7891

Diag. Chi. No. 8863-3

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

EX-4250 &

Field No. EX-10150 *Office No.* H-7891

LOCALITY

State ALASKA-ALEUTIAN ISLANDS

General locality DELAROF ISLANDS

Locality AMCHITKA PASS

19 50

CHIEF OF PARTY

H. A. Karo

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B-1870-1 (1)

7891

Form 537
Ed. Dec. 1930

REG. NO.

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.

Field No. H 7891

REGISTER NO. Ex 10150 & Ex 4250

State Alaska - Aleutian Islands

General locality ~~Aleutian~~ Delarof Islands

Locality Amchitka Pass

Scale 1/ 100 000 Date of survey 11 May to 10 June 1950

Vessel EXPLORER

Chief of Party H. Arnold Karo

Surveyed by H.Arnold Karo, S.B.Grenell, J.S.Morton
M.A.Hecht, F.X.Popper, R.C.Bolstad.

Protracted by Wm. M. Martin,
Ray B. Johnson, Clarence E. Pedersen

Soundings penciled by Wm. M. Martin

Soundings in fathoms ~~feet~~ Fathoms

Plane of reference M L L W

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated 3 Feb. 1938 thru 9 Feb. 1950

Remarks: Fathograms scanned by Van Overlake, Bateman
Remme, Frost, Young & Cole.
Rescanned by RLK BEM DMW REW HWK WDB and further
spot scanned by [redacted]MM (Plotter)

U. S. GOVERNMENT PRINTING OFFICE

Verified. Instructions for Prel. Verif. are in back of this Report.

DESCRIPTIVE REPORT 7891
to accompany
HYDROGRAPHIC SURVEY NO. ____
Field No EX-10150
Amchitka Pass
Scale: 1:100,000
1950

A PROJECT:

This survey was executed under instructions dated 3 February 1938, and Supplemental Instructions received through 9 February 1950 for project CS-218.

B SURVEY LIMITS AND DATES:

This survey covers offshore hydrography in Amchitka Pass between limits 179°-37' E to 179°-04' W and 50°-40' N to 51°-40' N.

This survey makes junction with Ship PIONEER'S surveys PI-8148 and PI-8150 on the north, EX-4250, H-7050, and PI-8150 on the east, and H-7741 (EX-10149) on the west. There are no surveys by this Bureau, and therefore no junctions to the south of this sheet.

Hydrography was accomplished during the period of 11 May to 10 June 1950.

C VESSELS AND EQUIPMENT:

All hydrography was accomplished by the Ship EXPLORER, and was controlled by shoran and dead reckoning.

Soundings were obtained with 808 type fathometer No. 60, NMC-2 and the NMC fathometers. Corrections were applied for initial setting, draft, phase comparisions and velocity.

D TIDE AND CURRENT STATIONS:

The reductions for tides were taken from data recorded by the portable automatic tide gage operated in Constantine Harbor, Amchitka Island. No time or range corrections were made. Tide reductions were not made to the NMC soundings, because the magnitude of the tide corrections was less than the accuracy of soundings obtained from this fathometer.

There were no current stations within the limits of this survey.

E SMOOTH SHEET:

The projection for the smooth sheet was made with the ruling machine in the Washington Office. All other data will be furnished by the Seattle Processing Office.

F CONTROL STATIONS:

The major portion of this survey was controlled by shoran stations TINY and HART which were located in 1949, and stations GARE and SEMI, which were located by third-order triangulation in 1950.

G SHORELINE AND TOPOGRAPHY:

There are no land masses within the limits of this sheet.

H SOUNDINGS:

The soundings were taken with the 808, NMC-2, and NMC Depth Recorders. Soundings were spaced in accordance with instructions.

The following notes, made by the fathogram scanners, are included for information of all concerned:

At two minutes and twenty seconds after the position 76D, the NMC-2 fathometer shows a sounding of 70 fathoms which is about twenty fathoms shoaler than that shown by the 808. This condition occured at other times and is probably due to the sounding unit of the NMC-2 having a larger cone than the 808, which would make it more liable to pick up side shadows. This is borne out at three minutes after position 76D where the NMC-2 shows a side shadow of a peak which the 808 does not show at all and where the deeper sounding under the side shadow on the NMC-2 agrees with the 808.

Rescanned as 86.8 fms. Adjacent hydrography and comparison of 808 & NMC-2 fathometer traces over area disprove shoaler sounding.

On E, F, and G days, the soundings involved some deep sea sounding using the NMC fathometer below 800 fathoms; the NMC-2 between 160 and 800 fathoms; and the 808 fathometer for the shoalest water. The weather was generally good with a force 4 breeze. The soundings on the 808 fathometer were generally good and the ties between these fathograms and the positions on the other fathogram was fair. It is recommended that in the future at least two fix marks should appear on each strip of each fathogram regardless of whether the bottom shows, in order to fully correlate each fathogram with the others. There were several cases where the 808 fathograms were not completely labeled, but were labeled by the scanners after comparing sounding times to other fathograms. The soundings on the NMC-2 fathograms were good with the exception of the steep slopes, and some of the deeper soundings which were apparently over a soft bottom. The NMC-2 fathometer generally got shoaler soundings than the 808, where both were in operation. The differences were greater than could be accounted for from the velocity and index corrections, but were generally within the one-half percent tolerance allowed. The NMC-2 fathogram was well labeled though in some cases, the operator used the wrong scale or continued to sound on the NMC-2 when he should have been on the 808. The soundings on the NMC were generally poor, in many cases being absolutely illegible. There were several cases where the time shown in the record book did not check the elapsed time on the fathogram. It has been suggested that the operator may have stopped the machine to clean the needle, though no indication of such a stoppage could by found in the record. Many of the recorded soundings could not be verified nor could substitute soundings be found on the fathogram. Allowance was made for the fact that the fathometer provides visual and audible aids to the operator to assist him in reading the record, and consequently many recorded soundings were checked even though good evidence for the soundings could not be found on the fathograms. In view of the generally poor performance of the operators, it is doubtful if these soundings have normal accuracy. The scanners spent considerable time on these records and the worst descrepancies have been noted in the records.

Verifier rescanned sdgs. where disagreements existed. Plotted depths now in adequate agreement.

I CONTROL OF HYDROGRAPHY:

Shoran control was used throughout the entire survey. Parts of the lines on the south portion of the sheet were run by dead reckoning when beyond the limits of a shoran fix.

J ADEQUACY OF SURVEY:

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

The junctions with adjoining surveys are satisfactory and no holidays of excessive difference exist. The depth curves can be adequately drawn at the junctions.

K CROSSLINES:

Thirteen percent of the hydrography was run as crosslines. The crossings are generally good on the boat sheet. A more detailed discussion of descrepancies can be made after the smooth sheet is plotted.

L COMPARISON WITH PRIOR SURVEYS:

~~There are no prior surveys by this Bureau in the area.~~ H-6906 (1935) USN recon. survey covers area of present survey. H-7649 (1944) covers pres. survey west of Long. 179°05'W.

M COMPARISON WITH CHART:

Chart No. 8863, print date 49-3/7, was compared with the present survey.

The general configuration of depth curves on the chart is very similar to that on the boat sheet.

The charted 78 fathom sounding in latitude 51°-30'.8 N, longitude 179°-52'.3 E is one tenth mile south of the shoal in latitude 51°-31'.0 N longitude 179°-52'.4 E which has a least depth of ~~81~~ 78 fathoms.

The reported 60 fathom sounding in latitude 51°-29'.4 N longitude 179°-54'.4 W and the charted 76 fathom sounding in latitude 51°-27'.7 N longitude 179°-53'.0 W should fall on the shoal found in latitude 51°-28'.8 N longitude 179°-52'.5 W which has a least depth of ~~58~~ 58 fathoms.

It is recommended that charted soundings be revised to conform to the present survey.

N DANGERS AND SHOALS:

There were no dangers found on this survey.

The two shoals described in paragraph M are the only ones worthy of note.

O COAST PILOT INFORMATION:

A special report of Coast Pilot Information has already been submitted.

P AIDS TO NAVIGATION:

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

Q LANDMARKS FOR CHARTS:

There are no landmarks for charts within the limits of this survey.

R GEOGRAPHIC NAMES:

It is recommended that the only geographic name within the limits of this survey -- Amchitka Pass -- be continued.

S-Y

There is nothing to report under these headings.

Respectfully submitted,

William D Barbee

William D. Barbee
Ensign, USC&GS

Approved and forwarded:

S. B. Grenell
CDR, USC&GS

PART III: SHORAN ZERO SETTINGS

Shore Set	Ship	Launch #1	Launch #2	Launch #3
HART (lf)	99.804	99.818	99.798	99.789
TINT (hf)	99.811	99.804	99.808	99.804
STMI	99.830			
CARE	99.821			
ROCK (hf)	99.825	99.814	99.812	99.796
DORE (lf)	99.804	99.770	99.773	99.771
DRUM (hf)	99.815	99.791	* (See below)	99.787
HILL (lf)	99.827	99.815	* (See below)	99.801

* The shoran zero settings for Launch #2 at Port Clarence were determined at two distances. The variation in zero settings between the two calibrations was proportional to distance. This variation was attributed to the attenuation of shoran signals at line-of-sight distances.

Calibration No. 10		Calibration No. 12	
DRUM distance	13.820 miles	DRUM distance	6.700 miles
DRUM zero set	99.762	DRUM zero set	99.790
HILL distance	19.356 miles	HILL distance	6.909 miles
HILL zero set	99.780	HILL zero set	99.819

From the above data the zero sets for Launch #2 are:

DRUM

Distance	Zero Set
0 - 7.5 miles	99.790
7.5-10.0 miles	99.780
10.0-12.5 miles	99.770
12.5-out miles	99.762

HILL

Distance	Zero Set
0 - 8.5 miles	99.819
8.5-11.5 miles	99.810
11.5-14.5 miles	99.800
14.5-17.5 miles	99.790
17.5-out miles	99.780

VELOCITY CORRECTIONS

1950

808 Fathometer

Vicinity Amchitka I.
Surveys Nos. 2150, 2250, 4150, H-7731, H-7737
4250, 10150

Corr'n fms	Depth fms
0.0	0 to 6.0
-0.2	to 14.0
-0.4	to 22.0
-0.6	to 30.0
-0.8	to 38.5
-1.0	to 46.5
-1.2	to 54.5
-1.4	to 63.0
-1.6	to 71.0
-1.8	to 79.0
-2.0	to 87.0
-2.2	to 95.0
-2.4	to 103.5
-2.5	to 114
-3.0	to 134
-3.5	to 154
-4.0	to 175

Vicinity Sledge I. & Port Clarence
Surveys Nos. 2350, 2650, 2750 & 4350.

(Ship) Corr'n ft.	Depth ft.	(Launch) Corr'n ft.	Depth ft.
		(0.2 reducer)	
0.0	0 to 29.0	0.0	0.0 to 08.5
-0.5	to 60.0	-0.2	to 12.0
-1.0	to 88.0	(0.5 reducer)	
-2.0	to 151.0	0.0	0.0 - 19.0
-3.0	to 160.0	-0.5	- 51.0
		-0.1	- 80.0
		-2.0	- 141.0
		-3.0	- 160.0

Surveys Nos. 2450 & 2550

0.0	0.0 to 19.0	0.0	0.0 to 9.0
-0.2	to 33.5	-0.2	to 23.5
-0.4	to 50.5	-0.4	to 38.0
-0.6	to 60.0	-0.6	to 56.0
		-0.8	to 60.0
		-1.0	to 88.0

H-7891

VELOCITY CORRECTIONS
1950

NMC & NMC-2 FATHOMETERS		NMC NMC & NMC-2 FATHOMETERS	
Corr'n. fms	Depth fms.	Corr'n. fms	Depth fms.
(all corrections plus)		(all corrections plus)	
0	0 to 220	75	2621 to 2705
1	221 to 380	80	2706 to 2790
2	381 to 500	85	2791 to 2878
3	501 to 595	90	2879 to 2960
4	596 to 673	95	2961 to 3025
5	674 to 741	100	3026 to 3100
6	742 to 800	105	3101 to 3175
10	857 xxx to 1104	110	3176 to 3247
15	1105 to 1315	115	3248 to 3315
20	1316 to 1484	120	3316 to 3384
25	1485 to 1635	125	3385 to 3452
30	1636 to 1776	130	3453 to 3515
35	1777 to 1907	135	3516 to 3578
40	1908 to 2022	140	3579 to 3641
45	2023 to 2135	145	3642 to 3702
50	2136 to 2237	150	3703 to 3762
55	2238 to 2342	155	3763 to 3820
60	2343 to 2445	160	3821 to 3880
65	2446 to 2536	165	3881 to 3937
70	2537 to 2620	170	3938 to 4000

NMC 2000 & 4000 fm. scales

Depth	Corr'n fm.
0 to 500	0
501 to 856	5 Fms

As above for deeper

APPROVAL SHEET

The boat, smooth sheet, and records have been inspected and approved.

S. B. Grenell
Commander, USC&GS

DESCRIPTIVE REPORT
to accompany
HYDROGRAPHIC SURVEY NO. 7891
Field No. EX-4250
Unalga Island, Delarof Group
Scale: 1:40,000
1950

USC&GSS EXPLORER H. Arnold Karo, Comdg.
Surveyed by: H. Arnold Karo, S. B. Grenell, and R. C. Bolstad

A PROJECT:

Instructions dated 3 February 1938 and Supplemental Instructions received through 9 February 1950 for project CS-218.

B SURVEY LIMITS AND DATES:

This survey is the development of a shoal off the west end of Unalga Island, Delarof Islands. Junctions are made on the inshore end with H-7052 and on the offshore sides with EX-10150. (7891)
(1945) Limits of hydrography are 179°-05'.5 W to 179°-12' W and 51°-33' N to 51°-37' N.

Hydrography was accomplished on 21 June 1950.

C VESSELS AND EQUIPMENT:

All hydrography was accomplished by the Ship EXPLORER, and was controlled by visual fixes.

Soundings were obtained with 808 type fathometer No. 60 and the NMC-2 type fathometer. Corrections were applied for initial setting, draft, phase comparisons, and velocity.

D TIDE AND CURRENT STATIONS:

Tide reductions were made to all soundings. Reducers for tides were obtained from data furnished by the Washington Office.

This data was based on predicted tides for Sweeper Cove, Adak, Island, and necessary allowances for time and range differences were made by the Washington Office.

There were no current stations within the limits of this survey.

E SMOOTH SHEET:

The smooth sheet was made as an insert in sheet H-7891 EX-10150 by the Seattle Processing Office. All other data will be furnished by the Seattle Processing Office.

F CONTROL STATIONS:

Triangulation stations UNA, 1944 and UNALGA, 1944 together with hydrographic signals scaled from photostats of H-7052 and H-7053 (1945) were used in this survey.

G SHORELINE AND TOPOGRAPHY:

No shoreline detail is included in this survey. Shoreline detail was supplied from survey H-7052.

H SOUNDINGS:

All sounding was in fathoms, by the echo method. Sounding lines were spaced in accordance with instructions. No unusual methods were used to obtain or reduce soundings.

I CONTROL OF HYDROGRAPHY:

All sounding lines were controlled by visual three point sextant fixes.

J ADEQUACY OF SURVEY:

The survey, as far as can be determined from the boat sheet, is adequate. There are no holidays within the limits of the sheet. So far as can be determined, junctions with adjacent surveys are adequate. Depth curves can be drawn satisfactorily at all junctions.

K CROSSLINES:

No cross lines were run on this survey. Crossings with lines run on EX-10150 appear to be in satisfactory agreement on the boat sheet. See P7 of Review

H-7891

L COMPARISON WITH PRIOR SURVEYS: (1945)

At the junction on the inshore side with H-7052, soundings appear to be in agreement, and depth curves can be drawn without discrepancies.

M COMPARISON WITH CHART:

Due to the difference in scale between this survey and Chart No. 8863, and the meagerness of the prior survey, an accurate comparison cannot be made, but in general, the depth curves of this survey seem to conform to the depth curves on the chart.

N DANGERS AND SHOALS:

The entirety of this survey was a development of the shoal making out from the west end of Unalga Island. This shoal was developed satisfactorily between the 20 and 100 fathom curves. There are no dangers to navigation within the limits of this survey.

O - R:

Since this survey was a supplement to a recent C&GS survey in this area, Coast Pilot Information, Aids to Navigation, Landmarks for Charts, and Geographic Names were not covered this season.

Respectfully submitted,

William D Barbee

William D. Barbee
Ensign, USC&GS

Approved and forwarded:

S. B. Grenell, CDR
Commanding Officer
C&GS Ship EXPLORER

APPROVAL SHEET

EX-4250

The boat, smooth sheet and records have been inspected and approved.

S. B. Grenell
Commander, USC&GS

7891
EX 4250

PART III: SHORAN ZERO SETTINGS

Shore Set	Ship	Launch #1	Launch #2	Launch #3
HART (lf)	99.804	99.818	99.798	99.789
TINY (hf)	99.811	99.804	99.808	99.804
SEMI	99.830			
CARE	99.821			
ROCK (hf)	99.825	99.814	99.812	99.796
DORE (lf)	99.804	99.770	99.773	99.771
DRUM (hf)	99.815	99.791	* (See below)	99.787
HILL (lf)	99.827	99.815	* (See below)	99.801

* The shoran zero settings for Launch #2 at Port Clarence were determined at two distances. The variation in zero settings between the two calibrations was proportional to distance. This variation was attributed to the attenuation of shoran signals at line-of-sight distances.

Calibration No. 10		Calibration No. 12	
DRUM distance	13.820 miles	DRUM distance	6.700 miles
DRUM zero set	99.762	DRUM zero set	99.790
HILL distance	19.356 miles	HILL distance	6.909 miles
HILL zero set	99.760	HILL zero set	99.819

From the above data the zero sets for Launch #2 are:

DRUM

Distance	Zero Set
0 - 7.5 miles	99.790
7.5-10.0 miles	99.780
10.0-12.5 miles	99.770
12.5-out miles	99.762

HILL

Distance	Zero Set
0 - 8.5 miles	99.819
8.5-11.5 miles	99.810
11.5-14.5 miles	99.800
14.5-17.5 miles	99.790
17.5-out miles	99.780

VELOCITY CORRECTIONS

1950

EX-4250

NMC & NMC-2 FATHOMETERS

Corr'n. fms	Depth fms.
(all corrections plus)	
0	0 to 220
1	221 to 380
2	381 to 500
3	501 to 595
4	596 to 673
5	674 to 741
6	742 to 800
10	857 to 1104
15	1105 to 1315
20	1316 to 1484
25	1485 to 1635
30	1636 to 1776
35	1777 to 1907
40	1908 to 2022
45	2023 to 2135
50	2136 to 2237
55	2238 to 2342
60	2343 to 2445
65	2446 to 2536
70	2537 to 2620

NMC & NMC-2 FATHOMETERS

Corr'n. fms	Depth fms.
(all corrections plus)	
75	2621 to 2705
80	2706 to 2790
85	2791 to 2878
90	2879 to 2960
95	2961 to 3025
100	3026 to 3100
105	3101 to 3175
110	3176 to 3247
115	3248 to 3315
120	3316 to 3384
125	3385 to 3452
130	3453 to 3515
135	3516 to 3578
140	3579 to 3641
145	3642 to 3702
150	3703 to 3762
155	3763 to 3820
160	3821 to 3880
165	3881 to 3937
170	3938 to 4000

NMC 2000 & 4000 fm. scales

Depth	Corr'n fm.
0 to 500	0
501 to 856	5 Fms

As above for deeper

VELOCITY CORRECTIONS

1950
808 Fathometer

Ex 4250

Vicinity Amchitka I.
Surveys Nos. 2150, 2250, 4150, H-7731, H-7737 4250, 10150

Corr'n fms	Depth fms
0.0	0 to 6.0
-0.2	to 14.0
-0.4	to 22.0
-0.6	to 30.0
-0.8	to 38.5
-1.0	to 46.5
-1.2	to 54.5
-1.4	to 63.0
-1.6	to 71.0
-1.8	to 79.0
-2.0	to 87.0
-2.2	to 95.0
-2.4	to 103.5
-2.5	to 114
-3.0	to 134
-3.5	to 154
-4.0	to 175

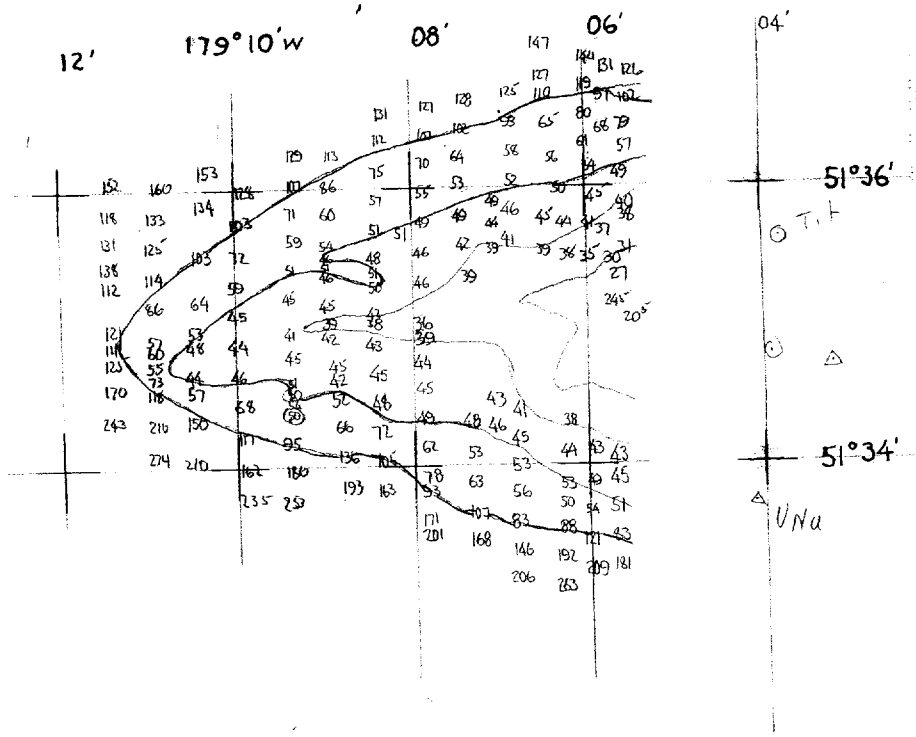
Vicinity Sledge I. & Port Clarence
Surveys Nos. 2350, 2650, 2750 & 4350.

(Ship) Corr'n ft.	Depth ft.	(Launch) Corr'n ft.	Depth ft. (0.2 reducer)
0.0	0 to 29.0	0.0	0.0 to 08.5
-0.5	to 60.0	-0.2	to 12.0
-1.0	to 88.0	(0.5 reducer)	
-2.0	to 151.0	0.0	0.0 - 19.0
-3.0	to 160.0	-0.5	- 51.0
		-0.1	- 80.0
		-2.0	- 141.0
		-3.0	- 160.0

Surveys Nos. 2450 & 2550

0.0	0.0 to 19.0	0.0	0.0 to 9.0
-0.2	to 33.5	-0.2	to 23.5
-0.4	to 50.5	-0.4	to 38.0
-0.6	to 60.0	-0.6	to 56.0
		-0.8	to 60.0
		-1.0	to 88.0

Top



Reduction of Ex 4250
to fit Ex-10150 - H-7891

H 7891 Ex 10150

Aleutian Islands
Amchitka Pass.

Processing Office Notes.

Smooth sheet.
The projection was ruled on the machine in Washington. Datum is NA 1927. Other datails were added in the Seattle Processing Office. Shoran arcs were controlled by points computed along radii and plotted on the sheet. Sea Otter Rock off Amchitka Island was transferred from H 7889 where the plotting was fully explained. The shoreline of Amatignak Island which was needed for tangent bearings was taken from H 7049.

⊙Sea Otter incorrectly plotted and not required for fixes on H-7891. Signal removed from Smooth sheet.

Sub Plan. Ex 4250.
This was provided for a 1/40 000 scale survey west of Unalga I. ⊙ Peak on Ulak Island was needed. The position of the signal was scaled from T 6991, or rather the differences in ϕ & λ between ⊙ Peak and △ ULAK were scaled. A true south line was constructed thru △ UNALGA. The azimuth line to △ ULAK was constructed by use of the natural tangent. The distance from △ UNALGA to △ ULAK was pricked off on this line. Then the differences in ϕ & λ between △ ULAK and ⊙ Peak were applied to the position of ULAK. This gave the position of ⊙Peak. The points ULAK and Peak fall far outside the box provided for the subplan. They are just southwest of Amatignak Island as shown on the principal survey. After the sub-plan has been verified ⊙ ULAK and △ Peak should be erased.

Position of ⊙Peak checked by constructing portion of projection which included △ Ulak and Unalga. Verifier made slight adjustment of position of ⊙Peak. No corrections to fixes made because they were only slightly effected by change.

△ Tot and ⊙ Era were obtained by projecting H 7052 on H 7891, holding the triangulation stations UNA and UNALGA in contact to correct for datum difference.

Shoreline of Unalga Island is from H 7052.

The field party provided a separate report for Ex 4250. It is bound as part of the report for H 7891.

Deep cut in Aleutian Ridge.
Attention is called to the interesting fact that the deepest cut thru the Aleutian Ridge falls almost on the 180 th meridian. I think the 600 fathom curve crosses the ridge. It is recommended that it be so shown. The positions of the soundings do not absolutely determine this point. The 600 fathom curve was turned back on each side of the ridge because it has been the custom to resolve uncertainties of thisnature in favor of the shoaler readings, a conservative policy where navigational hazards are possible, Such hazards seem impossible here.

Inadequate development to substantiate crossing of ridge by 600-fm. curve.
ϕ 51°31' N
λ 179°59E

Adjustment of sounding lines.

In the area north of ϕ 51 30 and east of λ179 50 west(approx) the positions are controlled by shoran stations Semi and Gare. These positions were held without adjustment.

Depths in adequate agreement in this area.

The lines directly west of this area were controlled by shoran stations Tiny and Hart. When these lines entered the area controlled by Semi and Gare the soundings disagreed. On account of similar difficulty with stations Tiny and Hart on Sheets H 7889 (1950) and H 7890 (1950) to westward, the Tiny-Hart lines were adjusted to agree with the Semi-Gare controlled lines. The adjustment was applied near the junction of the control systems, making such changes as appeared necessary and reasonable with regard to time, course, etc. The changes were not extended alln the way back thru the Tiny-Hart area.

It should be noted that the visually controlled sub-plan soundings are in agreement with surrounding Semi-Gare sounding lines without any adjustment applied.

In the western part of the sheet, between ϕ 51 20 and ϕ 51 40 The positions are controlled by Tiny and Hart. Except for the adjustments on the eastern border of this area, already discussed above, there is very little adjustment to these lines. Shifts were made where necessary to obtain good crossings. On G-day the line from Pos. 25 to Pos. 30 were unsatisfactory and were rejected without loss to the sheet.

Depths in adequate agreement

In the lower half of the sheet the long lines were adjusted to fit soundings in the area mentioned in the paragraph above. These adjustments influenced the plotting of positions in the lower part of the sheet. In many of these positions the returns from Tiny and Hart were in such disagreement that one return, usually Tiny, was rejected. Please note that the intersections from these signals are very weak thruout the entire lower half of the sheet. It is understood that during the greater part of the time that the EXPLORER was engaged on this survey shoran stations Semi and Gare were not available to her because they were required by the PIONEER which was working in other directions.

Depths in adequate agreement. Portions of lines plotted on one signal, time and course.

On "F" dayreturns from Tiny and Hart were recorded. The northern part of the line had to be adjusted to fit crossed lines. As the arcs from Tiny seemed to provide the better crossings the lower part of the line also was guided by the return from Tiny.

The lines nearest to Amitignak I. are in agreement (1950) with soundings of the PIONEER'S sheet H 7805. Lines in this vicinity were supported by a few bearings to Amatignak Island. Dead reckoning was adjusted from 197 K-day to 12 L-day and from 18 L to 54 L-day. At positions 12 L to 18 L-day returns were received from Tiny and Hart but those from Tiny were rejected.

Escarpment at Pos.24 L-day.
There is a 540 fathom change in depth at ϕ 50 52 λ 179 36W. The soundings before and after the change in depth are fairly legible on the fathogram but the depths on the slopes could not be read. It is recommended that this spot be re-examined by the next party in the field.

Work accomplished on H-7978 (1952) confirms escarpment

New line in this area H-7978(1952) (Sp 49368) (see 56 to 56D, H-7978)

Depth curves.
Depth curves at 100 fathom intervals were drawn on H 7805 to aid in forming the depth curves on H 7891.

Sounding interval F-day.
Attention is called to Pos. 6 - 7 F-day ϕ 50 45 λ 179 47E
and to Pos.36- 38 F 51 23 179 56E.
In each case the interval between positions on the profile is shorter than clock time would indicate. Plotted distances agree with clock time.

Position. F-day.	Clock Time. Min.	Plotted distances. Min.	Time per profile. Min.
6 - 7	10	10	6.7
36-37	10	10	8.3
37-38	10	10	9.

plotted station TINY, time & course. Distance between fixes O.K.

The spacing of the 10 second sounding interval is maintained on the NMC profile at the rate of twelve to the inch without shortening. This is not understood. Time intervals on the profile were checked thruout the day. Plotting was re-examined. The field party divided the profile interval between positions into ten parts and recorded ten soundings

Fathometer assumed to have stopped and then started again between position 6-7 F & 36-38 F

Scanning.
Profiles were scanned and checked by field party. In the Processing Office all NMC fathograms were again re-scanned. The profile is obscure frequently. The depths become a matter of opinion, Large discrepancies are possible. Our changes in the sounding record were made in green.
Part of the NMC 2 fathograms were spot scanned. The NMC 2 and 808 soundings are good. Usually the NMC fathograms in depths less than 2,000 fathoms are satisfactory.

Edgar E. Smith
Cart. Engr. 1/31/52

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

POST-OFFICE ADDRESS: 1500 Westlake Ave. North, Seattle 9, Wash.

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

1 December 1950

To: Commanding Officer Explorer
Commanding Officer Pioneer.

Subject: Plotting survey by Pioneer on Ex 10150.

It is suggested that the survey by the Pioneer in Amchitka Pass west of Amatignak and Ulak Islands be plotted on the same sheet as Ex 10150. This assumes that the fixes are chiefly shoran and that no visual signals north of Unalga nor east of Ulak Island were used. Sheet Ex 10150 extends from ϕ 50 39 to ϕ 52 00 and from 179 03 W to 179 27 E.

H-7891

It is understood that the Pioneer's sheet is not on 1/100 000 scale but on 1/80 000(?) scale. The smaller scale seems adequate for a survey in this area. If development or search for reported shoals require a larger scale these parts can be put in a sub-plan. There is 15 inches of unused space across the top of the sheet within the limits shown above.

H-7891

It is the intention, if there is no objection, to plot the small survey Ex 4250 west of Unalga as a sub-plan on Ex 10150. This will go in a space the size of a letter sheet. This survey is a larger scale development of a shoaler area fitting into Ex 10150. This arrangement will reduce the number of registered sheets and put the survey where it will be convenient for compilers.

Edgar L. Smith
Cart. Engr.

Approved and forwarded.

Jack Senior
Supervisor NW Dist.

DEC 11 1950

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

POST-OFFICE ADDRESS: Ship PIONEER

TELEGRAPH ADDRESS: P.O. Box 2039

EXPRESS ADDRESS: Oakland, California

7 December 1950

To: Supervisor, Northwestern District
U.S. Coast and Geodetic Survey
705 Federal Office Building
Seattle, Washington

Subject: Hydrographic Survey No. H-7805 (1:80,000)

Reference is made to a letter dated 1 December 1950 from Edgar E. Smith of the Seattle Processing Office suggesting that the above survey made by the PIONEER in the southern part of Amchitka Pass be smooth plotted on EXPLORER sheet No. EX-10150. (H-7891)

The smooth plotting of this sheet has been completed on the PIONEER and the sheet will be forwarded to the Washington Office in a short time. (About all the work remaining is typing the Descriptive Report).

I will request that the Washington Office forward a photographic copy to the Seattle Office for comparing junctions with the EXPLORER'S work.

cc: Commanding Officer, Ship EXPLORER

Thos. B. Reed
CDR., USC&GS
Comdg. Ship PIONEER

7891

Ex 10150

TIDAL NOTE

Soundings for this survey were reduced from tide data obtained from the portable automatic tide gage located at Kiriloff Wharf, Constantine Harbor, Amchitka Island, Alaska. Latitude 51°-24.8'N, Longitude 179° 16.8'E. For the period 0200 to 1100, 23 May 1950 when the gage was not operating, the tide curve was interpollated in order to obtain corrections.

This tide gage is in the same location as in 1949 and the same tide staff was used. The plane of reference is MLLW, which is 2.5 feet on the staff. All soundings and tidal observations are based on 165th meridian time (west). No correction for difference of time or range of tide was applied.

No tide reducers were applied to soundings from the NMC fathometer.

7891

TIDAL NOTE

Ex 4250

Soundings for this survey were reduced from tidal data furnished by the Washington Office.

These hourly heights were based on predicted tides for Sweeper Cove, Adak Island, and necessary allowances for time and range differences were made by the Washington Office.

The plane of reference is MLLW. All soundings and tidal observations are based on 165th meridian time (west).

STATISTICS FOR HYDROGRAPHIC SHEET NO. 7891

Field No. Ex-10150

USC&GSS EXPLORER

DATE	DAY LETTER	VOLUME	NO OF POSITIONS	STATUTE MILES
1950				
5-11	A	1	103	109.8
5-19	B	1&2	142	158.5
5-23	C	2	162	161.4
5-24	D	2&3	149	145.2
5-30	E	3	69	85.7
5-31	F	3&4	202	351.0
6-1	G	4&5	231	239.4
6-5	H	5	8	16.5
6-6	J	5&6	92	85.1
6-9	K	6&7	205	224.7
6-10	L	7	71	150.0
TOTALS		7	1434	1727.3

AREA, square statute miles 2523

STATISTICS FOR HYDROGRAPHIC SHEET NO. 7891

Field No. Ex-4250

USC&GSS EXPLORER

DATE	DAY LETTER	VOLUME	NO OF POSITIONS	STATUTE MILES
1950 6-21	A	1	93	49.1
	TOTALS	1	93	49.1

AREA, square statute miles, 17.5

H 7891
Ex 4250 & Ex 10150

Aleutian Islands
Amchitka Pass.

List of geographic names
penciled on smooth sheet.

Unalga Island

Amatignak Island

Amchitka Pass

~~Sea Otter Rock~~

Bering Sea

GEOGRAPHIC NAMES

Survey No. H-7891

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	
Alaska			(for title)							1
Aleutian Islands			(")							2
Bering Sea										3
Amchitka Pass									B.G.N.	4
Unalga Island										5
Amatignak Island										6
Pacific Ocean										7
Sea otter Rock										8
										9
					Names underlined in red are approved. 3-12-52 L. Heck					10
										11
										12
Constantine Harbor		(tide gage locations)								13
Sweeper Cove										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7891...

Records accompanying survey:

Boat sheets ..2..; sounding vols.. ..6..; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 6 Env.;

special reports, etc. 1 Descriptive Report; 1 Smooth Sheet; 1 Envelope

Shoran Plotting Abstracts.

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

Number of positions on sheet		......
Number of positions checked		......
Number of positions revised		......
Number of soundings revised (refers to depth only)		......
Number of soundings erroneously spaced		......
Number of signals erroneously plotted or transferred		......
Topographic details	Time	......
Junctions	Time	......
Verification of soundings from graphic record	Time	......

Verification by Prelim. Verif. D.R. Engle ..... Total time 169 Date 2-15-53

Reviewed by [signature] ..... Time 62 Date 3-20-53

Stirni - 9 hrs

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7891 FIELD NO. EX-4250 & EX-10150

Alaska-Aleutian Islands, Delarof Islands, Amchitka Pass

Project No. CS-218

Surveyed - May-June 1950 Scale 1:100,000

Soundings:

808 Fathometer
NMC-2 Fathometer
NMC Fathometer

Control:

Shoran
Sextant fixes on shore signals

Chief of Party - H. A. Karo
Surveyed by - H.A. Karo, S.B. Greenell, J.S.Morton, M.A. Hecht, F.X. Popper and R.C. Bolstead
Protracted by - W.M. Martin, R.B. Johnson and C.E. Pedersen
Soundings plotted by - W.M. Martin
Preliminary verification by - D.R. Engle
Verified and inked by -
Reviewed by - I.M. Zeskind, 20 March 1953
Inspected by - R.H. Carstens

1. Shoreline and Control

The shoreline originated with air-photographic surveys T-8008 (1945-48) and T-8029 (1952).

The source of the control is given 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 were adequately delineated.

The bottom is very irregular. Submarine features such as troughs, valleys, ridges, and knolls contribute to the bottom irregularity.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with the following surveys:

H-7804 (1950) on the northeast.
H-7650 (1948-49) on the northwest.
H-7739 (1949) on the west.
H-7741 (1949) on the west.
H-7052 (1945) west of Unalaga Island.
H-7050 (1945) west of Unalaga Island.
H-7805 (1950) on the east.

5. Comparison with Prior Surveys

a. H-6906 (1935) USN 1:150,000

This small-scale U.S. Navy reconnaissance survey covers the area of the present survey north of lat. 51°00' N and west of long. 179°20' W. A comparison between the prior and present surveys reveals differences of as much as 314 fms., as for example in lat. 51°27.00' N., long. 179°55' E where a prior depth of 930 fms. falls in present depths 616-681 fms. These differences are attributed largely to the dead reckoning control and the improper spacing of soundings on the prior survey. It is apparent that a shift in position of the prior sounding lines would eliminate many of these discrepancies.

The present survey is adequate to supersede the prior survey within the common area.

b. H-7049 (1945) 1:160,000

This is a small-scale reconnaissance survey which covers that portion of the present survey which lies north of approximate lat. 51°17'. A comparison between the prior and present surveys reveals differences in depth of as much as 200 fms., as for example in lat. 51°26.4', long. 180°00.0' were a prior depth of 508 fms. falls in present depths of 705 fms. The difference in locations of the two shoals bordering Amchitka Pass is also of interest. The 78-fm. shoal on the present survey in lat. 51°31.2' N, long. 179°52.2' E falls about 1½ miles to the eastward on the prior survey. The 58-fm. shoal on the present survey in lat. 51°28.5', long. 179°52.7' W falls about 1 mile north of a 76-fm. shoal on the prior survey. These differences are attributed largely to the dead reckoning control on the prior survey. It is apparent that a shift in position of the prior sounding lines would eliminate these discrepancies.

The present survey is adequate to supersede the prior survey within the common area.

6. Comparison with Chart 8863 (Latest print date 1/14/52)

A. Hydrography

The charted hydrography originates principally with the previously discussed prior surveys which need no further consideration, with compilations of reconnaissance surveys by this Bureau and the U.S. Navy prior to 1945 (Bps. 39018, 40278, and 40307), and several critical soundings from the present survey prior to verification and review. Differences in depths of as much as 200 fms. between the charted and present depths are noted. These differences are attributed to errors in the positions of the soundings.

The 880-fm. sounding charted in lat. 51°14.0', long. 179°51.5'W. from Bp. 40307 (1945) falls in present depths of 1800-1900 fms. The 880-fm. sounding is probably 1,000 fms. in error and should be disregarded.

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 survey has been given only a preliminary verification in accordance with recently adopted procedure. A complete statement concerning the condition of the survey will be made after the survey has been completely verified.

b. The positions of the sounding lines in the western portion of the survey, which were controlled by shoran stations TINY and HART were questionable. This was evidenced by the conflicts between sounding lines at crossings. Discrepancies between sounding lines controlled by TINY and HART were also encountered on survey H-7889 (1950) in the area west of the present survey, as discussed in the review of that survey. To rectify the discrepancies on the present survey, the Processing Office adjusted the position of the sounding lines to bring the depths at crossings into agreement. The adjustment of the sounding lines as made by the Processing Office has been accepted as adequate for the hydrography affected.

Investigation of the hydrography in the eastern portion of the survey showed no excessive conflicts between sounding lines controlled by shoran stations SEMI and GARE, and sounding lines controlled by visual fixes.

c. Only one bottom characteristic was obtained in the area.

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 an adequate basic survey of the area and no additional field work is recommended. Attention, however, is directed to the paucity of bottom characteristics as noted in paragraphs 7c and 8 above.

Examined and approved:

H. R. Edmonston
Chief, Nautical Chart Branch

H. Arnold Karo
Chief, Division of Charts

G. R. Fish
Chief, Section of Hydrography

Earl O. Heaton
Chief, Division of Coastal Surveys

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~[illegible] hydrography and topography~~ 14 March 1952

Division of Charts: R. H. Carstens

Plane of reference approved in 8
volumes of sounding records for

HYDROGRAPHIC SHEET 7891

Locality Amchitka Island, Aleutian Islands

Chief of Party: H. A. Karo in 1950
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.
Chief, ~~Division~~ Section of Tides ~~and Currents.~~

U. S. GOVERNMENT PRINTING OFFICE 756675

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7891

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
3/31/52	8864	[signature]	Before ~~After~~ Verification and Review Partially applied
12/27/55	8863	H.F. Stegman	~~Before~~ After (preliminary) Verification and Review
5/17/57	9102	C.R. Willmann	~~Before~~ After (preliminary) Verification and Review
11/61	8864	[signature]	~~Before~~ After Verification and Review
10/3/79	530(9000)	KANIS	(PART) ~~Before~~ After Verification and Review & Signature AS Cat. 6 survey - thru chart 9102 (16012) - 19th Ed.
2/1993	16450	DON CORDTS	~~Before~~ After Verification and Review Fully appl New Metric Chart
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

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.