covers a portion of the Aleutian Ridge between Kiska Island and Sea Lion Rock. The detailed coverage of Sea Lion Pass, Tanadak Pass and the southern approach

to South Pass contributes important knowledge to navigation in the area. Most of the shoaler areas are covered by heavy kelp and strong tide rips occur off the islands. The bottom for the most part is very irregular. A conspicuous feature in the area is the shoal rising abruptly in lat. $51^{\circ} 58.25'$, long. $177^{\circ} 46.35'$, to within 11 fms. of the surface from surrounding depths of 20-30 fms.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with the following adjoining surveys:

H-7645 (1948) on the north
 H-7625 (1947-48) on the northeast and south
 H-7710 (1948) on the east and south
 H-7707 (1947-49) on the southwest
 H-6933 (1943) on the west (in South Pass)
 H-7712 (1948-49) on the west
 H-7644 (1948) on the northwest

The junction with H-7646 (1948) on the southeast will be considered in the review of that survey.

5. Comparison with Prior Surveys

a. H-2700 (1904) 1:10,000 H-2701 (1904) 1:20,000

These prior surveys cover a portion of the present survey area in the vicinity of Little Kiska Island. No appreciable differences are noted between prior and present depths. However, three soundings have been carried forward from H-2700 to supplement present soundings in South Pass. These prior soundings represent shoaler depths than were obtained on the present survey.

b. H-6900 (1935) 1:30,000 H-6901 (1935) 1:60,000

These prior reconnaissance surveys by the U. S. Navy cover the area of the present survey. Numerous differences between prior and present depths are found over widely separated localities.

Prior depths over an area of about three square miles east of Tanedak Island are generally much deeper than present depths. Conspicuous examples in this area are the prior soundings of 36 fms. charted in lat. $51^{\circ} 56.55'$, long. $177^{\circ} 48.59'$, and 40 fms. charted in lat. $51^{\circ} 56.82'$, long. $177^{\circ} 48.42'$, which fall in present depths of 7 and 12 fms. respectively. Farther eastward, however, two

exceptions to the foregoing condition are noted in the prior soundings of 5 fms. charted in lat. 51° 56.63', long. 177° 49.73', and 17 fms. charted in lat. 51° 56.43', long. 177° 50.47', which fall in present depths of 33 and 38 fms. respectively.

South of Tanadak Island, the 7-fm. prior sounding charted in lat. 51° 55.42', long. 177° 47.23' together with other prior soundings of 9 and 20 fms. charted in the immediate vicinity fall in present depths of 24-33 fms. about 0.15-0.25 nautical mile from the present 9-10 fm; shoal.

The above discrepancies are attributed to the dead reckoning control and inaccuracy in sounding on the prior surveys. In many instances, a shift in position of a few hundred meters would effect agreement between the prior and present depths.

The 17-fm. sounding charted in lat. 51° 59.42', long. 177° 38.88', from H-6900 should be disregarded. Falling in depths of 38 fms. on the present survey, the prior sounding was probably recorded in error. Present development adequately disproves the prior depth in the position charted.

The 23-fm. sounding charted in lat. 51° 54.12', long. 177° 51.92', from H-6900 should be disregarded. Falling in present depths of 32 fms. the prior sounding is actually 28 fms. on H-6900 and was charted in error. A 28-fm. sounding close by on the present survey is adequate for charting.

The following discrepancies of lesser importance are noted to further indicate the widely separated localities in which differences in depths occur:

<u>Prior Depth</u> (charted)	<u>Latitude</u> (Chart	<u>Longitude</u> Datum)	<u>Present Depth</u>
26	51° 53.43'	177° 32.47'	36
23	51° 54.77'	177° 38.84'	33
22	51° 54.53'	177° 47.12'	42
29	51° 53.32'	177° 51.44'	47
44	51° 57.41'	177° 42.64'	44

In the first four examples above, prior surrounding depths are in close agreement with present depths. This indicates the probability that the 26-and 23-fm. prior soundings were recorded 10 fms. in error and the 22-and 29-fm. prior soundings 20 fms. in error. In all instances, comparable depths on the present survey lie considerable distances away.

The 44-fm. prior sounding listed above was probably intended to represent two 4-fm. soundings inasmuch as 44-fm. depths lie more than a mile northward.

A few bottom characteristics have been retained from the prior surveys. With these additions and the prior soundings mentioned in par. a above, the present survey is adequate to supersede the prior surveys within the common area.

c. H-6934 W.D. (1943)

This wire-drag survey covers a very small portion of the present survey in South Pass. There are no conflicts between the effective drag depths and depths on the present survey.

6. Comparison with Chart 9124 (Latest print date 10/28/44)
Chart 9155 (Latest print date 5/5/44)

A. Hydrography

Charted hydrography originates principally with the prior surveys which need no further consideration. Several critical soundings have been charted from advance information of the present survey contained in H. O. Notice to Mariners No. 40 (1949). The following charted soundings originating with this source have been subsequently revised in depth during verification:

<u>Charted Depth</u>	<u>Latitude (Chart Datum)</u>	<u>Longitude (Datum)</u>	<u>Smooth Sheet Depth</u>
5.5	51° 54.93'	177° 51.22'	8.6
4.5	51° 53.56'	177° 56.23'	7.9
3.5	51° 56.18'	177° 49.39'	7.8

The above charted depths were determined to have been read from kelp rather than the actual bottom.

The prior soundings of 8 fms. charted in lat. 51° 53.28', long. 177° 56.12' and 16 fms. charted in lat. 51° 53.33', long. 177° 55.77', fall in present depths of 14 and 30 fms. respectively. These charted soundings, the origin of which is not readily ascertainable, are considered to be out of position and should actually fall about 200 meters northeastward where comparable depths were obtained on the present survey. The 8 and 16 should be disregarded in their charted positions.

The 4-fm. P.A. sounding charted in lat. 51° 58.30', long. 177° 46.20', from Chart Letter 580 (1943) should be retained on the charts. Present development which shows 11 fms. on this shoal is inadequate to verify or

disprove the charted 4-fm. sounding. Further development on this shoal is being recommended.

Except as noted in the preceding paragraph, charted hydrography is superseded by the present survey.

B. Aids to Navigation

There are no aids to navigation within the limits of the present survey.

Many new shoals were found along the reef between Little Kiska Island and Sea Lion Rock. They are so numerous that the area is generally unsafe for navigation except through the passes.

7. Condition of Survey

- a. The sounding records are complete; the Descriptive Report covers all matters of importance.
- b. The smooth plotting was generally satisfactory. However, it was necessary to replot 313 positions because of erroneous shoran distances from station TAR. The positions involved are part of additional development by launch No. 3 over shoal areas west and southwest of Tanadak Island and south of Little Kiska Island. The erroneous distances possibly resulted from faulty tuning of the Shoran equipment aboard the launch. Distance corrections were determined by using shoran distances from station LIT and supplementary sextant angles. A correction was also determined from the minimum distance line between stations LIT and TAR. The combined corrections ranged from 0.04 to 0.08 statute miles and affected the work of positions, 1-131 "f" day and 1-182 "g" day, August 2 and 3, 1948. Discrepancies between soundings of these days and adjacent soundings were eliminated by the repositioned hydrography. Although some of the discrepancies were mentioned by the Processing Office, others were detected during verification in the Washington Office. All corrections were determined and positions replotted in this office.
- c. As noted in the Descriptive Report, the 4-fm. shoal charted in lat. $51^{\circ} 58.30'$, long. $177^{\circ} 46.20'$, was not investigated on the present survey.
- d. Numerous soundings previously read on kelp traces by the field party were revised during verification in this office. However, in some areas of heavy kelp, separation of kelp from the bottom profile on the fathograms could not be discerned and some of the plotted depths are, therefore, probably shoaler than true depths.

8. Compliance with Project Instructions

Except as noted in paragraph 7c above, the survey adequately complies with the Project Instructions.

9. Additional Field Work

This is an excellent survey of a difficult area. However, as noted by the hydrographer in paragraph "J" of the Descriptive Report, the 4-fm. shoal charted in lat. 51° 58.30', long. 177° 46.20', requires additional development and investigation for least depth. This shoal has been previously discussed in paragraph 6A of this review.

Examined and approved:

H. R. Edmonston

H. R. Edmonston
Chief, Nautical Chart Branch

Robert W. Knox

R. W. Knox
Chief, Division of Charts

L. S. Hubbard

L. S. Hubbard
Chief, Section of Hydrography

W. M. Scaife

W. M. Scaife
Chief, Division of Coastal Surveys

