

7729

Diag. Cht. No. 8864-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PI-4149 Office No. H-7729

LOCALITY

State ALASKA-ALEUTIAN ISLANDS

General locality RAT ISLANDS

Locality NORTH OF SEMISOPCHNOI ISLAND

194 9

CHIEF OF PARTY

H. E. Finnegan

LIBRARY & ARCHIVES

DATE Feb. 21, 1950

B-1870-1 (1)

62212

Form 537
(Ed. June 1946)

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. H-7729

Field No. PI-4149

Alaska-

State ^ Aleutian Islands

General locality Rat Islands

Locality North of ~~Patrol Bank~~, Semisopochnoi Island

Scale 1:40,000 Date of survey 12, 13, 14, 18, 19, 20, 22, 26, 27 and 30 July 1949.

Instructions dated See "List of Instructions - -", page 2.

Vessel Ship PIONEER

Chief of party H. E. Finnegan

Surveyed by G. A. Nelson, E. B. Lewey, R. A. Marshall, C. J. Peyma, L.F. Woodcock

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

Fathograms scaled by RSD, JW, WCF, JB, AEG, RLK

Fathograms checked by PAW, LFW, DGR, AEG, BCS

Protracted by L. F. Woodcock

Soundings penciled by L. F. Woodcock

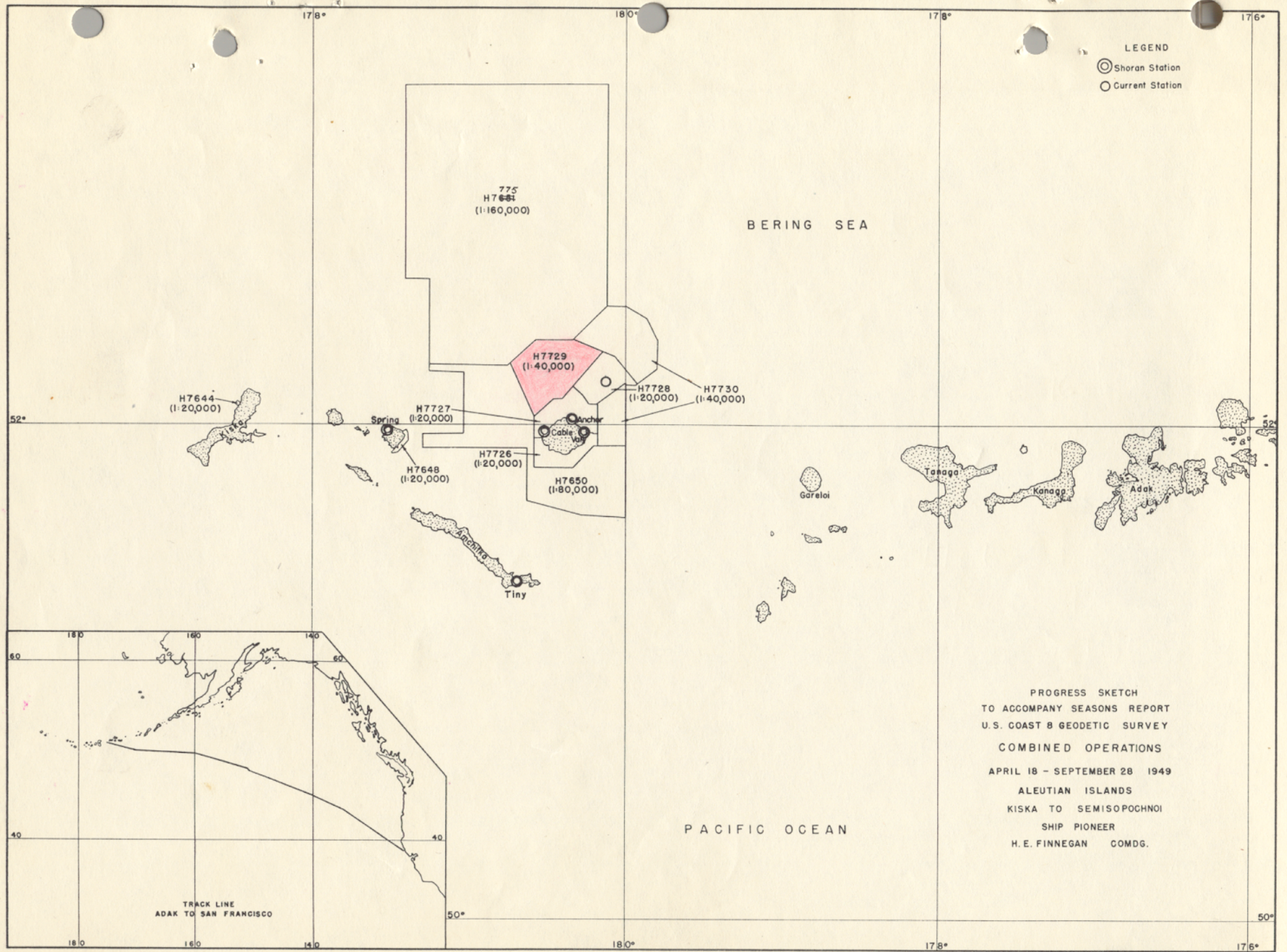
Soundings in fathoms ~~Cast~~ at ~~MLLW~~ MLLW

REMARKS:
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LIST OF INSTRUCTIONS AND SUPPLEMENTAL INSTRUCTIONS
FOR PROJECT CS-218

(To Season of 1949)

-
1. Supplemental Instructions dated 28 February 1936;
 2. Instructions dated 3 February 1938.
 3. Supplemental Instructions dated 28 February 1938.
 4. Amended Instructions dated 1 March 1938.
 5. Supplemental Instructions dated 3 April 1939.
 6. Amendment to Instructions dated 8 May 1940.
 7. Revised Instructions dated 16 April 1943.
 8. Supplemental Instructions dated 1 February 1944.
 9. Supplemental Instructions, Shoreline Inspection, 18 March 1944.
 10. Supplemental Instructions, dated 10 February 1948.
 11. Supplemental Instructions, Photogrammetric Field Surveys,
8 April 1948.
 12. Detail Instructions for Operation of the K-20 Camera (Reference
Paragraph 16-D of Instructions dated 8 April 1948).
 13. Report on Experimental Use of Photographs for Establishing
Elevations in Alaska. Division of Photogrammetry, April 1949.
 14. Brief Instructions for Operation of the K-20 Camera (Reference
Paragraph 16-D of Instruction dated 8 April 1948).
 15. Supplemental Instructions dated 11 April 1949 (To C.O. EXPLORER).



LEGEND
 ⊙ Shore Station
 ○ Current Station

BERING SEA

PACIFIC OCEAN

PROGRESS SKETCH
 TO ACCOMPANY SEASONS REPORT
 U.S. COAST & GEODETIC SURVEY
 COMBINED OPERATIONS
 APRIL 18 - SEPTEMBER 28 1949
 ALEUTIAN ISLANDS
 KISKA TO SEMISOPCHNOI
 SHIP PIONEER
 H.E. FINNEGAN COMDG.

TRACK LINE
 ADAK TO SAN FRANCISCO

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY

H-7729

(Field PI-4149)

Petrel Bank, Semisopochnoi Island

Project CS - 218

Season of 1949

Ship PIONEER

Henry E. Finnegan, Chief of Party

Scale: 1:40,000

Surveyed by: G. A. Nelson
 E. B. Lewey
 R. A. Marshall
 C. J. Beyma
 L. F. Woodcock

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. The survey consists of ship hydrography north of Semisopochnoi Island between latitudes $52^{\circ} 02'$ and $52^{\circ} 22'$, and between longitudes $179^{\circ} 14'E$ and $179^{\circ} 50'E$. It covers the southern portion of the western approach to Petrel Bank. The shoaler portions of Petrel Bank and the inshore area were surveyed on a series of 1:20,000 scale sheets.

Field work began on 12 July 1949 and ended on 30 July 1949.

This survey joins contemporary surveys on all sides, as is shown on the Progress Sketch, page 3 of this report.

C. VESSEL AND EQUIPMENT:

All hydrography on this survey was done by the Ship PIONEER.

Type 808-J Depth Recorders No. S-69 and S-108 were used to depths of approximately 120 fathoms. MMC-2 Fathometer No. 115 was used for greater depths.

D. TIDE AND CURRENT STATIONS:

Data obtained from the portable tide gage at Constantine Harbor, Amchitka Island were used for the reduction of all soundings. No time or range corrections were applied. A tide note is included in this report.

No current stations were occupied within the limits of this survey.

E. SMOOTH SHEET:

The projection was made and verified by the Washington Office.

F. CONTROL STATIONS:

All the hydrography on this sheet was controlled by three shoran stations, namely, VALY 1949, CABLE, 1949 and CAPE 1949. All of these stations were located by triangulation, the first two by the Ship PIONEER, H.E. Finnegan Chief of party, and the latter by the Ship EXPLORER, H. Arnold Karo Chief of party.

G. SHORELINE AND TOPOGRAPHY:

~~As this is an off-shore~~ survey no shore line or topography was involved.

H. SOUNDINGS

Depths were obtained by the fathometers enumerated in Paragraph C. All soundings were scanned from the graphs and then verified. No draft or settlement corrections were applied. Fathometer and velocity corrections were applied. They were determined as described in "REPORT ON FATHOMETER AND VELOCITY CORRECTIONS", Ship PIONEER, Season of 1949. A list of fathometer and velocity corrections accompanies this report.

*Filed with
H-7730*

I. CONTROL OF HYDROGRAPHY:

All hydrography was controlled by shoran observations. The spacing of sounding lines was very economically maintained by sailing at constant distances from one of the stations, or "running arcs".

J. ADEQUACY OF SURVEY:

This survey is considered complete and adequate, and no further work is necessary in the area. Junctions with adjoining surveys are satisfactory on the boat sheets, and no holidays or excessive differences exist. The smooth sheets for the adjoining surveys are not complete at this time. A comparison of smooth sheet junctions will be made later and added to this report. (See page 8.)

K. CROSSLINES:

Crosslines on this sheet comprise 10% of the total mileage of hydrography. Crossings are in good agreement.

M. COMPARISON WITH CHART:

Chart #8864 (March 1948):

The chart shows a large indentation in the 100 fathom curve at latitude $52^{\circ} 16'$, longitude $179^{\circ} 40'$. This indentation completely disappears on the new survey and becomes a smooth curve. The remainder of the 100 fathom curve is in good agreement.

The small portion of the 50 fathom curve developed on the new survey is 2 to 3 miles northwest from the 50 fathom curve on the chart.

Since the chart is based on a reconnaissance survey, and since this new survey is well-controlled throughout, it is recommended that the new survey supercede all prior surveys for charting purposes.

N. DANGERS AND SHOALS:

There are no dangers to surface navigation within the area of this survey.

O. COAST PILOT INFORMATION:

See the special report on COAST PILOT NOTES submitted 14 November 1949.

Q. LANDMARKS FOR CHARTS:

See the special report ^{"AIR PHOTO REPORT 1949"} on ~~LANDMARKS FOR CHARTS~~.

R. GEOGRAPHIC NAMES:

There are no new geographic names in the area covered by this survey.

U. VELOCITY CORRECTIONS:

An abstract of Velocity Corrections is included with this report. Abstracts for Phase Corrections for the depth recorders used on this survey are also included with this report.

For the determination of this data see the special report "REPORT ON FATHOMETER AND VELOCITY CORRECTIONS", Ship PIONEER, Season of 1949. *Filed with H-7730 (1949)*

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", Ship PIONEER, Season of 1949. *Filed with H-7730 (1949)*

W. REDUCERS:

Velocity corrections were entered as follows:

- 0.1 fm. units to 31 fms. depth.
- 0.2 fm. units to 101 fms. depth.
- 0.5 fm. units to 800 fms. depth.

Tide reducers were entered as follows:

- 0.1 fm. units to 31 fms. depth.
- 0.2 fm. units to 800 fms. depth.

X. MISCELLANEOUS:

Work on this sheet was originally started off the west side of Semisopochnoi Island. Later it was decided to survey this area on sheet H-7650 (scale 1:80,000), and the lines were re-plotted on the latter sheet. However, the records are still contained in Volume 1 of sheet H-7729, positions 1A to 17B inclusive, a total of 32 positions. These positions are to be plotted on smooth sheet H-7650, and notations to this effect have been made in the sounding volumes.

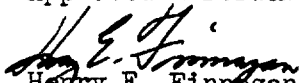
Position No. 10 on "H" day falls off the eastern limit of the smooth sheet as constructed. It is to be plotted on sheet H-7730 as an isolated position. *For K day see H-7650 (1949)*

Y. TABULATION OF APPLICABLE DATA:

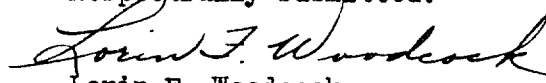
The following data are included with this report.

1. Title sheet
2. Index of sheets
3. Tidal note
4. Velocity corrections (2 pages)
5. Initial and phase corrections, Ship PIONEER
6. Shoran zero settings, season of 1949
7. Abstract of statistics.

Approved & forwarded:


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

Respectfully submitted:


Lorin F. Woodcock
Lieut. USC&GS

J. ADEQUACY OF SURVEY:

Comparisons have been made with all adjoining smooth sheets and all junctions are satisfactory.

STATISTICS FOR HYDROGRAPHIC SURVEY H-7729 (1949)

Ship PIONEER

Project CS - 218

<u>Day</u>	<u>Vol. No.</u>	<u>Date</u>	<u>No. of Positions</u>	<u>Statute miles</u>
B	1	12 July	103	97.7
C	1 & 2	13 July	69	73.6
D	2	18 July	81	84.9
E	2	19 July	70	61.1
F	2 & 3	20 July	78	68.2
G	3	22 July	17	17.7
H	3	26 July	84	36.5
J	3 & 4	27 July	144	112.6
K	4	30 July	<u>53</u>	<u>41.9</u>
T O T A L S			699	594.2

Square Statute Miles - 385.0

TIDE NOTE

Project CS-218 SHIP PIONEER Field Season - 1949

The tide gage at Constantine Harbor, Amchitka Island, Aleutian Islands, Alaska, latitude $51^{\circ} 24.8'$ north and longitude $179^{\circ} 16.8'$ east was used for the reduction of all soundings except as indicated below. On the following days when the gage was inoperative at Constantine Harbor, tides were inferred from observed tides at Sweeper Cove:

30 June; 1 July; 8 - 12, 17 August; 12, 13 September

A height of 2.5 feet on the tide staff at Constantine Harbor corresponds to mean lower low water. No corrections for time or height differences were applied to the observed tides. For tides inferred from observed tides at Sweeper Cove all time and range corrections were made by the Washington Office.

Hourly heights were obtained from the Ship EXPLORER and from the Washington Office.

VELOCITY CORRECTIONS

1949

NMC & NMC-2 FATHOMETERSNMC & NMC-2 FATHOMETERS

<u>Corr'n. fms.</u>		<u>Depth fms.</u>		<u>Corr'n. fms.</u>		<u>Depth fms.</u>	
	0.0	6.0	to 65.0	plus 32	1836	to	1869
	-0.2	65.1	to 102.0	plus 33	1861	to	1885
	0.0	103	to 250	plus 34	1886	to	1910
plus	0.5	251	to 370	plus 35	1911	to	1930
plus	1.0	371	to 450	plus 36	1931	to	1955
plus	1.5	451	to 510	plus 37	1956	to	1980
plus	2.0	511	to 580	plus 38	1981	to	2010
plus	2.5	581	to 630	plus 40	2011	to	2120
plus	3.0	631	to 670	plus 45	2121	to	2225
plus	3.5	671	to 720	plus 50	2226	to	2330
plus	4.0	721	to 760	plus 55	2331	to	2430
plus	4.5	761	to 810	plus 60	2431	to	2520
plus	5.0	811	to 870	plus 65	2521	to	2615
plus	6	871	to 930	plus 70	2616	to	2700
plus	7	931	to 1000	plus 75	2701	to	2785
plus	8	1001	to 1050	plus 80	2786	to	2865
plus	9	1051	to 1095	plus 85	2866	to	2945
plus	10	1096	to 1145	plus 90	2946	to	3025
plus	11	1146	to 1190	plus 95	3026	to	3100
plus	12	1191	to 1235	plus 100	3101	to	3170
plus	13	1236	to 1275	plus 105	3171	to	3245
plus	14	1276	to 1315	plus 110	3246	to	3315
plus	15	1316	to 1355	plus 115	3316	to	3385
plus	16	1356	to 1395	plus 120	3386	to	3450
plus	17	1396	to 1430	plus 125	3451	to	3520
plus	18	1431	to 1460	plus 130	3521	to	3580
plus	19	1461	to 1490	plus 135	3581	to	3645
plus	20	1491	to 1525	plus 140	3646	to	3710
plus	21	1526	to 1555	plus 145	3711	to	3770
plus	22	1556	to 1590	plus 150	3771	to	3830
plus	23	1591	to 1620	plus 155	3831	to	3890
plus	24	1621	to 1650	plus 160	3891	to	3945
plus	25	1651	to 1675	plus 165	3946	to	4010
plus	26	1676	to 1705				
plus	27	1706	to 1730				
plus	28	1731	to 1760				
plus	29	1761	to 1785				
plus	30	1786	to 1810				
plus	31	1811	to 1835				

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

INITIAL AND PHASE CORRECTIONS
TO
Ship's Fathometers

PIONEER

Season of 1949

FATHOMETER
NMC & NMC-2

INITIAL CORRECTION
- 0.1 fms.

808 J #S-108

- 0.1 fms

PHASE CORRECTION

<u>FATHOMETER</u>	<u>SCALE</u>	<u>CORRECTION</u>
808-A	B	- 0.3
ship 69-S	C	- 0.4
	D	- 0.6

808-J	B	- 0.9
ship #108	C	- 0.8
	D	- 0.3

809-J	B	- 0.6
Launch #4 #107-S	C	- 0.0
	D	≠ 0.3

808-J	B	- 1.4
Launch #3 #129-S	C	- 0.4
	D	≠ 1.5

SHORAN ZERO SETTINGS

Ship PIONEER

Season of 1949

<u>SHORE SETS</u>	Ship Set #3		Ship Set #6	
	<u>Rate</u>	<u>Drift</u>	<u>Rate</u>	<u>Drift</u>
#1 Valy	99.816	99.816	99.817	99.796
#4 Cape	99.769	99.772	99.777	99.777
#6 Cable	99.817	99.820	99.834	99.827

APPROVAL SHEET TO ACCOMPANY

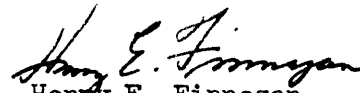
SURVEY H-7729

(Field No. PI-4149)

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

The records and smooth sheet have been inspected and approved.

The survey is considered adequate.


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

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

13 March 1950

Division of Charts: R. H. Carstens

Plane of reference approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 7729

Locality Semisopchnoi Island, Petrel Bank, Aleutian Islands

Chief of Party: H. E. Finnegan 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-7729

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
<u>Bering Sea</u>								USWB	4
									5
<u>Petrel Bank</u>								"	6
<u>Semisopachnoi Island</u>								"	7
									8
									9
									10
									11
									12
									13
<u>Constantine Harbor</u>			(location of tide gage)					USWB	14
									15
									16
									17
									18
									19
									20
									21
									22
									23
									24
									25
									26
									27

Names underlined
in red are approved.
3-13-50. L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7729

Records accompanying survey:

Boat sheets ¹.....; sounding vols. ⁴.....; wire drag vols.;
 bomb vols.; graphic recorder rolls ^{8 envel.}.....;
 special reports, etc. ^{1 envel. Shoran Abstract Sheets}.....

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

Number of positions on sheet	.....	682
Number of positions checked	.....	49
Number of positions revised	.....	2
Number of soundings revised (refers to depth only)	.....	14
Number of soundings erroneously spaced	.....	0
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	.....0
Junctions	Time	.....5
Verification of soundings from graphic record	Time	.....5

Verification by *William Klein*..... Total time ...86... Date 7. Dec. 1950

Reviewed by *Ernest*..... Time 18..... Date 1/24/51

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7729

FIELD NO. PI-4149

Alaska, Aleutian Islands, Rat Islands, North of Semisopchnoi
Island

Surveyed in July, 1949

Scale 1:40,000

Project No. CS-218

Soundings:

Control:

808 Fathometer
NMC-2 Fathometer

Shoran

Chief of Party - H. E. Finnegan

Surveyed by - G. A. Nelson, E. B. Lewey, R. A. Marshall,
C. J. Beyma and L. F. Woodcock

Protracted by - L. F. Woodcock

Soundings plotted by - L. F. Woodcock

Verified and inked by - Wm. Klein

Reviewed by - I. M. Zeskind, 13 February 1951

Inspected by - R. H. Carstens

1. Shoreline and Control

No shoreline is shown on this offshore survey.

The source of the signals 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 are adequately delineated.

The survey covers a portion of the insular shelf and slopes north of Semisopchnoi Island. The bottom is very smooth.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7728 (1949) on the east and with H-7730 (1949) on the northeast. Junctions with H-7775 (1949) on the north, with H-7650 (1949) on the west and with H-7727 (1949) on the south will be considered in the reviews of those surveys.

5. Comparison with Prior Surveys

H-6906 (1935) U.S.N. 1:150,000

A comparison between this small-scale Navy reconnaissance survey and the present survey reveals differences of as much as 35 fms. as for example, in lat. $52^{\circ} 07.88'$, long. $179^{\circ} 21.30'$, where a prior depth of 184 fms. falls in present depths of 214-219 fms. These discrepancies 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 many of these discrepancies. The present large-scale survey is adequately developed to reveal all the hydrographic information necessary to supersede H-6906.

6. Comparison with Chart 8864 (Latest print date 3/19/51)

A. Hydrography

The charted hydrography originates with the previously discussed survey which needs no further consideration. A few supplementary soundings from the present survey have been applied to the chart in those areas where soundings were previously lacking.

The charted hydrography is superseded by the present survey 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. No 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 paragraphs 7c and 9.

9. Additional Field Work Recommended

This is a very good basic survey and no additional work is recommended. However, 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

Acting/


H. Arnold Karo
Chief, Division of Charts


L. S. Hubbard
Chief, Section of Hydrography


W. M. Scaife
Chief, Division of Coastal Surveys

