

7646

Diag. Cht. No. 8864-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC
PI-2348
Field No. EX-2348 Office No. H-7646
EX-1249

LOCALITY

State ALASKA
General locality ALEUTIAN ISLANDS
Locality HAT ISLAND AND VICINITY

194 8 & 1949

CHIEF OF PARTY
F.B.T. Siems,
H.E. Finnegan and H.A. Karo

LIBRARY & ARCHIVES

DATE OCT. 14, 1949

7646

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. 7646

Field No. EX-2348, PI-2348 & EX-1249

State Alaska

General locality Aleutian Islands

Locality Rat Island & Vicinity

Scale 1:20,000 (insert 1:10,000) Date of survey 3 July to 20 Sept. 1948
and 21 July 1949

Instructions dated 3 Feb. 1938, 1 Mar. 1938, 10 Feb. 1948, 8 April 1948
and 11 April 1949

Vessel Ships PIONEER and EXPLORER and Launches 2 and 3

Chief of party F.B.T. Siems, H.E. Finnegan and H.A. Karo

Surveyed by R.R. Moore, R.L. Pfau, G.C. Mast, P. Taylor, C.J. Beyma,
E.E. Jones, E.B. Lewey, J.S. Morton and Mr. Rushford

Soundings taken by fathometer, graphic recorder, ~~and lead wire~~

Fathograms scaled by _____

Fathograms checked by _____

Protracted by L. W. Eason and G. W. Moore

Soundings penciled by J. R. Wheeler and G. W. Moore

Soundings in fathoms ~~feet~~ at ~~XXXX~~ MLLW

REMARKS: _____

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. 7646

Field No. EX-2348

State Alaska

General locality Aleutian Islands

Locality Rat Island and Vicinity

Scale 1:20,000 Date of survey 3 July to 20 Sept. 1948

Instructions dated 3 February 1938; Supplemental Instructions dated 10 February 1948

Vessel EXPLORER

Chief of party F.B.T. Siems

Surveyed by R.R. Moore, R.L.Pfau, G.C. Mast and P. Taylor

Soundings taken by fathometer, graphic recorder, ~~hand lead, wire~~

Fathograms scaled by

Fathograms checked by

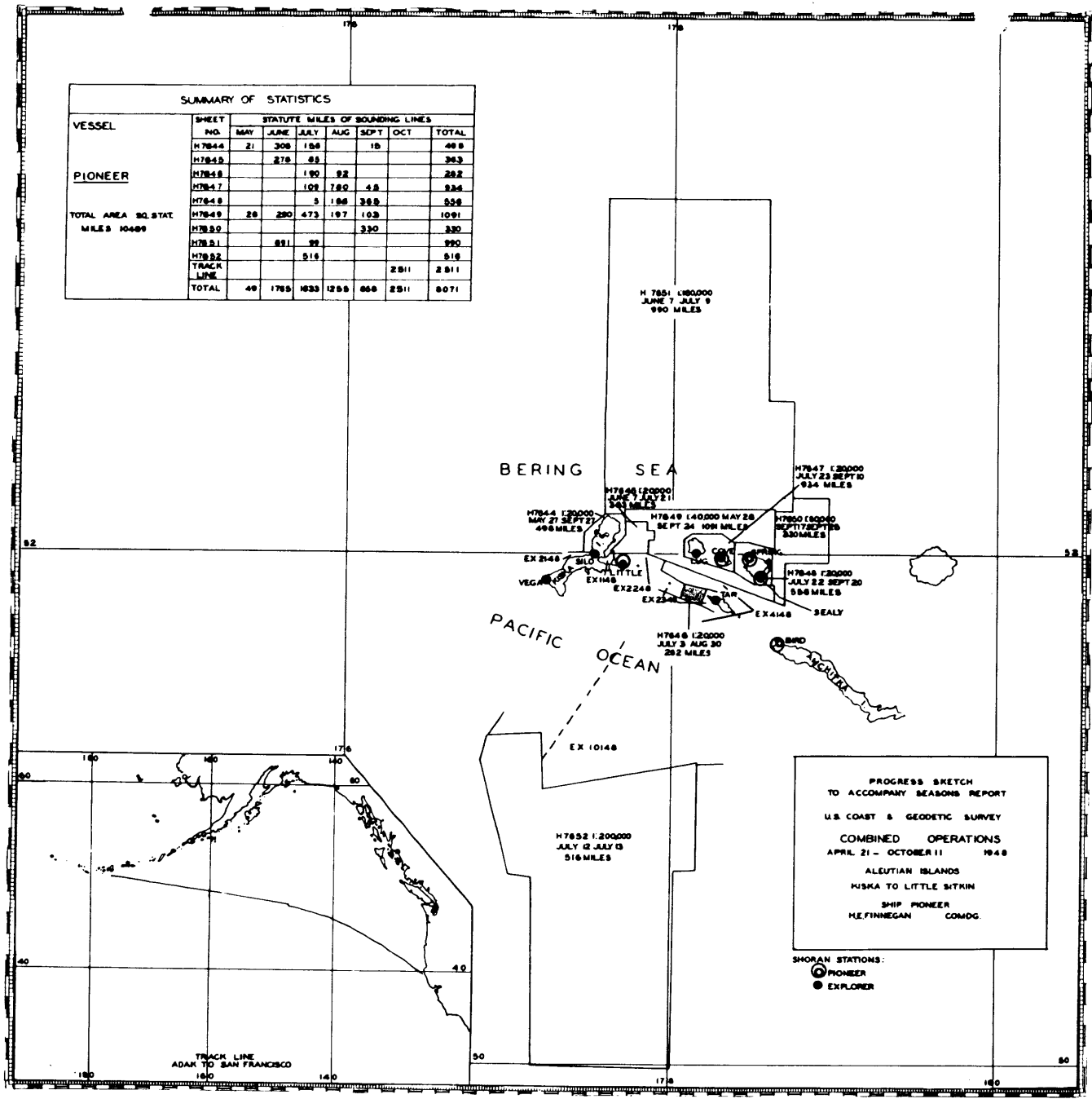
Protracted by L. W. Eason

Soundings penciled by James R. Wheeler

Soundings in fathoms ~~xxxx~~ at ~~XXXX~~ MLLW

REMARKS:

SUMMARY OF STATISTICS								
VESSEL	SHEET NO.	STATUTE MILES OF SOUNDING LINES						
		MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
PIONEER	H7844	21	308	188		18		488
	H7845		278	88				366
	H7846		190	92				282
	H7847		109	780	48			936
	H7848		5	188	388			581
	H7849	28	280	473	197	103		1091
	H7850					330		330
	H7851		881	92				990
	H7852			916				916
	TRACK LINE						2811	2811
TOTAL	49	1789	1833	1288	868	2811	8071	



PROGRESS SKETCH
 TO ACCOMPANY SEASONS REPORT
 U.S. COAST & GEODETIC SURVEY
 COMBINED OPERATIONS
 APRIL 21 - OCTOBER 11 1948
 ALEUTIAN ISLANDS
 KUSKA TO LITTLE BITKIN
 SHIP PIONEER
 M.E. FINNEGAN COMDG.

SHORAN STATIONS:
 ○ PIONEER
 ● EXPLORER

TRACK LINE
 ADAK TO SAN FRANCISCO

H-7646 (PI-2348)

DESCRIPTIVE REPORT

to accompany

7646

HYDROGRAPHIC SURVEY H _____

Field No. EX-2348

Rat Island and Reef west of Rat Island.

1948

Scale 1:20,000

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

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

A. PROJECT:

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

B. SURVEY LIMITS AND DATES:

This survey covers the reef between Tanadak Island and Rat Island between the 12.4 mile circle and the 17 mile circle from Shoran Station LITTLE, and the inshore work on the north and south sides of Rat Island.

The survey makes a junction with Sheet ^{(H7710(1948))} EX-4148 on the north and south, on the west with Sheet ^{(H 7708(1948))} EX-2248, and with Sheet PI-2348 on the 17 and 23 mile circles from shoran station LITTLE. *Combined with present survey*

Hydrography was executed during the period 3 July to 20 September 1948. Work was carried on in conjunction with other surveys in the area.

C. VESSELS AND EQUIPMENT:

Most of the hydrography was executed by launch No. 3. A small amount was done with the ship and launch No. 2.

The ship executed the offshore work on the northeast end of Rat Island. Launch No. 2 worked an area inshore on the south side of Rat Island where shoran control was blocked. Launch No. 3 accomplished all other hydrography.

The ship sounded at a speed of approximately 8 knots, the turning radius at this speed was approximately 200 and 280 meters to port and starboard respectively.

Launches No. 2 and 3 both operated from the ship.

Compasses:

The ship was coned on all hydrography using the gyro compass. This compass had a constant 2° W. error. Launch No. 2 used a boat compass to run the lines. Launch No. 3 used distance circles from shoran stations for all hydrography.

Sounding Equipment:

The ship and launches used the 808-fathometer for all soundings on this survey.

D. TIDE AND CURRENT STATIONS:

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

No time or height corrections were applied.

No current stations were occupied.

E. SMOOTH SHEET:

Function of processing office.

F. CONTROL STATIONS:

Datum, North American 1927, local triangulation 1935, 1945 and 1948. Signal ~~Tra~~ ^{gadok} was located by the three point method. (See Vol. 1 for list)

There is no topographic control.

G. SHORELINE AND TOPOGRAPHY:

~~Shoreline was traced from aerial photographs without a radial plot, and is not adequate for charting. No planetable survey was made.~~
& Topography¹⁵ from T-8590 and T-8591 of 1948.

The shore has steep bluffs and is fringed with reefs and off-lying rocks, making it impossible to identify the low water line with soundings.

H. SOUNDINGS:

All soundings were taken by the echo method and recording fathometers. Soundings are reduced in the usual manner.

I. CONTROL OF HYDROGRAPHY:

All control was by shoran distances except the work executed by Launch No. 2 which used visual fixes.

Launch No. 2 worked on a small inshore area on the south side of Rat Island.

No adjustment of the horizontal control was necessary.

This is the first sheet this ship has done using shoran control on a launch for inshore hydrography. The results are gratifying and believed to be as accurate as three point visual fixes as long as the shoran is not blocked by intervening objects.

Fath. corr. and Pioneer Shoran "Zero" settings filed with H-7645

J. ADEQUACY OF SURVEY:

This survey is complete and adequate to supersede prior surveys for charting.

Junctions with adjoining surveys are satisfactory, depth curves can be adequately drawn. No holidays or excessive differences exist between adjoining sheets.

K. CROSSLINES:

Cross lines are in close agreement with other soundings.

L. COMPARISON WITH PRIOR SURVEYS:

No prior surveys of this area have been made by this Bureau.

M. COMPARISON WITH CHART:

Comparison with charts 9155, dated 17 February 1947 and 8864, dated 1 September 1947, shows:

1. That the reef is displaced about 0.3 mile to the south and 0.7 mile to the west, near the western edge of Krysi Pass. *Differences in location of reef caused by poor control of prior surveys. (see TP 5 of Review)*

*13.1m
5.0m
8.0m*

2. The passage $2\frac{1}{2}$ miles east southeast of Sea Lion Rock through Krysi Pass shows a least depth of 29 fathoms, this survey shows a least depth of ~~24~~ ²¹ fathoms in Lat. $51^{\circ}52.0'N$. Long. $178^{\circ}02.3'E$. Depths from ~~17~~ ¹⁶ to ~~20~~ ²¹ fathoms are scattered over the passage.

3. The ~~2~~ ² fathom sounding in Lat. $51^{\circ}52.4'N$. Long. $178^{\circ}01.7'E$ marks the western limit of Krysi Passage, The eastern limit is shown on sheet PI-2348. In general, heavy kelp grows along the axis of the reef inside the 20 fathom curve. At maximum current very little of this is visible, but at slack water a small launch has difficulty getting through.

4. The 20 fathom curve is 0.6 mile east of Sea Lion Rock on the chart, the survey shows it runs 2.0 miles east. *Caused by poor control of prior surveys.*

Both these charts are small scale and show few details. However the charts are in general agreement with the survey.

N. DANGERS AND SHOALS:

The following shoals were found.

Depth Fms.	Lat.	Long.	Vessel	Pos.	Vol. ^[Depth after verification]
1. - 3.1	51°52.40'N	178°01.70'E	Launch # 3	25a	1 - 3 ¹ (2 ⁶ fm, 160 m NW)
2. - 13.0	51°52.8'N	178°02.33'E	"	54d	2 - 13
3. - 3.1	51°49.16'N	178°11.50'E	"	14m	5 - 3 ¹
4. - 16.6	51°47.62'N	178°13.8'E	"	5j	4 - 16
5. - 16.7	51°46.8'N	178°13.92'E	"	6p	6 - 16
6. - 14.2	51°45.4'N	178°15.8'E	"	134q	6 - 14
7. - 16.2	51°45.10'N	178°16.12'E	"	179q	7 - 16
8. - 5.9	51°45.7'N	178°16.8'E	"	182q	7 - 9 ²

The above depths are all shoaler than the charted soundings.

All charted dangers, shoals and bare rocks were found as charted or shoaler depths were found.

O. COAST PILOT INFORMATION:

All coast pilot information was furnished in the Coast Pilot Notes.

P. AIDS TO NAVIGATION:

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

Q. LANDMARKS FOR CHARTS:

None.

R. GEOGRAPHIC NAMES:

No new names are submitted.

Respectfully submitted,

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

Approved and forwarded.

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

FINAL CORRECTIONS

DRAFT & INITIAL

SHEET EX-2348

VESSEL	DATE 1948	DAY LETTER	POSITION	808 # 50 FMS.
Launch # 3	7-3	a	All day	0.00
"	7-13	b	1-10	0.0
			10-30	-0.2
			30-43	-0.4
			44-54	0.0
			54-67	+0.2
"	7-27	c	1-57	0.0
			58-59	-0.2
			60-79	+0.2
"	7-29	d	1-9	-0.2
			10-28	-0.4
			28-63	-0.6
			64-72	0.0
			73-103	+0.2
			104-122	0.0
			123-133	-0.2
			133-147	0.0
			147-172	+0.2
			173-181	0.0
			182-185	-0.2
			185-198	+0.2
"	8-13	e	All day	0.0
"	8-16	f	1-42	0.0
			42-173	+0.2
"	8-20	g	All day	0.0
"	8-23	h	1-83	0.0
			83-89	+0.2
			89-91	0.0
"	8-25	j	All day	0.0
"	9-1	k	1-73	0.0
			73-100	-0.2
			100-116	-0.4
			116-151	0.0
"	9-2	l	1-10	0.0
			10-30	+1.0
			30-50	0.0
			50-67	-0.2
			67-110	0.0
			110-124	-0.2
			124-155	0.0
			155-214	+0.2
			214-232	0.0
			232-240	+0.2
"	9-3	m	All day	0.0
"	9-4	n	1-11	0.0
			11-80	+0.2
			80-103	0.0
			103-143	-0.2
"	9-7	p	All day	0.0

VESSEL	DATE 1948	DAY LETTER	POSITION	808 # 50 FMS.
Launch No. 3	9-8	q	All day	0.0
"	9-9	r	All day	0.0
"	9-16	s	1-15	0.0
			15-47	+0.2
			47-113	0.0
"	9-20	t	1-26	0.0
			26-136	+0.2
				808 # 49
Launch No. 2	9-20	a	All day	+0.2
				808 # 60
EXPLORER	9-18	A	All day	+0.08

~~Pioneer~~

Explorer, 1948

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 parenthesis 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
Paul Taylor
Lt. Comdr. USN

USCGSS EXPLORER
 SHORAN ZERO SETTINGS
 Season of 1948

Shore Sets	Ship Set No. 5	Ship Set No. 1	Launch Set No. 5
# 1 Little		99.816 (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) (PLUG) (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 1948 calibration

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

STATISTICS FOR HYDROGRAPHIC SURVEY H

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Field No. EX-2348

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

VESSEL	DATE 1948	DAY LETTER	VOLUME	STAT.MI.	POSITION	AREA SQ. STAT.MI.
Launch No.3	7-3	a	1	31.8	105	
"	7-13	b	1	21.2	67	
"	7-27	c	1 & 2	26.8	79	
"	7-29	d	2	47.7	198	
"	8-13	e	2	1.7	8	
"	8-16	f	2 & 3	38.8	173	
"	8-20	g	3	9.7	44	
"	8-23	h	3	20.5	91	
"	8-25	j	4	9.7	45	
"	9-1	k	4	34.9	151	
"	9-2	l	4 & 5	51.0	243	
"	9-3	m	5	27.2	124	
"	9-4	n	5 & 6	31.0	143	
"	9-7	p	6	16.1	72	
"	9-8	q	6 & 7	63.7	268	
"	9-9	r	7	17.2	69	
"	9-16	s	7	23.8	113	
"	9-20	t	8	29.9	136	
Sub total				502.7	2129	
EXPLORER	9-18	A	10	24.1	80	
Launch #2	9-20	a	9	15.3	93	
Total				542.1	2302	61.5

H 7646 (Pi 2346)
 Ship PIONEER
 Statistics

Date	Day	Vol.	Vessel	Positions	Stat.Mi.
1949					
7/3	a	11 & 12	Lch.#3	171	59.2
7/14	b	12	"	38	17.2
7/19	c	12	"	103	42.1
7/29	d	13	"	80	37.2
7/30	e	11	"	104	39.6
8/13	f	12 & 15	"	268	65.7
8/16	g	13	"	107	16.0
8/30	h	15	"	55	9.9
				926	286.9
	Totals				

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TIDAL NOTES

(Explorer, 1948)

H-7646
Soundings on Hydrographic Survey (EX-2348) were reduced from tide data obtained from portable automatic tide gage operated in Gertrude Cove, Kiska Island, Lat. $51^{\circ}56.2'N$, Long. $177^{\circ}27.5'E$. Mean lower low water on the staff was 4.4 feet. No time or height corrections were applied.

Time meridian for operation of the gage was 165° west from 7 May to 7 July, and 180° west from 7 July to 27 September 1948.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. 7646

Field No. PI-2348

State Aleutian Islands

General locality Rat Islands

Locality Krysi Pass to Rat Islands

Scale 1:20,000 Date of survey 3 July - 30 Aug. 1948

Instructions dated 3 February 1938, 1 March 1938, 10 February 1948, 8 Apr. 1948

Vessel Ship PIONEER

Chief of party H. E. Finnegan

Surveyed by E. B. Lewey & C. J. Beyma

Soundings taken by fathometer, graphic recorder, hand lead, ~~etc~~

Fathograms scaled by H.W.K., D.G.R., J.P.O., E.A.C.

Fathograms checked by S.D.P.

Protracted by L. W. Eason

Soundings penciled by J. R. Wheeler

Soundings in fathoms ~~feet~~ at MLW ~~MLLW~~

REMARKS:

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY

H-7646 (Field PI-2348)

Krysi Pass Rat Islands

Project CS-218 Season of 1948

Ship PIONEER H.E. Finnegan, Chief of Party

Scale 1:20,000

Surveyed by: E.B. Lewey
C.J. Beyma

A. PROJECT:

The work was done in accordance with the following Instructions for Project CS-218:

Original Instructions dated 3 February 1938.
Amended Instructions dated 1 March 1938.
Supplemental Instructions dated 10 February 1948.
Supplemental Instructions dated 8 April 1948.

B. SURVEY LIMITS AND DATES:

The general locality is the Aleutian Islands. This survey covers an area 3.3 miles wide from Krysi Pass to Rat Island, the approximate center of which is Lat. 51-51.0 and Long. 178-08.0 E. The Commanding Officer of the EXPLORER requested that the Ship PIONEER aid in the execution of the survey of the reef west of Rat Island. The extent of the survey to the westward was confined by limits set by the Commanding Officer of the EXPLORER, i.e., the 17 mile arc from Station LITTLE, or the eastern edge of Krysi Pass.

Junctions are made with ^{H-7646 (Explorers work)} EX-2348 on the east and west, and with EX-4148 ^{H-7710 (1948)} on the north and south.

Field work began on 3 July 1948 and ended 30 August 1948.

C. VESSELS AND EQUIPMENT:

The hydrography was done by Launch #3 operating from the ship. Fathometer 808-J No. 129-S was used for all soundings on this survey.

D. TIDE AND CURRENT STATIONS:

Tide reducers were obtained from the tide gage at Gertrude Cove, Kiska Island. No time or range corrections were applied.

A tidal note is included with this report.

No current stations were occupied. An attempt was made to find suitable anchoring depths for observing currents in Krysi Pass. However, the bottom here was too deep and irregular to risk the ship's anchor gear.

From observations while sounding in this area, the general direction of the flood current is approximately 40 T. and the time agrees fairly well with the Current Tables. There are heavy tide rips at the strength of the current, particularly in the vicinity of the shoaler water. Usually, the rips are worse on the lee side of the shoals, i.e., lee side of the shoals in regards to direction of current.

E. SMOOTH SHEET:

It is suggested that this survey and the EXPLORER survey (EX-2348) be plotted on the same smooth sheet. The area covered by this survey is completely within the limits of EX-2348. ^{(PI. 2348) H-7646} ^{H-7646}

F. CONTROL STATIONS:

Only two stations were used to control this survey, both were Shoran Stations. LITTLE was placed directly over Triangulation Station LITTLE, 1904. SPRING was located as described in "REPORT TO ACCOMPANY TRIANGULATION PROGRESS SKETCHES", Ship PIONEER, 1948. Both stations are on the NA 1927 datum.

Distance circles from TAR and GULL were drawn on the sheet, but neither was used for this survey.

H. SOUNDINGS:

Soundings were obtained by the 808-J fathometer No. 129-S, all were scanned from the graphs and then verified. Fathometer and Velocity corrections were applied. They were determined as described in the report "REPORT ON FATHOMETER AND VELOCITY CORRECTIONS", Ship PIONEER 1948. ^{See H-7645}

I. CONTROL OF HYDROGRAPHY:

All hydrography on this survey was controlled by Shoran.

Shoran was used in another way on this survey, it was used to space the sounding lines and to keep the launch on line. Arcs from Station LITTLE were used for these purposes. This method of spacing lines and controlling the launch proved quite satisfactory and saved much time, particularly in running splits.

J. ADEQUACY OF SURVEY:

This survey is considered to be complete and adequate to supersede prior surveys for charting.

K. CROSS LINES:

No cross lines were run on this sheet.

L. COMPARISON WITH PRIOR SURVEYS:

There are no detailed prior surveys of this area.

See TPJ of Review

M. COMPARISON WITH CHARTS:

Chart # 9155 (May 1944):

The sunken rock (PA reported 1942) charted in Lat. 51-52.0 and Long 178-05.0 E. is obviously an error and should be deleted. General depths here are 46 to 50 fms. It is probable that the report originated from observations on the 4-fm. shoal about 3/4 miles southwestward, or that heavy tide rips extended northeastward from the shoal to the vicinity of the reported rock.

See TP6 of Review.

Charted 7 fm. sounding in Lat. 51-50.4 and Long. 178-08.8 E. is out of position. A 4 fm. spot lies 500 meters northwest of the charted 7 fm. sounding. It is recommended that the 7 fm. sounding be deleted.

See TP6 of Review

A 4-fm. spot in Lat. 51-51.4 and Long. 178-04.2 E. and a 8 fm. spot in Lat. 51-50.4 and Long. 178-03.7 E. are not indicated on the chart. These spots make Krysi Pass, as it is now charted, dangerous to navigation.

Shown on Chrt 9155 of 1-6-51

The discrepancies listed above are the important differences between this survey and Chart # 9155. It is doubtful that sufficient control was available for locating the charted soundings, and it is suggested that this survey supersede the Chart within the area covered by this sheet.

N. DANGERS AND SHOALS:

See letters to the Director dated 20 August and 27 October 1948, subject, "Dangers to Navigation", copies of which are included with this report.

U. VELOCITY CORRECTIONS:

Abstracts of Velocity Corrections and Phase Corrections for the depth recorder used on this survey are included with this report.

For the determination of this data see the special report "REPORT ON FATHOMETER AND VELOCITY CORRECTIONS", Ship PIONEER, 1948.

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V. SHORAN CORRECTIONS:

An abstract of Shoran Zero Settings is included with this report. For determination of these values see the special report "REPORT ON DETERMINATION OF SHORAN ZERO SETTINGS" for 1948 records. *H-7645*

W. REDUCERS:

Velocity corrections were entered as follows:

- 0.1 fm. units to 31 fm. depth.
- 0.2 fm. units to 101 fm. depth.

Tide reducers were entered as follows:

- 0.1 fm. units to 31 fm. depths.
- 0.2 fm. units to 800 fm. depths.

X. PASSAGE:

A clear passage about 0.5 miles in width and with a minimum depth of ²⁴26 fms. exists between the Pacific Ocean and the Bering Sea in the vicinity of this survey. Approximate center of the passage is in Lat. 51-50.5 and Long. 178-06.5 E. However, this passage lies about 0.5 miles northwest of a dangerous ^{1/2}1/2 fm. spot and its use would be hazardous, unless clearly marked by buoys. Its use is not recommended, since Sea Lion Pass lies 8 miles to the west-north-westward and is easier to navigate because of the proximity of Sea Lion Rock for bearings.

Y. MISCELLANEOUS:

The following data are included with this report:

1. Title Sheet
2. Index of Sheets
3. Tidal Note
4. List of Stations
5. Letters to the Director dated 20 August and 27 October 1948, subject; "Dangers to Navigation".
6. Velocity Corrections
7. Phase Corrections Launch # 3
8. Shoran Zero Settings
9. Abstract of Statistics.

Submitted by:

Ernest B. Lewey
Ernest B. Lewey
Lieut.-Comdr., USC&GS

Approved and Forwarded:

Henry E. Finnegan
Henry E. Finnegan
Comdr., USC&GS
Comdg. Ship PIONEER

LIST OF STATIONS ON H-7646 - 1948

<u>Name used in Hydro - Station</u>	<u>Origin of Station</u>
LITTLE	Little - 1904
SPRING	Spring - 1948

Shoran Stations only used.
Station TAR distances were
taken to check the location
of the station, but TAR was
not used for any hydrography
on this sheet.

*For Pioneer's
Work only.
See Smith Sheet
Note for Shoran
Stations used on
H-7646.*

Ship PIONEER, M. O. B., Adak, Alaska

20 August 1948

To: The Director
U.S. Coast & Geodetic Survey
Washington 25, D. C.

Subject: Dangers to Navigation

From preliminary survey of Kryai Pass, Rat Islands, Alaska,
the following shoals and dangers to navigation are reported:

Depth (fathoms)	Latitude (North)	N. A. Datum-1927		Dist. N. Mi.	Bearing True	Reference
		Longitude (East)				
4.0 ⁶	51-51.44	178-04.24		3.56	114.0 ^{115.0}	Sea Lion Rock 9 (51-52.89N., 177-59.06E.)
8.0 ¹²	51-50.49 ³	178-03.79 ⁸⁰		3.77	129.3	" " "
9.0 ^{8.7}	51-51.00	178-04.88		4.10	117.3	" " "
4.0 ^{1.9}	51-50.08	178-06.84 ⁵		5.64	120.0	" " "
9.0 ^{7.2}	51-50.54 ⁵	178-08.54 ⁵		6.38	111.4	" " "
6.0 ^{5.9}	51-50.37	178-09.60		7.05	112.0 ^{111.0}	" " " (54 & N)
6.0 ^{5.9}	51-50.16	178-10.06		7.40	110.0 ^{112.0}	" " "
5.0 ^{1.8}	51-50.12	178-11.50 ⁴		8.24	110.0	" " "

Henry E. Finnegan
Commanding Ship PIONEER

Ship PICKER
 P. O. Box 2039
 Oakland, California

27 October 1948

To: The DIRECTOR
 U. S. Coast and Geodetic Survey
 Washington 25, D.C.

Subject: Dangers to Navigation

In addition to dangers reported in letter of 20 August 1948, the following principal dangers and shoals are reported. They were discovered by the past season's surveys in the Rat Islands, Aleutian Island Project CS - 218.

Depth (fathoms)	Latitude (North)	Longitude (East)	N. A. Datum - 1927		Reference landmark and Remarks
			Dist. (N.M.)	Bearing (True)	
3.0	51-59.55	178-17.55	0.35	38	N. end Khvostof Island
6.5	51-58.98	178-19.46	0.87	18	N. end Pyramid Island
2.5	51-58.80	178-18.90	0.63	353	N. end Pyramid Island
9.0	51-58.11	178-22.42	0.35	40	E. end Davidof Island
4.2	51-58.68	178-15.60	0.33	228	W. end Khvostof Island
Rock Anast	51-58.80	178-26.72	0.13	322	Tip of peninsula, S. of William Cove, N.W. side of Little Sitkin Island. (See Chart 5214 5824)
11.0	52-00.47	178-29.69	0.80	344	Islet, N.E. of Williams Cove, N. end Little Sitkin Island.
2.5	52-03.70	177-52.30	7.60	26	Center Tanadak Island. (Shal- est spot McArthur Reef.)
3.0	52-04.42	177-30.82	1.63	23	Witchcraft Point

Not applicable to H-7646

N.A. Datum - 1927

<u>Depth</u> <u>(fathoms)</u>	<u>Latitude</u> <u>(North)</u>	<u>Longitude</u> <u>(East)</u>	<u>Dist.</u> <u>(N.Mi.)</u>	<u>Bearing</u> <u>(True)</u>	<u>Reference landmark</u> <u>and Remarks</u>
2.0	52-04.30	177-29-76	1.80	00	Witchcraft Point. (Shoalest depth obtained in extensive shoal area extending approx. 2 miles NNW of Witchcraft Pt. Very thick kelp and tide rips in this area.
6.0	52-00.52	177-27.83	2.68	206	Witchcraft Point
6.8			0.10	180	Above 6 fm. spot
10.0	52-01.00	177-29.05	1.96	194	Witchcraft Point
6.0	52-01.10	177-29.52	1.81	185	Witchcraft Point
2.0	52-00.10	177-36.12	2.08	321	Little Kiaka Head

Not applicable to H-7646

From further investigation in the eastern part of the pass between Sea Lion Rock and Rat Island, the following dangers are reported:

^{1.9} 2.0	51-50.32	178-06.85	5.62	119.7	Sea Lion Rock
^{0.15} 6.8	51-50.80	178-11.75	8.41	109.5	Sea Lion Rock

The following charts are affected:

9124, 9155, 9180, 8864, 9102.

Henry E. Finnegan
Commanding Ship PIONEER
By George A. Nelson
Executive Officer

Pioneer

VELOCITY CORRECTIONS 1948

808 Fath. Ship & Launches

NMC and NMC-2 Fathometers

Corr'n to 0.1 fms.

Corr'n to 0.1 fms.

Corr'n Fms.	Depth-Fms.
0.0	0 to 3.4
-0.1	3.5 8.3
-0.2	8.4 12.4
-0.3	12.5 16.6
-0.4	16.7 20.9
-0.5	21.0 24.5
-0.6	24.6 29.0
-0.7	29.1 32.7

Corr'n Fms.	Depth-Fms.
0.0	0 to 77.0

Corr'n to 0.2 fms.

Corr'n Fms.	Depth-Fms.
0.0	0 to 182.0
+0.2	182.1 220.0

Corr'n to 0.2 fms.

Corr'n to 0.5 fms.

Corr'n Fms.	Depth-Fms.
0.0	0 to 6.0
-0.2	6.1 14.9
-0.4	15.0 22.7
-0.6	22.8 31.0
-0.8	31.1 38.6
-1.0	38.7 46.3
-1.2	46.4 54.3
-1.4	54.4 61.8
-1.6	61.9 69.6
-1.8	69.7 77.0
-2.0	77.1 85.0
-2.2	85.1 93.1
-2.4	93.2 100.7
-2.6	100.8 109.0

Corr'n Fms.	Depth-Fms.
0.0	0 to 210
+0.5	211 330
+1.0	331 410
+1.5	411 480
+2.0	481 540
+2.5	541 600
+3.0	601 650
+3.5	651 690
+4.0	691 730
+4.5	731 765
+5.0	766 797
+5.5	798 830

Corr'n to 0.5 fms.

Corr'n Fms.	Depth-Fms.
0.0	0 to 12.3
-0.5	12.4 32.9
-1.0	33.0 52.0
-1.5	52.1 71.4
-2.0	71.5 91.3
-2.5	91.4 111.9
-3.0	111.0 132.0
-3.5	132.1 154.9
-4.0	155.0 179.2

PHASE CORRECTIONS - LAUNCH # 3

Ship PIONEER Season of 1948

<u>FATHOMETER</u>	<u>SCALE</u>	<u>CORRECTION</u>	<u>DATES</u>
808 A # S-69	B	- 0.2 fms.	All Season
	C	- 0.2 fms.	All Season
	D	- 0.2 fms.	All Season
<hr/>			
808 J # S-129	B	- 1.0 fms.	21 June to
	C	- 1.0 fms.	25 August
	D	- 1.0 fms.	Inclusive
808 J # S-129	B	- 1.3 fms.	26 August to
	C	- 1.3 fms.	31 August
	D	- 1.3 fms.	Inclusive
808 J # S-129	B	- 1.7 fms.	1 Sept. to
	C	- 1.7 fms.	27 Sept.
	D	- 1.7 fms.	Inclusive

SHORAN ZERO SETTINGS
for
Season of 1948

SHORE SETS	SHIP SETS			
	PIONEER			EXPLORER
	Ship Set # 3	Launch Set # 4	Ship Set # 5	Ship Set # 1
# 1 Little	99.814	99.820	99.810	99.816
# 2 Silo & Tar	(99.834)	(99.837)	99.842	99.839
# 3 Spring	99.808	99.817	99.807	99.822
# 4 Vega	(a)(99.781) (99.805)	(a)(99.784) (99.803)	(a)(99.780) (99.804)	(a) 99.786 99.810
# 5 Lug	(99.824)	(99.827)	(99.823)	(b) 99.829
# 6 Bird & Cove	99.813	(*)99.786 99.805	(*)99.794 99.803	99.811

NOTES: PIONEER Values in Parenthesis are from comparison with EXPLORERS Values. (See Report)
All other PIONEER Values are from Accepted Means of 1947 & 1948 Oakland Tests and 1948 Field Tests.
(a) Use only on Vega to eastward of bearings 54°T to 130°T.
(b) From 1946 Calibrations
(* Use only when Shore Set is the Drift Station (Freq. 250 mag. cycles).

STATISTICS FOR HYDROGRAPHIC SURVEY H-7646 1948

Ship PIONEER Project CS - 218

<u>Day</u>	<u>Vol. No.</u>	<u>Date</u>	<u>No. Positions</u>	<u>No. St. Mi.</u>
a	1&2	3 July	171	59.2
b	2	14 July	38	17.2
c	2	19 July	103	42.1
d	3	29 July	80	37.2
e	1	30 July	104	39.6
f	2,4&5	13 Aug.	268	65.7
g	3	16 Aug.	107	16.0
h	5	30 Aug.	52	9.9

SHEET TOTALS: No. of Positions..... 923
Statue Miles..... 286.9
Square Statue Miles..... 24.0

copy by DGR

MEMORANDUM TO SEATTLE PROCESSING OFFICE LISTING OFFICE WORK
ON SURVEY H-7646 (PI-2348)

Office work done by personnel of Ship PIONEER:

1. Fathograms scanned and verified.
2. Tidal Reducers entered and checked.
3. Velocity Corrections entered and checked.
4. Initial Corrections entered and checked.
5. Phase Corrections entered and checked.
6. Shoran Corrections entered and checked.
7. Shoran Distances corrected and checked.
8. Hydrographic Title Sheet (Form 537) (partially complete).
9. Descriptive Report.
10. Following data submitted to accompany final Descriptive Report:
 - a. Index of Sheet.
 - b. Tide Note.
 - c. List of Stations.
 - d. Copies of Letters to Director, "Dangers to Navigation".
 - e. Abstract of Velocity Corrections.
 - f. Abstract of Phase Corrections for fathometer.
 - g. Abstract of Shoran Zero Settings.
 - h. Abstract of Statistics.
 - i. Approval Sheet by Chief of Party.

Office work remaining to be done by Processing Office:

1. Reduction and checking of soundings in Sounding Records.
2. Construction and inking of smooth-sheet projection, the plotting and inking of control stations, and the drawing of Shoran Distance Circles.
3. Plotting the positions, Visual and Shoran.
4. Penciling the soundings.
5. Drawing the depth curves in pencil.
6. Completion of the Title Sheet (Form 537).
7. Additions to Descriptive Report (if required).

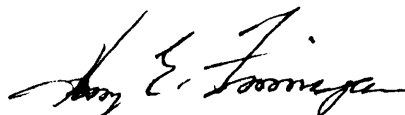
APPROVAL SHEET TO ACCOMPANY

SURVEY H-7646 (Field No. PI-2348)

The field work was supervised closely and the boat sheet was inspected daily.

The records have been inspected and approved.

The survey is complete and considered adequate.



Henry E. Finnegan
Comdr. USC&GS
Comdg. Ship PIONEER

4 March 1949.

TIDE NOTE

Project CS - 218

Ship PIONEER

Field Season of 1948

The tide gage at Gortrude Cove, Kiska Island, Aleutian Islands, Alaska, Latitude $51^{\circ}56.2'$ North and Longitude $177^{\circ}27.5'$ East was used for the reduction of all soundings.

A height of 4.4 feet on the tide staff corresponds to mean lower low water (The Director's letter, 36-tmo, dated 31 August 1948 to the Commanding Officer, Ship EXPLORER). No corrections for differences in time or height were applied to the observed tides.

Hourly heights were obtained from the Ship EXPLORER, except for the following periods: August 25-31 and September 24-27, which were obtained from the Washington Office.

Explorer, 1948

TIDE NOTE FOR HYDROGRAPHIC SHEET

31 October 1949

~~Division of Hydrography and Topography~~

Division of Charts: R. H. Carstens

Plane of reference approved in
15 volumes of sounding records for

HYDROGRAPHIC SHEET 7646

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. M. Kay
Section
Chief, ~~Division of Tides and Currents~~

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. ⁷⁷⁴⁶ ~~H-7732~~

Field No. ~~EX 1249~~

State Alaska

General locality Aleutian Islands

Locality Rat Island, Gunners Cove

Scale 1:10,000 Date of survey 21 July 1949

Instructions dated 3 Feb. 1938 to 11 April 1949

Vessel EXPLORER Launch No. 2

Chief of party H. Arnold Karo

Surveyed by J. S. Morton

Soundings taken by ~~fathometer~~ graphic recorder, hand lead, wire

Protracted by G. W. Moore

Soundings penciled by G. W. Moore

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

REMARKS:

DESCRIPTIVE REPORT

HYDROGRAPHIC SURVEY H-⁷⁷⁴⁶7732 (Field No. EX-1249)

Aleutian Islands, Rat Island, Gunners Cove - 1949

Scale: 1:10,000

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

H. Arnold Karo, Commanding

Surveyed by J.S. Morton

A. PROJECT

Project CS-218 Instructions dated 3 February 1938 and Supplemental Instructions through 11 April 1949.

B. SURVEY LIMITS AND DATA

This survey consists of a large scale development of Gunners Cove on the north side of Rat Island. The original survey H-7646 at a scale of 1:20,000 was made by the EXPLORER in 1948. Field work was done 21 July 1949.

C. VESSELS AND EQUIPMENT

EXPLORER Launch No. 2 equipped with sonic depth recorder No. 49-J was used. The launch was operated at full speed and the turning radius may be assumed to be 15 meters.

D. TIDE AND CURRENT STATIONS

Tides are referred to the tide gage at Constantine Harbor. It was not found necessary to apply time or range corrections.

E. SMOOTH SHEET

The projection was made in Washington on the projection ruling machine. The shoreline and signals were transferred from Special Shoreline Manuscript T-8590A. *Revised to agree with T-8590 (1948)*

F. CONTROL STATIONS

Triangulation station COVE 1949 was established for use in conjunction with NAU, USN 1935 to control the photographic plot.

Topographic signals are from Special Shoreline Manuscript T-8590-2 (948)

It was unnecessary to establish hydrographic signals.

G. SHORELINE AND TOPOGRAPHY

The shoreline and topographic details are from ~~Special~~ ^{and T-8591 of 1949} Special Shoreline Manuscript T-8590-2. In four places the hydrographic survey adds topographic details that are not shown upon the manuscript. These details are penciled in on the smooth sheet from information in the hydrographic record book and from sketching on the boat sheet. In compliance with Acting Director's letter 77-rs dated 16 January 1950, subject: Photogrammetric Positions and Shoreline, Rat Island, Alaska, the changes have been indicated upon the lightweight paper copy of the manuscript and that copy has been forwarded to the Washington Office.

The low-water line was not defined by the hydrographer. Abundant kelp and irregular coast line made this impossible.

H. SOUNDINGS

The depths were measured in fathoms with 808 depth recorder and no unusual corrections were applied to the recorded depths.

I. CONTROL OF HYDROGRAPHY

The hydrography was controlled by visual three-point fixes. All the crossings are satisfactory.

J. ADEQUACY OF SURVEY

The survey is complete and adequate for charting. The overlapping hydrography of H-7646 checks very well with the 1949 survey and should be used to supplement the 1949 survey. Because of irregular bottom and coast line it was found inadvisable to delineate the 4- and 6-fathom curve on the smooth sheet.

K. CROSSLINES

The hydrography has about 15 percent crosslines. All crossings are satisfactory.

L. COMPARISON WITH PRIOR SURVEYS

The soundings agree well with those of H-7646.

M. COMPARISON WITH CHART

There are no large-scale charts of this area.

N. DANGERS AND SHOALS

A shoal extends about 0.4 mile northwestward from triangulation station NAU. There is less than a fathom of water near the outer extremity.

O. COAST PILOT INFORMATION

The ship was anchored two times at the anchorage suggested in EXPLORER 1948, U.S. Coast Pilot Notes, page 479.

P. AIDS TO NAVIGATION

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

Q. LANDMARKS FOR CHARTS

There are no recommended landmarks within the limits of this survey.

R. GEOGRAPHIC NAMES

Geographic names penciled upon the smooth sheet are from Chart No. 8864. There are no new ones recommended.


S - Y

There is nothing to report under these headings.

Respectfully submitted,


Glenn W. Moore
Lt. Comdr. USC&GS

Approved and forwarded:


H. Arnold Karo, Comdr. USC&GS
Commanding Ship EXPLORER

STATISTICS FOR HYDROGRAPHIC SURVEY

~~7646~~
H-~~7732~~ (Field EX 1249) EXPLORER CS 218 (1949 work)

Vol. No.	Day	Date	HL - Wire	Positions	Statute Miles
1	a	21 July	0	102	17.5

Area: 1.0 square statute mile

TIDE NOTE

~~7646~~
Hydrographic Survey H-~~7732~~ (Field 1249)

Tide gage at Constantine Harbor, Amchitka Island, Lat. $51^{\circ} 24' .8$ N,
Long. $179^{\circ} 16' .8$ E.

MLLW on tide staff is 2.5 feet.

No corrections for difference in time or height were applied to
observed tides.

APPROVAL SHEET

The boat and smooth sheets and records have been ^{examined} completed and approved.



H. Arnold Kero, Comdr. USC&GS
Commanding Ship EXPLORER

*This sheet has been combined
with H-7646*

Fath Rept filed with H-7735

VELOCITY CORRECTIONS

1949

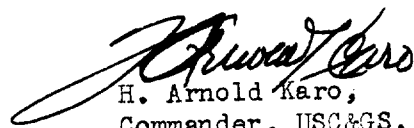
808 Fath. Ship & Launches

<u>Corr'n. fms.</u>	<u>Depth fms.</u>
0.0	0.0 to 4.0
-0.1	4.1 to 8.3
-0.2	8.4 to 12.4
-0.3	12.5 to 17.0
-0.4	17.1 to 20.9
-0.5	21.0 to 24.9
-0.6	25.0 to 28.3
-0.7	28.4 to 32.0
-0.8	32.1 to 35.6
-1.0	35.7 to 43.2
-1.2	43.3 to 51.0
-1.4	51.1 to 59.2
-1.6	59.3 to 67.4
-1.8	67.5 to 75.0
-2.0	75.1 to 83.0
-2.2	83.1 to 90.9
-2.4	91.0 to 98.1
-2.6	98.2 to 105.8
-3.0	105.9 to 124.7
-3.5	124.8 to 146.7
-4.0	146.8 to 170.0
-4.5	170.1 to 196.0

Fath. Rept. filed with H-7735

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.

H 7646
Ex 2348 &
Pi 2348.

Aleutian Islands -- Rat Islands.
Rat Island and Reef to westward of Rat Island.

Processing Office Notes.

Smooth sheet.

The projection is hand made on K & E paper N 124 H. The shore distance circles were controlled by computed points. No shoreline of suitable quality was available for the smooth sheet. *Shoreline added to survey in Wash. Off. from T-8590 and T-8591 of 1948.*

Boatsheets.

The field work was plotted on five boatsheets, one of which was by the PIONEER'S party. One small area of the EXPLORER'S work was made on 1/40 000 scale and replotted on 1/20 000. Another of the EXPLORER'S boatsheets covers the western part of H 7646 (Ex 2348) and the eastern part of H 7708 (EX 2348). The PIONEER'S sounding lines occupy a central position on the smooth sheet H 7646. They are those lines crossing parallel 51 51 between meridians 178 03.4 and 178 12.4.

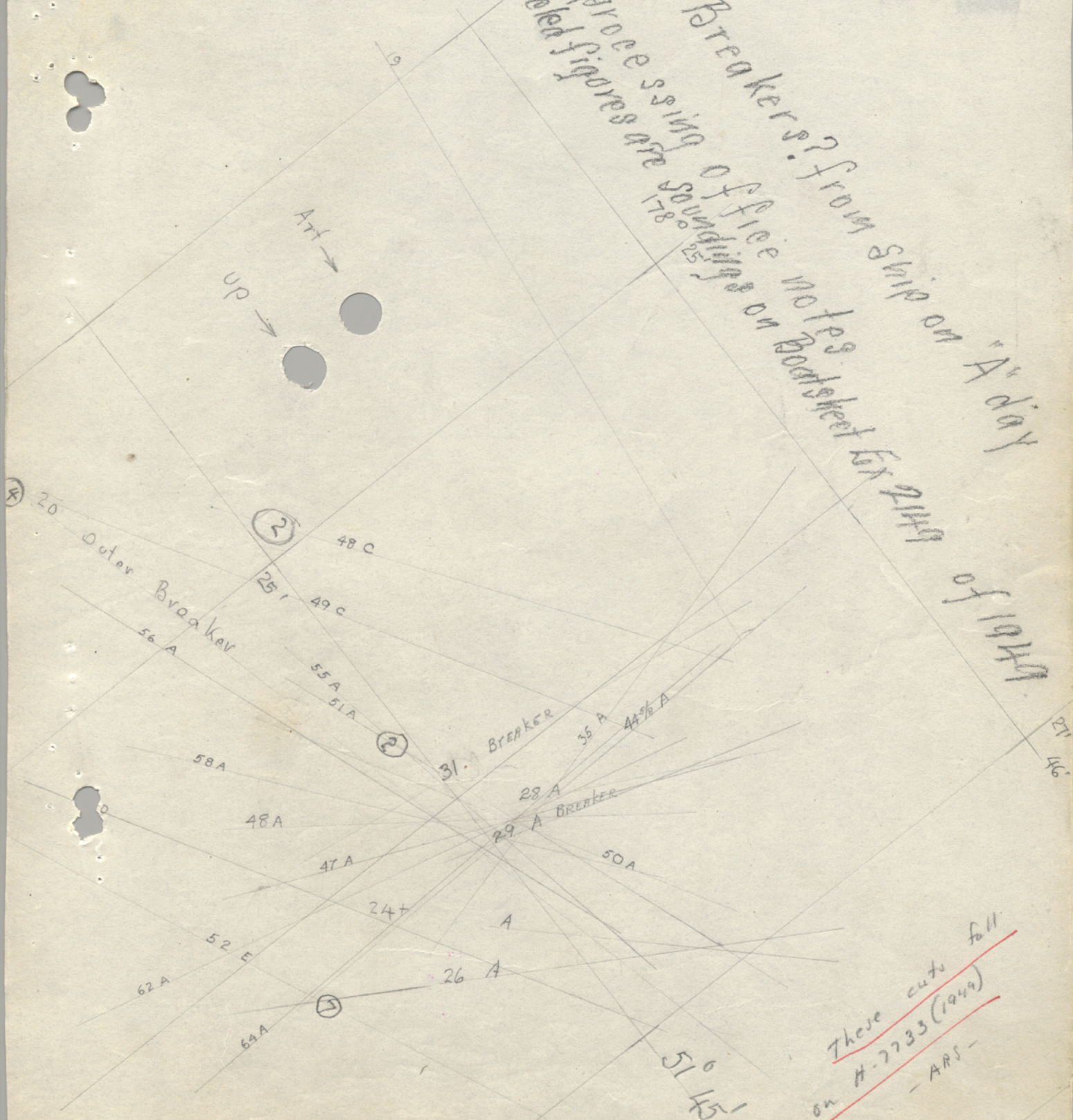
Cuts to breakers off Ayugadak Pt.

On "A" day (Vol.10) numerous cuts were made to breakers in this locality. They were plotted on a tracing paper overlay which is a part of this report. The cuts concentrate chiefly on a small area at Lat. 51 45 Long. 178 26.2. However, we have now seen the boat sheet for Ex 2149 of the 1949 season. This area is on the edge of a bank with depths of six fathoms at the intersections and five fathoms close by. The bank drops off to 20 and 30 fathoms rather steeply. Officers of the Explorer suggest that tide rips and not breakers were seen in this area.

Other cuts on "A" day pass over shoals whose positions and depths are listed on the following page.

*Cuts
fall on
H-7733
(1949).*

Cuts to Breaker? From ship on "A" day
 See processing office notes on Breaker for 1949
 Encircled figures are soundings on Breaker for 1949



These cuts full
on H-7733 (1949)
 -ARS-

Cuts from positions on "A" day.	Passes over or near depth below on sheet Ex 2149 Fathoms	Latitude	Longitude
20 A & 49 A	4	51 44.64	178 24.86
51 A & 55 A	2	44.94	25.71
48 A	2	45.04	24.09
26 A & 52 A	7	44.52	26.28

In view of the question raised as to whether these things seen were breakers or tide rips it is recommended that all cuts to breakers on "A" day shall not be considered until Sheet Ex 2149 is in your hands.

H-7733(1949)

Dangers.

In addition to the dangers listed in the report by the EXPLORER'S party we add the following items which are in the area surveyed by the PIONEER'S party.

Latitude	Longitude	Position	Wathoms	
51 51.40	178 04.23	20 g	4.8*	Vol 13
50.10	06.86	11h	1.9	15
50.57	08.57	159 f	9 ←	14
50.48	09.65	167 a	5.4	12
50.37	09.6	166.8a	5.9	12
50.16	10.05	128 a	5.9	12
50.10	11.50	32.5 a	4.8 ^{8.8}	11

*4.6 of 72-78
Vol-11

changed to 9
for diving test.

changed to 8.8
during verifice.

Development desirable.

There are on the sheet a number of pinnacles and shoal indications revealed by a single line of soundings which should be marked for additional development when this is possible.

Edgar E. Smith
Edgar E. Smith
Cart. Engr. 9/30/39

RHC

Explorer, 1949

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

14 April 1950

Division of Charts: E. H. Carstens

Plane of reference approved in
1 volumes of sounding records for

HYDROGRAPHIC SHEET 7646A

Locality Pab Islands, Aleutian Islands

Chief of Party: E. A. Kero in 1949

Plane of reference is mean lower low water, reading

0.5 ft. on tide staff at Constantine Harbor

0.0 ft. below B. M. 1 (1944)

Height of mean high water above plane of reference is 2.8 feet.

Condition of records satisfactory except as noted below:

E. C. McKay

Section

Chief, ~~Division of Tides and Currents.~~

GEOGRAPHIC NAMES

Survey No. H-7646

Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>				(for title)							1
<u>Alentian Islands</u>				" "							2
<u>Rat Islands</u>		(group)		" "							3
											4
<u>Pacific Ocean</u>											5
<u>Sea Lion Pass</u>											6
<u>Sea Lion Rock</u>									US&B		7
<u>Krysi Pass</u>											8
<u>Rat Island Pass</u>									US&B		9
<u>Krysi Point</u>									"		10
<u>Rat Island</u>									"		11
<u>Gunners Cove</u>									"		12
<u>Ayugadak Point</u>									"		13
<u>Oglala Pass</u>									"		14
											15
											16
											17
											18
<u>Gertrude Cove</u>											19
<u>Kiska I.</u>											20
											21
											22
											23
											24
											25
											26
											27

Names underlined in red are approved
11-3-49. L. Heck

(location of tide gage)

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ^{H-7646}

Records accompanying survey:

Boat sheets ⁵....; sounding vols. ¹⁵.....; wire drag vols.;
 bomb vols.; graphic recorder rolls ²¹ envel.;
 special reports, etc.

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

Number of positions on sheet	.....	3327
Number of positions checked	.....	17
Number of positions revised	.....	9
Number of soundings revised (refers to depth only)	.....	55
Number of soundings erroneously spaced	.....	18
Number of signals erroneously plotted or transferred	.....	—
Topographic details	Time	16 hrs
Junctions	Time	48 hrs
Verification of soundings from graphic record	Time	12 hrs

SUB PLAN PLOTTED BY - Arthur B. Markovitz, TIME 59 hrs DATE APR 13, 1950

Verification by *A.R. STIRN*..... Total time *311 hrs* Date *2/5/51*...

Reviewed by *Lu Jerskind*..... Time *40 hrs* Date *2/21/51*...

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7646

FIELD NO. PI-2348
EX
EX-1249

Alaska, Aleutian Islands, Rat Island and Vicinity
Surveyed in July - August, 1948 and July 1949. 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, H.E. Finnegan and H.A. Karo
Surveyed by - C.J. Beyma, E.E. Jones, E.B. Lewey, R.R. Moore,
R.L. Pfau, G.C. Mast, P. Taylor, J.S. Morton and
Mr. Rushford

Protracted by - L. W. Eason and G. W. Moore
Soundings plotted by - J. R. Wheeler and G. W. Moore
Verified and inked by - A. R. Stirni
Reviewed by - I. M. Zeskind, 21 February 1951
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with air-photographic surveys T-8590 and T-8591 of 1949.

The source of the control is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated, except inshore from 5-fm. depths where the foul character of the bottom and heavy kelp prevented development to the low-water line.

This is a survey of 2-3 miles of insular shelf adjacent to the northeast and southwest shores of Rat Island, and an area 3-3½ miles in width lying between Rat Island and

Sea Lion Rock. Ridges, knolls, pinnacles and reefs contribute to the bottom irregularity.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7708 (1948) on the west, with H-7710 (1948) on the north and south, with H-7733 (1949) on the east and with H-7738 (1949) on the southeast.

5. Comparison with Contemporary Surveys

H-6901 (1935) U.S.N., 1:60,000
H-6903 (1935) U.S.N., 1:60,000
H-6904 (1935) U.S.N., 1:60,000

These U. S. Navy reconnaissance surveys cover the area of the present survey. Differences in depths between the prior and present surveys generally range from 1-3 fms. in depths of 10-60 fms. However, in several areas differences in depths of as much as 26 fms. are noted. Examples of these differences in depths are given in paragraphs 1 and 2 below. These discrepancies are attributed largely to the inaccuracies in dead reckoning control on the prior surveys and the improper spacing of soundings. It is apparent that a shift in position of the prior sounding lines would eliminate many of the discrepancies.

The following discrepancies are specifically noted.

1. The 13-fm. sounding (charted) in lat. $51^{\circ} 52.08'$, long. $178^{\circ} 00.88'$, (Kiska Datum) originating with H-6903 (1935), falls in present depths of about 35-fms. This prior sounding is considered to be out of position and should actually fall about 700 meters northeastward where comparable present depths are found.
2. The 7-fm. sounding (charted) in lat. $51^{\circ} 50.40'$, long. $178^{\circ} 08.80'$, (Kiska Datum) originating with H-6903 (1935), falls in present depths of about 20 fms. This prior sounding is considered to be out of position and should actually fall on the shoal about 600 meters eastward where comparable present depths are found.

A number of bottom characteristics have been carried forward to supplement the present survey. With these additions, the present survey is adequate to supersede the prior surveys within the common area.

6. Comparison with Chart 8864 (Latest print date 3/8/48)
Chart 9155 (Latest print date 1/15/51)
Chart 9180 (Latest print date 1/22/51)

A. Hydrography

The charted hydrography originates principally with the previously discussed prior surveys, which need no further consideration, with restricted H.O. Notice to Mariners No. 2, 1942 and with a few critical soundings from the present survey prior to verification and review.

1. The Sunken Rock (P.A. Reported 1942) charted in lat: $51^{\circ} 51.98'$, long. $178^{\circ} 05.05'$, (Kiska Datum) from the Restricted H.O. Notice to Mariners No. 2, 1942 should be deleted from the chart. As stated on page 3, of the Descriptive Report for the 1948 work of the PIONEER, the report of this sunken rock probably originates with observations on the $4\text{-}3/4$ fms. shoal which lies about $3/4$ mile southward, or with tide rips extending from the shoal to the vicinity of the reported sunken rock. Present depths at the charted position of the sunken rock are about 47 fms.
2. The following soundings and rock awash charted from the present survey prior to verification and review have been revised in depth as indicated:

Charted Depth fms.	(Kiska Datum)		Depth after Verification fms.
	Latitude	Longitude	
9	$51^{\circ} 50.58'$	$178^{\circ} 03.60'$	12 ^{7v}
8	$51^{\circ} 50.70'$	$178^{\circ} 08.40'$	9
$4\text{-}3/4$	$51^{\circ} 50.25'$	$178^{\circ} 11.30'$	$8\frac{8}{8}$
Rock Awash	$51^{\circ} 50.20'$	$178^{\circ} 11.60'$	<u>22</u>

The present survey supersedes the charted information within the common area.

B. Aids to Navigation

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

7. Condition of Survey

- a. The field records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was satisfactory. However, in penciling fractional soundings greater than 11 fms., the change point was erroneously taken as 0.5 fm. instead of 0.8 fm. These errors were detected and corrected in the Washington Office.
- c. Few bottom characteristics were obtained in the area of the present survey.

8. Compliance with Project Instructions

The present survey adequately complies with the Project Instructions, except as noted in paragraph 7b and c above.

9. Additional Field Work Recommended

This is a good basic survey. It would be desirable, however, to develop the 16 fm. shoal in lat. $51^{\circ} 46.75'$, long. $178^{\circ} 13.92'$. Attention is also directed to the few bottom characteristics mentioned in paragraph 7c above.

Examined and approved:



H. R. Edmonston
Chief, Nautical Chart Branch



H. Arnold Karo
Chief, Division of Charts

Acting/



L. S. Hubbard
Chief, Section of Hydrography



W. M. Scaife
Chief, Division of Coastal Surveys

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ADDITIONAL FIELD WORK RECOMMENDED, H-7646

In addition to the recommendation by the Review Section, Nautical Chart Branch, for development of the 16-fathom shoal located in latitude $51^{\circ} 46.75'$, longitude $178^{\circ} 13.92'$, it is recommended that the following shoal indications be developed whenever survey operations are again undertaken in the vicinity of Rat Island:

<u>Depth</u> <u>Fathoms</u>	<u>Location</u>	
	<u>Latitude</u>	<u>Longitude</u>
14	$51^{\circ} 45.6'$	$178^{\circ} 18.4'$
15	51 45.9	178 17.7
9.8 ⁹	51 45.6	178 16.5
16	51 46.75	178 13.9
9.7	51 47.4	178 14.3
12	51 48.1	178 12.5
12	51 48.2	178 12.4
19	51 48.6	178 11.4

Wm. Scarfe
Chief, Division of
Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7646

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
7/26/50	9102	GHE	Before After Verification and Review
7/28/50	8864	GHE	Before After Verification and Review
11/3/50	9155	SAM	<u>Before</u> After Verification and Review Critical soundings only. Partially applied Before After Verification and Review
11/3/50	9180	S.G. M.	<u>Before</u> After Verification and Review Critical soundings only Partially applied
7-15-55	9180	^{Revised} Wittmann	Before After Verification and Review gma
5/20/57	9102	Wittmann	Before After Verification and Review ^{Use via reconstr. chart 9180 gma} complete
11/13/61	8864	GHE	Before After Verification and Review ^{thru Ch 9180}
11/16/92	16450	DON CORDTS	Before After Verification and Review Fully applied New metric chart Before After Verification and Review

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A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.