

7710

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-4148 Office No. H-7710

LOCALITY

State ALASKA

General locality ALEUTIAN ISLANDS

Locality VICINITY OF RAT ISLAND

1948

CHIEF OF PARTY

F. B. T. SIEMS

LIBRARY & ARCHIVES

DATE 28 SEPTEMBER 1949

7710

SEP 28 1949

Form 537
(Ed. Nov. 1941)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. H-7710

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

7710

REGISTER NO. _____

Field No. EX-4148

State Alaska

General locality Aleutian Islands, ~~Rat Island Group~~

Locality *Vicinity of*
~~Tanadok Island to~~ Rat Island

Scale 1:40,000 Date of survey 24 June 1948 - 24 September 1948

Instructions dated Original 3 February 1938; Supplemental 10 February 1948

Vessel EXPLORER

Chief of party F.B.T. Siems

Surveyed by R.R. Moore, R.L. Pfau, E.H. Kirsch, G.C. Mast, P. Taylor,
H.S. Cole.

Soundings taken by fathometer, graphic recorder, ~~hand lead~~ 808 Number 60.
NMC No. 54, NMC2 No. 60

Protracted by Marion Gwinn McLean

Soundings penciled by Marion Gwinn McLean

Soundings in fathoms feet at MLLW MLLW

REMARKS: _____

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET H 7710

Field No. EX-4148

Rat Islands, east of Kiska Island, Alaska

1948

Scale 1:40,000

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

Surveyed by: R.R. Moore, R.L. Pfau, E.H. Kirsch
G.C. Mast, P. Taylor, H.S. Cole

A. PROJECT:

The field work on Sheet 4148 was executed in accordance with original instructions for Project No. C.S. 218 dated 13 February 1938 and supplemental instructions for Project No. C.S. 218 dated 10 February 1948.

B. SURVEY LIMITS AND DATES:

The long axis of Sheet No. ^{H7710(1948)} EX-4148 runs in a direction about 20° south of east. The west edge of the sheet extends through the middle of Little Kiska Island and east end of sheet cuts the NW end of Amchitka Island. The north edge of the sheet skirts the south shore of Segula Island and Little Sitkin Island and the south edge extends almost to the 500 fathom curve south of the Rat Island group.

The reef which extends from the east end of Little Kiska Island to the west end of Amchitka Island, and which includes Tanadak Island, Sea Lion Rock and Rat Island, parallels the long axis of the sheet just north of the sheet center. The hydrography of this reef and island area was executed on Sheets ^{H7708(1948)} EX-2248 and ^{H7709(1948)} EX-2348 and this area is a blank space on Sheet EX-4148. The outside perimeter of work on sheet ^{H7710(48)} EX-4148 is joined by the following sheets.

On the east, no junction.

On the north, by work executed by the Ship ^{H-7649(1948)} PIONEER in 1948.

On the west, by Sheet EX-4247 ^{H7625(1947-48)}

On the south, by Sheet EX-10148 ^{H7711(1948)}

Hydrographic work was started on 24 June 1948 and ended on 24 September 1948.

C. VESSEL AND EQUIPMENT:

All hydrography on this sheet was accomplished with the Ship EXPLORER and the following graphic recorders were used.

808 No. 60 ✓
NMC No. 54 ✓
NMC2 No. 60 ✓

The turning radius of the EXPLORER at standard speed ahead is 275 meters when full left about, and 360 meters when full right about.

D. TIDE AND CURRENT STATIONS:

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

No currents were observed within the area of this survey.

E. SMOOTH SHEET:

Seattle Processing Office. ✓

F. CONTROL STATIONS:

Datum: North American 1927; local triangulation 1943, 1945, 1947 and 1948. No topographic signals were used in controlling the work on this sheet. *Shoran stations were established at the site of triangulation stations*

G. SHORELINE AND TOPOGRAPHY:

No shore line details are included in this survey. The shore line of Rat Island was transferred to the boat sheet from air photographs and depicted in pencil. This is NOT the final position of the shoreline as there was no radial plot or rectification of photographs.

H. SOUNDINGS:

The sounding lines were spaced in accordance with standard instructions.

All soundings were taken with graphic recorders as listed under C.

The usual standard corrections were applied to the recorded depths.

Time meridian for recording soundings is 165° W., from beginning of season through June 30, 180° W. from July 1 through August 31, and 165° W. from Sept. 1 to end of season.

I. CONTROL OF HYDROGRAPHY:

All hydrography was controlled with the standard three point fix or with shoran fixes. Corrections to shoran distances is a subject of a special report from this vessel for the 1948 field season. (See attached copy.)

J. ADEQUACY OF SURVEY:

The area covered by this survey is adequate to supersede prior surveys for charting.

An inspection of boat sheets indicates that adjoining surveys are satisfactory. A smooth sheet inspection of junctions will be made by the Seattle Processing Office.

K. CROSSLINES:

It is estimated that 15% of the total mileage is cross lines. Cross line depths are in excellent agreement with depths obtained on the regular sounding lines.

L. COMPARISON WITH PRIOR SURVEYS:

No prior surveys of this area have been made by this bureau. Prior surveys by the U.S. Navy are depicted on the present chart of the area. See M.

M. COMPARISON WITH CHART:

In general, existing charted soundings are in close agreement with those obtained on this survey except for several shoaler spots. See paragraph N.

N. DANGERS AND SHOALS:

The fifty fathom curve south of the reef which extends from Little Kiska Island to Amchitka Island, is much more irregular than the fifty fathom curve as depicted on chart No. 8864, print date 3/8/48.

The following soundings were obtained giving much shoaler depths than previously charted:

A sharp pinnacle with least depth of ^{* 11} 12 fathoms (unreduced) in a general depth of 50 fathoms located 5.4 nautical miles, 242° True from Sea Lion Rock. in Lat 51° 50.44', Long. 177° 57.36' (2 545 (48))

* 110
smooth sheet

A pinnacle with least depth of ^{36 fms. smooth sheet ✓} 37 fathoms (unreduced) in a general depth of 55 fathoms located 5.8 nautical miles 227° True from Sea Lion Rock. Lat. 51°48.94', Long. 177°52.00'

A sharp pinnacle with a least depth of ^{53 ← 3} 5 fathoms (unreduced) in a general depth of 50 fathoms located 5.9 miles 140° True from Sea Lion Rock. Lat. 51°48.26', Long. 178°05.06' ^{5.8 fms smooth sheet ✓} (545(48) 302

It will be noted that this survey shows several lumps of less than fifty fathoms outside of the fifty fathom curve.

The supervisor, Coast and Geodetic Survey, Seattle, Washington, was advised by radio of the existence of the 5³ fathom and 12 fathom spots.

O. COAST PILOT INFORMATION:

Coast Pilot notes is the subject of a special report from the Ship EXPLORER, field season 1948.

P. AIDS TO NAVIGATION:

There are no fixed or floating aids to navigation in the area of this survey.

Q. LANDMARKS FOR CHARTS:

There are no special landmarks for charts in the area of this survey.

R. GEOGRAPHIC NAMES:

There was no geographic names investigation. ✓

Respectfully submitted,

E. H. Kirsch

E. H. Kirsch
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-4148

DATE	DAY LETTER	808 NO. 60		NMC-2 NO. 60		NMC NO. 54	
		POS. NO.	FMS.	POS. NO.	FMS.	POS. NO.	FMS.
6/24/48	A	1-17	+0.3	78	0		
		17-18	0				
		18-50	+0.3				
		51	+1.1				
		52-115	+0.4				
		115-154	+0.3				
6/28/48	B	1-103	+0.1	72-113	+0.3	58-60	+2.3
		103-126	+0.3				
		126-128	+0.5				
		129-157	+0.6				
		157-193	+0.3				
6/29/48	C	1-6	+0.1	61-219	+2.3		
		6-137	+0.2				
		137-219	+0.4				
7/1/48	D	All	+0.2	All	+2.3		
7/2/48	E	All	+0.1				
7/3/48	F	1-156	+0.1	1-39	+2.0		
		156-203	0	39-65	+0.1		
				65-71	+2.1		
				175-203	+0.1		
7/7/48	G	All	+0.4				
7/9/48	H	1-37	+0.1				
		37-42	+0.4				
7/12/48	J	1	-0.2				
		2-7	-0.1				
		7-19	-0.2				
		20-55	0				
		55-139	-0.2				
		139-178	0				
		179	+0.1				
7/13/48	K	1-78	0				
		78-119	+0.1				
7/22/48	L	1-16	0				
		16-28	+0.2				

DATE	DAY LETTER	808 NO. 60		NMC-2 NO. 60		NMC NO. 54	
		POS. NO.	FMS.	POS. NO.	FMS.	POS. NO.	FMS.
7/24/48	M	1-40	+0.2	6-153	+2.2		
		48-74	0				
		81-153	+0.2				
7/27/48	N	1-13	+0.2				
		13-19	+0.3				
		19-37	+0.2				
		37-55	+0.1				
		55-196	+0.2				
7/29/48	P	3-76	+0.2	1-7	+0.2		
		77-100	0				
		100-111	+0.4				
		112-132	+0.2				
8/2/48	Q	1-18	+0.1	14-18	+2.1		
8/9/48	R	1-125	+0.3	1-19	+2.2		
		125-198	0	19-38	+0.2		
		198-213	+0.2	39-115	+2.2		
8/11/48	S	All day	+0.1	1-3	-0.9		
				3-15	+1.1		
				15-54	+2.1		
				54-60	+1.1		
8/12/48	T	All day	+0.1				
8/13/48	U	All day	+0.1	All day	+2.1		
8/16/48	V	All day	+0.1	All day	+2.1		
8/19/48	W	All day	+0.4	All day	+2.4		
8/20/48	X	1-3	+0.3	All day	+2.3		
		3-8	+0.1				
		8-16	+0.3				
		16-95	+0.1				
		96-109	+0.5				
8/21/48	Y	1-21	+0.3	49-127	+2.3	182-184	-2.7
		22-58	+0.1	127-141	+0.3		
		230-268	+0.3	141-162	+2.3		
				162-172	+0.3		
				172-181	+4.3		
		185-265	+2.3				
8/23/48	Z	1-27	+0.2	All day	+2.2		
		27-100	+0.4				
		100-206	+0.2				

DATE	DAY LETTER	808 No. 60		NMC-2 No. 60		NMC No. 54	
		POS. NO.	FMS.	POS. NO.	FMS.	POS. NO.	FMS.
8/24/48	AA	All day	+0.2	All day	-2.2		
8/25/48	BA	1-46 46-47 47-end	+0.2 0 +0.2				
8/26/48	CA	All day	+0.2				
8/30/48	DA	All day	+0.2	67-93 93-121	+1.2 +2.1		
9/2/48	EA	All day	0	All day	+2.0		
9/3/48	FA	1-60 60-end	0 -0.2	All day	+2.0		
9/4/48	GA	All day	0				
9/7/48	HA	All day	+0.2				
9/8/48	JA	1-35 35-118 118-148 149-194 195-230 230-238	-0.1 +0.1 0 +0.1 0 +0.1				
9/15/48	KA	All day	+0.5	11-18 18-23 23-27 27-29 29-38 38-81	+0.5 -0.5 +0.5 +1.5 +3.5 +2.5		
9/16/48	LA	1-38 92	+0.5 +0.3	1-78	+3.5		
9/20/48	MA	1-3 3-13 13-60 60-68 68-119 119-122 122-126 126-175	+0.1 +0.3 +0.1 -0.1 +0.1 0 +0.1 +0.3				
9/24/48	NA	All day	+0.3	10-12 12-22 22-end	+2.1 +0.1 +2.1		

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
Paul Taylor
Lt. Comdr. USCGS

APPROVAL FOR

HYDROGRAPHIC SURVEY EX-4148

The sounding volumes and boatsheet have been inspected and approved. The survey is considered complete and adequate. No additional work is necessary. ✓

This officer was not aboard during the execution of the field work, which was accomplished under the supervision of Captain F.B.T. Siems, former Commanding Officer of the Ship EXPLORER.


H. Arnold Karo, Comdr.
Comdg. Ship EXPLORER

H 7710
Ex 4148

Processing Office Notes.

The smooth sheet is hand made on K & E paper N 124 H. The drawing of the shoran distance circles was controlled by computed points.

Boatsheet.

The southeast part of H 7710 was surveyed on boatsheet H 7711 (Ex 10148) but the soundings are recorded in the books of H 7710. *Sdgs plotted on H-7710.*

Other subjects have been covered in the report by the field party.

Edgar E. Smith
Edgar E. Smith, Capt. Engr.
September 20, 1949

H 7710
Ex 4148

Aleutian Islands
Rat Islands.

Geographic names penciled on smooth sheet.

Sea Lion
~~Sealion~~ Pass

Rat Island

Rat Island Pass

Pacific Ocean

7710

TIDAL NOTES

Tidal data for this survey was obtained from the tide gage at Gertrude Cove, Kiska Island, Lat. $51^{\circ}56.2'N$. Long. $177^{\circ}27.5'E$. MLLW is 4.4 feet on the staff. During the latter part of August this gage failed to operate for a few days. Tidal data for these days were obtained from Washington Office. ✓

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.

STATISTICS FOR HYDROGRAPHIC SURVEY H **7710**

Field No. EX-4148

DATE 1948	DAY LETTER	VOLUME NO.	STAT. MI.	NO. of POSITIONS
June 24	A	1	80.0	154
28	B	1 and 2	106.4	193
29	C	2 and 3	129.3	219
July 1	D	3	21.6	43
2	E	3	19.4	36
3	F	3 and 4	102.0	208
7	G	4	7.4	12
9	H	4	17.0	42
12	J	4 and 5	72.0	178
18	K	5	72.0	119
22	L	5 and 6	17.6	28
24	M	6	85.1	153
27	N	6 and 7	67.2	196
29	P	7	68.2	132
August 2	Q	7	9.2	18
9	R	8	101.2	213
11	S	8	25.7	60
12	T	9	5.7	7
13	U	9	29.8	55
16	V	9	59.0	126
19	W	9	23.7	43
20	X	9 and 10	55.9	109
21	Y	10 and 11	168.3	268
23	Z	11 and 12	82.4	206
24	AA	12	14.4	37
25	BA	12	86.6	171
26	CA	12	13.1	43
30	DA	12 and 13	69.1	121
Sept. 2	EA	13	39.5	122
3	FA	13 and 14	98.2	234
4	GA	14	36.0	87
7	HA	14 and 15	32.0	105
8	JA	15	102.9	241
15	KA	16	49.1	81
16	LA	16	47.2	92
20	MA	16 and 17	57.5	175
24	NA	17	38.3	59
			<hr/>	
			1794.3	3803

Sq. Stat. Miles 394.2

TIDE NOTE FOR HYDROGRAPHIC SHEET

31 October 1949

~~Division of Hydrography and Topography~~

Division of Charts: R. H. Carstens

Plane of reference approved in
17 volumes of sounding records for

HYDROGRAPHIC SHEET 7710

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.~~

GEOGRAPHIC NAMES

Survey No. H-7710

Name on Survey	Source									
	A	B	C	D	E	F	G	H	K	
	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
<u>Alaska</u>			(for title)							1
<u>Aleutian Islands</u>			" "							2
<u>Rat Islands</u>			" "					US&B		3
<u>Pacific Ocean</u>										4
<u>Rat Island</u>								US&B		5
<u>Sea Lion Rock</u>								"		6
<u>Sea Lion Pass</u>			(w. of Sea Lion Rock)							7
<u>Krysi Pass</u>			(between " " " Rat I.)							8
<u>Oglala Pass</u>										9
<u>Rat Island Pass</u>										10
										11
										12
										13
<u>Gertrude Cove</u>			(location of tide staff)							14
										15
										16
										17
										18

Names underlined in red are approved - 11-9-49
L. Heck

LA 7-2-50

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7710..

Records accompanying survey:

Boat sheets .1....; sounding vols. .17..; wire drag vols.;
bomb vols.; graphic recorder rolls ¹⁶/~~envek.~~.....;
special reports, etc.
.....

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

Number of positions on sheet	3803.
Number of positions checked	..10..
Number of positions revised	...4.
Number of soundings revised (refers to depth only)	..22.
Number of soundings erroneously spaced7.
Number of signals erroneously plotted or transferred0.
Topographic details	Time1.(hr)
Junctions	Time7.(hr)
Verification of soundings from graphic record	Time9.(hr)

Verification by Stephen Rose..... Total time 423(hr) Date 7-5-50

Reviewed by Luiz Beskind..... Time 57... Date 8-18-50

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7710

FIELD NO. EX-4148

Alaska, Aleutian Islands, Vicinity of Rat Island
Surveyed in June - September, 1948 Scale 1:40,000
Project No. CS-218

Soundings:

808 Fathometer
NMC Fathometer
NMC-2 Fathometer

Control:

Shoran
Sextant fixes on shore signals

Chief of Party - F.B.T. Siems
Surveyed by - Ship's Officers
Protracted by - M. G. McLean
Soundings plotted by - M. G. McLean
Verified and inked by - S. Rose
Reviewed by - I. M. Zeskind, 18 August 1950
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline for Rat Island originates with T-8590 and T-8591 of 1949 prior to review.

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

2. Sounding Line Crossings

Depths at crossings are in adequate agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated. The 150-fm. curve has been added to define more clearly the submarine canyon which lies southwestward from Rat Island.

This survey covers an area which lies on the north and south side of the Aleutian Ridge between Oglala Pass and Sea Lion Pass.

On the south side of the ridge, the bottom is fairly irregular in depths less than 60 fms. Several shoals covered by depths of 5.3 to 36 fms. rise from depths of about 50 fms.

In depths greater than 60 fms., the insular slope is fairly smooth, except where it is indented by submarine canyons. The head of a prominent canyon is found in the vicinity of lat. 51° 43.2', long. 178° 07.4'.

On the north side of the ridge, the bottom in general is smooth. The bottom slopes gradually to depths of 70 fms. where it abruptly drops to 100 fm. depths and then continues to slope gradually to the limits of the survey.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7625 (1947-48) on the northwest, H-7649 (1948) on the north and H-7711 (1948) on the south. The junctions with surveys on the Aleutian Ridge, H-7733 (1949) east of Rat Island, H-7646 (1948) west of Rat Island, and H-7708 (1948) west of Sea Lion Rock will be considered in the reviews of those surveys.

5. Comparison with Prior Surveys

H-6900 (1935)	USN	1:30,000
H-6901 (1935)	USN	1:60,000
H-6903 (1935)	USN	1:60,000
H-6904 (1935)	USN	1:60,000

These U. S. Navy reconnaissance surveys cover the area of the present survey. There are differences of as much as 123 fms. between the present and prior depths, as for example, in lat. 51° 56.96', long. 177° 57.96', where a prior depth of 154 fms. on H-6903 falls in present depths of 272-277 fms. These discrepancies are attributed largely to the dead reckoning control on the prior surveys. It is apparent that a shift in position of the prior lines would eliminate many of these discrepancies.

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

6. Comparison with Chart 8864 (Latest print date 3/8/48) Chart 9155 (Latest print date 5/5/44) Chart 9180 (Latest print date 12/18/48)

A. Hydrography

The charted hydrography originates principally with the previously discussed prior surveys which need no further consideration and with information of the present survey contained in Chart Letter 545 (1948).

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 sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was accurately done.
- 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 below in paragraph 9.


9. Additional Field Work Recommended


This is a very good basic survey and no additional work is recommended. As a matter of record, attention is directed to the lack of bottom characteristics in this area.

Examined and approved:


H. R. Edmonston
Chief, Nautical Chart Branch


R. W. Knox
Chief, Division of Charts


L. S. Hubbard
Chief, Section of Hydrography


W. M. Scaife
Chief, Division of Coastal Surveys

