

7733

Diag. Cht. No. 8364-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. EX-2149 Office No. H-7733

LOCALITY

State ALASKA--ALEUTIAN ISLANDS

General locality RAT ISLANDS

Locality OGLALA PASS

194 9

CHIEF OF PARTY

H. A. Karo

LIBRARY & ARCHIVES

DATE

April 21 - 1950

B-1870-1 (1)

7733

APR 18 1950

Form 587
(Ed. Nov. 1941)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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. H- 7733

Field No. EX-2149

State Alaska - Aleutian Islands

General locality Rat
~~Aleutian~~ Islands

Locality Oglala Pass

Scale 1/20,000 Date of survey 14 June - 1 Sept 1949

Instructions dated 3 Feb 1938, supplementals through 11 April 1949

Vessel EXPLORER - Launch 1

Chief of party H. Arnold Karo

Surveyed by F.A. Riddell

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

Protracted by W.A. Kemp

Soundings penciled by W.A. Kemp

Soundings in fathoms ~~1000~~ at ~~MLW~~ MLLW

REMARKS:
.....
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.....
.....
.....
.....

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHY SURVEY H-7733

Field No. EX-2149

Scale 1:20,000

USC&GSS EXPLORER

H. A. Karo Comdg.

A. PROJECT

This survey forms a part of Project CS-218 covered by Instructions dated 3 February 1938 and Supplemental Instructions through 11 April 1949.

B. SURVEY LIMITS AND DATES

In general this survey covers the inshore hydrography on either side of Oglala Pass from the shore to the 40 fathom curve where it makes a junction with Ship Hydrographic Survey H-7738 (Field No. EX-4149). Other junctions are with H-7709 on the west, H-7710 on the southwest, H-7734 (Field No. EX-2249) on the northwest, and H-7735 (Field No. EX-2449) on the southeast.

Field work began on 14 June 1949 and was completed on 1 September 1949.

This area was difficult to survey because of strong currents and heavy tide rips. These rips are especially bad at maximum ebb against a SW swell. Under these conditions the pass is not even safe for medium sized vessels and with a launch the rip areas have to be carefully avoided except at slack water. On 9 July 1949 near position 25g the launch approached too close to the rips and was nearly towed under. Turning into the current and running at full speed, there was no appreciable headway for 50 minutes as determined by shore ranges. (For further description of Oglala Pass see EXPLORER 1949 "Seasons Report".

C. VESSEL AND EQUIPMENT

Launch No. 1 operated from the ship and using shoran set #5 was used on this survey (See Shoran Summary attached).

All soundings were taken with 808 depth recorder No. 50.

D. TIDE AND CURRENT STATIONS

Tide reducers were determined from data obtained on a portable tide gage operated in Constantine Harbor, Amchitka Island. No time and height differences were applied. No current stations were occupied within the limits of this survey.

E. SMOOTH SHEET:

The smooth sheet was plotted aboard the EXPLORER. The projection was constructed and the distance arcs were scribed in the Washington Office. Shoreline and topographic details on the Rat Island side were transferred from an acetate copy (same scale) of map manuscript No. T-9135 and the transfer verified in accordance with 757. On the Amchitka side details were from map manuscript T-5599^{3 (1948)} and transfer and verification was by tracing paper. No discrepancies were noted in plotting the sheet.

LT-8591(1948)

In order not to obliterate the soundings kelp symbols were omitted on the smooth sheet. Kelp areas are well defined on the boat sheet.

F. CONTROL STATIONS:

The triangulation stations used for control were located in 1949 by H. Arnold Karo, Chief of Party. (See EXPLORER 1949 Triangulation Report.)

The locations of signals were determined in the Washington Office by photogrametric methods.

G. SHORELINE and TOPOGRAPHY:

Shoreline and topographic detail were obtained by photogrametric methods and transfer was as stated in "E" above. Because of the small tidal range and abrupt drop-off and also because of the thick kelp beds it was not practicable to develop the low water line.

H. SOUNDINGS:

All soundings were taken in fathoms with an 808 depth recorder. No unusual methods were used to obtain or reduce the soundings. Frequent bar checks were made.

I. CONTROL OF HYDROGRAPHY:

Over most of the area the sounding lines were controlled by shoran readings from two stations. In general, courses were steered to keep the line on an arc from one station. A small amount of work on "r" day in the vicinity of signal "Sey" was controlled by visual fixes. A shoal Lat. $51^{\circ}40.9$, Long. $178^{\circ}38.1$ was developed by visual fix control. On "q" day the work was controlled by one shoran distance and a horizontal angle.

J. ADEQUACY OF SURVEY:

The survey appears to be complete and adequate. The junction with

survey No. 7736 ¹⁹⁴⁹ (EX-2449) was compared and found satisfactory. Other junctions were checked on the boat sheets and were satisfactory and adequate for drawing depth curves and there were no holidays.

K. CROSSLINES:

The area is well covered with crosslines and all crossings are in satisfactory agreement.

L and M:

There are no prior surveys on a comparable scale.
H-6904(1935) scale 1:60,000 covers this area.

N. DANGERS and SHOALS:

The bottom in the area covered by this survey is very irregular with numerous sunken rocks. For charting purposes the important shoals are as follows:

13.0 fms, Lat. $51^{\circ}42.45'$ Long. $178^{\circ}27.30'$
13.5⁰ fms, Lat. $51^{\circ}41.20'$ Long. $178^{\circ}34.50'$

These have been reported by special letter. *CL 739(1949)*

O. COAST PILOT INFORMATION:

The channel west of signal "Law" *Lat-51°39.82', Long. 178°38.96'* can be used by launches when there is a current to tow under the kelp. At slack water the thick kelp prevents passage.

In the area covered by this survey there are no ship anchorages. Launches can anchor off signal "Bon" in moderate weather.

Lat. 51°39.50', Long. 178°38.88'

P to Z:

Nothing to report.

Fred A. Riddell

Fred A. Riddell
Lt. Comdr., USC&GS

Approved and forwarded.

H. Arnold Karo

H. Arnold Karo, Comdg. Ship EXPLORER

APPROVAL SHEET

The smooth sheet and records have been inspected and approved.



H. Arnold Karo
Comdg. Ship EXPLORER

TIDAL NOTE

Soundings for this survey were reduced from tide data obtained from the portable automatic tide gage located at Kirilloff Wharf, Constantine Harbor, Amchitka Island, Alaska Latitude $51^{\circ} 24.8'$ N. Longitude $179^{\circ} 16.8'$ E. For the short period that this gage was out of operation, tidal data, based on the observations at Sweeper Cove, Adak, Alaska, was furnished by the Washington Office.

The plane of reference is MLLW, which is equal to 2.5 feet on the staff. All soundings and tidal observations are based on 165th meridian time (west). No corrections for difference of time or range of tide ~~was~~^{was} applied.

STATISTICS FOR HYDROGRAPHIC SURVEY H - 7733

Field No. EX 2149

Date	Day	Vođ.	Number of Pos.	Statute Miles
1949				
6/14	a	1	65	22.0
6/25	b	1	93	17.2
6/26	c	1 & 2	158	30.3
6/27	d	2	215	41.9
6/28	e	2 & 3	180	36.9
6/29	f	3	184	33.4
7/9	g	3 & 4	174	35.5
7/18	h	4	165	36.4
7/20	j	5	110	18.5
7/21	k	5	210	51.9
7/27	l	6	76	15.4
7/28	m	6	198	37.1
7/29	n	6 & 7	202	36.2
7/31	p	7	86	17.2
8/26	q	7 & 8	172	35.8
9/1	r	8	49	8.0
TOTAL			2337	473.7

Area equals 39.5 square statute miles.

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. Report filed with H-7735

SHORAN SUMMARY

1949

1. The EXPLORER used the following shoran stations:

STEM (1949) on SE end of Little Sitkin Island at an elevation of 340 feet.

BIRD (1948-1949) on Bird Cape at NW end of Anchitka Island at an elevation of 167 feet.

CAPE (1949) on highest peak on NW end of Anchitka Island at an elevation of 876 feet. This was the same equipment as used at BIRD.

HART (1949) on highest peak near the center of Anchitka Island at an elevation of 1034 feet.

The PIONEER's stations CABLE and VALY on Semisopochnoe Island and TINY at Constantine Harbor, east end of Anchitka Island.

2. The Zero Settings were obtained by a comparison of the shoran distances and the computed distances obtained in the following manner.

On 6 June triangulation stations WEBB-2 and CHITKA were occupied with theodolites and the Ship's mast cut in simultaneously with Shoran distance readings on BIRD and STEM. By position computations and inverses the computed distances obtained.

On 27 August triangulation stations RIM and OTT were occupied and the ship's mast cut in simultaneously with distance readings on CAPE and HART. The computed distance was obtained as above.

On 4 September sextant fixes on triangulation stations from both the Ship and Launch #1 were taken simultaneously with distance readings on stations TINY and HART. Three-point problem and inverse position computations were completed to compute the true distances.

With Launch #1 in the chocks comparative distances were read with the Ship and Launch #1 to BIRD, STEM, CAPE and HART. The Launch distances were reduced to the Ship distances and compared.

For the Ship and Launch Zero Settings of VALY and CABLE a comparison was made between the EXPLORER's 1948 values and average differences applied for the equipments used. On both the EXPLORER and PIONEER the same sets are kept together.

3. The Shoran Zero Settings for 1949 are:

<u>Shore Sets</u>	<u>Ship Sets</u>	
	<u>#1-EXPL.</u>	<u>#5-Launch #1</u>
#1 (VALY)	99.801	99.796
#2 (HART)	99.828	99.823
#3 (TINY)	99.809	99.803
#4 (BIRD)	99.803	99.801
(CAPE)	99.822	99.826
#5 (STEM)	99.791	99.777
#6 (CABLE)	99.796	99.791

4. The shoran equipment gave little operational difficulties outside of the generators.

To correct this and to minimize radio communication transfer switches are to be installed at the shore stations so that the operators may change generators whenever convenient. Also variacs are to be supplied the stations in case the AC output voltage will not come up to normal.

Two types of generators were used in Launch #1. A light "Onan" gasoline generator was mounted on the stern. An inboard belt driven AC generator was installed in the engine compartment. The output voltage of this was controlled by a variac and DC voltage obtained by rectification. The variac only permitted a variance in speed from 800 to 1200 rpm for the launch when using the inboard generator. It would be advisable to install a variable speed drive between the engine and generator. In any case a clutch should be inserted before the generator so that it may be cut out while the Launch is dead heading or running visual hydrography. The generator mounted on the stern has only one defect - gasoline must be carried in the launch. With different pulleys or a variable speed drive the inboard generator will give just as good service as the gasoline generator.

RAC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Records from Coast and Geodetic Survey Hydrographic and Topographic~~

25 April 1950

Division of Charts: R. H. Carstens

Plane of reference approved in
8 volumes of sounding records for

HYDROGRAPHIC SHEET 7733

Locality Amchitka Island, Aleutian Islands

Chief of Party: H. A. Karo in 1949
Plane of reference is mean lower low water, reading
2.5 ft. on tide staff at Constantine Harbor
9.9 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-7733

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K
<u>Alaska</u>			(for title)						1
<u>Aleutian Islands</u>			" "						2
<u>Rat Islands</u>			" "						3
									4
									5
<u>Anchitka Island</u>								USGB	6
<u>Aleut Point</u>								"	7
<u>Bird Cape</u>								"	8
<u>Oglala Pass</u>								"	9
<u>Rat Island</u>								"	10
<u>Ayugadak Point</u>								"	11
									12
									13
									14
									15
									16
									17.
									18
<u>Constantine Harbor</u>			(location of tide gage)					USGB	19
									20
									21
									22
									23
									24
									25
									26
									27

Names underlined in red are approved. 4-24-50
L. HECK

Hydrographic Surveys (Chart Division)

H-7733

HYDROGRAPHIC SURVEY NO.

Records accompanying survey:

Boat sheets ¹.....; sounding vols. ⁸.....; wire drag vols.;
 bomb vols.; graphic recorder rolls ^{1 envel.}.....;
 special reports, etc.

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

Number of positions on sheet	2337.
Number of positions checked	...40
Number of positions revised0
Number of soundings revised (refers to depth only)4
Number of soundings erroneously spaced	...11.
Number of signals erroneously plotted or transferred0
Topographic details	Time ..6. hrs.
Junctions	Time ..16. hrs.
Verification of soundings from graphic record	Time ...50. hrs.

Verification by *Stephen Rose*..... Total time 271 hrs. Date Dec 12, '50

Reviewed by *Lu Juskund*..... Time 26 Date Nov 5, 1951

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7733

FIELD NO. EX-2149

Alaska-Aleutian Islands, Rat Islands, Vicinity of Oglala Pass
Surveyed in June - September, 1949 Scale 1:20,000
Project No. CS-218

Soundings:

808 Fathometer

Control:

Shoran
Sextant fixes on shore signals

Chief of Party - H. A. Karo
Surveyed by - F. A. Riddell
Protracted by - W. A. Kemp
Soundings plotted by - W. A. Kemp
Verified and inked by - S. Rose
Reviewed by - I. M. Zeskind, 28 February 1951
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with air-photographic surveys T-5593 and T-8591 of 1948.

The source of the control is described 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 10-fm. depths where kelp and the foul character of the bottom prevented development to the low-water line.

The survey covers a portion of the Aleutian Ridge between Amchitka Island and Rat Island, except for Oglala Pass. Pinnacles, ridges, knolls and inshore foul areas are characteristic bottom features in this area.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7646 (1948-49) on the west, with H-7738 (1949) on the north and on either side of Oglala Pass and with H-7736 (1949) on the southeast. The junction with H-7734 (1949) on the northeast will be considered in the review of that survey.

5. Comparison with Prior Surveysa. H-6904 (1935) U.S.N., 1:60,000

This U. S. Navy reconnaissance survey covers the area of the present survey. Differences in depths between the prior and present survey generally range from 1-3 fms. in depths of 10 to 100-fms. However, in several areas greater differences in depths are noted, as for example, in lat. $51^{\circ} 45.55'$, long. $178^{\circ} 26.95'$, where a prior depth of 67 fms. falls in present depths of 46-47 fms. 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.

Several 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.

b. T-6944 (1935) 1:28,200

This U. S. Navy air-photographic survey includes in-shore rock details which are in conflict with the present survey as follows:

1. The rock awash (charted) in lat. $51^{\circ} 40.20'$, long. $178^{\circ} 37.28'$, (N.A. 1927 Datum) falls in present depths of 3.8 to 6.7 fms. and should be disregarded. The rock awash is believed to be displaced in position and should actually fall 200 meters southeastward where a rock awash is found on the present survey.
2. The rock awash (charted) in lat. $51^{\circ} 40.22'$, long. $178^{\circ} 36.72'$, (N.A. 1927 Datum) falls in present depths of 11-15 fms. and should be disregarded. It is believed that the photograph was incorrectly interpreted and the rock awash does not exist.

6. Comparison with Chart 8864 (Latest print date 3/8/48)A. Hydrography

The charted hydrography originates principally with the previously discussed prior survey, which needs no further consideration and with critical depths from the present survey prior to verification and review. The following soundings charted from the present survey were read on kelp traces and were revised during verification and review.

<u>Charted Depth</u> fms.	<u>Latitude</u>	<u>Longitude</u>	<u>Depth after Verification</u> fms.
12	51° 47.32'	178° 23.15'	17 (not plotted)
2	51° 44.97'	178° 25.68'	5
4	51° 36.60'	178° 36.86'	10.5

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 accurately done.
- c. Bottom characteristics were not obtained in the area of the present survey.
- d. Inasmuch as the separation of kelp traces and bottom profile was very indistinct in many instances, a considerable amount of time was required by the verifier in the revision of soundings.


8. Compliance with Project Instructions


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


9. Additional Field Work Recommended


This is a very good basic survey. 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


H. Arnold Karo
~~Acting~~ Chief, Division of Charts


L. S. Hubbard
Chief, Section of Hydrography


W. M. Scaife
Chief, Division of Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7733

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
7/27/50	8864	<i>LHE</i>	<i>Partially app'd</i> Before After Verification and Review
7-19-55	<i>Reconst</i> 9180	<i>C.P. Wittman</i>	Before After Verification and Review <i>3MO</i>
5/22/57	9102	<i>C.R. Wittman</i>	Before After Verification and Review <i>2MO</i>
4/14/61	8864	<i>J. Evans</i>	Before After Verification and Review
11/24/92	16450	<i>D. Curtis</i>	Before After Verification and Review <i>Fully app'd</i> New metric chart Before After Verification and Review
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M-2168-1

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.