7775

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-16149 *Office No.* H-7775

LOCALITY

State ALASKA -- ALEUTIAN ISLANDS

General locality RAT ISLANDS

Locality NORTH OF SEMISOPOCHNOI ISLAND

1949

CHIEF OF PARTY

H. E. Finnegan

LIBRARY & ARCHIVES

DATE Feb. 17, 1950.

B-1870-1 (1)

7775

FEB 17 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-7775

Field No. PI-16149

State ~~Territory of~~ Alaska - Aleutian Islands

General locality ~~Aleutian~~ Rat Islands

Locality North of ~~Rat Islands~~ Semisopochoi Island

Scale 1:160,000 Date of survey 17 September 1948 - 8-17 August 1949

Instructions dated (See enclosed List of Instructions and Supplemental Instructions.)

Vessel Ship PIONEER

Chief of party H.E. Finnegan

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

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

Fathograms scaled by RSD, RLK, BCS, DGR & EAC

Fathograms checked by BCS, DGR, BEG, & SPD

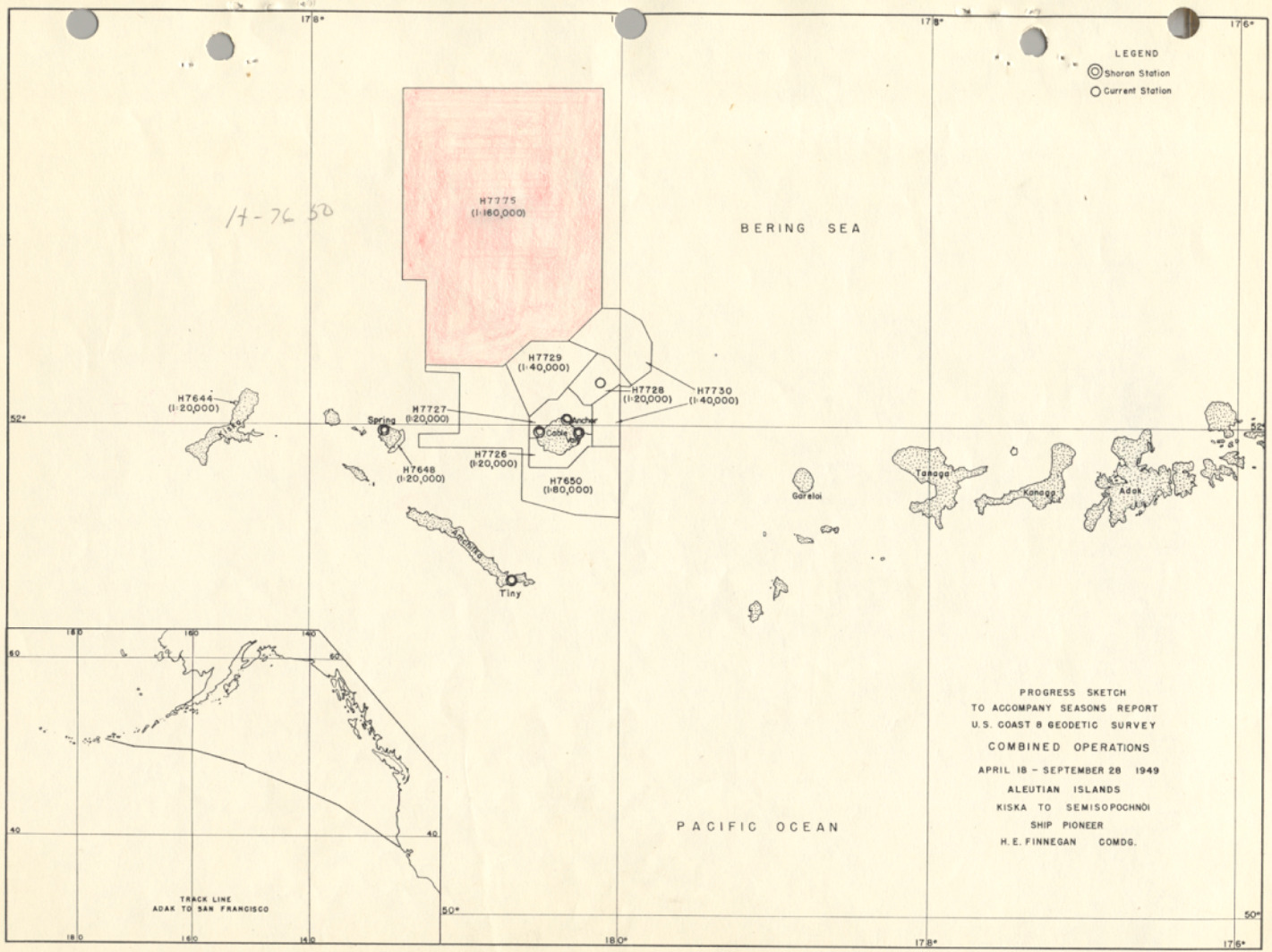
Protracted by W. N. Martin

Soundings penciled by W. N. Martin

Soundings in fathoms ~~feet~~ at MLLW

REMARKS: Shoran Control

U. S. GOVERNMENT PRINTING OFFICE 693019


LEGEND
Shoran Station
Current Station
H7775
(1:160,000)
BERING SEA
H7729
(1:40,000)
H7728
(1:20,000)
H7730
(1:40,000)
H7644
(1:20,000)
H7727
(1:20,000)
Spring
Archer
Cable
H7726
(1:20,000)
H7648
(1:20,000)
H7650
(1:80,000)
Tiny
Gareloi
Tanaga
Kanaga
Adak
PACIFIC OCEAN
TRACK LINE
ADAK TO SAN FRANCISCO
PROGRESS SKETCH
TO ACCOMPANY SEASONS REPORT
U.S. COAST & GEODETIC SURVEY
COMBINED OPERATIONS
APRIL 18 – SEPTEMBER 28 1949
ALEUTIAN ISLANDS
KISKA TO SEMISOPOCHNOI
SHIP PIONEER
H. E. FINNEGAN COMDG.
M-2707-5

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY

H-7775 (Field PI-16149)

Project CS-218 Season of 1948 & 1949

Ship PIONEER H.E. Finnegan, Chief of Party

Scale: 1:160,000 Surveyed by: G.A. Nelson
G.R. Fish
E.B. Lewey
R.A. Marshall
C.J. Beyma
P.A. Weber

A. PROJECT

This survey is part of Project CS-218. See enclosed List of Instructions and Supplemental Instructions.

B. SURVEY LIMITS AND DATES

This survey is located in the Aleutian Islands, north of Rat Islands. It extends approximately from Latitude 52°-20' to 53°-20' north and from 178°-40 to 179°-50' east.

See Index of Sheets, page 11.

Field work was done from 8 to 17 August 1949 and in addition, 18 positions from H-7650 surveyed on 17 September 1948 were transferred to this survey.

Junctions are made with prior survey H-7651, 1948 scale: 1:160,000 on the west and the following contemporary surveys on the south: H-7650, (1948) H-7729 and H-7730. (1949)

C. VESSEL AND EQUIPMENT

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

The turning radius of the ship as operated was approximately 400 meters.

All soundings were obtained with the NMC-2 Fathometer No. 115.

D. TIDE AND CURRENT STATIONS

Tide reducers were obtained from the portable tide gage at Constantine Harbor, Amchitka Island. No time or range corrections were applied.

A tidal note is included in this report.

No current stations were occupied within area of this sheet.

E. SMOOTH SHEET

The projection and shoran circles were made in the Washington office. Shoran station Bird, 1948 and segments of two circles were plotted on the ship PIONEER by hand.

No shoreline is shown on this offshore sheet.

F. CONTROL STATIONS

All of the triangulation stations used for control on this survey were located on NA 1927 datum by the U.S. Coast and Geodetic Survey. All shoran stations coincide with triangulation stations.

Complete data on triangulation stations located in 1949 by the Ship PIONEER was transmitted to the Washington office on 25 October 1949.

List of triangulation and shoran stations:

BIRD, 1948
SPRING, 1948
CABLE, 1949
VALY, 1949
*CAPE, 1949

* Located by Ship EXPLORER.

H. SOUNDINGS

Depths were obtained by NMC-2 Fathometer No. 115. All soundings were scanned from the graphs and verified where possible. In a few cases the red light was used when the graph was not marking properly.

No draft or settlement and squat corrections were applied. Tide corrections were entered under 800 fathoms. Index and velocity corrections were entered.

I. CONTROL OF HYDROGRAPHY

All hydrography on this survey was controlled by shoran. Several lines were carried by dead reckoning from shoran limits to the northern edge of the survey. In these cases, a straight line adjustment was made using the time intervals and courses near the shoran limits, together with check loran fixes at the northern ends of the lines.

J. ADEQUACY OF SURVEY

This survey is considered to be complete and adequate for the area covered. Junctions with adjoining surveys are on the whole satisfactory; however the following discrepancies are noted:

Adj. Survey No.	Lat. N.	Long E.	Depth H-7775 fms.	Depth Adj. Survey fms.	Remarks
H-7651	52°-33.5	178°-40.0	~~1547~~ 1563	1560	
H-7651	52°-33.5	178°-41.6	1522	~~1544~~ 1514-1524	
H-7650	52°-14.7	178°-53.2	584 plus	537	OK with Jct. Sheet
H-7650	52°-14.7	178°-56.6	568*	529	* graph H-7775 poor - sdgs. omitted at Jct.

The above discrepancies are probably caused by horizontal position displacement.

K. CROSSLINES

Crosslines consist of approximately 7% of the total lines run.

Crossings are in general very good but the following discrepancies over 10 fathoms are noted.

1. Lat. 52°-40.8' N. Long. 179°-44.0' E, 100 fm. in 800 fm. At this point on both lines red light readings were recorded as the depth scale had just been changed and the graph was not recording. If intermediate soundings are interpolated between the points on which the graph did mark, only a 4 fathom discrepancy results. It is recommended that this be done.

sdgs. were interpolated between positions 687 & 688, Col. 5.

2. Lat. 52°-35.1 N, Long. 179°-09.0 E. A 31 fathom discrepancy exists at approximately 1100 fathoms. The slope at this point is very steep and in addition the graph is poor between 12H and 13H. It is recommended that the soundings between 210K and 211K be used.

Fathms. recommended, soundings in agreement.

3. Lat. 52°-25.1 N, 178°-40.4 E. A discrepancy of 46 fathoms existed in approximately 800 fathoms. It was noted that the red light was being recorded at position 11F, so these soundings were rejected.

smooth-plotted soundings in agreement.

M. COMPARISON WITH CHART
CHARTS 8864 & 9102

480 fms. 775 fm. 18.5'

The shoal areas shown on these charts at Lat. 52°-~~19~~ 18.5' N, Long. 178°-38.5' E; Lat. 52°-28' N, Long. 178°-51.2 E; and at 52°-47' N, Long. 179°-04' E were not found on this survey. As the present survey is a completely integrated, well controlled survey, and the chart is made up of hydrography not exceeding reconnaissance accuracy, it is recommended that the present survey be used in its entirety and that no soundings from the previous charts be used.

~~1180~~ 910 fm.

See P5 and P6 of Review.

N. DANGERS AND SHOALS

There are no dangers within the limits of this survey.

V. DATA INCLUDED WITH THIS REPORT

1. Statistics
2. Tide Note
3. Velocity Correction Abstract
4. Shoran Zero Settings
5. Initial & Phase Corrections
6. List of Instructions and Supplemental Instructions
7. Index of Surveys, 1949
8. Approval Sheet

Z. TABULATION OF APPLICABLE DATA

The following special reports apply to this survey.

1. Shoran Zero Settings, 1949, forwarded 25 January 1950.
2. Fathometer and Velocity Corrections, 1949, forwarded 1 February 1949. filed with H-7730 for 1948 ut see H-7645
3. Report to Accompany Triangulation Sketch, 1949, forwarded 25 October 1949.
4. Season's Report, 1949, forwarded 25 November 1949.

10 Feb.,1950.

Submitted by:

William N. Martin

William N. Martin
LCDR., USC&GS
Ship PIONEER

Approved and forwarded:

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

STATISTICS FOR HYDROGRAPHIC

Survey No. H-7775 (1949)

Ship PIONEER Project CS-218

Day Letter	Vol. No.	Date 1949	No. of Pos.	Stat. Mi. Sdg. lines	Sq. Stat. Miles
* F	1	8 Aug.	154	364.8	
G	2	9 Aug.	80	210.0	
H	2&3	10 Aug.	103	216.0	
J	3&4	11 Aug.	204	446.2	
K	4&5	12 Aug.	220	390.3	
L	5	17 Aug.	61	88.8	
** M	5	17 Sept. 1948	18	18.4	
		TOTALS	840	1734.5	3802.0

* This survey was originally intended to be a continuation of H-7651 (1948) which ended with E day.

** This line transferred from H-7650 (1948)

TIDE NOTE

Project CS-218 SHIP PIONEER Field Season - 1949

The tide gage at Constantine Harbor, Amchitka Island, Aleutian Islands, Alaska, latitude 51° 24.8' north and longitude 179° 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 FATHOMETERS

Corr'n. fms.	Depth fms.
0.0	0.0 to 65.0
-0.2	65.1 to 102.0
0.0	103 to 250
plus 0.5	251 to 370
plus 1.0	371 to 450
plus 1.5	451 to 510
plus 2.0	511 to 580
plus 2.5	581 to 630
plus 3.0	631 to 670
plus 3.5	671 to 720
plus 4.0	721 to 760
plus 4.5	761 to 810
plus 5.0	811 to 870
plus 6	871 to 930
plus 7	931 to 1000
plus 8	1001 to 1050
plus 9	1051 to 1095
plus 10	1096 to 1145
plus 11	1146 to 1190
plus 12	1191 to 1235
plus 13	1236 to 1275
plus 14	1276 to 1315
plus 15	1316 to 1355
plus 16	1356 to 1395
plus 17	1396 to 1430
plus 18	1431 to 1460
plus 19	1461 to 1490
plus 20	1491 to 1525
plus 21	1526 to 1555
plus 22	1556 to 1590
plus 23	1591 to 1620
plus 24	1621 to 1650
plus 25	1651 to 1675
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

NMC & NMC-2 FATHOMETERS

Corr'n. fms.	Depth fms.
plus 32	1836 to 1860
plus 33	1861 to 1885
plus 34	1886 to 1910
plus 35	1911 to 1930
plus 36	1931 to 1955
plus 37	1956 to 1980
plus 38	1981 to 2010
plus 40	2011 to 2120
plus 45	2121 to 2225
plus 50	2226 to 2330
plus 55	2331 to 2430
plus 60	2431 to 2520
plus 65	2521 to 2615
plus 70	2616 to 2700
plus 75	2701 to 2785
plus 80	2786 to 2865
plus 85	2866 to 2945
plus 90	2946 to 3025
plus 95	3026 to 3100
plus 100	3101 to 3170
plus 105	3171 to 3245
plus 110	3246 to 3315
plus 115	3316 to 3385
plus 120	3386 to 3450
plus 125	3451 to 3520
plus 130	3521 to 3580
plus 135	3581 to 3645
plus 140	3646 to 3710
plus 145	3711 to 3770
plus 150	3771 to 3830
plus 155	3831 to 3890
plus 160	3891 to 3945
plus 165	3946 to 4010

Sheet No. 3

SHORAN ZERO SETTINGS

Season of 1949

SHORE SETS	SHIP SETS						
	PIONEER						EXPLORER
	SHIP SET #3		SHIP SET #6		Launch Set #4		
#	Rate	Drift	Rate	Drift	Rate	Drift	
#1 VALY	99.816	99.816	99.817	99.796			99.816
#2 HART	99.803	99.813	99.809	99.803		99.791	99.828
#3 TINY & SPRING	99.800	99.800	99.795	99.786			99.809
#4 CAPE & BIRD	99.769	99.772	99.777	99.777	99.823		99.822
#5 STEM	Mean 99.792*		Mean 99.792*				99.807
#6 CABLE	99.817	99.820	99.834	99.827			99.811
#6 ANCHOR				99.818			

* From comparison with EXPLORER'S values see report.

INITIAL AND PHASE CORRECTIONS
TO
Ship's Fathometers

PIONEER

Season of 1949

FATHOMETER NMC & NMC-2	INITIAL CORRECTION
808 J #S-108	- 0.1 fms.
	- 0.1 fms

PHASE CORRECTION

FATHOMETER	SCALE	CORRECTION
808-A ship 69-S	B	- 0.3
	C	- 0.4
	D	- 0.6
808-J Ship #108	B	- 0.9
	C	- 0.8
	D	- 0.3
808-J Launch #4 #107-S	B	- 0.6
	C	- 0.0
	D	∕ 0.3
808-J Launch #3 #129-S	B	- 1.4
	C	- 0.4
	D	∕ 1.5

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, Photogrametric 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).

APPROVAL SHEET TO ACCOMPANY

SURVEY H-7775 (Field No. PI-16149)

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
Comdr. USC&GS
Comdg. Ship PIONEER

RHC

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~ 13 March 1950

Division of Charts: R. H. Carstens

Plane of reference approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 7775

Locality North of Rat Islands, Aleutian Islands

Chief of Party: H. E. Finnegan in 1948-49
Plane of reference is mean lower low water, reading
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 3.7 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-7775

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Alaska			(for title)							1
Aleutian Islands			"	"						2
Rat Islands			"	"						3
										4
Samisopachnoi Island									USLB	5
Bering Sea									"	6
Little Sitkin Island									"	7
										8
					Names underlined in red are approved. 3-13-51. L. Heck.					9
										10
										11
Constantine Harbor			(location of tide gage)						USLB	12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7775

Records accompanying survey:

Boat sheets 1; sounding vols. 5; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 5 envel.

special reports, etc. 35 Shoran Abstract Sheets

.....

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

Number of positions on sheet		840
Number of positions checked		10
Number of positions revised		0
Number of soundings revised (refers to depth only)		41
Number of soundings erroneously spaced		—
Number of signals erroneously plotted or transferred		—
Topographic details	Time	0
Junctions	Time	16 hrs
Verification of soundings from graphic record	Time	16 hrs

Verification by A.R. STIRNI Total time 130 hrs Date 3/26/51.

Reviewed by [signature] Time 32 Date 4/12/51

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY — REGISTRY NO. H-7775

FIELD NO. PI-16149

Alaska-Aleutian Islands, Rat Islands, North of Semisopochnoi Island

Surveyed in Sept., 1948 - Aug., 1949 — Scale 1:160,000

Project No. CS-218

Soundings: — Control:

NMC-2 Fathometer — Shoran

Chief of Party - H. E. Finnegan
Surveyed by - G.A. Nelson, G.R. Fish, E.B. Lewey, R.A. Marshall, C.J. Beyma and P.A. Weber
Protracted by - W. N. Martin
Soundings plotted by - W. N. Martin
Verified and inked by - A. R. Stirni
Reviewed by - I. M. Zeskind, 12 April 1951
Inspected by - R. H. Carstens

1. Shoreline and Control

No shoreline is shown on this offshore survey.

The source of the control 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.

This is a survey of that portion of the insular slope which lies north of Semisopochnoi Island. The slope is indented by a prominent sea-valley whose axis roughly parallels latitude 52° 35'. The bottom is very irregular.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7651 (1948) on the west, and with H-7729 (1949) and H-7730 (1949) on the southeast. The junction with H-7650 (1948-49) on the southwest

will be considered in the review of that survey. Project surveys on the east have not been completed at the present time.

5. Comparison with Prior Surveys

H-6903 (1935) U.S.N., 1:60,000
H-6906 (1935) U.S.N., 1:150,000

A comparison between the depths on these small-scale Navy reconnaissance surveys and the present survey reveals differences of 5-240 fms. as for example, in lat. 52° 18.6', long. 178° 38.7', where a prior depth of 480 fms. falls in present depths of 682-720 fms. These discrepancies are largely due to the inaccuracies in dead reckoning control and soundings on the prior surveys. The present survey is adequately developed to reveal all the hydrographic information necessary to supersede the prior surveys within the common area.

6. Comparison with Chart 8864 (Latest print date 3/19/51)
Chart 9102 (Latest print date 9/18/50)

A. Hydrography

The charted hydrography originates principally with the previously discussed prior surveys which need no further consideration with tracklines of 1943, 1944, and 1946 by this Bureau, with tracklines of 1935 and 1943 by the U. S. Coast Guard and other sources and with the present survey prior to verification and review. Differences in depth of as much as 475 fms. between the trackline soundings and the present survey are largely due to dead reckoning control on the prior tracklines.

The 775-fm. sounding charted in lat. 52° 28.0', long. 178° 51.2'E, from a source not readily ascertainable, falls on the present survey in depths of 1200 to 1250 fms. and should be disregarded. This sounding is probably out of position and should actually fall about 4 miles southwestward where comparable present depths are found.

The present survey supersedes the charted information within the common area.

B. Aids to Navigation

There are no aids to navigation within the limits of the present survey.

7. Condition of Survey

a. The 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

H. Arnold Karo
Acting Chief, Division of Charts

L. S. Hubbard
Chief, Section of Hydrography

W. M. Scaife
Chief, Division of Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7775

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
8-30-50	8863	[illegible]	Before ~~After~~ Verification and Review Partially applied.
8-31-50	8864	"	Before ~~After~~ Verification and Review "
9/19/50	9102	[illegible]	Before ~~After~~ Verification and Review
12-6-56	8863	H.J. Stegman	~~Before~~ After Verification and Review Completely
5/21/57	9102	C.R. Wittmann	~~Before~~ After Verification and Review " JMA
10/16/61	8864	[illegible]	~~Before~~ After Verification and Review - partial
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.