

7648

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-2548 Office No. H-7648

LOCALITY

State ALASKA- ALEUTIAN ISLANDS

General locality RAT ISLANDS

Locality LITTLE SITKIN ISLAND

194 2-149

CHIEF OF PARTY

H. E. Finnegan

LIBRARY & ARCHIVES

DATE JANUARY 25, 1950

B-1870-1 (1)

7648

JAN 25 1950

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 7648

Field No. Pi 2548

State Alaska - Aleutian Islands

General locality Rat Islands

Locality ~~Sevidof~~ to Little Sitkin Island

Scale 1/20 000 Date of survey 5 Aug. to 22 Aug., 1949  
22 July to 20 Sept. 1948

Instructions dated 3 Feb. 1938, 1 Mar. 1938, 10 Feb. 1948, 8 Apr. 1948

Vessel PIONEER

Chief of party H. E. Finnegan

Surveyed by G. R. Fish, E. B. Lewey, C. A. George, C. J. Beyma, P. A. Weber

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

Fathograms scaled by SDP HWK DGR EAC FWL WCF RLK

Fathograms checked by SDP BCS AEG DGR

Protracted by Clarence E. Petersen

Soundings penciled by Clarence E. Petersen

Soundings in fathoms <sup>and tenths</sup> ~~XXX~~ at MLWX MLLW *and are true depths*

REMARKS:

178°30'

640

560

720

589

640

640

560

600

560

500

480

510

640

560

560

560

480

480

480

402

640

560

440

480

440

400

400

402

640

400

380

400

400

400

386

368

240

320

320

362

380

400

378

347

60

160

200

240

329

378

400

380

60

160

200

240

329

378

400

333

90

210

183

210

210

400

400

52°

212

204

138

183

334

400

250

31

0

171

160

180

374

447

435

425

0

58

72

131

124

360

462

480

52

57

74

60

53

385

490

442

3

13

5

195

187

312

377

290

7

52

49

32

35

400

405

370

0

65

44

53

39

435

440

396

0

93

74

71

58

420

392

487

0

121

126

83

104

302

392

363

205

186

173

123

109

442

382

352

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135

435

467

443

371

314

304

247

182

420

402

335

398

244

180

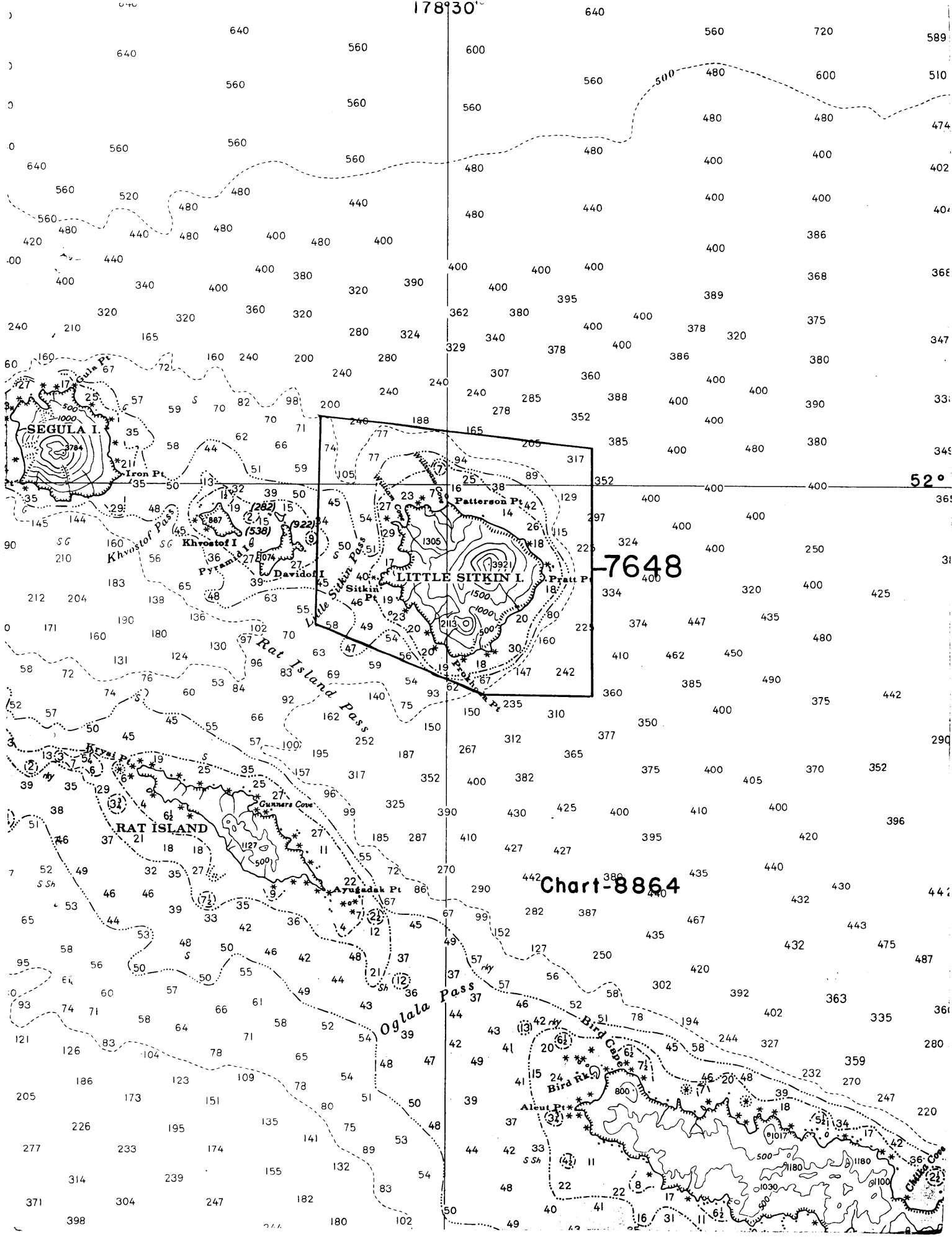
102

49

442

382

442



LIST OF INSTRUCTIONS AND SUPPLEMENTAL INSTRUCTIONS  
FOR PROJECT CS-218

(To Season of 1949)

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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).

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY

H-7648

(Field PI-2548)

Little Sitkin Island

Project CS-218

Season of 1948 - 1949

Ship PIONEER

Henry E. Finnegan, Chief of Party

Scale 1:20,000

Surveyed by: G.R. Fish ✓  
E.B. Lewey ✓  
C.A. George  
C.J. Beyma  
P.A. Weber

A. PROJECT:

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

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

B. SURVEY LIMITS AND DATES:

The general locality is the Aleutian Islands. This survey covers the inshore hydrography around Little Sitkin Island to a distance of 1 to 3 miles offshore.

Junctions are made with H-7647 (PI-2448) on the west; H-7649 (PI-4148) on the north and south; and with H-7650 (PI-8148) on the east.

Field work began on 22 July 1948 and ended on 20 September 1948. ✓

Additional work done on 5, 18, 19, 21, 22 August 1949.

C. VESSELS AND EQUIPMENT:

The hydrography was done by the Ship PIONEER and Launches #3 and #4 and #1 operating from the ship. The following sounding equipment was used:

Ship PIONEER  
Launch #3  
Launch #4  
Launch #1

808J No. 108 and NMC-2 No. 117.  
808J No. 129-S.  
808J No. 107-S.  
808J No. 103-S.

D. TIDE AND CURRENT STATIONS:

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

No current stations were occupied.

A tidal note is included with this report.

F. CONTROL STATIONS:

All of the triangulation stations used for control on this survey were located by the Coast & Geodetic Survey and are on the NA 1927 Datum.

Shoran Station TAR was located by the Ship EXPLORER. Shoran Stations SPRING and BIRD were located as described in "REPORT TO ACCOMPANY TRIANGULATION PROGRESS SKETCHES", Ship PIONEER, 1948. Shoran Stations "CAPE" and "HART" were located by the Ship EXPLORER in 1949.

Some of the signals used for hydrographic control were located by planetable, some by sextant cuts, and some by a combination of both. All of the signals used were plotted on aluminum mounted graphic control sheets Nos. ~~T-7082~~ and ~~T-7082~~ for 1948 and T-6927 for 1949. A statement as to the method of locating the various signals is included in the descriptive reports accompanying the control sheets.

A list of stations is included with this report.

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. (See note on Page 2, Vol. #1). Fathometer and velocity corrections were applied. They were determined as described in "REPORT ON FATHOMETER AND VELOCITY CORRECTIONS", Ship PIONEER, 1948. For work performed in 1949 Velocity corrections were used as determined in 1949, a list accompanies this report.

I. CONTROL OF HYDROGRAPHY:

The ship work west of longitude 178-29.0 E. (plotted on boat sheet 2548-a) and on the southeast portion of the sheet (plotted on boat sheet 2548-b) was controlled by Shoran. Launch #3 work on the southwest portion of the sheet was also controlled by Shoran. The Launch #3 work on the west side of Little Sitkin Island between latitudes 51-57.0 and 51-59.0 was controlled mostly by visual fixes, using arcs from Shoran Station TAR for spacing lines. The work done in 1949 by Launch #3 on the SE side of Little Sitkin was controlled by Shoran on "g" day. On "h" and "j" days visual fixes were used, spacing of lines was determined by arcs from Shoran Station CAPE. Elsewhere, all work was controlled by visual fixes.

*PI-E-48* *PI-F-48* *PI-E-49* - *OR. attached*  
*DR of PI-E-48*  
*PI-F-48*  
*H-7647*  
*H-7645*  
*Report of 1949 with H-7730*

J. ADEQUACY OF SURVEY:

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

Junctions with adjoining surveys are satisfactory. Ship and launch junctions on this sheet are satisfactory in general. However, at the junction between the Ship and Launch #3 on the southwest edge of the sheet, the launch soundings average about 0.7 fms. shoaler than the ship's. There is no explanation for this difference. The phase correction of -1.7 fms. for 1948 applied to the B scale of the Launch #3 fathometer would seem to be too great. However, the difference is noted on the A scale also. After a study of all junctions between the Ship and Launch #3 on this and other sheets, it was decided that the fathometer corrections accepted are the most likely to be correct. A list of Phase corrections as determined in 1949 are attached.

*Depths at junctions in adequate agreement (verifier adjusted phase corrections.)*

K. CROSS LINES:

Actual cross lines on this sheet consists of 4% of the total lines run. Also, there is approximately a 5% overlap with adjoining sheets.

All crossings are in good agreement.

L. COMPARISON WITH PRIOR SURVEYS:

Except as noted under Paragraph M, this survey agrees in general with prior surveys.

M. COMPARISON WITH CHARTS:

Chart # 8864 (Mar. 1948):

*59*  
*← One rock was verified*  
(The two rocks awash in Lat. 51-59.55 and Long. 178-28.55 E. were not verified.) There is a heavy kelp patch and shoal area just to the east of the charted position of the two rocks. The shoal extends 550 meters offshore (directly north of Triangulation Station NAT, 1948) and the minimum depth found was 6 fms. in 1948. In 1949 this spot was further investigated on "b" day launch #1 soundings were taken with a hand lead as the boat drifted across the shoal but nothing shoaler than the 1948 sounding was found.

*See P 5 of Review.*  
*sdg lines 100 m apart*

Rock awash in Lat. 51-53.9 and Long. 178-30.95 E. is apparently out of position. A rock baring 1 1/2 ft. at MLLW lies 160 meters ~~NE~~ *NW* of the charted rock. It is recommended that the charted rock be deleted.

*Retain Rk awash. Charted slightly displaced because of small scale of chart.*

Rock awash in Lat. 51-54.20<sup>4</sup> and Long. 178-29.20<sup>4</sup> E. was not found. Apparently out of position and recommend that it be deleted.

*See P 5 of Review*

M. (Cont'd.) COMPARISON WITH CHARTS:

Rock awash in Lat. 51-54.8 and Long. 178-28.9 E. is misplaced. A rock bearing 3 ft. at MLLW lies 200 meters to the NNW. Recommend that the charted rock be deleted. (Retain \* as symbolization of foreshore.)

on H-7648

Rock awash in Lat. 51-55.6 and Long. 178-27.6 E. is also out of position. There is a rocky ledge surrounded by sunken and high water rocks 180 meters north of the charted rock. Recommend that the charted rock be deleted. *retained.*

Symbolization generalized on chart. Position adequate. Retain charted rock awash.

Rock awash in Lat. 51-56.8 and Long. 178-25.85 E. is out of position. See boat sheet for other rocks in this area. Recommend the charted rock be deleted. *retained.*

Symbolization generalized on chart. Position adequate. Retain charted rock awash.

The charted 115 fm. sounding in Lat. 51-58.4 and Long 178-36.10 E. is out of position. There are depths of approximately 60 fms. here. The 100 fm. curve does not come in as close to the beach in this vicinity as is charted and does come in closer to Pratt Point than is charted. It is recommended that the 115 fm. sounding be deleted.

The 30 fm. curve extends about 0.4 mile further west in rounding Sitkin Point than is charted.

Superseded by present survey.

In Little Sitkin Pass the 50 fm. curve extends about two miles further south from the north side of the pass than is charted. On south side of the pass the 50 fm. curve does not jog south as shown. The southwest part of this jog is actually an isolated and closed curve.

To the north of the northwest end of Little Sitkin Island, the 100 fm. curve is approximately correct, but the 50 and 30 fm. curves cut much closer to the point than they are charted.

N. DANGERS AND SHOALS:

The shores are steep and rocky and there are numerous pinnacles close inshore. However, there are only two offlying dangers and they are listed below:

A rock uncovered 1.0 ft. at MLLW about 250 meters off the point forming the south side of William Cove in Lat. 51-58.80 and Long. 178-26.72 E. -

~~7.4~~ 51-~~51~~ 11 fm. spot in Lat. 52-00.47 and Long. 178-29.68 E. - 1648 (1948)

Both of these dangers were reported to the Director 27 October 1948, a copy of which is enclosed with this report. (L 648 (1948))

O. COAST PILOT INFORMATION:

See the special report on COAST PILOT NOTES submitted 3 December 1948.



Q. LANDMARKS FOR CHARTS:

See the special report on LANDMARKS FOR CHARTS submitted 15 February 1949.

R. GEOGRAPHIC NAMES: 814 ✓

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, 1948 and also "REPORT ON FATHOMETER AND VELOCITY CORRECTIONS", Ship PIONEER, 1949. *Filed with H-7645 and H-7730*

V. SHORAN CORRECTIONS:

An abstract of Shoran Zero Settings is included with this report. For determination of these values see the special report "REPORT ON DETERMINATION OF SHORAN ZERO SETTINGS" for 1948 records and also for 1949 records. *Filed with H-7645 and H-7730*

An abstract of Slope Corrections for Shoran Station SPRING is also included with this report.

W. REDUCERS:

Velocity corrections were entered as follows:

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

Tide reducers were entered as follows:

0.1 fm. units to 31 fm. depth.  
0.2 fm. " " 800 " "

X. MISCELLANEOUS:

The following data are included with this report:

1. Title Sheet
2. Index of Sheets
3. Tidal Note
4. List of Stations
5. Letter to the Director dated 27 October 1948, subject; Dangers to Navigation.
6. Velocity Corrections (2 pages)
7. Initial and Phase Corrections Ship PIONEER

X. (Cont'd) MISCELLANEOUS:

8. Phase Corrections Launch #3 for 1948 & 1949
9. Phase Corrections Launch #4 for 1948 & 1949
10. Shoran Zero Settings for 1948 & 1949
11. Shoran Slope Corrections to SPRING
12. Abstract of Statistics.

Submitted by:

*Ernest B. Lewey*  
Ernest B. Lewey,  
LCDR., USC&GS

*Philip A. Weber*  
Philip A. Weber  
LCDR., USC&GS.

Approved and Forwarded:

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

APPROVAL SHEET TO ACCOMPANY

SURVEY H-7648

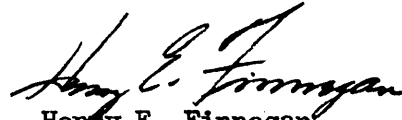
(Field No. PI-2548) .

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

The records have been inspect and approved.

The survey is considered adequate.

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

3 March 1949.

LIST OF STATIONS ON H - 7648

Name used in  
Hydro - Survey

Origin of  
Station

ACE	T-7081
ACK	T-7082
BAG	T-7082
BEV	T-7081
(*) BIRD	Bird - 1948
BCC	T-7081
BUZ	T-7082
COL	T-7082
(*) CCVE	<del>Cove - 1948</del> T-7080 b
CUB	T-7081
CUR	T-7081
DAVY	Davidoff Island (USN) 1935
DEL	T-7082
DEW	T-7081
DEX	Dex - 1948
EAT	T-7081
EFF	T-7082
EGO	T-7081
FAR	T-7082
FAY	T-7081
GAG	T-7081
GIL	T-7081
GRAY	Gray - 1948
HAM	T-7081
H2O	T-7082

Note  
and T6927  
Req. Nos. T-7080b, 7081 and 7082 have been  
cancelled; now called

T-70806 = PI-D-6-48

7081 = PI-E-48

7082 = PI-F-48

6927 = PI-E-49

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For add. signals used on H-7648  
see "List of Topo. Signals" Vol 9, 1949,  
Pg. 1.

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LIST OF STATIONS ON H - 7648 (Cont'd.)

<u>Name used in Hydro - Survey</u>	<u>Origin of Station</u>
JIB	T-7081
KEG	T-7081
LEE	T-7081
(@) LITTLE	(@) Little - 1944
(**) LITTLE	(** ) Little - 1904
LOPY	Lopy - 1948
MEX	T-7082
MOE	T-7081
NAT	Nat - 1948
NAV	T-7082
NEW	T-7082
NIK	Niktis - 1948
ONA	T-7082
OUT	Out - 1948
PRATT	Pratt - 1948
RAM	Ram - 1948
REB	T-7080-b
RIT	Rit - 1948
ROC	T - 7082
RUP	T - 7082
SEALY	Sealy - 1948
SIT	Sitkin - 1944
SKY	Sky - 1948
SOR	T - 7082
(*) SPRING	Spring - 1948

LIST OF STATIONS ON H - 7648 - (Cont'd.)

<u>Name used in</u> <u>Hydro - Survey</u>	<u>Origin of</u> <u>Station</u>
(*) TAR	Tar - 1948
THUMB	Thumb - 1948
UMP	T-7082
VIC	T-7082
VIM	T-7082
VOS	Vos - 1948
WIG	T-7082
WIL	William - 1948
YIP	T-7082
(*) Shoran Stations	
(**) <del>X</del>	Little Kiska Island, <i>Shoran station</i>
(@)	Little <del>Kiska</del> Island <i>Sitkin</i>

Ship PIONEER, P. O. Box 2039, Oakland 4, Calif.

27 October 1948

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

Subject: Dangers to Navigation

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

L. A. Datum - 1927

<u>Depth</u> <u>(Fathoms)</u>	<u>Latitude</u> <u>(North)</u>	<u>Longitude</u> <u>(East)</u>	<u>Dist.</u> <u>(N.M.)</u>	<u>Bearing</u> <u>(True)</u>	<u>Reference Landmark</u> <u>and Remarks</u>
3.0	51-59.55	178-17.55	0.35	38	N. end Khvostof Island
6.5	51-58.98	178-19.46	0.87	18	N. end Pyramid Island
2.5	51-58.80	178-28.90	0.63	353	N. end Pyramid Island
9.0	51-58.11	178-22.42	0.35	40	E. end Davidof Island
4.2	51-58.68	178-15.60	0.33	228	N. end Khvostof Island
* Rock Amass	51-58.80	178-26.72	0.13	322	Tip of peninsula, S. of William Cove, N.W. side of Little Sitkin Island. (See Chart 8244)
* 11.0	52-00.47	178-29.69	0.80	344	Islet, N.E. of William Cove, N. end Little Sitkin Island.
2.5	52-03.70	177-52.30	7.60	26	Center Tompak Island. (Shoal- est spot No Arthur Reef.)
3.0	52-04.62	177-30-82	1.63	23	Witchcraft Point
2.0	52-04.70	177-29.76	1.80	00	Witchcraft Point. (Shoalest depth obtained in extensive shoal area extending approx. 2 miles NNE of Witchcraft Pt. Very thick kelp and tide rips in this area.
6.0	52-00.52	177-27.83	2.68	206	Witchcraft Point
6.8			0.10	180	Above 6 fm. spot
10.0	52-01.00	177-29.05	1.96	194	Witchcraft Point

\* H-7648 (48)

(Page 1 of 2.)

N.A. Datum - 1927

<u>Depth</u> (fathoms)	<u>Latitude</u> (North)	<u>Longitude</u> (East)	<u>Dist.</u> (N.Mi.)	<u>Bearing</u> (True)	<u>Reference Landmark</u> <u>and Remarks</u>
6.0	52-01.10	177-29.22	1.81	185	Witchcraft Point
2.0	52-00.10	177-36.12	2.06	321	Little Kiska Head

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

2.0	51-50.12	178-06.85	5.62	119.7	Sea Lion Rock
0.8	51-50.08	178-11.75	6.41	109.5	Sea Lion Rock

The following charts are affected:

9124, 9155, 9180, 8864, 9102.

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



SHORAN ZERO SETTINGS  
for  
Season of 1948

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

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

SHORAN ZERO SETTINGS  
for  
1949 SEASON

SHIP SETS						
		PIONEER				
SHORE SETS	Ship Set #3		Launch Set #4		Ship Set #6	
	Rate	Drift	Rate	Drift	Rate	Drift
#1 VALY	99.816	99.816			99.817	99.796
#2 HART	99.803	99.814		99.791	99.810	99.804
#3 TINY SPRING	99.800	99.800			99.796	99.786
#4 CAPE	99.769	99.772	99.828		99.777	99.777
#6 CABLE	99.817	99.820			99.834	99.827
#6 ANCHOR						99.818

SHORAN SLOPE CORRECTIONS TO SPRING

----- Sheet PI-2548 (H-7643) -----

<u>Dist.</u>	<u>Corr.</u>
1.0 mile	- 0.010
1.2 "	- 0.009
1.4 "	- 0.008
1.6 "	- 0.007
1.8 "	- 0.006
2.0 "	- 0.005
2.5 "	- 0.004
3.0 "	- 0.003
over 3.0 miles	None

Corrections to be applied: (To Ship positions only)

<u>Day Letter</u>	<u>Positions</u>
F	27-29, 37-40, 57-60, 64-70, 83-88
G	8-28, 36-59, 71-83, 91-102
H	5-17, 24-35, 39-50, 56-66, 71-82, 87-97, 102-107
J	1-6, 14-25, 31-42, 48-53

H 7648  
Pi 2548

Davidof Island to Little Sitkin Island.

Processing Office Notes.

Smooth sheet.

The projection is hand made on K & E paper N 124 H. The shoran distance circles were controlled by computed points on lines radiating from the shoran stations. Shoreline is to be added from air-photo compilation when available. The 1944 triangulation is from adjusted data. 1948 stations were plotted from GP's by Finnegan 1948 field computations.

8256  
T-7734 partial  
completed paper  
copy was compared  
2/25/53  
T-8256 not yet  
available  
9/22/52  
T-6755(1935) Navy  
not applicable

ROCKS.

The Hydrographer's notes in the sounding records and on the boat sheet have been plotted carefully. Many rocks have been noted in the sounding books, with estimated distances and heights. Rocks and other information shown on the boatsheet only have been transferred to the smooth sheet. It is suggested that these items be checked by comparison with air photographs or photo topo.

Attention is called to the following soundings:

41 19.5° Fms Lat. 51 54.27 Long 178 33.40 ✓  
41 7.1 52 00.51 178 29.61 ✓ *from to m 7, 1950*  
*sdq. retained add. wk requested.*

In general, the shores are free from hidden dangers outside the immediate beach area. Other pertinent subjects have been discussed by the report of the field party.

*Edgar E. Smith*  
Edgar E. Smith  
Cart. Engr.  
Seattle Processing Office 1/9/50

7648

ADDITIONAL STATISTICS FOR HYDROGRAPHIC SURVEY H-7648 1949

Ship PIONEER

Project CS - 218

Launch No. 1

<u>Day</u>	<u>Vol. No.</u>	<u>Date</u>	<u>No. Positions</u>	<u>No. Stat. Mi.</u>
a	9	5 Aug.	63	8.2
b	9	22 Aug.	36	3.9

Launch No. 3

g	10	18 Aug.	106	23.0
h	11	19 Aug.	90	26.7
j	11	21 Aug.	54	12.9

Launch No. 4

d	12	18 Aug.	110	18.4
e	12	19 Aug.	115	19.4

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1949 Totals			574	112.5
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Square Statute Miles 7.9

7648

TIDE NOTE

Project CS - 218

Ship PIONEER

Field Season of 1948

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

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

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

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1949 Season

Tides for the additional work done this season were obtained from the Washington Office. These tides have been inferred from observed tides at Sweeper Cove and all necessary time and range differences between Sweeper Cove and Gertrude Cove have been made.

H 7648  
Pi 2548

Aleutian Islands  
Rat Islands  
Little Sitkin

List of geographic names  
penciled on smooth sheet.

Little Sitkin Island

Davidof Island

Bering Sea Prokhoda Point.

Pratt Point

Patterson Point

Sitkin Point

Williwaw Cove

William Cove

Little Sitkin Pass

Rat Island Pass

7648

STATISTICS FOR HYDROGRAPHIC SURVEY H-7648 1948

Ship PIONEER Project CS - 218

Ship - PIONEER

<u>Day</u>	<u>Vol. No.</u>	<u>Date</u>	<u>No. Positions</u>	<u>No. St. Mi.</u>
A	1	22 July	12	4.6
B	1	6 Aug.	120	39.1
C	1	11 Aug.	8	3.2
D	1	12 Aug.	7	2.6
E	1	13 Aug.	25	8.9
F	1	14 Aug.	139	54.8
G	2	26 Aug.	102	31.4
H	2	30 Aug.	107	30.6
J	2	31 Aug.	53	14.0
K	2	4 Sept.	18	4.0
L	2	9 Sept.	107	27.2
M	3	11 Sept.	164	48.8
N	3	15 Sept.	219	82.8

Launch No.3

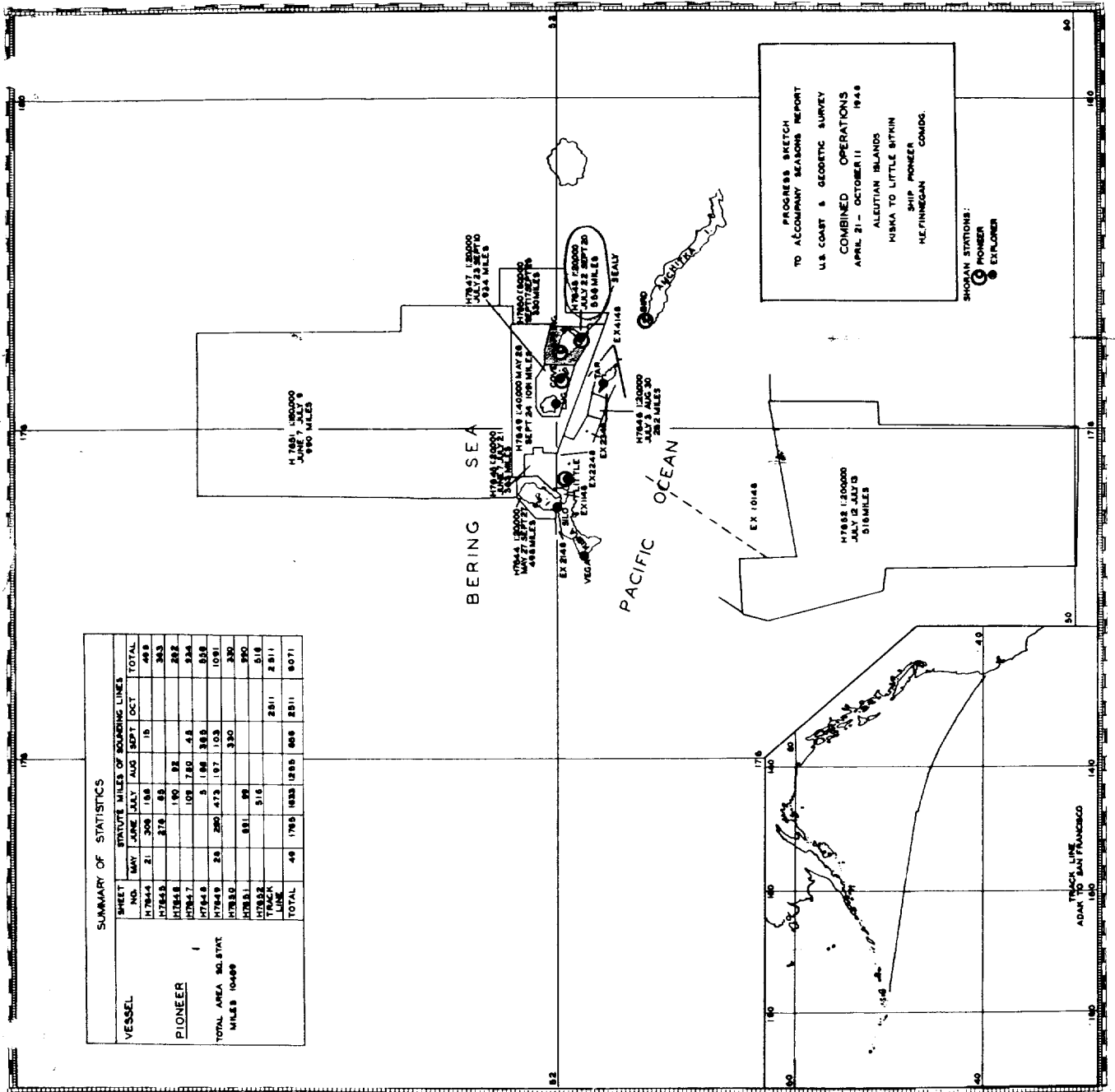
a	5	7 Sept.	117	25.2
b	5	8 Sept.	193	32.7
c	6	10 Sept.	116	28.7
d	6	16 Sept.	69	17.7
e	7	17 Sept.	128	24.3
f	7	20 Sept.	58	8.9

Launch No.4

a	8	16 Sept.	102	15.6
b	8	17 Sept.	170	30.2
c	8	20 Sept.	117	15.8

SHEET TOTALS: No. of Positions..... 2151  
 Statue Miles..... 555.4  
 Square Statue Miles..... 61.6





SUMMARY OF STATISTICS

SHEET NO.	STATUTE MILES OF SOUNDING LINES					TOTAL
	MAY	JUNE	JULY	AUG	SEPT	
H 7644	21	308	158	15		482
H 7645		316	85			401
H 7646			190	32		222
H 7647			108	150	45	303
H 7648			5	158	38.5	201.5
H 7649	25	280	473	137	103	1081
H 7650				320		320
H 7651		851	82			933
H 7652			516			516
TOTAL	49	1785	1832	685	685	5077

VESSEL  
PIONEER

TOTAL AREA SOLICIT  
MILES 10469

PROGRESS SKETCH  
TO ACCOMPANY SEASONS REPORT  
U.S. COAST & GEODETIC SURVEY  
COMBINED OPERATIONS  
APRIL 21 - OCTOBER 11 1948  
ALEUTIAN ISLANDS  
KISKA TO LITTLE SITKIN  
SHIP PIONEER  
HELVINGAN COMDS.

STATION SYMBOLS:  
○ PIONEER  
● EXPLORER

TRACK LINE  
ADAK TO SAN FRANCISCO

FORM 537a  
(9-24-47)

DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

REGISTER NO. T - ~~6927~~

TOPOGRAPHIC TITLE SHEET

FIELD NO. PI-E-49

Each Planetable and Graphic Control Sheet should be accompanied by this form, completed so far as practicable, when forwarded to the Washington Office.

STATE

Alaska, Aleutian Islands

GENERAL LOCALITY

Rat Islands

LOCALITY

East Coast of Little Sitkin Island

SCALE

1 : 20,000

DATE OF SURVEY

Aug. 18, 19 & 21, 1949

VESSEL

PIONEER

CHIEF OF PARTY

H. E. Finnegan

SURVEYED BY

Ship's Officers

INKED BY

L. F. Woodcock

HEIGHTS IN FEET ABOVE MHW OR \_\_\_\_\_

TO GROUND

TO TOPS OF TREES

CONTOUR

APPROXIMATE CONTOUR

FORM LINE INTERVAL \_\_\_\_\_

FEET

PROJECT NUMBER

CS-218

REMARKS

Graphic Control Sheet - No Shoreline.

*Applied to H-7648 (1948-49)*

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).

DESCRIPTIVE REPORT TO ACCOMPANY GRAPHIC CONTROL SHEET PI-E-49,  
~~REGISTRY NO. T-6927~~

Project CS-218

Field Season 1949

Ship PIONEER

H. E. Finnegan, Chief of Party

Aleutian Islands    Rat Islands    East Coast of Little Sitkin Id.

INSTRUCTIONS:

Original instructions were dated 3 February 1938 and applicable supplemental instructions were dated 1 March 1938 and 10 February 1948.

LIMITS AND PURPOSE:

This survey was made to locate hydrographic signals on the east coast of Little Sitkin Island for the purpose of completing an unfinished hydrographic survey. Vertical cuts to LITTLE SITKIN VOLCANO, 1944 were also taken while the ship was in the area.

CONTROL USED:

The following triangulation stations were used as control:

DAVIDOFF ISLAND (USN) 1935    (Falls off the sheet)  
THUMB 1948  
PRATT 1948  
SEALY 1948  
LITTLE 1944  
SITKIN (USN) 1935

RIT 1948 was used only in locating ship stations while taking vertical angles to LITTLE SITKIN VOLCANO, 1944.

Signal "Pip" was used as a control station. Its location was obtained from an advance copy of Topographic Manuscript T-9134, <sup>8256</sup> Little Sitkin Island. It is the top of a 25 ft. finger-like pinnacle alongside a larger island approximately 1 nautical mile south of Little Sitkin Point.

PI-F-48

Hydrographic signals Far 1948, Buz 1948 and Nav 1948 were used as control stations for locating ship stations for sextant cuts. Their locations were obtained from Graphic Control Sheet ~~T-7002~~, Little Sitkin Island. Hydrographic signal Vim 1948 was used only in locating ship stations while taking vertical angles to LITTLE SITKIN VOLCANO 1944. Its location was also obtained from Graphic Control Sheet ~~T-7002~~, Little Sitkin Island.

PI-F-48

METHODS OF LOCATING SIGNALS:

All hydrographic signals were located by sextant observations from offshore. In all cases the vessel was stopped during observations and all observations from each ship position were taken simultaneously. The fixes and cuts have been plotted graphically on the sheet, and the signal positions determined from intersection of cuts.

An attempt was made to re-establish signal Mex as located in 1948. However, a slightly different location was obtained for the new white-wash, and it is probable that the same point was not recovered. The new signal has been called "Mex 1949" on this sheet.

INDEX OF SEXTANT CUTS:

All sextant cuts for this sheet are contained in the sounding volume entitled "Cuts to Hydrographic Signals, All Sheets, Season 1949", pages 37 to 47 inclusive.

LANDMARKS:

See "REPORT ON LANDMARKS FOR CHARTS" for season 1948, Ship PIONEER.

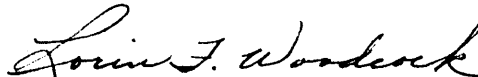
LIST OF NEW NAMES:

No new geographic names submitted.

PERSONNEL AND DATES OF FIELD WORK:

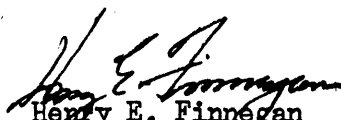
Sextant observations for this sheet were taken by various ship's officers on August 18, 19 and 21.

Respectfully submitted



Lorin F. Woodcock  
Lieut. USC&GS

Approved:



Henry E. Finnegan  
Comdr. USC&GS  
Chief of Party

GEOGRAPHIC NAMES

Survey No. H-7648

Name on Survey											
	A	B	C	D	E	F	G	H	K		
Alaska				(for title)							1
Aleutian Islands				" "							2
Rat Islands				" "							3
											4
Bering Sea									US&B		5
Pacific ocean											6
											7
Davidof Island									US&B		8
Little Sitkin Pass											9
Rat Island Pass									US&B		10
Little Sitkin Island									"		11
Prokhoda Point									"		12
Pratt Point									"		13
Patterson Point									"		14
Williaman Cove									"		15
William Cove											16
Sitkin Point									US&B		17
											18
											19
											20
											21
											22
Gertrude Cove				(location of tide gage)							23
											24
											25
											26
											27

Names underlined in red are approved. 2-6-50  
L. HECK

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7648

FIELD NO. PI-2548

Alaska-Aleutian Islands, Rat Islands, Little Sitkin Island

Project No. CS-218

Surveyed in July - September 1948, August 1949 Scale 1:20,000

Soundings:

808 Fathometer  
NMC-2 Fathometer

Control:

Shoran  
Sextant fixes on shore signals

Chief of Party - H. E. Finnegan  
Surveyed by - G. R. Fish, E. B. Lewey, C. A. George, C. J.  
Beyma and P. A. Weber  
Protracted by - C. E. Petersen  
Soundings plotted by - C. E. Petersen  
Preliminary verification by - C. R. Helmer  
Verified and inked by -  
Reviewed by - I. M. Zeskind, 15 April 1953  
Inspected by - R. H. Carstens

*Reviewer - check  
HWL*

1. Shoreline and Control

The islets and inshore detail shown in pencil on the present survey originate with the advance print of air-photographic survey T-9134<sup>8256</sup>. The remainder of the shoreline will be applied when the present survey is inked.

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 are adequately delineated except in depths less than 10 fms. where the foul character of the bottom and heavy kelp prevented development to the low-water line.

The bottom is generally smooth in depths greater than about 50 fms. and fairly irregular in shoaler depths. Submarine features such as reefs, pinnacles, troughs and ridges contribute to the bottom irregularity.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7649 (1948) on the north and south, with H-7650 (1948) on the east, and with H-7647 (1948) on the west. In addition to the above junctions, a portion of one line of soundings from H-7738 (1949) overlaps the present survey in the southeast. Depths on this line are in excellent agreement with present depths.

5. Comparison with Prior Surveys

H-6903 (1935) USN 1:60,000

This small-scale U. S. Navy reconnaissance survey covers the area of the present survey. A comparison between the present and prior surveys reveals differences of as much as 64 fms., as for example in lat.  $52^{\circ} 01.86' N$ , long.  $178^{\circ} 26.35' E$ , where a prior depth of 77 fms. falls in present depths of 136-141 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.

In the inshore area the rock awash which falls on the prior survey in lat.  $51^{\circ} 59.50' N$ , long.  $178^{\circ} 28.70' E$ , was not verified on the present survey. A least depth of 5.9 fms. was found on the present survey as a result of several development lines and 13 minutes of hand lead sounding while drifting over the area. It is possible that the rock awash originates with the erroneous interpretation of air photographs. However, because the investigation of this area on the present survey is not considered adequate to disprove the existence of a reef, the rock awash on H-6906 has been carried forward to the present survey as a sunken rock.

The rock awash in lat.  $51^{\circ} 54.4' N$ , long.  $178^{\circ} 29.4' E$ , falls in an inshore area on the present survey where no contemporary shoreline is available. The rock awash is probably a symbolization of the character of the foreshore area and should be retained on the chart pending completion of the topographic survey of this area, when disposition of the rock and other inshore detail will be made.



Except as noted above and with the addition of the sunken rock in lat.  $51^{\circ} 59.5' N$ , long.  $178^{\circ} 28.7' E$ , the present survey is adequate to supersede the ~~prior survey within the common area.~~

6. Comparison with Chart 8864 (Latest print date 9-29-52)

A. Hydrography

The charted hydrography originates with the previously described prior survey which needs no further consideration, and with a critical sounding from the present survey prior to verification and review.

The present survey supersedes the charted information within the common area except as noted in paragraph 5.

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. Hydrographic signals obtained by sextant cuts from the ships were erroneously shown in red color instead of blue. The color was revised to blue in the Washington Office.
- c. The positions of the sounding lines on g and h (red) days in the southeast portion of the survey, which were controlled by shoran stations Cape and Hart, were questionable. This was evidenced by conflicts in depths at sounding line crossings and by differences of as much as 80 meters between positions obtained simultaneously by shoran and visual fixes. To rectify these discrepancies, the positions of the sounding lines were adjusted either to bring the depths at crossings into agreement or, where simultaneous shoran and visual fixes were obtained, to conform with the visual fixes.
- d. No bottom characteristics were obtained in the area of the survey.

8. Compliance with Project Instructions

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

9. Additional Field Work Recommended

This is a basic survey of the area. As a matter of record, however, it is noted that the least depth on the shoal in lat. 52° 00.51' N, long. 178° 29.61' E, was read from unsupported traces on the fathogram. Substantiation of this reading by hand lead investigation would be desirable at an opportune time. Attention is also directed to the lack of bottom characteristics as noted in paragraph 7d above.

Examined and approved:

  
H. R. Edmonston

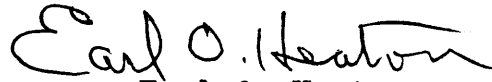
Chief, Nautical Chart Branch

  
H. Arnold Karo

Chief, Division of Charts

  
G. R. Fish

Chief, Section of Hydrography

  
Earl O. Heaton

Chief, Division of Coastal Surveys

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.
3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.
4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.
5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.
6. All positions verified instrumentally were check marked in the sounding records.
7. All critical soundings are clear and legible and are a little larger than the adjacent soundings.
8. The metal protractor has been checked within the last three months.
9. The protracting and plotting of all bad crossings were verified.
10. All detached positions locating critical soundings, rocks or buoys were verified.
11. The boat sheet was compared with the smooth sheet.

15. Shoreline, rocks, ledges & other top information was added from  
Manuscript T-8256 (1948) This sheet has been reviewed. There  
is also an advance bromide copy which should not be used as  
there were extensive changes made on later copy.

John T. Gallahan

Nov. 27, 1957

T-8256 Field inspection 1948-49  
Photos 1943, 1952, 1953

12. The spacing of soundings as recorded in the records was closely followed.
13. The bottom characteristics were shown on outstanding shoals.
14. The reduction and plotting of doubtful soundings were checked.
15. The transfer of contemporary topographic information was carefully examined.
16. All junctions were transferred and overlapping curves made identical.
17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.
18. The depth curves have been inspected before inking.
19. All triangulation stations and transfer of topographic and hydrographic signals were checked.
20. Heights of rocks were checked against range of tide.
21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.
22. Unnecessary pencil notes have been removed.
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.
24. The low water line and delineation of shoal areas have been properly shown.
25. Degree and minutes values and symbols have been checked.
26. Questionable soundings have been checked on the fathograms.

27. Source of shoreline and signals (when not given in report).
28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.
29. All aids located, with those on contemporary topographic sheets, have been shown on survey.
30. Depth curves were satisfactory except as follows:
31. Sounding line crossings were satisfactory except as follows:
32. Junctions with contemporary surveys were satisfactory except as follows:
33. Condition of sounding records was satisfactory except as follows:
34. The protracting was satisfactory except as follows:
35. The field plotting of soundings was satisfactory except as follows:
36. Notes to reviewer:

Verified by

Date

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7648 .....

Records accompanying survey:

Boat sheets <sup>3</sup> .....; sounding vols. <sup>12</sup> .....; wire drag vols. ....;  
 bomb vols. ....; graphic recorder rolls <sup>29</sup> envel. ....;  
 special reports, etc. ....  
 .....

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

	Prel. Ver.	Final Ver.
Number of positions on sheet	2151	...
Number of positions checked	228	277
Number of positions revised	38	9
Number of soundings revised (refers to depth only)	* 552	.....
Number of soundings erroneously spaced	0	21
Number of signals erroneously plotted or transferred	⊕ 40	.....
<i>shoreline &amp; other topo added - Gallaher</i> Topographic details <i>rock verification</i>	Time 40	.....
Junctions	Time 40	.....
Verification of soundings from graphic record	Time 10	4
Prel. Verification by <i>C.R. Helmer</i>	275 hrs.	7/22/52 - 3/25/53
Verification by <i>R.T.M. Bond</i>	Total time 136 hrs.	Date 3-12-58
Reviewed by <i>Jan Jeskevid</i>	Time 46	Date 4-15-53

*Stirni - 8 hrs*

*\* 133 sdps. were due to phase correction on "F" day. The rest due to help interpretation and junction differences*

*⊕ (Transferred and inked as Topo signals instead of Hydro.)*

RAG

### TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

8 February 1950

Division of Charts: R. H. Carstens

Plane of reference approved in  
12 volumes of sounding records for

HYDROGRAPHIC SHEET 7648

Locality Rat Islands, Aleutian Islands

Chief of Party: H. E. Finnegan in 1948-49  
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)

3.0 ft. on tide staff at Sweeper Cove  
7.0 ft. below B. M. 1 (1943)

Height of mean high water above plane of reference is as follows:

Gertrude Cove = 3.2 ft.  
Sweeper Cove = 3.7 ft.

Condition of records satisfactory except as noted below:

*E. C. McKay*  
*Section*  
Chief, ~~Division of Tides and Currents.~~



# NAUTICAL CHARTS BRANCH

SURVEY NO. H-7648

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
7/25/50	9102	<i>RHE</i>	Before <del>After</del> Verification and Review
9-12-50	8864	<i>W. M. Judson</i>	Before <del>After</del> Verification and Review <i>Partially applied.</i>
7-18-55	<sup>Recon. St.</sup> 9180	<i>Wittmann</i>	<del>Before</del> <sup>preliminary</sup> After Verification and Review <i>2700</i>
6-17-57	9102	<i>J. M. Albert</i>	<del>Before</del> <sup>preliminary</sup> After Verification and Review
11/15/61	8864	<i>ME</i>	<del>Before</del> After Verification and Review <i>partial</i>
10/01/92	16450 (metric)	DON CORDTS	<del>Before</del> After Verification and Review <i>Fully applied</i>
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
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			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.