

# 7993

Diag. Cht. No. 9000-1

CS-343

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

## DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. PI-501-52 Office No. H-7993

### LOCALITY

State Alaska

General locality Bering Sea

Locality Southwest Bering Sea

19 52

CHIEF OF PARTY

Thos. B. Reed

LIBRARY & ARCHIVES

DATE .....

7993

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-7993

Field No. PI-501-52

State Alaska - Aleutian Islands ✓

General locality Bering Sea ✓

Locality ~~Southwest Bering Sea~~ Northeast of Near Islands ✓

Scale 1:500,000 ✓ Date of survey 19 May to 12 July, 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. Cook

Soundings penciled by G. E. Cook

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

REMARKS: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

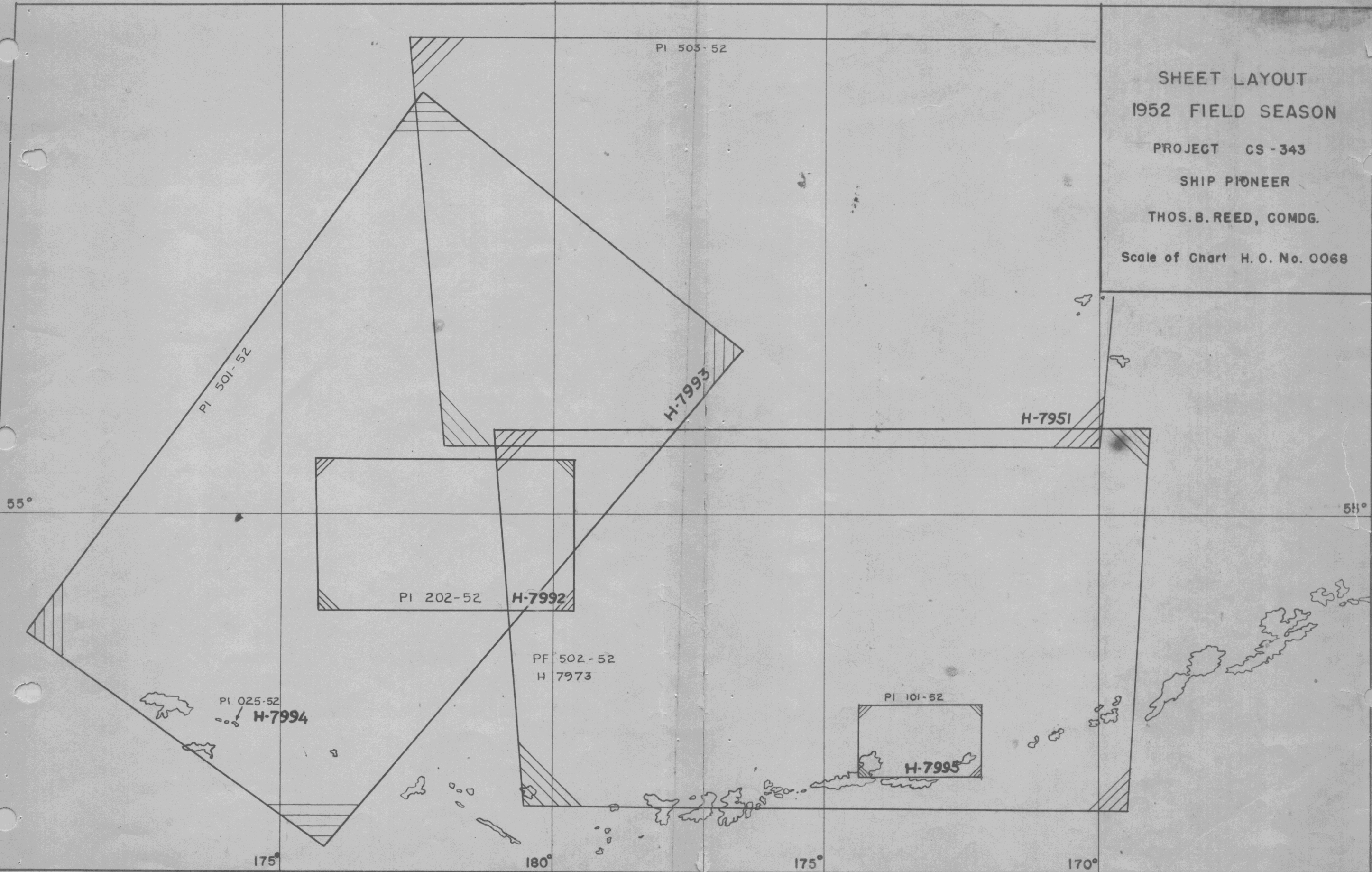
SHEET LAYOUT  
1952 FIELD SEASON

PROJECT CS-343

SHIP PIONEER

THOS. B. REED, COMDG.

Scale of Chart H. O. No. 0068



DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY

H-7993

(PI-501-52)

SOUTHWEST BERING SEA

Project CS-343  
Ship PIONEER  
Scale 1:500,000

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 enclosed by the International Boundary between Alaska and Siberia on the northwest, thence southeasterly from a point, Lat. 59° 15'N, Long. 177° 45'E to Lat. 56° 30'N, Long. 176° 45'W, thence southwesterly to Lat. 53° 25'N, Long. 178° 30'E, then west to Lat. 53° 40'N, Long. 170° 30'E on the International Boundary, with the exception of Bower's Bank which is covered by Sheet No. H-7992. (1952)

The survey joins contemporary surveys Sheet No. H-7073 along the <sup>9 (1952)</sup> Review, southeast edge of the survey and Sheet No. H-7951 along the ~~northeast~~ <sup>part 4</sup> edge of the survey. (1951-52)

Junctions were made with the previous surveys:

H-7134	1946	Scale 1:100,000
H-7135	1946	1: 80,000
H-7143	1946	1:120,000
H-7597	1947	1:120,000
H-7598	1947	1:120,000
H-7651	1948	1:160,000

Field work was begun on 19 May 1952 and ended 12 July 1952.

C. VESSEL AND EQUIPMENT

The hydrography was performed exclusively by the Ship PIONEER. All soundings were taken with the NMC fathometer, Serial No. I-766. The turning radius of the ship was approximately 400 meters.

D. SMOOTH SHEET

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

E. CONTROL STATIONS

(cont'd. on p-2)

(Cont'd. from p-1)

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 AT was located by traverse from a previously established station. Station EPI AM was located by theodolite cuts from three previously established stations. Station EPI TA 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".

F. SHORELINE AND TOPOGRAPHY

This was an off-shore survey and no shoreline or topographic work was done.

G. SOUNDINGS

The soundings were taken with the NMC previously mentioned. Due to rough seas, the soundings were sometimes not recorded on the fathograms and at these times the soundings were taken by audio. 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-PI, no velocity corrections were applied to the soundings. *(Velocity corrections were applied along southern edge of the survey to bring pres. survey depths into agreement with the depths on the junctional surveys.)*

H. CONTROL OF HYDROGRAPHY

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

I. ADEQUACY OF SURVEY

The survey is complete as a preliminary wide-line spacing survey and as such is adequate. Junctions with adjoining surveys are satisfactory considering that velocity corrections were applied to prior surveys. *see note above*

J. CROSSLINES

All crossings within 20 fathoms in depths of 2000 fathoms except as follows:

15C and 17-18 JA. The soundings on JA day were taken by audio and on C day the sea was very rough and the fathogram record is very poor. The discrepancy is 30 fathoms in depths of 2100 fathoms. *Discrepancy reduced to 10 fms.*

34-35 R and 11-12 JA. The soundings taken on JA day were by audio and on R Day the sea was very rough and the fathogram record is poor. The discrepancy is 30 fathoms in depths of 2100 fathoms. *during verification*

K. COMPARISON WITH PRIOR SURVEYS

There are no prior surveys of this area. ✓

There is a disagreement of 40-80 fathoms at the junctions with *Review*, prior surveys to the south as velocity corrections were applied to *pars. 4 & 7* the prior surveys.

L. COMPARISONS WITH CHART *See Review, par. 6.*

Chart No. 9102, revision March 1948, scale 1:1,126,303 is available for comparison with the part of this survey below Lat. 56° 00'N. Comparison indicates that the depths obtained in this survey are shoaler than those on the chart but velocity corrections were applied to prior surveys. Chart No. 9102 does not indicate an extension of Bower's Bank to the south-west as indicated by this survey. ✓

Hydrographic Office Chart No. 0068, 14th edition, September 1943, *Review*, scale 1:3,436,385 has less soundings of the area than Chart No. 9102 *par. 6* but the general indications are shoaler soundings from the survey.

M. DANGERS AND SHOALS.

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

N. COAST PILOT INFORMATION

This is an off-shore survey and there are no features to report. ✓

O. DATA INCLUDED WITH THIS REPORT

1. Index of Surveys
2. Summary of EPI corrections
3. Abstract of Statistics
4. Computation of Arc Points (*filed with fgms*)
5. Approval Sheet

P. TABULATION OF APPLICABLE DATA

1. EPI Corrections 1952
2. Triangulation Report

Respectfully submitted:

*G. E. Cook*

G. E. Cook

Deck Officer, U. S. C. & G. S.

Approved and forwarded:

*Thos. B. Reed*

Thos. B. Reed

Capt., U. S. C. & G. S.

Com'd'g Ship PIONEER

ARC POINTS

Survey H-7993

Field No. PI-501-52

EPI TA

Distance	Azimuth	Latitude	Longitude
2400 ms	144°	54° 14' 17.83"	178° 40' 09.25"E
		Computation with report on H-7992	
3000ms	144°	54° 51' 59.30"	177° 47' 47.31"E
		Computation with report on H-7992	
4800 ms	144°	56° 42' 37.12"	175° 00' 24.37"E
3000 ms	105°	52° 32' 24.59"	175° 30' 14.61"E
3000 ms	156°	55° 19' 24.64"	179° 01' 57.60"E
		Computation with report on H-7992	
3000 ms	180°	55° 42' 19.83"	178° 05' 17.57"W
		Computation with report on H-7973	

EPI AM

1400 ms	147°	52° 59' 10.13"	177° 35' 28.87"E
2400 ms	147°	54° 05' 27.25"	176° 17' 57.97"E
		Computation with report on H-7992	
4000 ms	147°	55° 49' 37.48"	174° 05' 03.44"E
2400 ms	121°	52° 59' 38.73"	174° 41' 57.46"E
2400 ms	187°	54° 37' 21.27"	179° 58' 14.39"E

EPI AT

2200 ms	215°	55° 19' 56.84"	176° 13' 48.04"E
4400 ms	215°	57° 38' 24.43"	179° 35' 02.47"E

*Computations filed with logs. of H-7993*

SUMMARY OF EPI CORRECTIONS

H-7993

Field No. PI-501-52

Shore equipment	Period	Correction
<u>EPI AT:</u>		
T-7 C-6	19 May - 16 June	-5.0
T-4 C-6	19 May - 16 June	-3.6
T-7 C-6	17 June - 12 July	-3.5
T-4 C-6	17 June - 12 July	-2.6
<u>EPI AM:</u>		
T-3 C-2	19 May - 15 June	-5.0
T-5 C-3	19 May - 15 June	-3.9
T-5 C-2	19 May - 15 June	-3.2
	Not used after 15 June	
<u>EPI TA:</u>		
T-8 C-7	19 May - 16 June	-4.2
T-8 C-8	19 May - 16 June	-4.8
T-8 C-7	17 June - 12 July	-4.9
T-8 C-8	17 June - 12 July	-6.3



STATISTICS FOR HYDROGRAPHIC SURVEY H-7993 (1952)

Ship Pioneer

Project CS-343

Day	Vol. No.	Date	No. of Pos.	No. Stat. Miles
A	1	19 May	23	132.2
B	1	20 May	39	212.4
C	1	24 May	20	117.3
D	1	28 May	19	112.7
E	1	4 June	1	4.7
F	1,2	5 June	74	445.0
G	2	6 June	73	428.9
H	2	7 June	73	422.0
J	2,3	8 June	72	429.0
K	3	9 June	63	374.9
L	3	10 June	44	255.3
M	3,4	11 June	74	444.2
N	4	12 June	72	373.8
P	4,5	13 June	77	434.7
Q	5	14 June	73	414.0
R	5	15 June	51	304.8
S	5,6	24 June	47	287.5
T	6	25 June	74	437.0
U	6	26 June	74	443.9
V	6,7	27 June	74	447.4
W	7	28 June	54	324.3
X	7	29 June	75	446.0
Y	7,8	30 June	74	445.0
Z	8	1 July	77	445.1
AA	8,9	2 July	73	434.7
BA	9	3 July	29	113.8
CA	9	6 July	36	222.0
DA	9	7 July	75	443.9
EA	9,10	8 July	74	440.4
FA	10	9 July	74	373.8
GA	10,11	10 July	74	401.4
HA	11	11 July	74	449.6
JA	11	12 July	25	151.8
TOTAL			<u>1,931</u>	<u>11,213.5</u>

Total Area of Survey: 106,111 square statute miles

APPROVAL SHEET TO ACCOMPANY

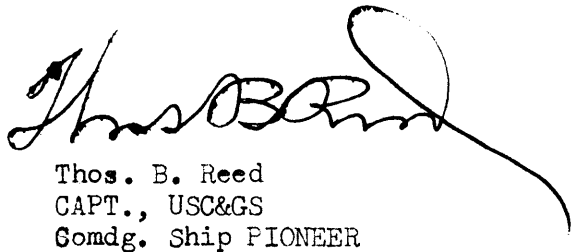
Survey H-7993

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

## TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

28 January 1953

Division of Charts: R. H. Carstens

Plane of reference approved in 11  
volumes of sounding records for

HYDROGRAPHIC SHEET 7993

Locality Southwest 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. McNay*  
Section of Tides  
Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES

Survey No. H-7993

Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>											1
<u>Bering Sea</u>										BGN	2
<u>Bowers Bank</u>											3
											4
											5
											6
											7
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											24
											25
											26
											27

Names underlined  
in red are approved  
1-26-55 L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7993

Records accompanying survey:

Boat sheets 1....; sounding vols. 11....; wire drag vols. ....; bomb vols. ....; graphic recorder rolls 6 Env.; special reports, etc. 1 Smooth Sheet; 1 Descriptive Report; .....

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

Number of positions on sheet	.....	1931
Number of positions checked	.....	40
Number of positions revised	.....	2
Number of soundings revised (refers to depth only)	.....	2500 *
Number of soundings erroneously spaced	.....	—
Number of signals erroneously plotted or transferred	.....	—
Topographic details	Time	no shoreline
Junctions	Time	40 hrs.
Verification of soundings from graphic record	Time	18

Preliminary verification by A. S. Hoffman 150 hrs 4/13/53  
 Verification by E. B. Adams 324 Total time 474 Date 5/24/54  
UNORFOLK

Reviewed by J. A. Dimmore Time 24 Date 21 May 1953

Review Addendum  
Inking curves & Junction — — — — — 24 — — — 22 May 1956  
 \* Velocity corrections to bring the survey into agreement with inshore surveys accounted for about 60% of the sounding revisions. Numerous revisions to the initial correction used in smooth plotting accounted for the remainder of the sounding revisions.

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7993

FIELD NO. PI-501-52

Alaska, Bering Sea, Northeast of Near Islands

Project No. CS-343

Surveyed in May - July 1952

Scale 1:500,000

Soundings:

Control:

NMC Fathometer

E.P.I.

Chief of Party - T. B. Reed

Surveyed by - C. J. Beyma, H. C. Applequist, W. N. Martin, F.  
Natella, A. R. Benton, Jr. and P.O. Reimer, Jr.

Protracted by - G. E. Cook

Soundings plotted by - G. E. Cook

Preliminary verification by - A. J. Hoffman

Verified and inked by - *E.B. Adamson*

Reviewed by - T. A. Dinsmore, 21 May 1953

Inspected by - R. H. Carstens

1. Shoreline and Control

There are no land areas within the limits of this offshore survey.

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

2. Sounding Line Crossings

Depths at crossings are generally in excellent agreement. Differences of 10 fms. occur in a few localities but such discrepancies are relatively minor in depths of 2000 fms.

3. Depth Curves and Submarine Relief

The usual depth curves are adequately delineated.

This offshore survey covers an extensive area northeastward from Near Islands. A succession of small ridges and knolls are revealed by the survey to extend southwestward from Bowers Bank. The 970-fm. sounding which rises abruptly from 2000-fm. depths in lat.  $54^{\circ} 16'$ , long.  $174^{\circ} 29'$  E, represents the highest knoll along the axis of these features. Except

as noted, the greater portion of the area is covered by general depths of 2000-2100 fms. and is relatively flat and featureless.

4. Adjoining Surveys

After the application of velocity corrections to present depths in the junctional area on the south, adequate junctions were effected with the following surveys on the south:

H-7134 (1946)	H-7597 (1947)
H-7135 (1946)	H-7598 (1947)
H-7143 (1946)	H-7651 (1948)

Present survey depths are in harmony with the depths on H-7992 (1952) which covers Bowers Bank. The transfer of junctional soundings is deferred pending complete verification and inking of the two surveys.

The junctions with H-7951 (1951-52) on the east and H-7973 (1952) and \*H-7972 (1952) on the southeast will be considered in the reviews of those surveys. \* See Review Addendum

There are no adjoining surveys on the north and west.

5. Comparison with Prior Surveys

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

6. Comparison with Chart 9000 (Latest print date 10/6/52) See Review Chart 9102 (Latest print date 10/1/51) Addendum

A. Hydrography

Charted hydrography originates with track-line sounding by the U. S. Navy, U. S. Coast Guard and this Bureau. A comparison of the depths on the survey and chart reveals differences of as much as 700 fms. as exemplified in lat. 53° 44', long. 175° 05' where a charted depth of 1420 fms. falls in 2100-fm. depths on the survey. However, present depths are generally 50-200 fms. shoaler than the charted depths. These differences are attributed to the dead-reckoning control and inaccurate sounding methods of the prior track-line surveys. Many shoaler depths are revealed by the more complete coverage of the present survey. The succession of small ridges and knolls in the western extension of Bowers Bank are especially noteworthy.

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 *See Review Addendum*

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The preliminary verification of the survey indicates that the smooth plotting was generally accurate. The revision in depth of about 1000 soundings by the application of corrections to compensate for a fluctuating initial resulted in eliminating several crossing discrepancies.
- c. Velocity corrections were applied to present survey depths along the southern border of the survey in order to smooth out the transition between corrected and uncorrected soundings in the junctional areas. The corrections amounted to about 45 fms. in 2000-fm. depths.
- d. No bottom characteristics were obtained on this original survey.


8. Compliance with Project Instructions


The survey adequately complies with the Project Instructions.

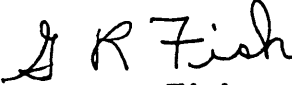
9. Additional Field Work

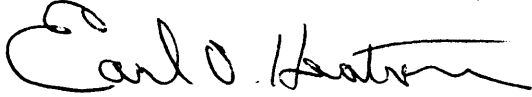
The survey is considered to be basic for the area covered and no additional field work is necessary. The lack of bottom characteristics is mentioned as a matter of record.

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



REVIEW ADDENDUM

H-7993 (1952)

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Verified by - E. B. Adamson  
Reviewed by - T. A. Dinsmore 22 May 1956  
Inspected by - R. H. Carstens

Junctions with Contemporary Surveys

The junctional soundings have been transferred from the present survey to H-7972 (1952) on the southeast. The junctional soundings are in good agreement.

Comparison with Chart 9000 (latest print date 11/17/55)  
Chart 9102 (drawing No. 9, 11/18/55)

Charted hydrography on the above charts originates with the present survey after the preliminary verification and review. No important discrepancies are noted in the charted information. However, several charted soundings at the west end of Bowers Bank differ by 20 fms. with present depths.

Condition of Survey

With the inking of soundings and depth curves, the verification of this survey is now complete.

Approved:



Acting Chief, Chart Division

175° East from Greenwich

180°

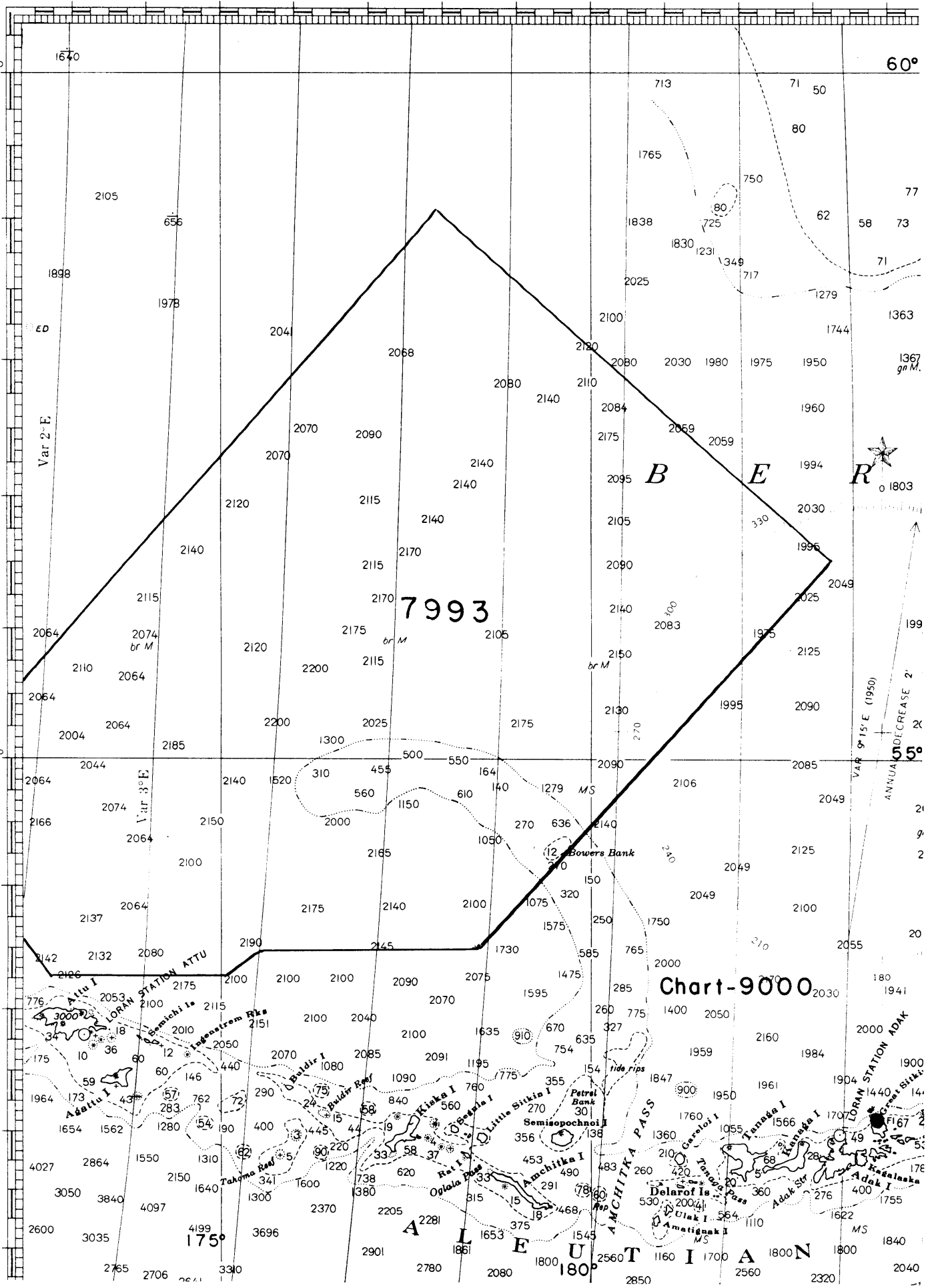
West from Greenwich

60°

60°

55°

55°



Var 2° E

Var 3° E

1803

ANNUAL INCREASE 2'

ANNUAL DECREASE 2'

Chart-9000

7993

B E R

Bowers Bank

ANCHITKA PASS

LORAN STATION ATTU

LORAN STATION ADAK

175°

180°

180°

180°

180°

180°

175°

180°

180°

180°

180°

180°

# NAUTICAL CHARTS BRANCH

10/1/51

SURVEY NO. H-7993  
 Preliminary Review 21 May 1953  
 Final " " 22 " 1956  
 Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
10/29/53	9102	Chas. R. Wittmann	<sup>Preliminary</sup> <del>Before</del> After Verification and Review (Fully applied) <sub>3/27/54</sub>
11/13/53	9000	Chas. R. Wittmann	<sup>preliminary</sup> <del>Before</del> After Verification and Review then chart 9102 <del>Before</del>
			Before <del>After</del> Verification and Review
16 Feb 61	9000	Edw. J. Boyce	<del>Before</del> After Verification and Review Corrected compared with another chart 3700 several soundings completely added and
4-16-63	8865	Edw. J. Boyce	<del>Before</del> After Verification and Review This survey is now 99 feet with 9102 completely added
			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
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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.