7847

Diag. Ch. No. 8864-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PI-2448 Office No. H-7647

LOCALITY

State Aleutian Islands

General locality Rat Islands

Locality Segula Island to Davidof Island

194 8

CHIEF OF PARTY

H.E.Finnegan

LIBRARY & ARCHIVES

DATE Jan.27, 1950

B-1870-1 (1)

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 - 7647

Field No. PI-2448

State Alaska - Aleutian Islands

General locality Rat Islands

Locality Segula Island to Davidof Island

Scale 1: 20,000 Date of survey 23 July - 10 Sept. 1948

Instructions dated 3 February 1938, 1 March 1938, 10 February 1948, 8 April 1948

Vessel Ship PIONEER

Chief of party Henry E. Finnegan

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

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

Fathograms scaled by E.B.L., H.W.K., D.G.R. & E.A.C.

Fathograms checked by S.D.P.

Protracted by Clarence R. Lehman

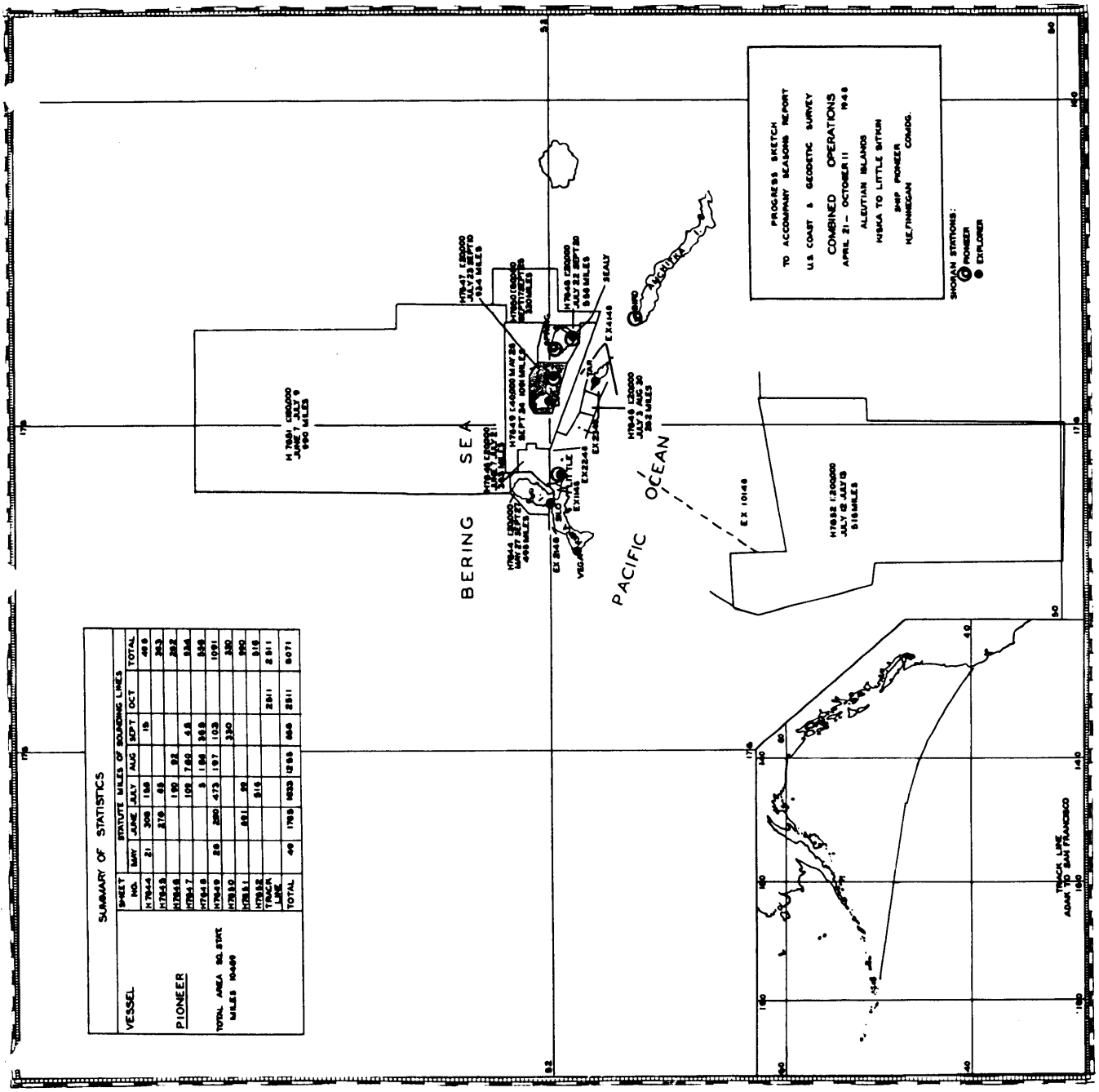
Soundings penciled by Clarence R. Lehman

Soundings in fathoms ~~feet~~ at ~~MEAN~~ MLLW and are true depths

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 603019

H - 7647(PI - 2448)



SUMMARY OF STATISTICS

VESSEL	SHEET NO.	STATUTE MILES OF SOUNDING LINES					TOTAL
		MAY	JUNE	JULY	AUG	SEPT	OCT	
PIONEER	H7644	21	308	198		19		498
	H7645		879	68				283
	H7646			192	82			282
	H7647			102	780	48		934
	H7648			3	196	358		556
	H7649	28	280	473	197	103		1091
	H7650					330		330
	H7651			821	92			990
	H7652				816			816
	TRACK LINE						2811	2811
	TOTAL	49	1789	1833	1295	888	2811	9071

TOTAL AREA SQ. STAT. MILES 10469

MEMRORANDUM TO SEATTLE PROCESSING OFFICE LISTING OFFICE WORK
ON SURVEY H-7647 (PI-2448)

Office work done by personnel of Ship PIONEER:

1. Fathograms scanned and verified.
2. Tidal Reducers entered and checked.
3. Velocity Corrections entered and checked.
4. Initial Corrections entered and checked.
5. Phase Corrections entered and checked.
6. Shoran Corrections entered and checked.
7. Shoran Distances corrected and checked.
8. Hydrographic Title Sheet (Form 537) (partially complete).
9. Descriptive Report.
10. Following data submitted to accompany final Descriptive Report:
    a. Index of Sheets.
    b. Abstract of Statistics.
    c. Tide Note.
    d. List of Stations.
    e. Abstracts of Velocity Corrections.
    f. Abstracts of Initial and Phase Corrections for fathometers.
    g. Abstract of Shoran Zero Settings.
    h. Copy of Letter to Director, "Dangers to Navigation".
    i. Approval Sheet by the Chief of Party.

Office work remaining to be done by Processing Office:

1. Reduction and checking of soundings in Sounding Records.
2. Construction and inking of smooth-sheet projection, the plotting and inking of control stations, and the drawing of Shoran Distance Circles.
3. Plotting the positions, Visual and Shoran.
4. Penciling the soundings.
5. Drawing the depth curves in pencil.
6. Completion of the Title Sheet (Form 537).
7. Additions to the Descriptive Report (if required).

Verifier, —

There are many notes in records and on sheet which conflict with topography — "20m. to beach or bluff." These notes are considered to be in error, particularly around NE shore of Segula Island.

Lee Carstens,

Where hydro notes are not in harmony with Topo. indicate generally, a "foul"

NOTES FOR DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY

H - 7647 (Field No. PI-2448)

Project CS - 218 Field Season - 1948

SHIP - PIONEER H.E.Finnegan,
Chief of Party

Scale 1: 20,000

Surveyed by: G.R. Fish, E.B. Lewey, C.A. George, and C.J. Beyma

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.
Supplemtnal Instructions dated 8 April 1948.

B. SURVEY LIMITS AND DATES

The general locality is the Aleutian Islands. The survey consists of the inshore hydrography around Segula, Khvostof, and Davidof Islands of the Rat Island group, including Khvostof Pass.

Field work began on 23 July 1948 and ended on 10 September 1948.

This survey joins contemporary surveys H-7648 (1948-49) (PI-2548) and H-7649 (1948) (PI-4148). An index of sheets is included in this report.

C. VESSEL AND EQUIPMENT

The hydrography was done by the Ship PIONEER and Launches Numbers 3 and 4 operating from the ship. In general, the launch work extended to approximately the 50-fathom curve.

The following sounding equipment was used:

Ship PIONEER - 808-J No. 108 and NMC-2 No. 117.
Launch No. 3 - 808-J No. 129-S and 808-A No. 69-S.
Launch No. 4 - 808-J No. 107-S.

D. TIDE AND CURRENT STATIONS

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

F. CONTROL STATIONS

A number of whitewashes, pinnacle rocks and other prominent features were located by triangulation, and were used for hydrography and for control in locating other stations.

The topographic stations were located by triangulation cuts, planetable and air photographs. Some stations were located by sextant cuts. All stations used on this survey are plotted on aluminum-mounted graphic control sheets Numbers ~~T-7080a, T-7080b and T-7081.~~ PI-D a & b-48 and PI-E-48 A list of stations is included in this report. Graphic Control surveys have been destroyed.

G. SHORELINE

~~No shoreline was located.~~ Shoreline applied in Wash Office from air-photo compilations T-8092 (1948) and T-8099 (1948).

H. SOUNDINGS

Depths were obtained by fathometers as enumerated in Paragraph C, and all soundings were scanned and verified from the graphs. In areas of heavy kelp, where the fathometer soundings were not reliable, handlead soundings were taken. No draft or settlement corrections were applied. (See note on Pg.2, Vol. 1.)

I. CONTROL OF HYDROGRAPHY

All ship hydrography on this survey was controlled by shoran.

The launch hydrography around Segula Island was controlled by visual fixes. The launch work in the cove between Khvostof I. and Davidof I., and in the area within the 20-fathom curve off the west and south coasts of Khvostof I. was visual hydrography.

All the remaining hydrography around Khvostof, Pyramid, and Davidof Islands was controlled by shoran.

J. ADEQUACY OF SURVEY

It is considered that the survey is complete and adequate to supersede prior surveys for charting.

J. (Cont'd.) ADEQUACY OF SURVEY

With respect to the boat sheet, the junctions with adjoining surveys are satisfactory.

K. CROSSLINES

The crosslines consist of 2% of the total lines run. With respect to the boat sheet, the crossings are generally satisfactory.

L. COMPARISON WITH PRIOR SURVEYS

The only prior surveys are those made by the U.S. Navy. (See Paragraph M.)
H-6903 (1935)

M. COMPARISON WITH CHART

(printdate 3-19-51)

Although some displacement in the depth curves were noted, the soundings on the boat sheet and chart No. 8864 are in general agreement, except in the cove between Davidof and Khvostof Is., where depths are considerably less than charted.

S/S depths in adequate agreement with Charted depths in Cove.

N. DANGERS AND SHOALS (See note below) H.S.A. 1/10/49

The shores are steep and rocky and there are numerous pinnacles and shoals off projecting points, however, there are few offlying shoals or dangers. The following shoals are listed from the boat sheet:

1. A shoal extending northwestward of the north end of Khvostof I. with a depth of 12~~.~~ fathoms at the outer end: Latitude 51-59.9~~2~~5', and Longitude 178-16.~~42~~50'.

2. A shoal extending northeastward of the north end of Khvostof I., least depth of ~~2.0~~ 1.1 fathoms at Latitude 51-59.5~~2~~3' and Longitude 178-17.5~~2~~0'.

3. A shoal bank extends from the islet off the north end of Davidof to the southeast corner of Khvostof I. The high point of the bank has a least depth of 2.~~2~~1 fathoms at Latitude 51-58.8~~2~~3' and Longitude 178-18.~~90~~87'.

4. A shoal with a least depth of ~~3.0~~ 1.0 fathoms at Latitude 51-58.~~11~~09' and Longitude 178-22.~~42~~38'.

5. A shoal with a least depth of 6.~~1~~0 fathoms at Latitude 51-58.98' and Longitude 178-19.46'.

6. A shoal with a least depth of ~~4.0~~ 3.1 fathoms (handlead, Pos. 35m, Launch No. 4) at Latitude 51-58.68' and Longitude 178-15.~~60~~79. Approximately one-half hour was spent drift sounding over this spot with the handlead. The above dangers reported by letter to The DIRECTOR, dated 27 October 1948. (Copy included in this report).

Note: This sentence refers to all shoals mentioned in items 1-6 inclusive. 1/10/49 H.S.A.

L 648 (1948)

O. COAST PILOT INFORMATION

See special report on Coast Pilot Notes, submitted 3 December 1948.

Q. LANDMARKS FOR CHARTS

See special report to be submitted on Landmarks.

R. GEOGRAPHIC NAMES

The following name, which does not appear on the chart, is recommended: PYRAMID COVE - the cove north of Pyramid Island, between Khvostof and Davidof Islands. (See special report on Geographic names). & Geographic Name Sheet.

Name as signed "Crater Bay"

U. VELOCITY CORRECTIONS

An abstract of Velocity Corrections is included in this report. There is also enclosed, abstracts for Phase Corrections for the depth recorders used on this survey. For the determination of this data, see special report on Fathometer and Velocity Corrections, Ship - PIONEER - 1948. (Library, S-2687) H-7645

V. SHORAN CORRECTIONS

An abstract of the corrections to be applied to the shoran distances is included in this report. For the determination of this data, see special report on Determination of Shoran Zero Settings. There is also enclosed an abstract of Slope Corrections for shoran station SPRING.

W. MISCELLANEOUS

The following data are also included in this report:

Abstract of Statistics
List of Stations
Title Sheet
Index of Sheets (Season's Progress Sketch)

Respectfully submitted,

Clarence A. George
Lieut. Comdr. USC & GS

Approved: Jan 10/49

Henry E. Finnegan
Commander, USC & GS
Chief of Party

These numbers are cancelled and assigned to other sheets

T-7080 a is PI-D(a)-48
T-7080 b is PI-D (b)-48
T-7081 is PI-E-48

LIST OF STATIONS ON H-7647

	Name used in Hydro - Survey		Origin of Station
	AB	700	T-7080 a
	ACT	018	T-7081
	ALE	042	T-7080 b
	ANN	055	T-7080 a
	AP	060	T-7080 b
	ARK	074	T-7080 b
(*)	BIRD	037	Bird - 1948
	BO	900	T-7080 b
	BOB	901	T-7080 a
	BUG	083	T-7080 a
	BUM	085	T-7080 b
	BUR	087	T-7081
	BUS	902	T-7080 b
	CAL	104	T-7080 a
	COB	160	T-7081
(*)	COVE	168	T-7080 b
	CRO	176	T-7080 b
	CUZ	189	T-7080 a
	CHUG	928	Chugul - 1948
	DAM	105	T-7080 b
	DAVY	108	Davidoff Is. (USN) 1935
	DIG	133	T-7080 a
	DIZ	139	T-7081
	DON	165	T-7080 b
	DOT	903	T-7080 a
	DUB	180	T-7080 b
	EAR	207	T-7080 a
	ELF	242	T-7081
	ELM	245	T-7080b
	ERA	270	T-7080 b
	EVE	282	T-7080 a
	EX	290	T-7080 a

LIST OF STATIONS ON H-7647

	Name used in Hydro - Survey		Origin of Station
	FA	200	T-7080 a
	FIZ	239	T-7080 b
	FLO	246	T- 7080 a
	FLU	248	T-7080 b
	FRY	279	T-7080 b
	FUN	285	T-7080 a
	GAR	307	T- 7080 a
	GEE	322	T-7081
	GEM	325	T-7080 b
	GIN	335	T-7080 b
	GRAY	370	Gray - 1948
(*)	GULL	384	Gull (EXPLORER)
	GUM	385	T-7080 b
	GUP	386	T-7080 a
	GYP	396	T-7080 b
	HAL	304	T-7080 a
	HEN	904	T-7080 a
	HOD	361	T-7080 a
	HOT	368	T-7080 b
	HOW	369	T-7080 b
	HUT	388	T-7080 a
	ICY	319	T-7080 b
	IMP	356	T-7080 a
	INK	354	T-7080 a
	IRA	905	T-7080 a
	IRON	376	Iron - 1948
	IS	912	T-7080 b
	JAN	405	T-7080 a
	JET	428	T-7080 a
	JEW	429	T-7080 b
	JOE	462	T-7080 a

LIST OF STATIONS ON H-7647

	Name used in Hydro - Survey		Origin of Station
	KIL	434	T-7080 a
	KIM	435	T-7080 a
	KIP	436	T-7080 a
	KIS	437	T-7080 b
	KNIFE	453	Knife - 1948
	KOF	907	T-7080 b
	LAG	403	T-7080 a
	LES	427	T-7080 b
	LIL	908	T-7080 a
(*)	LITTLE	438	Little, 1904
	LOPY	466	Lopy, 1948
	LUC	483	T-7080 a
	LUX	489	T-7080 b
	MAC	501	T-7080 b
	MAY	509	T-7080 a
	ME	520	T-7080 a
	MIS	537	T-7080 a
	NEX	529	T-7080 b
	NIB	530	T-7080 b
	NIC	533	T-7080 a
	OKE	642	T-7080 b
	ONE	652	T-7080 a
	OSA	670	T-7080 a
	OUT	688	Out - 1948
	PEG	623	T-7080 a
	PIF	632	T-7080 b
	POL	664	T-7080 a
	QUO	686	T-7080 a

LIST OF STATIONS ON H-7647

	Name Used in Hydro - Survey		Origin of Station
	RAM	705	Ram 1948
	REB	720	T -7080 b
	ROY	769	T - 7080 a
	SAM	909	T - 7080 a
	SEG	723	Segula (USN) 1935
	SIG	733	T - 7080 b
	SPRING	767	Spring - 1948
(*)	TAR	807	Tar, 1948
	TED	821	T - 7080 a
	UGA	830	Aluga - 1948
	VI	910	T - 7080 a
	WAG	911	T - 7080 a ← ✓
	WES	927	Wes, 1948
	WOW	969	T - 7080 b
	YEL	924	T - 7080 a
	ZAP	906	Zapad - 1948
	ZEB	920	T - 7080 a

(*) HORAN STATIONS

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 SLOPE CORRECTIONS TO SPRING

----- Sheet PI-2548 (H-7648) -----

Dist.	Corr.
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)

Day Letter	Positions
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

Copy

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

27 October 1948

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

L648(1948)

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.

N. A. Datum - 1927

Depth (fathoms)	Latitude (North)	Longitude (East)	Dist. (N.Mi.)	Bearing (True)	Reference landmark and Remarks
* ~~3.0~~ 1.7	51-59.55~~3~~	178-175~~5~~0	0.35	38	N. end Khvostof Island ✓ 1½ fms
* 6.5~~6~~0	51-58.98	178-19.46	0.87	18	N. end Pyramid Island
* 2.5~~7~~	51-58.8~~9~~3	178-18.~~90~~87	0.6~~1~~8	353	N. end Pyramid Island ✓ 2 fms
* ~~9.0~~ 11	51-58.~~11~~09	178-22.~~42~~38	0.35	40	E. end Davidof Island ✓ 9 fms
* ~~4.2~~ 3.7	51-58.68	178-15.~~60~~73	0.~~33~~28	~~228~~ 220	W. end Khvostof Island
Rock Awash	51-58.80	178-26.72	0.13	322	Tip of penninsula, S. of William Cove, N.W. side of Little Sitkin Island. (See Chart 8264)
11.0	52-00.47	178-29.69	0.80	344	Islet, N.E. of Williwaw Cove, N. end Little Sitkin Island.
2.5	52-03.70	177-52.30	7.60	26	Center Tanadak Island. (Shoalest spot Mc Arthur Reef.)
3.0	52-04.42	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 NNW 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

Applicable to H-7647 Helmer

N.A. Datum - 1927

Depth (fathoms)	Latitude (North)	Longitude (East)	Dist. (N.Mi.)	Bearing (True)	Reference landmark and Remarks
6.0	52-01.10	177-29.52	1.81	185	Witchcraft Point
2.0	52-00.10	177-36.12	2.08	321	Little Kiska Head

From further investigation in the eastern part of the pass between Sea Lion Rock and Rat 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	8.41	109.5	Sea Lion Rock

The following charts are affected:

9124, 9155, 9180, 8864, 9102.

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

APPROVAL SHEET TO ACCOMPANY SURVEY H-7647 (PI - 2448)

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

The records have been inspected and have been approved. The smooth sheet is to be plotted at the Processing Office.

The survey is complete and considered adequate.

Henry E. Finnegan
Comdr. USC & GS
Commanding, Ship PIONEER

13 January 1949

H 7647
Pi 2448

Segula to Davidof Island.

Processing Office Notes.

Smooth sheet.

This is hahdmade on Dietzgen paper D 117. The work on the sheet had advanced too far to discard when instructions were received to discontinue the use of this paper for smooth sheets. Shoran distance circles were controlled by points computed onlines radiating from the shoran points. no suitable shoreline was available for the sheet. Shoreline applied to S/S in Wash. Office

Triangulation stations Little, Davidof and Segula are from P 264 Vol.5 Adjusted triangulation of Alaska. Other triangulation stations are from the field computations of Finnegan 1948

Important soundings.

All important soundings have been checked back to the fathograms. The soundings are emphasized on the sheet and are pointed out with arrows. Note the following.

Fathoms	Position	Latitude	Longitude	Remarks
~~3.7~~	13 m	51 58.70	178 15.70	
~~1.7~~	143 h	59.~~55~~	17.50	Hand lead 1.7. See Pos.35m.
4.5	18 k	59.~~64~~	17.60	
~~3.7~~	72 p	58.83	18.86	
3.6	90 h	58.70	18.82	
3.5	91 h	58.64	18.82	
8.3	69 p	59.01	19.40	
6.0	164 h	58.98	19.~~6~~45	
8.5	147 h	58.81	19.40	
~~9~~10	25 r	58.10	22.~~4~~39	
~~9~~10	28 r	58.06	22.~~4~~39	
~~1.5 ?~~ Miss	145 g	52 03.1	06.7	This sounding is doubted. See records. Suggest hand lead imvestigation.

Passages on northwest and southeast sides of Pyramid I.

With the boatsheet and completed smooth sheet before me it seemed that there must be a bar or barrier running from Kvostof I. to Pyramid and from Pyramid to Davidof. It was not clear from the sheets whether there were to NW and SE of Pyramid I. The soundings were lined up outside or inside and soundinglines did not cross between them. This implied the presence of a bar, barrier or spit. It was found that on "m" day Launch 4 made about forty detached handlead soundings in this vicinity, beginning with Pos.52 m. These were in dense kelp beds on both sides of Pyramid.I. This area is adequately developed

An overlay tracing was made on which the detached positions were traced from the smooth sheet. Positions 52 m to 92 m were connected by lines. It was then evident that Launch 4 passed back and forth across the areas discussed. The fathometer was operating but positions were not marked from Pos. 50 to Pos.78. However, by spacing the time back from Pos. 78 the position points were identified and the fathometer soundings found generally in agreement with the lead. The kelp was very heavy. Bottom echoes recorded on the profile when the launch stopped for the hand lead work. When underway from position to position the fathogram sometimes showed no indication of the bottom. At other times an exceedingly faint trace could be seen when looking sideways along the face of the graph.

An effort was made to obtain additional soundings to fill in the gap between the inner and outer waters. They were scanned as well as I could. No precision is claimed for them. The time spent with the handlead at each point is uncertain. A sounding was selected between positions and called the mid point. See following sheet. These soundings were plotted on the overlay tracing in red ink. The soundings at the detached positions traced from the smooth sheet are in black ink.

H.L. soundings are adequate in this area

Conclusions.

(1) The launch crossed back and forth from outside to inside when investigating the kelp beds with the hand lead.
(2) Five or six fathoms can be carried from outside to inside between Pyramid and Khvostof, favoring the Pyramid Island side. About three and a half fathoms can be carried across southeast of Pyramid I.

Landmarks.

The Processing Office does not have a copy of the Report on Landmarks.

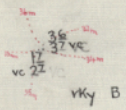
Edgar E. Smith
Cart, Engr.
Seattle Processing Office
1/12/1950

Launch 4 - M day Sept 9 1948

Pos.	FMS				
52 1/2	6	0.0	-0.3	+0.1	5.8
56 1/2	5			0.	4.7
58 1/2	7.6			+0.1	7.4
59 1/2	5			0	4.7
63 1/2	6			+0.1	5.8
66 1/2	7			0.1	6.8
67 1/2	6.5			0.1	6.3
85 3/3	4			0.	3.7
87 1/2	5			0.	4.7
88 1/2	5	0.0	-0.3	0.	4.7

52°00'04

1-7
good
21



WES, 1948

Oke ⊙

KHVOSTOF I

58'

Note: Overlay to show Shoal area above Khvostof Is. & subsequant hand lead soundings.

Segula - Davidof Is.

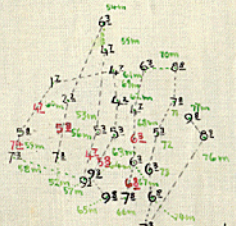
H-7647 Pi-2448

16' Overlay = 1 18'

52° 59'

KHVOSTOF I

Disregard red soundings
RHC



58'

DAVIDOF I

Note: This Overlay shows fathagram (corrected) depths in red, thru heavy kelp, in pass areas around Pyramid Is. Shows probable path of Launch. Soundings in black are hand lead soundings at detached positions.

Segula - Davidof Is
H-7647 P.-2448
Detached positions 52m to 92m
Launch 4

overly "F" 2

18'

178° 21'

7647

TIDE NOTE

Project CS - 218 Ship PIONEER Field Season of 1948

The tide gage at Gertrude Cove, Kiska Island, Aleutian Islands, Alaska, Latitude 51°56.2' North and Longitude 177°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.

7647

STATISTICS FOR HYDROGRAPHIC SURVEY H - 7647 (1948)

Ship - PIONEER - Project CS-218

SHEET TOTALS:	No. of Positions.....	4362
	Statue Miles.....	933.7
	Square Statue Miles..	85.3

7647

STATISTICS FOR HYDROGRAPHIC SURVEY H-7647 (1948)

Ship PIONEER Project CS 218

Ship - PIONEER

Day	Vol.No.	Date	No. Positions	No. St. Mi.
A	1	23 July	199	60.6
B	1	30 July	96	31.6
C	1&2	7 Aug.	111	40.4
D	2	9 Aug.	352	126.4
E	3	11 Aug.	122	26.6
F	3	16 Aug.	5	--
G	3	17 Aug.	142	55.8
H	3	19 Aug.	141	48.3
J	4	25 Aug.	75	19.3
K	4	26 Aug.	52	12.6
L	4	27 Aug.	163	54.6
		Launch No. 3		
a	5	2 Aug.	71	12.9
b	5	3 Aug.	102	15.8
c	5	4 Aug.	111	19.4
d	6	5 Aug.	109	15.4
e	6	6 Aug.	42	6.1
f	6	11 Aug.	4	0.7
g	6	14 Aug.	139	28.5
h	7	17 Aug	170	32.0
j	7	19 Aug.	134	28.2
k	7	25 Aug.	28	5.3
l	8	26 Aug.	142	32.0
m	8	27 Aug.	37	3.9
n	8	28 Aug.	74	15.8
q	9	4 Sept.	53	3.6
r	9	9 Sept.	136	25.3
s	9	10 Sept.	19	3.9
		Launch No. 4		
a	10	23 July	37	5.8
b	10	30 July	70	10.6
c	10	2 Aug.	82	12.0
d	10	3 Aug.	197	27.6
e	11	5 Aug.	164	22.5
f	12	6 Aug.	145	21.2
g	11& 12	16 Aug.	185	27.7
h	12	17 Aug.	225	28.9
j	12& 13	25 Aug.	97	14.5
k	13	26 Aug.	76	11.5
l	13	4 Sept.	3	0.28
m	13	9 Sept.	147	11.5

(Cont'd.)

H 7647
Pi 2448

Aleutian Islands
Rat Islands
Segula to Davidof

List of Geographic names
penciled on smooth sheet.

Segula Island

Khvostof Island

Pyramid Island

Davidof Island

Zapad Point

Gula Point

Chugul Point

Iron Point

Bering Sea

Pyramid Cove -- This name was suggested by the field party. It refers to the old volcanic crater between Davidof and Khvostof Islands. Crater Cove or Crater Bay are offered as more appropriate names for this rather unique body of water.

Crater Bay accepted. See Geo. Name Sheet

The inlet on the northwest side of Segula Island deserves a name if none has yet been assigned. No Name

R140

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

8 February 1950

~~Division of Hydrography and Topography~~

Division of Charts: R. H. Carstens

Plane of reference approved in
13 volumes of sounding records for

HYDROGRAPHIC SHEET 7647

Locality Rat Islands, Aleutian Islands

Chief of Party: H. E. Finnegan in 1948
Plane of reference is mean lower low water, reading
4.4 ft. on tide staff at Gertrude Cove
7.3 ft. below B. M. 2 (1947)

Height of mean high water above plane of reference is 3.2 feet.

Condition of records satisfactory except as noted below:

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

U. S. GOVERNMENT PRINTING OFFICE 756675

GEOGRAPHIC NAMES

Survey No. H-7647

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
Rat Islands			"	"						3
										4
Bering Sea									USGB	5
Pacific Ocean										6
										7
Segula Island									USGB	8
Zapad Head									"	9
Gula Point									"	10
Chugul Point									"	11
Iron Point									"	12
Khvostof Pass									"	13
Khvostof Island									"	14
Pyramid Island									"	15
Davidof Island									"	16
Crater Bay			(Pending U.S.B.B. 6-64 approval)							17
										18
										19
					Names underlined in red are approved					20
						2-6-50		L. Heck		21
										22
										23
Gertrude Cove				(location of tide gage)						24
										25
										26
										27

M 234

Hydrographic Surveys (Chart Division)

H-7647

HYDROGRAPHIC SURVEY NO. .....

Records accompanying survey:

Boat sheets 1; sounding vols. 13; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 40 envelopes;

special reports, etc. .....

.....

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

	Preliminary	Final
Number of positions on sheet	4362	
Number of positions checked	140	
Number of positions revised	201	
Number of soundings revised (refers to depth only)	498	
Number of soundings erroneously spaced	0	
Number of signals erroneously plotted or transferred	0	
Topographic details Time	32 hrs	
Junctions Time	50 hrs	
Verification of soundings from graphic record Time	63 hrs.	

Prel. Inspection G. F. Jordan 8 hrs 12/4/51

Prel. Verification - C R. Helmer * 431 hrs. 12/18/51-9/19/52

Verification by.....Total time ..... Date .....

Reviewed by..... Time ..... Date 10-17-52

* This survey was started 12/19/51 and during time of verification there were 10 interruptions for a total of 900 hours on other assignments ff

M-2232-1

Form 537a

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

Each Topographic and Graphic Control Sheet, and each Air Photographic Drawing should be accompanied by this form, completed so far as practicable, when forwarded to the Washington office.

REGISTRY No. ~~H-7647a~~

Field No. PI - D (a) - 48

Scale 1: 20,000

State Aleutian Islands General locality Rat Islands

Specific locality Segula Island

Dates: Survey began JUNE - 1948 Completed JULY - 1948

Photography ....., Supplemented by ground surveys to Supplemental Inst. 2-10-48 & 4-8-48

Project No. CS - 218 Instructions dated Original Instructions 3 February - 1938

Vessel / Party or Ship PIONEER Chief of party Henry E. Finnegan

Field work by Ship's Officers Office work by G.R.F. & C.A.G.

Final inking by D.G.R.

Ground elevations / Treetop elevations in feet above { M. H. W. / or / ----- }

Contours / Approximate contours / Form lines by { Planetable / Multiplex / ----- } Interval ..... ft.

REMARKS Graphic Control Sheet - no shoreline.

This survey was applied to H-7647 (1948) and then destroyed.

U. S. GOVERNMENT PRINTING OFFICE 16—38129-1

AUG 1 0 1949

Form 537a

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

Each Topographic and Graphic Control Sheet, and each Air Photographic Drawing should be accompanied by this form, completed so far as practicable, when forwarded to the Washington office.

REGISTRY No. ~~T-7647-b~~

Field No. PI - D (b) - 48

Scale 1: 20,000

State Aleutian Islands General locality Rat Islands

Specific locality Khvostof Island and Pyramid Island

Dates: Survey began JUNE - 1948 Completed JULY - 1948

Photography ....., Supplemented by ground surveys to Supplemental Inst. 2-10-48 & 4-8-48

Project No. CS - 218 Instructions dated Original Instructions 3 February 1938.

Vessel / Party } or Ship PIONEER Chief of party Henry E. Finnegan

Field work by G.R.F. Office work by G.R.F.

Final inking by E.E.J.

Ground elevations / Treetop elevations } in feet above { M. H. W. / or / .....

Contours / Approximate contours / Form lines } by { Planetable / Multiplex / ..... } Interval ..... ft.

REMARKS Graphic Control Sheet - no shoreline.

This sheet was applied to H-7647 (1948) and then destroyed.

U. S. GOVERNMENT PRINTING OFFICE 16—38129-1

AUG 1 0 1948

Form 537a

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

Each Topographic and Graphic Control Sheet, and each Air Photographic Drawing should be accompanied by this form, completed so far as practicable, when forwarded to the Washington office.

REGISTRY No. ~~T-5057~~

Field No. PI - E - 48

Scale 1: 20,000

State Aleutian Islands General locality Rat Islands

Specific locality Davidof Island - West side of Little Sitkin Island

Dates: Survey began JULY - 1948 Completed AUGUST - 1948

Photography ____, Supplemented by ground surveys to Supplemental Inst. 2-10-48 & 4-8-48

Project No. CS - 218 Instructions dated Original Instructions 3 February 1938

Vessel / Party } or Ship PIONEER Chief of party Henry E. Finnegan

Field work by Ship's Officers Office work by G.R.F. & C.A.G.

Final inking by D.G.R.

Ground elevations / Treetop elevations } in feet above { M. H. W. / or / ____

Contours / Approximate contours / Form lines } by { Planetable / Multiplex / ____ } Interval ____ ft.

REMARKS Graphic Control Sheet - no shoreline.

This survey was applied to H-7647 (1948) and then destroyed.

U. S. GOVERNMENT PRINTING OFFICE 16—38129-1

DESCRIPTIVE REPORT TO ACCOMPANY GRAPHIC CONTROL SURVEYS

~~T-7080a~~ (PI-Da-48), ~~T-7080b~~ (PI-Db-48), ~~T-7081~~ (PI-E-48) and ~~T-7082~~ (PI-F-48).

Project CS - 218 Field Season 1948

Ship - PIONEER H.E. Finnegan, Chief of Party

Aleutian Islands Rat Islands Segula I. to Little Sitkin I.

INSTRUCTIONS

Original instructions were dated 3 February 1938 and applicable supplemental instructions were dated 1 March 1938, 10 February 1948, and 8 April 1948.

LIMITS

These surveys were made for the purpose of locating the hydrographic signals on Segula, Khvostof, Davidof and Little Sitkin Islands of the Rat Island Group. The respective limits of the individual surveys are as follows:

PI-Da-48
*T-~~7080a~~ - Segula Island.
PI-Db-48
*T-~~7080b~~ - Khvostof Island, Pyramid I. and west coast of Davidof I.
PI-E-48
*T-~~7081~~ - East coast of Davidof I. and west coast of Little Sitkin I.
T-7082 - North coast of Little Sitkin Island.

* applied to H-7647 (1948)

CONTROL USED

At the beginning of the 1948 field season, the only prior triangulation consisted of stations along the south coasts of the islands, namely, station SEGULA (USN), 1935 on Segula I.; DAVIDOFF ISLAND (USN), 1935 on Davidof Island; and stations SITKIN (USN), 1935 and LITTLE, 1944 on Little Sitkin Island. Additional triangulation stations were established in 1948 to furnish control for air photographs and the graphic control sheets. In addition, a number of whitewashes, pinnacle rocks, etc., were located by triangulation cuts, computed and plotted on the graphic control sheets to furnish supplemental control for the location of the hydrographic signals.

METHODS OF LOCATING SIGNALS

The hydrographic signals were located by various methods, which included: planetable methods, geodetic methods (theodolite cuts), air photographs, sextant observations (intersection of cuts) and a combination of the above methods. All stations, regardless of the method of location, have been plotted and verified on the graphic control sheets, and it is not considered that any further plotting will be necessary. On the list of stations for

the hydrographic surveys, the registry numbers of the graphic control sheets have been used as the origin of the stations plotted on the respective control sheets.

There is listed below the methods used to locate the hydrographic signals on the various graphic control surveys for which this report is written:

PI-D(a)-48 ~~T-7080-a~~ (Applied to H-7647(1948)

Signals EX, FA, RE, AB and POL, which are in the small cove on the northwest side of Segula Island, were located by planetable, and are shown by red circles.

The remaining signals on this sheet that are symbolized by red circles were located from air photographs. In most cases, the air photo cuts were verified by theodolite or sextant cuts.

The signals symbolized by blue circles were located by sextant cuts taken from the PIONEER and the ship's launches.

PI-D(b)-48 ~~T-7080-b~~ (Applied to H-7647(1948)

Signals ARK, TRY, BUM, FIZ, and GIN on the west side of Khvostof Island, were located by sextant cuts from the Ship PIONEER, and are shown by blue circles.

The remaining signals on this sheet were located by planetable and are shown by red circles.

PI-E-48 ~~T-7081~~ (Applied to H-7647(1948)

All signals are located by sextant cuts and are shown on the sheet by blue circles. In most cases, the cuts were taken from the Ship PIONEER with the vessel stationary and it's position fixed by sextant angles to triangulation stations. In a few instances, supplemental cuts were taken from the ship's launches.

PI-F-48 ~~T-7082~~

Signals BAG, ACK, PID, IFT, YIP, VIC, UMP, WIG and NEW were located by planetable and are shown by red circles.

The remaining signals along the north coast of Little Sitkin Island were located by sextant cuts from the Ship PIONEER, and are shown by blue circles. In locating these signals, a number of the larger whitewashes were first located from positions fixed by sextant angles to triangulation stations. These signals were then used in conjunction with the triangulation stations to provide stronger fixes from which the supplemental signals were cut in. In all cases the three-point fixes were taken with the ship stationary.

INDEX OF SEXTANT CUTS

The sextant cuts to the hydrographic signals plotted on these graphic control sheets are indexed as follows:

Hydrographic Survey H-7647 (PI-2448), Volume 1, Page 2.
Hydrographic Survey H-7648 (PI-2548), Volume 4, Page 2.

LANDMARKS

(See special report on "Landmarks").

LIST OF NEW NAMES

(See special report on "Geographic Names").

PERSONNEL

The planetable work on these surveys was done by Lieut. Commander G.R.Fish. The sextant cuts to locate hydrographic stations were taken by various ship s officers.

Respectfully submitted,

Clarence A. George

Clarence A. George
Lieut. Comdr. USC & GS

Approved:

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

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7647 FIELD NO. PI-2448

Alaska-Aleutian Islands, Rat Islands, Sequla I. to Davidof I.

Project No. CS-218

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

Soundings:

808 Fathometer
NMC-2

Control:

Shoran
Sextant fixes on shore signals

Chief of Party - H. E. Finnegan
Surveyed by - G. R. Fish, E. B. Lewey, C. A. George and C. J. Beyma
Protracted by - C. R. Lehman
Soundings plotted by - C. R. Lehman
Preliminary verification by: C. R. Helmer
Verified and inked by -
Reviewed by - I. M. Zeskind, 18 October 1952
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with air-photographic surveys T-8092 (1948) and T-8099 (1948).

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

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated except in depths less than 10 fms. where kelp and the foul character of the bottom frequently prevented development to the low-water line.

The survey covers the area adjacent to Davidof, Khvostof and Segula Islands. The bottom is very irregular in depths less than 30 fms. and is generally smooth in greater depths. Submarine features contribute to the bottom irregularity.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7649 (1948) on the north, south and west. The junction with H-7648 (1948) will be considered in the review of that survey.

5. Comparison with Prior Surveys

H-6903 (1935) 1:60,000

This U. S. Navy reconnaissance survey covers the area of the present survey except near the islands where prior development is sparse or lacking entirely. A comparison between the prior and present surveys shows numerous minor differences of 2-4 fms. in depths. However, in several areas differences in depths of as juch as 49 fms. are noted, as for example, in lat. 52 ° 02.75', long. 178° 19.85' where a prior depth of 105 fms. falls in present depths of 153-154 fms. These discrepancies are attributed largely to the dead reckoning control and the improper spacing of soundings on the prior surveys. 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.

6. Comparison with Chart 8864 (latest print date 3/19/51)
Chart 9180 (latest print date 1/22/51)

A. Hydrography

The charted hydrography originates with the previously discussed prior survey, supplemented by several soundings from the present survey prior to verification and review.

The present survey supersedes the charted hydrography 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. This 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. Preliminary verification revealed discrepancies in crossings caused by the application of erroneous fathometer phase corrections. The field party had applied a mean phase correction, disregarding phase differences which

varied appreciably from the mean phase difference. By using the rejected instead of the mean phase differences in the reduction of soundings of several days, numerous differences in depths at crossings were eliminated.

c. Errors in positions determined by shoran on several days were detected and corrected. Adjustments of as much as .06 statute mile were made to bring shoran sounding lines into agreement with topographic detail, visually controlled sounding lines, and sounding lines of an adjoining survey. On one line the improper adjustment of gain after making a zero check was apparently the cause of error. On other lines, faulty operation of the shoran equipment or inadequate information regarding shoran corrections, appear to be possible factors in the causes of the errors.

d. Few bottom characteristics were obtained in the area of the present survey.

8. Compliance with Project Instructions

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

9. Additional Field Work Recommended

This is a good basic survey and no additional field work is recommended. Attention, however, is directed to the paucity of bottom characteristics.

Examined and approved:

H. R. Edmonston
Chief, Nautical Chart Branch

H. Arnold Karo
Chief, Division of Charts

L. S. Hubbard
Chief, Section of Hydrography

Earl O. Heaton
Chief, Division of Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7647

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
7/25/50	9102	GHE	Before ~~After~~ Verification and Review
9-11-50	8864	[illegible]	Before ~~After~~ Verification and Review Partially applied.
11/2/50	9180	SAM.	(Before) ~~After~~ Verification and Review
			Examined only. No work added now.
			Before After Verification and Review
11/6/50	9155	LAM.	(Before) ~~After~~ Verification and Review Part applied
			Added 3¼ near Kroatz I, & other
7/18/55	9180 Reconst.	CRW.	~~Before~~ After Verification and Review JMA
5/22/57	9102	Wittman	~~Before~~ After Verification and Review Ver. via reconstr. chart 9180 JMA
~~8~~ 11/14/61	8864	[illegible]	~~Before~~ After Verification and Review –
1/93	16450	D. CORDTS	~~Before~~ After Verification and Review Fully appd
			NEW METRIC CHART
			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.