7992

Diag.Cht.No.9000-1

55-343

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PI-202-52 *Office No.* H-7992

LOCALITY

State ALASKA

General locality BERING SEA

Locality BOWERS BANK

1952

CHIEF OF PARTY

THOS. B. REED

LIBRARY & ARCHIVES

DATE JAN 15 1953

B-1870-1 (1)

7992

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-7992

Field No. PI-202-52

State Alaska

General locality Bering Sea

Locality Bowers Bank

Scale 1:200,000 Date of survey 9 May to 1 June, 1952

Instructions dated 6 March 1951, 28 May 1951, 21 June 1951, 21 March 1952

Vessel Ship PIONEER

Chief of party Thos. B. Reed

Surveyed by Ship's Officers

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

Fathograms scaled by Fathometer readers and Ship's Officers

Fathograms checked by Ship's Officers

Protracted by G. E. Haraden

Soundings penciled by G. E. Haraden

Soundings in fathoms ~~feet~~ at ~~MEAN~~ MLLW
and are based on a velocity of sound of 800 fms./sec.

REMARKS:

The bot. characteristic in ϕ 54°45' λ 170°45'E was added from "Spec. Report of Bainbridge (1953) No. 162"

2 AS

U. S. GOVERNMENT PRINTING OFFICE 693019

SHEET LAYOUT
1952 FIELD SEASON

PROJECT CS-343

SHIP PIONEER

THOS. B. REED, COMDG.

Scale of Chart H. O. No. 0068

PI 503-52

PI 501-52

H-7993

H-7951

PI 202-52 H-7992

PF 502-52
H 7973

PI 025-52
H-7994

PI 101-52
H-7995

55°

51°

175°

180°

175°

170°

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY

H-7992 (PI-202-52)

BOWERS BANK

Project CS-343
Ship PIONEER
Scale 1:200,000

Season of 1952
Thos. B. Reed, Chief of Party
Surveyed by Ship's Officers

A. PROJECT.

The work was done in accordance with instructions for Project CS-343 dated 6 March 1951, 28 May 1951, 21 June 1951, and 21 March 1952.

B. SURVEY LIMITS AND DATES.

The survey covered the area within the 1000 fathom curve from longitude 175° 57'E on the west to longitude 179° 12'E on the east, and from latitude 54° 00' on the south to latitude 55° 14' on the north.

The survey joins contemporary survey sheet No. H-7993 (1952) on the north, west, and south, and sheet No. H-7972 on the east. → not registered 2/16/53 *Review, par. 4.*

Hydrography was begun 9 May and ended 1 June, 1952.

C. VESSEL AND EQUIPMENT.

The hydrography was performed exclusively by the Ship PIONEER.

An attempt was made to record all soundings up to a depth of 400 fathoms on the NMC-2 fathometer, serial number 117. In deeper water the NMC fathometer, serial number I-766 was used. Due to occasional fathometer trouble it was not always possible to adhere to this procedure. From position 42G to 44G the 808 fathometer, serial number S-108 was operating simultaneously with the NMC-2.

The turning radius of the ship was approximately 400 meters.

D. TIDE AND CURRENT STATIONS.

No tide or current stations were used in connection with this survey.

E. SMOOTH SHEET.

The projection was made by hand on the Ship PIONEER. The EPI arcs were located and drawn by computation of points on the arcs.

F. CONTROL STATIONS.

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

Station EPI ATtu was located by traverse from a previously established station. Station EPI AMchitka was located by theodolite cuts from three previously established stations. Station EPI TAnaga was located by personnel from the Ship EXPLORER. Computations for the location of these stations are contained in a separate report, "Location of EPI and Shoran Stations, Season of 1952". In Library

G. SHORELINE AND TOPOGRAPHY.

This was an offshore survey and no shoreline or topographic work was done.

H. SOUNDINGS.

All soundings were taken with the previously mentioned fathometers. All soundings recorded on the fathogram were scanned and verified.

Due to the depths worked in no tide corrections were applied.

In accordance with the Director's letter, dated 21 June, 1951, 21/mek, S-1-P1, no velocity corrections were applied to the soundings.

I. CONTROL OF HYDROGRAPHY.

The survey was controlled exclusively by the three EPI stations previously mentioned.

J. ADEQUACY OF SURVEY.

The survey is complete and should supersede prior surveys for charting.

K. CROSSLINES.

Seven and one half per cent of the total miles of hydrography constituted crosslines.

All crossings were in good agreement with the following exceptions. The crossing at 52M and 6-7E (lat. 55°10'N long. 177°40'E) did not agree by approximately 50 fathoms, however these lines crossed over a very steeply sloping bottom. The crossing at 3-4G and 78-79P is in wide disagreement. Position 3G plus one sounding shows a deep of 760 fathoms which does not show at all on the crossline. Although both the fathograms and the control data have been carefully examined no reasonable explanation was reached as to the reason for the discrepancy. (lat. 55°03'N long. 177°23'E (Sdgs. 78-79 P rejected after thorough examination)) Except for the above mentioned crossings the percentage discrepancy at crossings ranged from 0 to 3%. Many of the comparisons were made from soundings obtained from the NMC fathometer on one line and the NMC-2 fathometer on the other line. This made it impossible to scale the depth equally as close on both lines.

Discrepancy resolved

Discrepancy resolved

Review, par. 2.

L. COMPARISON WITH PRIOR SURVEYS.

There have been no prior surveys of this area. The only available soundings are from undetermined sources and tracklines made in 1935 by the U.S. Navy. Their comparison is discussed under the following heading.

M. COMPARISON WITH CHARTS.

The largest scale chart available for comparison is C&GS chart 9102 (11th edition) October 1951. Previous soundings in this are are from the track lines of the USS CHELAN and the USS TAHOE in 1935. Comparison with these soundings indicates that shoaler depths were discovered during this survey. It was found that the 1000 fathom curve was altered very little from that on the published chart. The 500 fathom curve was found to extend farther south along the western end of Bowers Bank. The difference in depth between this survey and the 1935 tracklines are, no doubt, due to the stronger control and more thorough coverage of the area during this survey.

U. MISCELLANEOUS.

1. This is an offshore survey and there are no dangers to surface navigation, coast pilot information, aids to navigation, landmarks for charts, new geographic names, or silted areas to report within the limits of this survey.

2. Bathythermograph observations were taken at two hour intervals under favorable weather conditions.

V. DATA INCLUDED IN THIS REPORT.

1. Abstract of EPI corrections.
2. Abstract of statistics.
3. Abstract and computation of arc points.
4. Approval sheet.

W. TABULATION OF APPLICABLE DATA.

1. Special report, " Computation of EPI Corrections" to be submitted.

2. Special report, "Computation of EPI Station Positions" to be submitted.

Respectfully submitted:

G. E. Haraden

G. E. Haraden
Ensign, U. S. C. & G. S.

Approved and forwarded:

Thos. B. Reed
Capt. U.S.C.& G.S.
Com'd'g. Ship PIONEER

SUMMARY OF EPI CORRECTIONS

Survey H-7992 Field No. PI-202-52

Shore Equipment	Period	Correction
EPI AMchitka		
T-3 C-2	Entire Period	-5.0ms
T-5 C-3	do	-3.9ms
T-5 C-2	do	-3.2ms
EPI ATtu		
T-7 C-6	Entire Period	-5.0ms
T-4 C-6	do	-3.6ms
EPI TAnaga		
T-8 C-7	Entire Period	-4.2ms
T-8 C-8	do	-4.8ms

STATISTICS FOR HYDROGRAPHIC SURVEY H-7992 (1952)

Ship PIONEER Project CS-343

Day	Vol. No.	Date	No. of Pos.	No. of Stat. Miles
A	1	9 May	Reject	Reject
B	1	10 May	59	322.0
C	1&2	11 May	83	447.3
D	2	12 May	28	151.8
E	2	13 May	50	186.3
F	2	20 May	12	66.7
G	2&3	21 May	65	334.1
H	3	22 May	89	430.1
J	4	23 May	85	414.5
K	4	24 May	40	180.5
L	4	28 May	35	155.2
M	5	29 May	97	434.9
N	5&6	30 May	82	435.8
P	6	31 May	81	439.6
Q	6&7	1 June	46	200.4
		TOTAL	852	4199.0

Total Area of Survey: 5360 square statute miles.

ARC POINTS

Computations filed with fathograms

Survey H-7992

Field No. PI-202-52

EPI AMchitka

Distance	Azimuth	Latitude	Longitude
2000ms	166°	54° 01' 30.33"	178° 11' 11.82"E
2400ms	166°	54° 32' 42.97"	177° 56' 55.64"E
3000ms	166°	55° 19' 28.38"	177° 34' 49.71"E
2400ms	147°	54° 05' 27.25"	176° 17' 57.97"E
2400ms	187°	54° 37' 21.27" Computation with report on H-7993	179° 58' 14.39"E

EPI ATtu

1500ms	233°	54° 07' 35.02"	175° 59' 48.52"E
2200ms	233°	54° 39' 24.27"	177° 19' 53.50"E
3000ms	233°	55° 14' 39.41"	178° 53' 58.11"E
2200ms	245°	54° 06' 28.36"	177° 49' 16.76"E
2200ms	215°	55° 19' 56.84" Computation with report on H-7993	176° 13' 48.04"E

EPI TAnaga

2400ms	144°	54° 14' 17.83"	178° 40' 09.25"E
3000ms	144°	54° 51' 59.30"	177° 47' 47.31"E
3400ms	144°	55° 16' 53.94"	177° 11' 56.73"E
3000ms	130°	54° 09' 00.11"	176° 38' 18.63"E
3000ms	156°	55° 19' 24.64"	179° 01' 57.60"E

APPROVAL SHEET TO ACCOMPANY

Survey H-7992 Project CS-343

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

The records and smooth sheet have been inspected and are approved.

The survey is considered adequate.

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

RHC

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. Apr. 1950

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coast and Surveys~~ 28 January 1953

Division of Charts: R. H. Carstens

Plane of reference approved in 7
volumes of sounding records for

HYDROGRAPHIC SHEET 7992

Locality Bowers Bank, Bering Sea, Alaska

Chief of Party: T. B. Reed in 1952
Plane of reference is
ft. on tide staff at
ft. below B. M.

NOTE: Tide reducers not entered and are unnecessary on account of deep soundings.

Condition of records satisfactory except as noted below:

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

U. S. GOVERNMENT PRINTING OFFICE 877933

GEOGRAPHIC NAMES

Survey No. H-7992

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										1
Bering Sea										2
Bowers Bank										3
										4
										5
					Names underlined in red are approved. 1-23-53 A. Heck					6
										7
										8
										9
										10
										11
										12
										13
										14
										15
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										24
										25
										26
										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7992...

Records accompanying survey:

Boat sheets 1....; sounding vols. ..7...; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls ..3 Env.

special reports, etc. 1 Smooth Sheet; 1 Descriptive Report; 1 Tracing showing depth curves.....

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

Number of positions on sheet		~~4199~~ 852
Number of positions checked		75 95 10
Number of positions revised		none 1 0
Number of soundings revised (refers to depth only)		400
Number of soundings erroneously spaced		30 8
Number of signals erroneously plotted or transferred		none
Topographic details	Time	none
Junctions	Time	1 hr.
Verification of soundings from graphic record	Time	15 hrs 83

Preliminary verif. by A. J. Hoffman 55 hrs. 2/16/53

Verification by William O. Hughes Total time 84 60 Date 17 Oct. 56 7/7/58

Currest & Addendum

Reviewed by J. A. Dunmore Time 18 Date 19 Mar. 1953

Stmt - 8hrs

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7992 FIELD NO. PI-202-52

Alaska, Bering Sea, Bowers Bank

Project No. CS-343

Surveyed - May - June 1952 Scale 1:200,000

Soundings: Control:

NMC & NMC-2 Fathometers E.P.I.

Chief of Party - T. B. Reed
Surveyed by - T. B. Reed
Protracted by - G. E. Haraden
Soundings plotted by - G. E. Haraden
Preliminary verification by - A. J. Hoffman
Verified and inked by - A. J. Hoffman and William A. Hughes
Reviewed by - T. A. Dinsmore, 19 March 1953
Inspected by - R. H. Carstens

1. Shoreline and Control

This is an offshore survey of an area lying approximately 160 miles north of Kiska Island. There is no shoreline within the limits of the survey sheet.

The origin of the control is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in good agreement except that soundings between 78-79 P were rejected because of a 100-fm. difference in lat. 55° 03', long. 177° 23', with the depths on sounding line 3-4 G. Thorough examination of the fathograms and records in this office produced no conclusive solution to the cause of the discrepancy.

3. Depth Curves and Submarine Relief

The usual depth curves are adequately delineated.

This survey covers the northwestern portion of Bowers Bank. A prominent mound rises to within 120 fms. of the surface in lat. 54° 51', long. 178° 43'. Several knolls rise from greater surrounding depths elsewhere along the axis of the

99 on H7992

bank. Depths within the limits of the surveyed area range from 100 fms. in lat. 54° 39', long. 179° 12', to 2000 fms. in lat. 54° 28', long. 175° 57'. The bottom is generally uneven.

4. Junctions with Contemporary Surveys

The junctions between the present survey and H-7993 (1952) on the north, south and west will be considered in the review of that survey. The contemporary survey on the east is not yet registered in this office.

5. Comparison with Prior Surveys

There are no prior surveys in this area by this Bureau.

6. Comparison with Chart 9102 (Latest print date 10/1/51)

A. Hydrography

Charted hydrography originates principally with trackline soundings by the U. S. Navy in 1935 (Bps. 29190, 29191, 29271 and 36699).

The differences revealed by a comparison between the charted soundings and present depths are attributed to the dead-reckoning control of the prior trackline surveys. In most instances, a shift of from one to five miles in the charted soundings would effect agreement with present survey depths. Many shoaler depths are revealed by the more complete coverage of the present survey. Present depths show the 500-fm. curve extending 15 miles farther south at the western end of Bowers Bank.

The present survey entirely supersedes the charted information.

B. Aids to Navigation

No aids to navigation are charted in this open-sea area.

7. Condition of Survey

a. The sounding records and Descriptive Report are complete and comprehensive.

b. The preliminary verification and review indicates that the smooth plotting was accurately done.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work

The survey is considered to be basic for the area covered and

no additional field work is necessary.

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

ADDENDUM TO REVIEW

H-7992 (1952)

Verified and inked by - A. J. Hoffman and William A. Hughes
Review Addendum by - L. S. Straw 7-7-58
Inspected by - R. H. Carstens

Junctions with Contemporary Surveys

The junctional soundings on the east have been transferred to H-7972 (1952) and the junctional soundings from H-7993 (1952) on the south, west, and north have been transferred to the present survey. The junctions with adjoining surveys are adequate.

Comparison with Chart 9000 (latest print date 6-23-58)
Chart 9102 (latest print date 3-24-58)

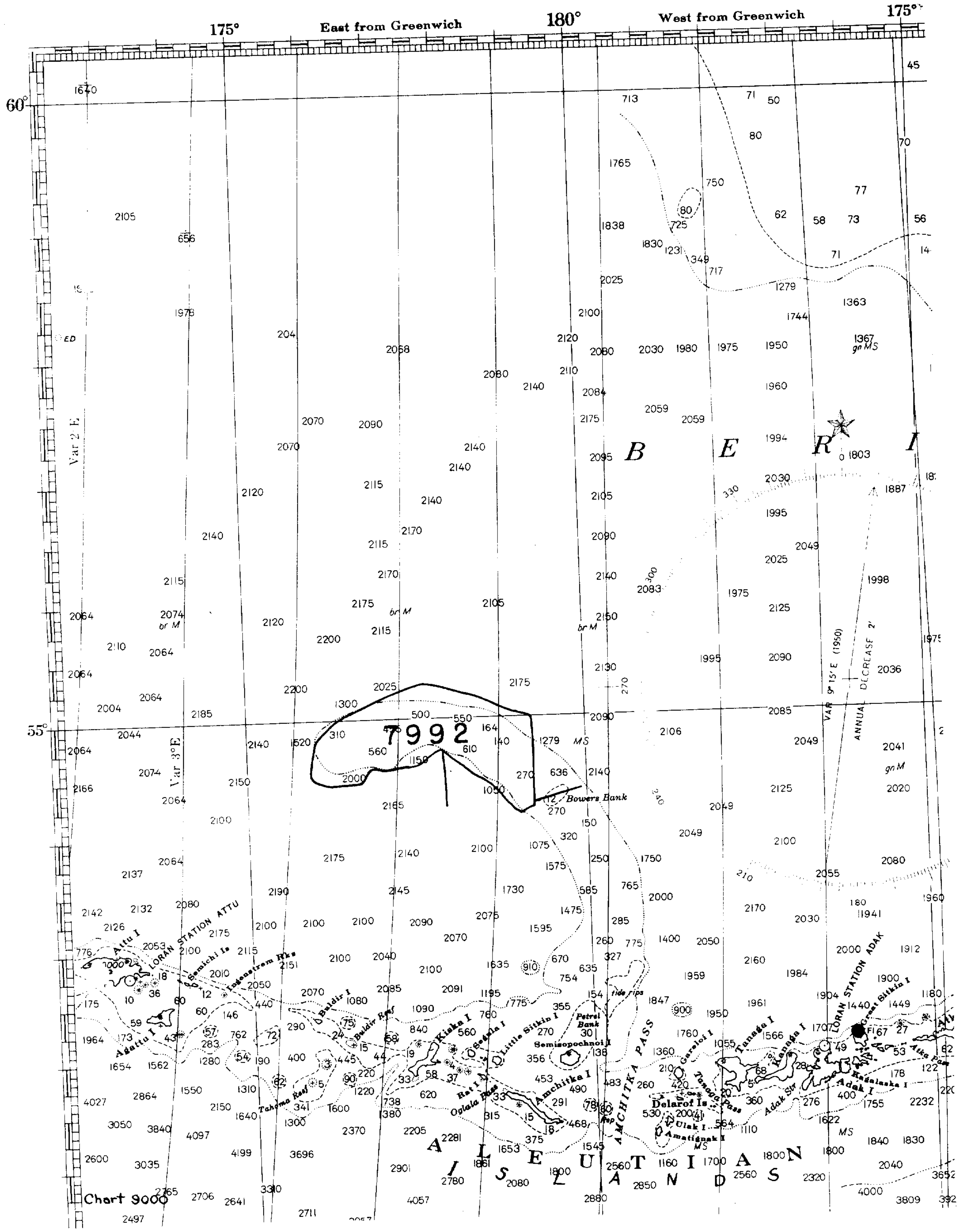
The charted hydrography on the above charts originates with the present survey after preliminary verification and review. No important discrepancies are apparent in the charted information.

Condition of Survey

The verification and inking of this survey is now complete.

Approved:

Max G. Ricketts
Chief, Nautical Chart Branch



175°
East from Greenwich
180°
West from Greenwich
175°
60°
55°
Var 2°E
Var 3°E
B E R I
7992
Bowers Bank
LORAN STATION ATTU
LORAN STATION ADAK
Attu I
Semichi Is
Ingenstrem Rks
Agattu I
Buldir I
Buldir Reef
Tahoma Reef
Kiska I
Segula I
Little Sitkin I
Rat I
Oglala Pass
Amchitka I
Semisopochnoi I
Petrel Bank
AMCHITKA PASS
Tanaga I
Kanaga I
Adak I
Great Sitkin I
Delarof Is
Ulak I
Amatignak I
Adak Str
Kagalaska I
A L E U T I A N
I S L A N D S
Chart 9000

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7992

Preliminary review 19 Mar. 1953
Addendum to " 7-7-1958

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
11/5/53	9102	Charles R. Wittmann	~~Before~~ After, Preliminary Verification and Review (Fully applied) V.J.M.A.
11/13/53	9000	Chas R. Wittmann	~~Before~~ After, preliminary Verification and Review (Item cht 9102 Bypp)
3-18-'61	9102	J.M. Albert	~~Before~~ After Verification and Review about a dozen ships surveyed or added.
3-20-'61	9000	J.M.A.	~~Before~~ After Verification and Review Brim a few ships via 9102
			Before After Verification and Review
			Before After Verification and Review
			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.