

7950

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3.3(a), EXECUTIVE ORDER 12356.

Diag. Cht. No. 9302

Form 504	
U. S. COAST AND GEODETIC SURVEY DEPARTMENT OF COMMERCE	
DESCRIPTIVE REPORT	
Type of Survey	HYDROGRAPHIC
Field No. EX-40251	Office No. H-7950
LOCALITY	
State	ALASKA
General locality	BERING SEA
Locality	ST. PAUL ISLAND TO ST. LAWRENCE I.
194 51	
CHIEF OF PARTY	
G. L. Anderson	
LIBRARY & ARCHIVES	
DATE	

B-1870-1 (1)

7950

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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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-7950

Field No. EX-40251

1. } State ALASKA

General locality BERING SEA

2. } Locality St. Paul I. to St. Lawrence I.

Scale 1:500,000 Date of survey 22 June to 12 Sept. 1951

Instructions dated 6 March 1951, supplemental instr. through 31 May 1951

3. } Vessel EXPLORER

Chief of party George L. Anderson

Surveyed by Ship's Officers

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

Protracted by D. L. Campbell, B. E. Greene

Soundings penciled by _____

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW

REMARKS: _____



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~~CONFIDENTIAL~~ SECTION
3.3(a), EXECUTIVE ORDER 12356.

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SURVEY H-7950
(Field No. EX-40251)

BERING SEA
Scale 1:500,000
1951

U.S.C. & G.S. Ship EXPLORER

George L. Anderson, Comdg.

Surveyed by: Ship's Officers

A PROJECT:

Instructions dated 6 March, 1951, and supplemental and amended instructions received through 31 May, 1951, for project CS-343.

B SURVEY LIMITS AND DATES:

The survey includes offshore hydrography within the area of this sheet, i.e., north of lat. 57° 12' N. from long. 165° 10' to 172° 50' W., and south of lat. 64° 00' N. from long. 164° 20' to 173° 40' W. It joins contemporary survey H-7949 (EX-40151) scale 1:500,000 to the south. Field work on this survey extended through the period of 22 June to 12 September inclusive. Hydrography was also accomplished on sheet H-7949 during this period.

C VESSEL AND EQUIPMENT:

The Ship EXPLORER was used exclusively on this survey. The ship was equipped with E. P. I. for horizontal control. Shoran was used for calibrating E. P. I. equipment, but was not used for hydrographic control (see heading I).

The ship was operated at standard speed except in heavy weather. All changes of speed are noted on the plotting abstracts. The turning radius of the ship can be taken as 1/6 of a naut. mile with sufficient accuracy for plotting at the scale of this sheet.

Submarine Signal Co. type 808 depth recorders No. 60 and No. 1135 were used throughout the survey.

D TIDE AND CURRENT STATIONS:

Data for tide reducers was obtained from the standard automatic tide gage at Dutch Harbor. Time and range corrections were applied. (See Tide Note and diagram, this report.)

One current station in the entrance channel off the village of Hooper Bay was occupied. (See letter to Director, 8 Nov., 1951)

E SMOOTH SHEET:

The projection with E. P. I. stations and distance arcs was made by hand in the Seattle Processing Office. No shoreline is shown.

*Abstracts of corrections to Soundings
filed with Fathoms*

F CONTROL STATIONS:

The survey was controlled by E. P. I. stations B, C, D, E, and F which were established and located in 1951 by third order triangulation as follows:

- EPI-B, St. Paul; Capt. Charles Pierce, Chief of Party
- EPI-C, Goodnews Bay; Capt. George L. Anderson, Chief of Party
- EPI-D, Nunivak Island; Capt. Charles Pierce, Chief of Party
- EPI-E, St. Matthew I.; " " " " " "
- EPI-F, Hooper Bay; estab., George L. Anderson, " " "
lec., Lt. Miller J. Tenkel, Chief of Party

G SHORELINE AND TOPOGRAPHY:

No shoreline is shown on this sheet.

H SOUNDINGS:

All soundings were taken in fathoms with the 808 depth recorders Nos. 60 and 1138. Sounding lines were spaced according to instructions.

The fathometers were calibrated for a velocity of 820 fms/second until 16 July at which time 800 fms/second reeds were installed for use during the remainder of the season.

Corrections for tide, phasing error and draft were compiled, summed, and entered directly on the fathograms. In the case of the 808 fathometers, corrections for settlement and squat and fathometer error canceled each other and were not listed. Corrections for initial deviation were applied on the fathograms when necessary.

A constant percentage velocity correction was applied mechanically by the use of templates to all soundings taken before 16 July in order to reduce them to 800 fms/second.

Soundings penciled on the smooth sheet were taken directly from the fathograms.

Note: See Corrections, this report and Fathometer Report.

USC&GSS EXPLORER, 1951. *Filed with H-7949*

*correcting
filed with
fms*

I CONTROL OF HYDROGRAPHY:

E. P. I. control was used entirely on this survey. Results of plotting indicate that the control was reliable. Occasionally static and interference prevented a reading on one or both stations being used. In this case the position was plotted on time, course, and one arc, or on time and course alone with adjustments made to the next good fix. This condition was most noticeable around midnight especially when using distant stations.

All E. P. I. stations used for control on this sheet with the exception of EPI-C were calibrated from a series of simultaneous shoran and E. P. I. readings taken from the ship at a distance of about 25 statute miles and on azimuth normal to the shoran--E. P. I. baseline. EPI-C was calibrated from a series of readings taken while determining the ship's position with sextant fixes on shore objects. The ship's position was plotted on an aluminum mounted topo sheet and the distance was scaled to a computed arc on EPI-C.

Calibrations were made at intervals through the season. Preliminary initial corrections were applied to E. P. I. readings plotted on the boat sheet, and final values derived from data compiled during season were applied to the readings for smooth plotting.

For more detailed information about calibration procedures see: Descriptive Report: Line Measurement by E. P. I., Project CS-343,

Ship EXPLORER, G. L. Anderson, Comdg.
E. P. I. and Sheran Calibration Ship EXPLORER, Field Season
May---Sept. 1951, G. L. Anderson, Comdg.

In Calibration

J. ADEQUACY OF SURVEY:

This survey was not completed due to lack of time. Hydrography was of secondary importance to the E. P. I. line measurements; therefore, the sounding lines are chiefly incidental with many of them run while enroute to E. P. I. line crossing points and to various E. P. I. shore stations.

The preliminary line spacing of 5 miles in depths less than 1000 fathoms and 15 miles in depths greater than 1000 fathoms as prescribed in the project instructions was complied with as nearly as possible.

No statement can be made regarding junctions with adjacent surveys at this time.

K. CROSSLINES:

About 12½ per cent of the hydrography was run as crosslines. This figure was difficult to determine since the hydrography was secondary to the E. P. I. line measurements and consequently much of it does not follow a well defined system.

L. COMPARISON WITH PRIOR SURVEYS:

There are no prior surveys with which this sheet can be compared.

M. COMPARISON WITH CHART:

Chart 9302 (July 1945, 16th edition) is the largest scale chart with which this survey can be compared. Considering the difference in scale and the lack of prior surveys in offshore Bering Sea areas the soundings are in fairly good general agreement.

In the area sounded by this ship to the west of Cape Mohican (lat. 60° 10' to 61° 10' N., long. 168° 10' to 168° 40' W.), the depth ranges from 17 to 20 fathoms. The majority of the soundings on the chart in this area are 2 to 3 fathoms deeper.

At the southern end of the long area covered by sounding lines run from St. Matthew I. to St. Paul I. the majority of the charted soundings are about 5 fathoms shoaler than the depths found in this survey.

In the area sounded between St. Lawrence I. and Cape Romanzof the average depths indicated by soundings on the chart agree with the depths found. Extreme charted depths of 25 and 35 fathoms were not found.

*What about track line soundings 7, 7½, + 8 fathoms at { 0. 62° 10' }
{ 2 167° 40' }*

*chart 9302
same
L-87(1943)*

The area sounded to the southwest of Cape Romanzof agrees with the charted soundings except those directly west of Dall Point and Hooper Bay which are 2 to 4 fathoms too deep.

N DANGERS AND SHOALS:

There are no important newly found dangers or shoals on this survey.

O COAST PILOT INFORMATION:

This report has been submitted to the Director. 9 Nov., 1951

P AIDS TO NAVIGATION:

No fixed or floating aids to navigation were located.

Recommended changes to Aeronautical Chart W.A.C. 119 were reported in a letter to the Director dated 6 November, 1951.

T BY-PRODUCT INFORMATION:

The following records have been sent to the Washington Office:

Beach Intelligence Information---Hooper Bay & St. Lawrence I.

Magnetic Observations---Sta. Chen, Hooper Bay, Alaska

Bathythermograph Records

V POSITIONS NOT PLOTTED ON THIS SHEET:

The following positions fell off the limits of this sheet and were plotted on sheet H-7951 (PF-40351):

pos. 10	thru 16	P day
" 18	" 21	HA "
" 1	" 16	JA "

Check cross-reference note on H-7951

Sounding between the following positions was run as reconnaissance only and the positions were not plotted:

pos. 20	thru 30	C day
" 28	" 30	FA "
" 1	" 3	MA "

Positions 22 thru 25 LA day were plotted on sheet EX-2151, 1:20,000 Hooper Bay, Alaska.

Check cross-reference note on H-7936

Respectfully submitted,

Bruce E. Greene

Bruce E. Greene
Ensign, USC&GS

Approved and forwarded

George L. Anderson, Capt.
Commanding Ship EXPLORER

STATISTICS FOR HYDROGRAPHIC SURVEY H-7950

Field No. EX-40251

USC&GSS EXPLORER

CS-343

DATE	DAY LETTER	NO OF POSITIONS	STATUTE MILES	MONTHLY & SEASON TOTALS	
6-22	A	3	10.5		
6-23	B	27	158.6		
6-24	C	44	209.3		
6-25	D	23	84.6	138.5	
7-2	E	26	179.6	June	97 516.9
7-3	F	29	200.1		
7-6	G	11	50.0		
7-7	H	50	304.0		
7-8	J	50	352.2		
7-9	K	27	174.3		
7-10	L	33	224.7		
7-11	M	37	225.8		
7-12	N	49	314.3		
7-13	P	16	82.8		
7-23	Q	37	252.3		
7-24	R	18	106.8	July	383 2466.9
8-1	S	39	185.8		
8-2	T	37	242.8		
8-3	U	10	59.7		
8-8	W	12	71.8		
8-9	X	34	207.9		
8-10	Y	26	131.0		
8-11	Z	41	219.6		
8-12	AA	32	178.0		
8-13	BA	10	49.1		
8-14	CA	18	97.8		
8-15	DA	36	226.3		
8-16	EA	42	166.4		
8-17	FA	47	267.5		
8-18	GA	50	297.5		
8-19	HA	21	145.8		
8-28	JA	32	157.4		
8-29	KA	49	299.0	August	
8-30	LA	25	116.3	&	
8-31	MA	28	117.2	Sept.	876 4747.1
9-1	NA	41	241.5		
9-2	PA	12	48.1	Season	1356 7730.9
9-3	QA	76	341.5		
9-9	RA	31	173.3	Area equals	21,800 square
9-10	SA	46	276.5		statute miles.
9-11	TA	62	327.0		
9-12	UA	19	102.3		

6

TIDE NOTE

Soundings for this survey were reduced from tide data obtained from the standard automatic tide gage at Dutch Harbor, Alaska. Latitude $53^{\circ} 53.6'$ N., Longitude $166^{\circ} 32.1'$ W.

The plane of reference is MLLW which is 3.3 feet on the tide staff. All soundings and tidal observations are based on 165th meridian (west) time. Time corrections and range multipliers were applied by zones as shown on the accompanying diagram. Data for these corrections was furnished by the Washington Office.

APPROVAL SHEET

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3.3(a), EXECUTIVE ORDER 12356.

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

In addition to the required plotting abstract and fathograms, sounding volumes and graphs for tide reducers are also forwarded to the office. The supplemental material may be destroyed if desired after the sheet is reviewed.

There is a possibility that some crossings on this sheet may be improved by readjustment of the tide time and range zones used in reducing soundings.

George L. Anderson

George L. Anderson
Capt. USC&GS
Commanding Ship EXPLORER

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DIVISION OF HYDROGRAPHY AND TOPOGRAPHY~~

7 May 1952

Division of Charts: R. H. Carstens

Plane of reference approved in 10
volumes of sounding records for

HYDROGRAPHIC SHEET 7950

Locality Bering Sea, Alaska

Chief of Party: C. Pierce in 1951
Plane of reference is mean lower low water, reading
3.3 ft. on tide staff at Dutch Harbor
15.3 ft. below B. M. 2 (1934)

NOTE: Time and height corrections in accordance with tide
zones as indicated on sketch, enclosed in letter of
21 November 1951 to Commanding Officer of U.S.C.&G.S.
Ship PATHFINDER.

Condition of records satisfactory except as noted below:

E.C. McKay
Section

Chief, ~~Division of Tides and Currents.~~

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7950.....

Records accompanying survey:

Boat sheets¹; sounding vols.¹⁰; wire drag vols.;
 bomb vols.; graphic recorder rolls 20 Env;
 special reports, etc. 1 Smooth Sheet; 1 Descriptive Report; 2 Reports, Plotting /
 Abstracts, 1 from the EXPLORER and 1 from the PATHFINDER
 } 1-Graphs of Serial Temperatures & Salinities; 1 Record Serial Temperatures & Salinities;
 } 1-Fathometer Corrections; filed with 7948.

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

Number of positions on sheet	.....
Number of positions checked	.....
Number of positions revised	.....
Number of soundings revised (refers to depth only)	.....
Number of soundings erroneously spaced	.....
Number of signals erroneously plotted or transferred	.....
Topographic details	Time	.....
Junctions	Time	.....
Verification of soundings from graphic record	Time	.....
Verification by.....	Total time	..... Date
Reviewed by.....	Time	..... Date

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-7950

Field No. PF-40251

State Alaska

General locality Bering Sea

Locality Tributary to St. Lawrence Is.
~~Northeast Bering Sea~~

Scale 1: 500 000

Date of survey 11 June to 11 Sept 51

Instructions dated 6 March 1951

Vessel PATHFINDER

Chief of party CHARLES PIERCE

Surveyed by J.C. TRIBBLE, K.S. ULM, W.C. RUSSELL, and F.J. BRYANT

Soundings taken by fathometer, graphic recorder, ~~hand lead, etc.~~

Fathograms scaled by LIPPOLD, WATKINS, HODGES

Fathograms checked by ELLIS, HODGES, WATKINS

Protracted by LIPPOLD, ELLIS

Soundings penciled by MOONEY, ENGUSTIAN

Soundings in fathoms ~~XXX~~ at ~~MLLW~~ MLLW

REMARKS:

DESCRIPTIVE REPORT

To Accompany

HYDROGRAPHIC SURVEY H-7950 (PF40251)

NORTHEAST BERING SEA

SCALE 1: 500 000

1951

USC&GSS PATHFINDER

CHARLES PIERCE, Comdg.

J.C. TRIBBLE

K.S. ULM

- - - - HYDROGRAPHERS

W.C. RUSSELL

F.J. BRYANT

A PROJECT

Project CS-343, Bering Sea, Alaska
Instructions 22/mek, 6 March 1951

B SURVEY LIMITS AND DATES

The survey covers the offshore areas of the northeast part of the Bering Sea East of Longitude 172° 40' W and northwest of a junction to be made with the incomplete contemporary survey H-7949 (PF 40151). The area of hydrographic coverage at the preliminary line spacing is indicated on the sheet layout sketch included in this report.

Field work was accomplished between the inclusive dates 11 June to 11 September 1951.

Hydrography in the area was incidental to completion of the Bering Sea Electronic Position Indicator trilateration scheme accomplished jointly by USC&GSS PATHFINDER and EXPLORER. No regular and systematic extension of hydrographic coverage was possible.

No junctions were made with prior surveys.

C VESSELS AND EQUIPMENT

The work on this survey was accomplished jointly by the USC&GSS PATHFINDER and EXPLORER. Position numbers and day letters in blue identify the EXPLORER's work and in green that of the PATHFINDER.

The work accomplished by USC&GSS EXPLORER is covered in a separate report.

The Ship PATHFINDER operated primarily at standard speed (115 RPM) with reductions to 2/3 speed (75 RPM) when Bathythermograph observations were taken or when in heavy seas. The turning radius of the Ship is estimated to be 300 meters at standard speed.

The Ship was equipped with EPI ship set No. 2 which was used for all hydrographic positions on this survey. The sounding equipment used and the depth ranges at which used are as follows:

808 Fathometer No. 130-S	0 - 155 Fathoms
NJ-3 Fathometer No. 22	0 - 155 Fathoms

NJ-3 Fathometer No. 22 was used only as a temporary replacement for 808 Fathometer No. 130-S.

D TIDES AND CURRENTS

The Standard Automatic Tide Gage at Dutch Harbor, Amaknak Island Alaska, was used as a reference station for reducing soundings. Time and range corrections were applied in various regions of the survey area in accordance with the zoning system devised in the Washington Office. (Reference: Director's letter 36 kh, Subject "Tide Reducers, Bering Sea, 1951", 15 October 1951). A copy of the applicable Tide Zone Diagram is included in this report.

Portable Automatic Tide Gages were established and maintained as listed below:

<u>LOCALITY</u>	<u>LATITUDE AND LONGITUDE</u>	<u>PERIOD</u>
Village Cove St. Paul Island	57° 07'.5 N 170° 16'.5 W	5 May to 14 Sep 1951
Off Loran Station St. Matthew Island	60° 21'.5 N 172° 42'.9 W	13 June 1951 (Destroyed by Storm)
Tachikuga Nunivak Island	60° 03'.8 N 167° 14'.0 W	10 June to 29 June 1951
Nash Harbor Nunivak Island	60° 11'.8 N 166° 59'.2 W	27 July to 12 Sept 1951

Current Station No. 2, northeast of Cape Mohican, Nunivak Island at Latitude 60° 15'.0 N., Longitude 167° 24'.0 W., was occupied for 4½ hours on 28 July 1951 for current pole observations.

Current station no. 3, off Cape Etolin, Nunivak Island at Latitude $60^{\circ} 25'.5$ N., Longitude $166^{\circ} 19'.0$ W., was occupied for 3 hours on 30 August 1951 for current pole observations.

E SMOOTH SHEET

The Smooth Sheet was constructed by hand at the Seattle Processing Office in accordance with conventional methods. The scale of the Boat Sheet was 1: 400 000; the scale of the Smooth Sheet was changed to 1: 500 000 to reduce its overall size to 36 by 60 inches. Both Boat and Smooth Sheets cover all of the project area.

The EPI distance circles were drawn as arcs of circles of varying radii between computed geographic positions of points on the circle. Additional geographic positions were computed and checked against the EPI circles. No appreciable error was discovered.

F CONTROL STATIONS

EPI station B (St. Paul Island) and EPI station E (St. Matthew Island) were located by EPI trilateration in 1951 jointly by USC&GSS PATHFINDER and EXPLORER using EPI line measurements to control stations on the NA 1927 datum. The positions of EPI stations B and E plotted on the Smooth Sheet are from incompletely adjusted positions of the control triangulation. The final adjustment of the control triangulation was not complete at the time the Smooth Sheet was constructed.

EPI station D (Nunivak Island) and EPI station F (Hooper Bay) were located by triangulation by the geodetic triangulation party of Lieutenant Miller J. Tonkle in 1951.

The geographic positions of all control stations used were furnished by the Washington Office.

G SHORELINE AND TOPOGRAPHY

Shoreline and topographic details have been omitted from the Smooth Sheet in accordance with Section 751 (c) of the Hydrographic Manual.

H SOUNDINGS

Depths were measured using 808 type Fathometer No. 130-S and NJ-3 Fathometer No. 22.

Fathometer velocity corrections, as such, have not been applied to the soundings taken during this survey. (Reference Director's letter 21/MEK, S-1-PF, "Fathometer Corrections Alaska", 21 June 1951).

The 808 type Fathometer No. 130-S was converted to a calibration velocity of 800 fathoms per second on 16 July 1951. Soundings recorded prior to that time have been corrected for the change in calibration velocity from 820 to 800 fathoms per second. The corrections have been designated "CVC" in the sounding record and apply to "A" day thru "L" day inclusive.

NJ-3 Fathometer No. 22 was initially controlled to a velocity of 800 fathoms per second and velocity corrections were not applied to these soundings.

Instrumental corrections for 808 Fathometer No. 130-S were derived from numerous simultaneous comparisons and phase comparisons taken throughout the season.

Instrumental corrections for NJ-3 Fathometer No. 22 were derived from simultaneous comparisons with 808 Fathometer No. 130-S and from frequency checks as described in the report "Fathometer Corrections 1951", submitted separately.

Corrections for the variation in the initial setting were applied at the time the Fathograms were scanned and have not been separately entered in the sounding record. The standard initial setting was 2.0 fathoms.

Draft corrections have been applied to the recorded soundings when warranted. Since the vessel was sounding continuously, the Fathometer initials were maintained at a standard setting of 2.0 fathoms and the change in midship draft plotted as a graph from draft readings taken at intervals. The algebraic differences between 2.0 fathoms and the instantaneous draft have been entered in the correction column headed "Draft".

Settlement and Squat corrections have not been applied since no value has been determined for the Ship PATHFINDER. However, the combined effect of settlement and squat is estimated to be not greatly in excess of 0.1 fathoms.

For detailed information concerning the derivation of the corrections discussed, reference should be made to the report, "Fathometer Corrections 1951", forwarded separately.

I CONTROL OF HYDROGRAPHY

Hydrography was controlled by EPI distance measurements from two shore stations for each fix. The observed EPI distances have been adjusted by applying corrections derived from simultaneous EPI and Shoran measurements observed at intervals during the season.

For detailed information concerning the derivation of these corrections reference should be made to letter of Commanding Officer PATHFINDER 426/CP/gaa, subject "EPI and Shoran Corrections", 24 October 1951, a copy of which is included in this report.

J ADEQUACY OF SURVEY

The survey is incomplete and only a portion of the area has been covered at the preliminary line spacing of 5 nautical miles.

Numerous charted shoal soundings North of Latitude 60° N have not been investigated and the extensive shoal area South of Nunivak Island has not been adequately covered.

Hydrographic coverage of the area West of Cape Mohican (Latitude 60° 13'.0 N., Longitude 167° 28'.0 W) between Latitudes 60° 00' and 60° 40' N to Longitude 168° 20' W at a line spacing of 1 nautical mile reveals no indication of charted shoals but this coverage is not sufficiently intensive to entirely disprove their existence. Charted shoals South, West and North of Nunivak Island which are dangerous to navigation should be retained until a more complete development of these areas has been made. In general, however, depths from the present survey should supersede charted information in the areas covered.

K CROSSLINES

No systematic coverage of the surveyed area by crosslines has been made. Such crosslines as exist are incidental and amount to 5% of the hydrography in the regular system.

Except for the area West of Cape Mohican (Latitude 60° 13', Longitude 167° 28'), agreement at crossings is satisfactory. In the area between Latitudes 59° 40' and 60° 40' N and Longitudes 167° 15' and 168° 20' W., Numerous crossing discrepancies exist. Crossing and overlapping lines of PATHFINDERS hydrography fail to agree by an average of 1 fathom in general depths of 14 - 20 fathoms. Crossings of lines of PATHFINDER and EXPLORER in this area show discrepancies approaching 2 fathoms in the same general depths. These ordinarily excessive discrepancies are considered to be within acceptable limits so far as the present hydrography is concerned because of the existing scarcity of tidal data in this area. These discrepancies occur in a region of uncertain tidal characteristics and the complexity of the currents encountered indicate that major variations in these characteristics from those adopted may exist. In the tidal zoning system used, the area is at the intersection of four zones having time corrections based on the Dutch Harbor Tide Gage differing by a maximum of 2 hours.

It is probable that tidal conditions exist here which were not indicated by the tide data obtained, either at Tachikuga or Nash Harbor.

L COMPARISON WITH PRIOR SURVEYS

There are no prior surveys in the area. Charted information is from inadequately controlled or dead reckoning track lines.

Charted features are considered under "M" following.

M COMPARISON WITH CHART

The Smooth Sheet has been compared with Chart 9302, 16th Edition, 1945, print date 50-12/11. Because of the incomplete nature of the survey, no comparison has been attempted in the area North of Latitude 60° 30' N.

In general, depths from the present survey are deeper than those charted. The following charted features were compared with the Smooth Sheet with the results indicated.

<u>CHARTED DEPTH</u>	<u>CHARTED POSITION</u>	<u>DEPTH FROM H-7950</u>
4½ Fms	60° 12' N 167° 50' W	17 - 18 Fms
3 Fms	60° 18' N 167° 28' W	16 - 19 Fms
1½ Fms	60° 23' N 167° 08' W	14 - 15 Fms
13 Fms	60° 29' N 167° 44' W	16 - 17 Fms

Although development in the vicinities of these charted features was not intensive, sounding lines were spaced at 1 to 1½ nautical miles and there is no evidence of shoaling. Possible elimination of these features from the chart should be considered.

N DANGERS AND SHOALS

Charted dangers and shoals in the area South of Latitude 60° 30' N are considered under section M above.

The shoal area South of Nunivak Island in the vicinity of the 4 ¾ fathom sounding at Latitude 59° 51' N, Longitude 167° 14' W is considerably more extensive than shown on the chart. This shoal has not been completely delineated; general depths from the present survey are 6 to 8 fathoms.

The existence of a shoal, having deep water inshore, in the vicinity of the 4 fathom sounding charted at Latitude 60° 16' N, Longitude 167° 20' W was verified by the reconnaissance survey PF 8151. The least depth from PF 8151 is 1½ fathoms, approximately at Latitude 60° 14' N, Longitude 167° 24' W.

O COAST PILOT INFORMATION

Coast Pilot notes for the general area have been submitted separately.

P AIDS TO NAVIGATION

No floating Aids to Navigation are regularly maintained in the survey area.

Cape Mohican Light, No. 2617 in Light List, Pacific Coast 1951 was located by triangulation by the party of Lieutenant Miller J. Tonkel in 1951. The position of the light, from the field computations of Lieutenant Tonkel's party is Latitude 60° 12' 42".26, Longitude 167° 27' 19".20.

Z TABULATION OF APPLICABLE DATA

Submitted separately:

- (1) Fathometer Corrections 1951
- (2) Current Observations 1951

Fair J. Bryant

FAIR J. BRYANT

Lieutenant Commander, USC&GS

STATISTICS

To Accompany

SURVEY H-7950 (1951)

VOL NO	DAY LTR	DATE	HAND LEAD, WIRE, SDGS	NO POSITIONS	STAT. MILES SDG
		1951			
1	A	11 June		23	162.3
1	B	19 June		20	129.0
1	C	20 June		26	170.3
1	D	30 June		14	98.0
1	E	1 July		28	181.7
1	F	2 July		37	277.4
1&2	G	3 July		25	168.8
2	H	7 July		8	28.4
2	J	8 July		40	269.1
2	K	9 July		38	272.0
2	L	10 July		13	79.9
2	N	24 July		33	222.5
2	P	25 July		12	84.6
2	Q	26 July		22	151.0
3	R	27 July		24	180.6
3	S	28 July		29	216.8
3	T	29 July		41	210.3
3	U	30 July		22	78.2
3	V	1 August		59	291.0
3	W	2 August		23	170.0
4	X	8 August		9	63.3
4	Y	9 August		34	211.2

STATISTICS

To Accompany

(Continued)

SURVEY H-7950 (1951)

VOL NO	DAY LTR	DATE	HAND LEAD WIRE, SDGS	NO POSITIONS	STAT MILES SDG
		1951			
4	Z	10 August		33	180.6
4	AA	11 August		27	194.3
4	BA	12 August		9	58.7
4	CA	14 August		70	216.6
4&5	DA	15 August		82	297.1
5	EA	16 August		96	347.2
5	FA	17 August		53	189.4
5	GA	18 August		79	336.8
5	HA	19 August		10	66.8
5	JA	28 August		20	141.2
6	KA	29 August		13	42.0
6	LA	30 August		32	120.0
6	MA	31 August		40	239.4
6	NA	10 September		26	190.3
6	PA	11 September		30	175.4
		TOTAL		1200	6512.2

Area in Square Statute Miles 17,118

TIDE NOTE

A standard Automatic Tide Gage was maintained at Dutch Harbor, Alaska at Latitude $53^{\circ} 53'.6$ N, Longitude $166^{\circ} 32'.1$ W. Three point three (3.3) feet on the staff was Mean Lower Low Water. Tide Curves were plotted from the hourly heights furnished by the Washington Office. Corrections for time and height differences were applied in accordance with the zoning system devised by the Washington Office (Reference: Director's letter 36 kh, Subject "Tide Reducers, Bering Sea, 1951", 15 October 1951). A copy of the applicable tide zone diagram is included in this report.

CALIBRATION VELOCITY CORRECTIONS
FROM 820 TO 800 FATHOMS PER SECOND

1951 FIELD SEASON

CORRECTIONS (Fathoms)	TO DEPTH (Fathoms)	CORRECTIONS (Fathoms)	TO DEPTH (Fathoms)
0.0	2	1.7	71
0.1	6	1.8	76
0.2	10	1.9	80
0.3	14	2.0	84
0.4	18	2.1	88
0.5	22	2.2	92
0.6	27	2.3	96
0.7	31	2.4	100
0.8	35	2.5	101
0.9	39	2.6	108
1.0	43	2.8	117
1.1	47	3.0	125
1.2	51	3.2	133
1.3	55	3.4	141
1.4	59	3.6	150
1.5	63	3.8	158
1.6	67	4.0	160

Corrections to be applied to 808 Fathometer
Soundings recorded prior to 16 July 1951.

ABSTRACT OF EPI CORRECTIONS

HYDROGRAPHIC SURVEY H-7950 (PF40251)

DAY LTR	1951		TIME		"A" side of Recvr			"B" side of Recvr		
	DATE				STA	EQUIP	CORRN	STA	EQUIP	CORRN
A	11 Jun	0730 0800	A	1-6	-4.2	B	3-5	-4.2		
A	11 Jun	0842 1930	D	7-8	-4.6	B	3-5	-4.2		
B	19 Jun	0630 1930	B	3-5	-4.2	D	7-8	-4.5		
C	20 Jun	0740 2300	E	2-3	-4.7	B	3-5	-4.2		
D	30 Jun	1300 1955	D	7-8	-4.6	E	2-3	-5.1		
E	1 Jul	0400 1300	D	7-8	-4.6	E	2-3	-5.1		
E	1 Jul	1915 2300	D	7-8	-4.6	B	3-5	-4.2		
F	2 Jul	0000 0800	D	7-8	-2.5	B	3-5	-2.8		
F	2 Jul	1438 1630	E	2-3	-5.0	B	3-5	-2.8		
F	2 Jul	1700 2330	E	2-3	-5.0	D	7-8	-2.5		
G	3 Jul	0000 1200	E	2-3	-5.0	D	7-8	-2.5		
H	7 Jul	2000 2330	E	2-3	-4.7	D	7-8	-4.5		
J	8 Jul	0000 1300	E	2-3	-4.7	D	7-8	-4.5		
J	8 Jul	1330 2330	E	2-3	-4.7	B	3-5	-4.2		
K	9 Jul	0000 0901	E	2-3	-4.7	B	3-5	-4.2		
K	9 Jul	0930 1115	B	3-5	-4.2	D	7-8	-4.5		
K	9 Jul	1630 2130	E	2-3	-4.7	D	7-8	-4.5		
K	9 Jul	2200 2350	B	3-5	-4.2	D	7-8	-4.5		
L	10 Jul	0340 1100	B	3-5	-4.2	D	7-8	-4.5		
* N	24 Jul	0000 0530	E	2-3	-4.7	D	7-8	-4.5		
N	24 Jul	0840 2320	E	2-3	-4.7	B	3-5	-4.2		
P	25 Jul	0030 0230	E	2-3	-4.7	B	3-5	-5.1		
P	25 Jul	1709 2050	E	2-3	-4.7	B	3-5	-5.1		
Q	26 Jul	0011 0800	B	3-5	-5.1	D	7-8	-4.5		

* M day transferred to PF 40351, B day

ABSTRACT OF EPI CORRECTIONS

(Continued)

HYDROGRAPHIC SURVEY H-7950 (PF40251)

DAY LTR	1951 DATE	TIME		"A" side of Rcvr			"B" side of Rcvr		
				STA	EQUIP	CORRN	STA	EQUIP	CORRN
Q	26 Jul	2145	2330	E	2-3	-4.7	B	3-5	-5.1
R	27 Jul	0000	0836	E	2-3	-4.7	B	3-5	-5.1
R	27 Jul	0900	1130	E	2-3	-4.7	D	7-8	-4.5
S	29 Jul	0824	0930	E	2-3	-4.7	D	7-8	-4.5
S	29 Jul	1004	2330	E	2-3	-4.7	B	3-5	-5.1
T	30 Jul	0000	1340	E	2-3	-4.7	B	3-5	-5.1
T	30 Jul	1400	1640	E	2-3	-4.7	D	7-8	-4.5
U	31 Jul	0840	0940	E	2-3	-4.7	D	7-8	-4.5
U	31 Jul	1000	2340	E	2-3	-4.7	B	3-5	-5.1
V	1 Aug	0000	0840	E	2-3	-4.7	B	3-5	-5.1
V	1 Aug	0900	1140	D	7-8	-4.6	B	3-5	-5.1
V	1 Aug	1200	1400	D	7-8	-4.6	E	2-3	-5.1
V	1 Aug	1640	2300	D	7-8	-4.6	B	3-5	-5.1
W	2 Aug	0000	1000	D	7-8	-4.6	B	3-5	-5.1
W	2 Aug	1030	1200	D	7-8	-4.6	E	2-3	-5.1
X	8 Aug	1930	2330	D	7-8	-4.6	E	2-3	-5.1
Y	9 Aug	0000	0750	D	7-8	-4.6	E	2-3	-5.1
Y	9 Aug	0830	1230	E	2-3	-4.7	B	3-5	-5.1
Y	9 Aug	1300	1530	E	2-3	-4.7	D	7-8	-4.5
Z	10 Aug	0620	0841	E	2-3	-4.7	D	7-8	-4.5
Z	10 Aug	0900	1930	E	2-3	-4.7	B	3-5	-5.1
Z	10 Aug	2000	2330	E	2-3	-4.7	D	7-8	-4.5
AA	11 Aug	0000	0805	E	2-3	-4.7	D	7-8	-4.5
AA	11 Aug	1800	2000	E	2-3	-4.7	*F	1-6	-4.1
AA	11 Aug	2030	2330	E	2-3	-4.7	B	3-5	-5.1

ABSTRACT OF EPI CORRECTIONS (Continued)

HYDROGRAPHIC SURVEY H-7950 (PF40251)

DAY LTR	1951		"A" side of Rover				"B" side of Rover			
	DATE	TIME	STA	EQUIP	CORRN	STA	EQUIP	CORRN		
BA	12 Aug	0000 0400	E	2-3	-4.7	B	3-5	-5.1		
CA	14 Aug	0630 2345	E	2-3	-4.7	B	3-5	-5.1		
DA	15 Aug	0000 2350	E	2-3	-4.7	B	3-5	-5.1		
EA	16 Aug	0000 2345	E	2-3	-4.7	B	3-5	-5.1		
FA	17 Aug	0000 0715	E	2-3	-4.7	B	3-5	-5.1		
FA	17 Aug	0720 1645	E	2-3	-4.7	D	7-8	-4.5		
FA	17 Aug	1700 2345	E	2-3	-4.7	B	3-5	-5.1		
GA	18 Aug	0000 2330	E	2-3	-4.7	B	3-5	-5.1		
HA	19 Aug	0000 0400	E	2-3	-4.7	B	3-5	-5.1		
JA	28 Aug	0000 1400	E	2-3	-4.7	B	3-5	-5.1		
KA	29 Aug	1330 1515	E	2-3	-4.7	B	3-5	-5.1		
KA	29 Aug	1530 1630	E	2-3	-4.7	D	7-8	-4.5		
LA	30 Aug	1015 1300	E	2-3	-4.7	D	7-8	-4.5		
LA	30 Aug	1730 1740	E	2-3	-4.7	B	3-5	-5.1		
LA	30 Aug	1802 1940	E	2-3	-4.7	D	7-8	-4.5		
LA	30 Aug	2000 2340	E	2-3	-4.7	B	3-5	-5.1		
MA	31 Aug	0000 1430	E	2-3	-4.7	B	3-5	-5.1		
MA	31 Aug	1500 1650	E	2-3	-4.7	D	7-8	-4.5		
NA	10 Sep	1100 2330	D	7-8	-4.6	E	2-3	-5.1		
PA	11 Sep	0000 1100	D	7-8	-4.6	E	2-3	-5.1		
PA	11 Sep	1130 1400	D	7-8	-4.6	B	3-5	-5.1		

ABSTRACT OF EPI CORRECTIONS (Continued)
 HYDROGRAPHIC SURVEY H-7950 (PF40251)

* PATHFINDER did not calibrate at EPI "FOX". With the same ground sets used by EXPLORER and PATHFINDER, it is assumed that the difference in the EPI corrections at the various stations involved the ship sets. Thus, station EPI ABLE with more consistent results from both ships, was used as the standard to apply correction differences to EPI "FOX".

At EPI "ABLE"

EXPLORER	EPI CORRECTION =	-6.1
PATHFINDER	" "	<u>-4.2</u>

Correction to be applied to EXPLORER Corr-1.9
 for EPI correction on PATHFINDER

EXPLORER EPI "FOX" correction	=	-6.0 Equip (1-6)
		<u>-1.9</u>

PATHFINDER EPI "FOX" correction	=	-4.1 Msec
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APPROVAL SHEET

The field work was done under my immediate supervision and the Boat Sheet was frequently inspected as the work progressed.

This survey is incomplete; the project area is not completely covered. The additional field work needed to complete hydrographic coverage of the area is recommended. Coastal areas of Nunivak Island and St. Matthew Island should be surveyed at a larger scale.

The completed Smooth Sheet and accompanying records have been examined by me and are approved.



CHARLES PIERCE
Chief of Party

24 October 1951

To: The Director
U. S. Coast and Geodetic Survey
Dept. of Commerce Bldg.

Subject: EPI and shoran corrections

Reference: My letters dated 17 July 1951 (426/CP/gaa) and 3 August 1951

There are forwarded abstracts of shoran and EPI corrections by the PATHFINDER subsequent to 1 August 1951. An abstract of all corrections obtained prior to 1 August 1951 were forwarded with my letters described under reference. There is also forwarded an abstract of a few line measurements made from the ship at anchor.

It is noted that the final shoran corrections at EPI BAKER and EPI EASY increase the "Zero Set" by 0.009 and 0.012 statute miles from the values obtained early in the season. The final shoran corrections have not been meaned with the earlier corrections for deriving EPI corrections to apply to positions on the hydrography because the change in microseconds would be too small to affect the plotting of any position on a scale of 1/400,000.

No final shoran correction was obtained on the equipment at EPI DOG. (Nunivak Island) because weather conditions prevented doing so. A preliminary value of the shoran correction for the shore equipment used at Nunivak Island and the ship equipment as calibrated in Seattle in October furnished a value within 0.006 statute miles of the shoran correction submitted with my letter of 17 July 1951 and which was used in computing the length measurements in the Bering Sea.

Shoran calibration observations taken on equipment at EPI DOG on 10 June and 8 July show considerable range in individual values when finally plotted on an aluminum mounted sheet and using geodetic positions furnished in September by Norman Sylar. However, the value submitted to Washington on the 17th of July, 1950 agree within 0.01 statute miles which variation will have no sensible effect on the computations of lengths involving EPI DOG.

The EPI corrections derived from shoran comparisons for the several shore stations appear to be reasonably consistent throughout the season. The exception to this occurred at EPI BAKER on 2 August when EPI corrections increased about 1.6 microseconds from the mean of values derived prior to this date. This has been attributed to changes in the modulator and transmitter at the shore station but it is noted that on the 19th of August the correction decreased again in agreement with to the early season values.

The method followed aboard the PATHFINDER for determining the EPI corrections by comparison with shoran readings was as follows: Place the ship on a bearing

normal to the line between the EPI and shoran transmitters by EPI control and at a distance close to the maximum range of the shoran equipment. Run this normal line at 1/3 speed taking simultaneous readings of the shoran and EPI distances at regular intervals. Twenty such readings are usually taken. After completion of this set, shift from the "A" to the "B" side of the ships "Scope" and taken 20 additional readings. The mean of each set of readings is used for computing the EPI correction. The individual shoran and EPI distance readings can be plotted and any wild values rejected. It is considered worth the time on EPI calibration tests to make the comparisons on both the A and B sides of the scope if for no other reason than to serve as a check on the particular observation. ZERO checks on the ship EPI equipment during the season showed the "B" side of the scope to be 0.3 microseconds bigger than the A side.

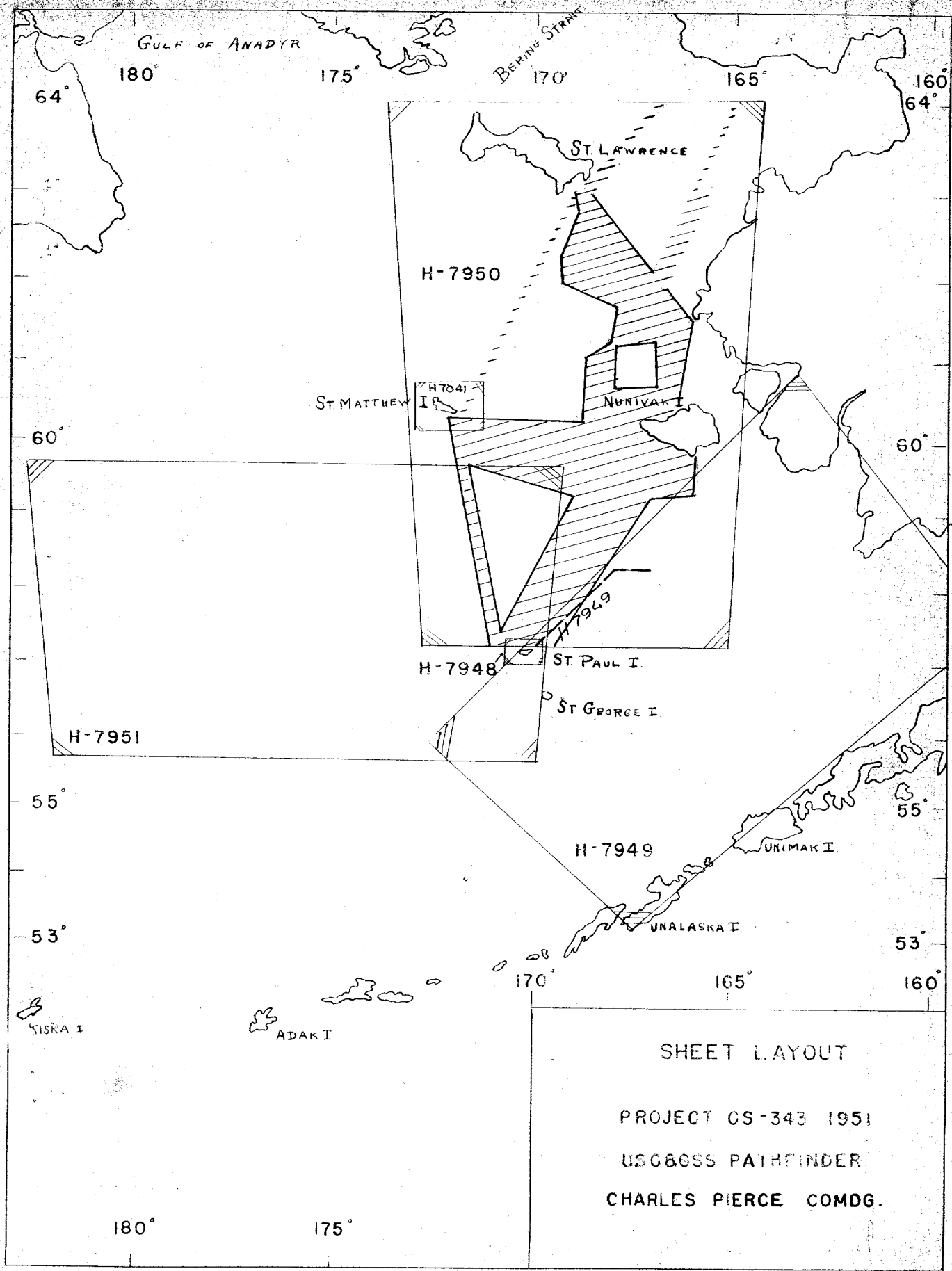
Reference has frequently been made in the abstract of shoran and EPI calibration forwarded to Washington to the "Calibration volume". This work book has been retained aboard and contains all the observational data for shoran and EPI corrections calibrations. All data has been checked.

Information is requested whether this calibration volume is desired in Washington. If not it will be retained aboard for reference purposes next season.

All line crossing observations, length determinations at anchor and meteorological data for line crossings are entered in sounding volumes which have been forwarded to Washington.

CHARLES PIERCE
Captain, USC&GS
Comdg. Ship PATHFINDER

cc: Cabin
Field works officer



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-7950

Field No. PF-40251

State Alaska

General locality Bering Sea

Locality *Prohibited to St. Lawrence Is.*
East Central Bering Sea

Scale 1: 500,000 Date of survey 9 August to 3 September '53

Instructions dated 6 March 1951, 28 May 1951, 21 June 1951, 21 March 1952
4 March 1953, and 9 March 1953

Vessel Ship PIONEER

Chief of party W. H. Bainbridge

Surveyed by Ship's Officers

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

Fathograms scaled by Operators 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

REMARKS:

Category 2

X.W.W. 6/17/51

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY

H-7950

(PF-40251)

EAST CENTRAL BERING SEA

Project CS-343
Ship PIONEER
Scale 1:500,00

Season of 1953
W. H. Bainbridge, Chief of Party
Surveyed by Ship's Officers

A. PROJECT

The work was done in accordance with the original instructions for Project CS-343 dated 6 March, 1951, and supplemental instructions dated 28 May 1951, 21 June 1951, 21 March 1952, 4 March 1953 and 9 March 1953.

B. SURVEY LIMITS AND DATES.

The survey covers the area between St. Paul Island and Nunivak Island and between Nunivak Island and St. Mathews Island. This sheet was begun by the Ship PATHFINDER in 1951. The survey conducted by the Ship PIONEER during the 1953 Field Season consisted of three splits in the area covered previously by the Ship PATHFINDER. Crossings between the contemporary survey and the prior survey are generally in good agreement.

The dates of hydrography were 9-11 August and 2-3 September, 1953.

C. VESSEL AND EQUIPMENT.

The hydrography was performed exclusively by the Ship PIONEER .

The NMC-2 Fathometer, serial number 117, was used simultaneously with the 808 Fathometers during this survey, all measured depths being less than 40 fathoms. The serial numbers of the 808 Fathometers used were: 141-SP, S-107, and S-103.

The turning radius of the ship is approximately 400 meters.

D. TIDE AND CURRENT STATIONS.

Tide reducers based on the hourly heights of the tide at Dutch Harbor were furnished by the Washington Office and were applied using a range factor of 1.0 and a time difference of plus one hour.

Currents were observed while the ship was at anchor tending the EPI camp at Tachikuga Bay, Nunivak Island.

E. SMOOTH SHEET.

The smooth sheet had been projected previously and was obtained from the Washington Office for the addition of these lines.

F. CONTROL STATIONS.

EPI Station NUNI was located in 1951 as station EPI "D" 1951. The same location was used this year.

The position of EPI station PAUL was furnished by the Ship PATHFINDER. This station was established by the Ship PATHFINDER in 1953. The arcs for EPI station PAUL were added by the Washington Office.

G. SHORELINE AND TOPOGRAPHY.

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

H. SOUNDINGS.

All soundings were taken with the previously mentioned 808 fathometers, except when the 808's were malfunctioning, the MMC-2 fathometer was scanned while the 808's were being adjusted. All soundings recorded on the fathograms were scanned and verified. Tide corrections were applied as previously mentioned.

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

I. CONTROL OF HYDROGRAPHY.

The survey was controlled exclusively by EPI stations NUNIVAK and St. PAUL.

From pos. 12 B through pos. 30 B, station NUNI had difficulties synchronizing with the ships signal. These positions were adjusted by time, log, and course to best agree with the EPI readings obtained.

J. ADEQUACY OF SURVEY.

This survey was intended to fill in unsurveyed areas on this sheet which is not yet completed.

K. CROSSLINES.

The lines run on this survey cross the lines of the previous survey several times and are in good agreement with the exception of just prior to position 35B of this survey where there is a difference of 2 - 2.5 fathoms in a depth of 21 fathoms. At this time, however, the 808 fathometer was malfunctioning and the NMC-2 fathometer was being read.

L. COMPARISON WITH PRIOR SURVEYS.

The survey compares very well with the depths obtained previously on this sheet.

M. COMPARISON WITH CHART.

The largest scale chart available of this area is C&GS Chart 9302 (16th. edition) July 1945. The comparison shows no apparent discrepancies between this survey and the chart.

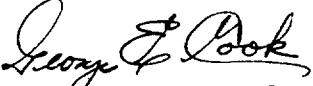
U. MISCELLANEOUS.

This is an off-shore 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 be reported as part of this survey.

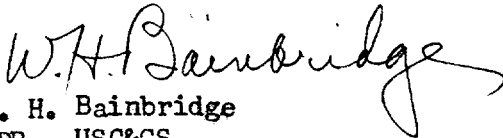
V. DATA INCLUDED IN THIS REPORT.

1. Abstract of EPI Corrections. For derivation of these corrections see Descriptive Report form sheet Registry Number H-7951.
2. Abstract of Statistics.
3. Approval Sheet.

Respectfully submitted:


George E. Cook
Ensign, USC&GS

Approved and forwarded:


W. H. Bainbridge
CDR., USC&GS
Cmdg. Officer
Ship PIONEER

CALIBRATION RESULTS

Sta. NUNI

Equipment		16 July	12 August	1 September
C-6, T-4	Mean Reading	2 038.29	2 036.18	2 036.91
	True Distance	2 038.63	2,035.07	2 035.67
	Correction	+ 0.34	- 1.11	- 1.24
C-4, T-4	Mean Reading			2 036.62
	True Distance			2 035.67
	Correction			- 0.95

Sta. PAUL

C-2, T-3	Mean Reading	2 524.72		2 525.13
	True Distance	2 521.65		2 520.45
	Correction	- 3.07		- 4.68
C-3, T-5	Mean Reading	2 523.78		2 524.93
	True Distance	2 521.60		2 520.50
	Correction	- 2.18		- 4.43
C-3, T-3	Mean Distance		2 525.36	2 525.64
	True Distance		2 520.50	2 521.05
	Correction		- 4.86	- 4.59
C-2, T-5	Mean Reading			2 525.28
	True Distance			2 520.55
	Correction			- 4.73

CORRECTIONS APPLIED

STATION EQUIPMENT	PERIODS				
	Up to 20 July	21 July to 25 July	26 July to 30 July	31 July to 3 Aug.	4 Aug. to end
NUNI					
C-6, T-4	+0.3	0.0	-0.3	-0.6	-1.1
C-4, T-4	-1.0	-1.0	-1.0	-1.0	-1.0
PAUL					
C-2, T-3	-3.1	-3.5	-4.0	-4.3	-4.7
C-3, T-5	-2.2	-2.8	-3.3	-3.8	-4.4
C-3, T-3	-4.7	-4.7	-4.7	-4.7	-4.7
C-2, T-5	-4.7	-4.7	-4.7	-4.7	-4.7

STATISTICS FOR HYDROGRAPHIC SURVEY H-7950 (1953)

Ship PIONEER - *Red Day Letters*

Project CS-343

<u>Day</u>	<u>Date</u>	<u>No. of Pos.</u>	<u>No. of Statute Miles</u>
A	9 August	4	16.1
B	10 August	43	241
C	11 August	19	103
D	2 September	9	72
E	3 September	<u>11</u>	<u>85</u>
	TOTALS	86	517.1

APPROVAL SHEET TO ACCOMPANY

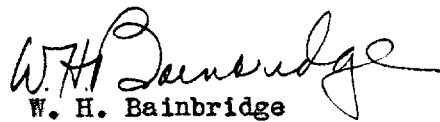
Survey H-7950

Project CS - 343

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

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

The survey is not complete.



W. H. Bainbridge
Comdr., USC&GS
Comdg. Ship PIONEER

GEOGRAPHIC NAMES

Survey No. H-7950

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	
<u>Alaska</u>										1
<u>Bering Sea</u>									BGN	2
<u>St. Paul Island</u>										3
<u>St. Lawrence Island</u>									BGN	4
<u>Nunivak Island</u>									BGN	5
<u>Hooper Bay</u>										6
<u>St. Matthew Island</u>									BGN	7
										8
										9
										10
										11
										12
										13
										14
<u>Dutch Harbor</u>									BGN	15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

Names underlined in red are approved.
8-5-52
H. Heck

(location of tide gage)

RHC.

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DIVISION OF COASTAL SURVEYS~~

23 March 1954

Division of Charts: R. H. Carstens

Plane of reference approved in
1 volume of sounding records for

HYDROGRAPHIC SHEET

7950 Add. Wk.

Locality Central Bering Sea, Alaska

Chief of Party: W. H. Bainbridge in 1953
Plane of reference is mean lower low water, reading
3.3 ft. on tide staff at Dutch Harbor
15.3 ft. below B. M. 2 (1934)

NOTE: Tide reducers in this volume have been revised in red,
these revisions have been verified.

Condition of records satisfactory except as noted below:

E. C. McKay

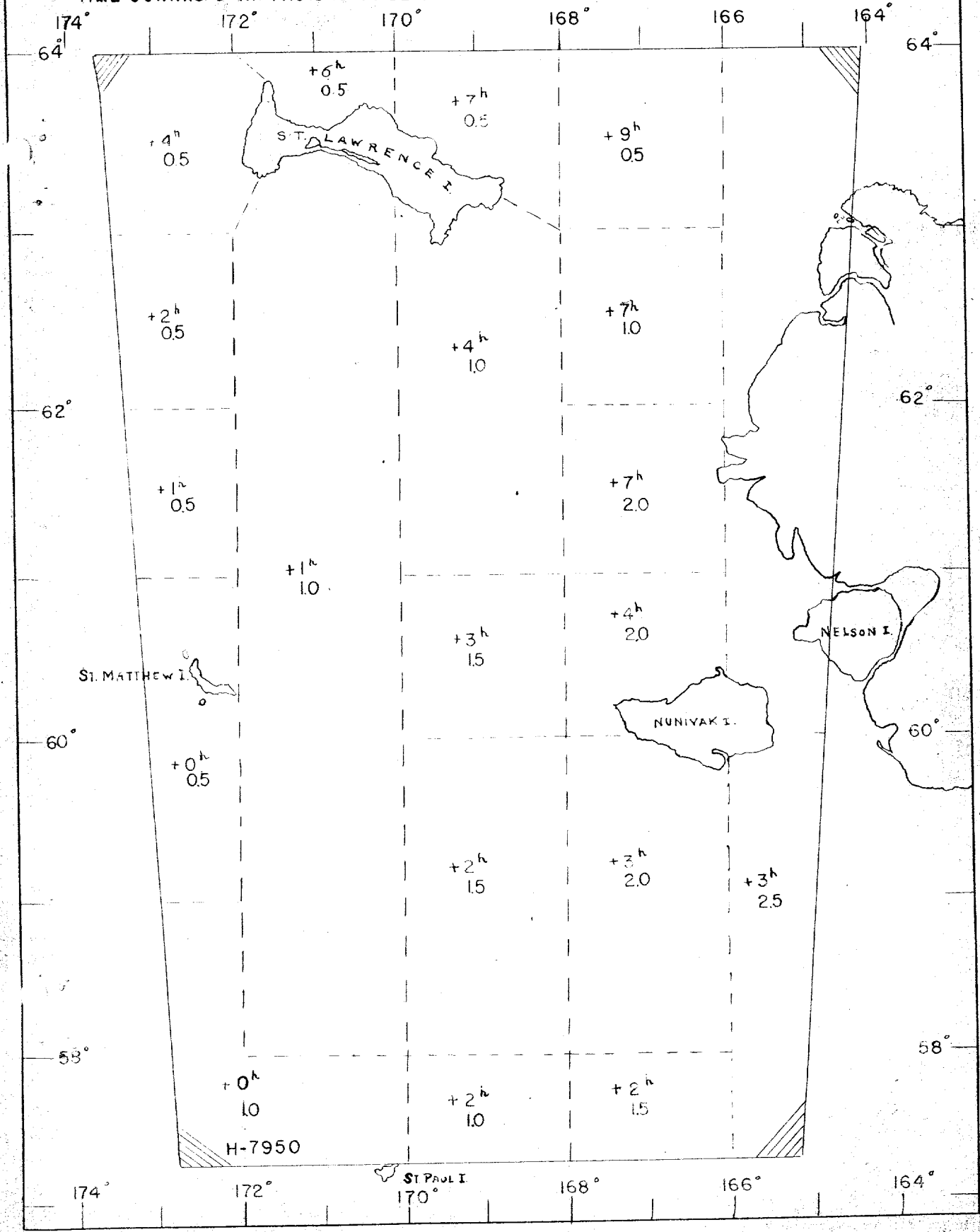
Section of Tides

Chief, Division of Tides and Currents.

TIDE ZONE LAYOUT

PROJ. CS-343

TIME CORRNS & RN FACTORS TO BE APPLIED TO DUTCH HARBOR TIDE GAGE



NAUTICAL CHARTS BRANCH

SURVEY NO. H-7950

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
<i>Partially applied.</i> 25 Apr 52	8995	A.E. MacEwen	Examined for critical alg. Previously applied through Before After Verification and Review <i>Brouide copy of Boat sheet 8945430</i>
5/7/52	9380	J.F. Walker	Before After Verification and Review <i>Partially</i>
6-11-52	8851	R.K. De Lawder	<i>Partially Appld.</i> Before After Verification and Review
1952	9302	Benson	Before After <i>fully applied before Ver</i> Verification and Review <i>Partially</i>
11/6/52	8994	Burgoyne	Before After Verification and Review
5-24-55	8802	J.M. Albert	<i>Exam - no chart</i> Before After Verification and Review
3/28/57	9374	BSE	Before After Verification and Review <i>3MA</i>
1956	<i>Reconsto.</i> 9380	B.A.E.	Before After Verification and Review <i>3MA</i>
12-28-62	9000	<i>Ev. Burgoyne</i>	<i>Partly</i> Before After Verification and Review <i>fully appld + 1000 at 9302 & 8802</i> <i>No Revision</i>
2-11-66	9370	H.W. Howard	Before After Verification and Review <i>Fully Applied</i>
4/10/84	16240	B. Fernders	Before After Verification and Review <i>Fully Appld.</i>
5-30-89	530	R.A. Lillis	<i>Fully appl'd before V&R</i> category 1 survey <i>Drq. #34</i>
4/10/90	1606L	D.M. KENLINDEN	CONSIDERED NOT FULLY <i>FULLY</i> APPLIED CAT I

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.