

**7846**

Diag. Cht. Nos. 9380 & 9400

341

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

**DESCRIPTIVE REPORT**

Type of Survey HYDROGRAPHIC

Field No. PL-2350 Office No. H-7846

LOCALITY

State ALASKA

General locality SEWARD PENINSULA

Locality EAST OF PRINCE OF WALES SHOAL

1945

CHIEF OF PARTY

T. B. Reed

LIBRARY & ARCHIVES

DATE Feb. 21, 1951

B-1870-1 (1)

**7846**

FEB 21 1951

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-7846**

Field No. **PI-2350**

State **Alaska**

General locality **Seward Peninsula**

Locality **East of Prince of Wales Shoal**

Scale **1:20,000** Date of survey **1 to 22 Aug. 1950**

Instructions dated **19 May 1950**

Vessel **Ship PIONEER**

Chief of party **Thos. B. Reed**

Surveyed by **Ship's Officers**

Soundings taken by fathometer, graphic recorder, ~~hand levelling~~ (See Paragraph C.)

Fathograms scaled by **Fathometer readers and ship's Officers**

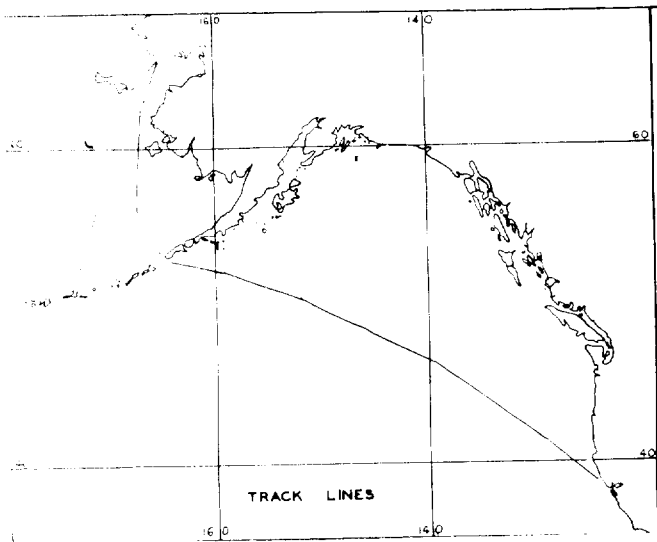
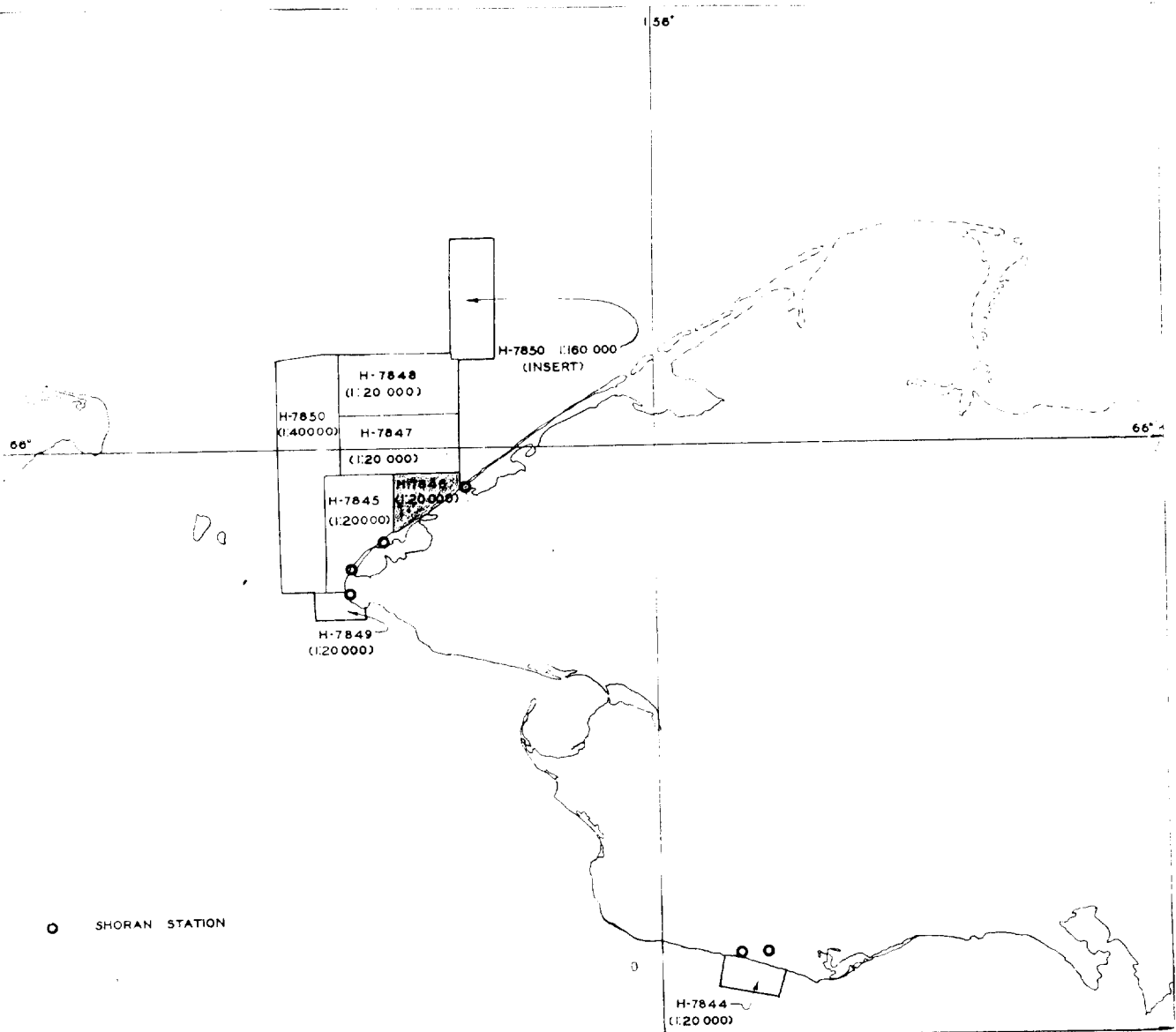
Fathograms checked by **Ship's Officers**

Protracted by **DO E. C. Stokes, Jr**

Soundings penciled by **DO E. C. Stokes, Jr.**

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

REMARKS:



PROGRESS SKETCH  
 TO ACCOMPANY SEASONS REPORT  
 U.S. COAST & GEODETIC SURVEY  
 COMBINED OPERATIONS  
 9 JUNE 23 SEPT. 1950  
 SEWARD PENINSULA  
 NOME & CAPE PRINCE OF WALES  
 SHIP PIONEER  
 THOS. B. REED COMDG.  
 PROJECT C.S. 341

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC  
SURVEY

H-7846

(Field PI-2350)

EAST OF PRINCE OF WALES SHOAL

1950

Project CS-341  
Ship PIONEER  
Scale 1:20,000

Season of 1950  
Thos. B. Reed  
Surveyed by Ship's officers

A. PROJECT

The work was done in accordance with the following instructions for project CS-341.

Original Instructions dated 19 May 1950.  
Amended Instructions dated 19 May 1950.  
Telegram dated 1 Aug. 1950.

B. SURVEY LIMITS AND DATES

The general locality is Bering Strait. This is an inshore survey extending from 14 to 30 statute miles northeast of Cape Prince of Wales, and from the beach line to approximately 8 miles offshore.

Field work began 1 August 1950 and ended 22 August 1950.

This survey is joined by contemporary surveys on the west <sup>H-7845(1950)</sup> and north as shown on the index of surveys included with this report. <sub>H-7847a&b(1950)</sub>

C. VESSEL AND EQUIPMENT

Hydrography was done using the Ship PIONEER and Launches Nos. 3 & 4 from that ship.

Type 808J depth recorders Nos. 69S, 103S, 108S, 129S were used for all hydrography.

D. TIDE AND CURRENT STATIONS

Data obtained from the portable tide gage at Lopp Lagoon, Cape Prince of Wales and Port Clarence, Alaska, were used for the tide reductions of all soundings.

No current stations were occupied within the limits of this survey.

A tide note is included in this report.

E. SMOOTH SHEET

The projection was made by hand aboard the Ship PIONEER.

The shoran curves were drawn aboard the ship PIONEER.

F. CONTROL STATIONS

All the triangulation stations used for control on this survey were located on the North American Datum, by the U.S. Coast and Geodetic Survey. Field computation data was used for 1949 stations.

Shoran station PRIN was located by theodolite and chain traverse from Wales, 1944, and was plotted on Graphic Control Sheet PI-D-50. Shoran station CHUK was located in the same manner from IKPEK, 1949, and was plotted on Graphic Control Sheet PI-B-50.

*GC Sheets  
to be  
destroyed*

The visual control signals were located on <sup>unregistered</sup> Graphic Control Sheets PI-B-50 & PI-C-50. A statement as to the method of locating the various signals is included in the descriptive reports accompanying the control sheets.

*Desc. Rep. for  
PI-B & C-50,  
filed in rear  
of this Report*

A list of stations is included in Vol. 1 of the sounding records.

G. SHORELINE AND TOPOGRAPHY

The indicated shoreline was located at the same time the visual control signals were located. A statement as to the method is in the descriptive reports for these control sheets.

H. SOUNDINGS

Depths were obtained using the fathometers listed in paragraph C of this report. All soundings were scanned from the graphs and then verified. No squat or settlement corrections were applied. Fathometer and velocity corrections for the ship hydrography were computed as described in the special reports. Instrumental Corrections, CS-341, 1950 and Velocity Corrections, CS-341, 1950. A list of these corrections accompanies this report. Fathometer corrections for the launch hydrography were determined from bar checks.

*with  
H-7844*

I. CONTROL OF HYDROGRAPHY

Both shoran and visual control was used in this survey. All the ship and <sup>most of</sup> launch #3 work was shoran controlled. All of launch #4 work was visually controlled.

J. ADEQUACY OF SURVEY

Except for the approximately three miles between stations Nip and Rak where an additional inshore line is needed for complete development this survey is considered adequate. Completion of the close inshore area here was prevented by weather conditions and the closing of the field season.

*no additional  
field work  
recommended,  
see Review  
par. 9*

K. CROSSLINES

Crosslines comprise approximately 8% of the total mileage of hydrography on this sheet. Crossings are in satisfactory agreement.

M. COMPARISON WITH CHART

Chart #9380. The large difference between the scales of the charts available and the survey makes a detailed comparison impractical. The most important comparison can be made between the shoreline as shown on the chart and the one found by this survey. Within the limits of this survey the shoreline shown on the chart is as much as 2 miles too far south. The greatest error exists at the southwest end of the beach and decreases toward the middle where it is nearly correct for the rest of the part shown on the smooth sheet.

charted hydrography & topography has been revised.

Since this survey was well controlled throughout it is recommended that it supersede all previous work for charting purposes.

N. DANGERS AND SHOALS

The beach is marked by false beaches, some shoaling to ten feet four hundred meters from the high water line. There are no other dangers to surface navigation within the limits of this survey.

U. SHORAN CORRECTIONS

Shoran corrections were applied as shown in the Shoran Corrections, 1950, a copy of which is included in this report. The method of obtaining these corrections is explained in the accompanying Shoran Summary, 1950.

W. DATA INCLUDED WITH THIS REPORT

1. Index of Surveys
2. Velocity Corrections
3. Abstract of Instrumental Corrections
4. Initial Corrections
5. Shoran Summary, 1950
6. Shoran Corrections, 1950
7. Abstract of Statistics
8. Approval Sheet
9. Tide Note
10. Tide Reducers, C-1, C-2, C-3

Z. TABULATION OF APPLICABLE DATA

The following special reports apply to this survey:

1. Instrumental Corrections, CS-341, 1950 - To be submitted
2. Graphic Control Surveys, PI-B-50 & PI-D-50 - Submitted to Portland Photogrammetric Office 8 Jan. 1951. *To be destroyed*
3. Velocity Corrections, CS-341, 1950 - To be submitted *filed with H-7844*
4. Coast Pilot Notes - Submitted 20 Oct. 1950
5. Current Data - To be submitted

Respectfully Submitted

*Barbour C. Stokes, Jr.*

Barbour C. Stokes, Jr.  
Ensign USC&GS

Forwarded:



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

**VELOCITY CORRECTIONS**

Ship **PIONEER 1950** <sup>H-7846</sup> <sup>H 7847 a+b</sup>

To be applied to Sheets **PI-2350, PI-2450, PI-2550** and  
**PI-16250** from 28 July 1950 to 22 August 1950. <sup>H-7845</sup>  
 H-7850, Insert

DEPTH, Feet		CORR'N., Feet
From	To	
11.0	20.0	0.0
20.5	34.0	-0.2
34.5	46.0	-0.4
46.5	58.0	-0.6
58.5	70.0	-0.8
70.5	81.5	-1.0
82.0	93.0	-1.2
93.5	104.5	-1.4
105.0	116.0	-1.6
116.5	127.0	-1.8
127.5	138.0	-2.0
138.5	149.0	-2.2
Over 149.0		-2.4

DEPTH, Fms.		CORR'N., Fms
5.7	11.6	-0.1
11.7	17.4	-0.2
17.5	23.0	-0.3
23.1	28.4	-0.4

Comp. WNM  
 Checked FN  
 Copy Checked



**ABSTRACT OF  
 INSTRUMENTAL CORRECTIONS, CS-341  
 308J FATHOMETERS # 69S, 103S, 108S, & 129S**

18 July - 13 Sept., 1950  
 PI-2250, 2350, 2450, 2550, 2650, 4250 & 16250

	From 1950	To 1950	Corr. A	Corr. B	FEET		FATHOMS	
					Corr. C	Corr. D	Corr. A	
308J 69S	4 Aug.	12 Aug.	-1.0	-1.0	-0.8	-0.4		
	13 Aug.	13 Aug.	-0.4	0.2	0.0	-0.2		
	10 Sep.	12 Sep.		-0.8	-1.2	-1.4		
103S	4 Aug.	0400 16 Aug.	-1.0	-0.6	-4.4	-9.4	0.0	
	0401 16 Aug.	13 Sep.	+0.4	+0.4	-3.6	-8.6	0.0	
108S	18 July	22 July	-1.0	-1.8	-2.4	-2.4	-0.4	
129S	18 July	20 July	+1.2	0.0	+1.2			
	27 July	0408 29 July		+0.4				
	0409 29 July	5 Aug.		-0.6				Except as noted below
	27 July	5 Aug.	-0.6		+1.4	+3.6	0.0	Except as noted below
	17 July	21 Aug.						
	15-34-30 30 July	16-59-00 30 July	+0.2	+0.2				Special corr. based on Sim. Comp. take, 1600, 30 July
	0849 1 Aug.	0909 1 Aug.		+1.4				*Arbitrary correction Survey H-7846
	0909 1 Aug.	1721 1 Aug.	+0.4	+0.4				**Arbitrary correction Survey H-7846
	0541 2 Aug.	1803 2 Aug.	+0.4	+0.4				**Arbitrary corr. H-7846

\* Correction of plus 2.0 ft. applied to mean correction  
 \*\* Correction of plus 1.0 ft. applied to mean correction

INITIAL CORRECTIONS (PIONEER)  
Sheet 2350 H-7846

DAY	FROM POS.	TO POS.	CORR'n FT.	
A	Throughout		-0.6	1 Aug.
B	"		-0.6	2 Aug.
C	"	plus	9.4	21 Aug.
D	"	plus	9.4	22 Aug.

Initial Corrections  
 PI-2350 H-7846 Launch #3

Pos.	Corr.	Pos.	Corr.
a-day 2 Aug. 1950 Init. 1.0		C-day 18 Aug. Init. 1.0	
1a - 20 3	0.0	1c - 15c	0.0
2a 4 - 3a 3	-0.2	15 1 - 16c	-0.2
3a 4 - 5a 3	0.0	16 1 - 68c	0.0
5a 4 - 6a	-0.2	69c - 69 1	-0.2
6a 1 - 17a 1	0.0	69 2 - 79c	0.0
17a 1 - 17a 5	-0.2		
18a - 2-a 3	0.0	Init. changed to 2.0	
20a 4 - 21a	-0.2	80c - end	0.0
22a - 22a 1	-0.4		
22a 2 - 42a 4	0.0	d-day 19 Aug.	
42a 5 - 43a 2	-0.2	Init. 1.0	
43a 3 - 47a	0.0	1d - 30d	0.0
48a - 48a 2	-0.2	30 1 - 33d	-0.2
48a 3 - 56 5	0.0	34d - 94d	0.0
57a - 57a 3	-0.2		
57a 4 - 88a	0.0	Init. 2.0	
		95d - 229 4	0.0
b-day 9 Aug. Init. 1.0		229d 5 - end	-0.2
1b - 15b	0.0		
15 1 - 240 2	-0.2	e-day 22 Aug. Init. 2.0	
24 3 - 26 3	-0.4	1e - 15e	0.0
27b - 34b	0.0	16.0 - 19e 3	-0.2
34b 1 - 36 2	-0.2	19 4 - 52 5	0.0
36 3 - 39 2	0.0	53e - 53e 6	-0.2
39 3 - 42	0.2	53 7 - end	
43b - end	0.0		
a-day 2 Aug. (Contd) Init. 1.0			
88a 1 - 89a	-0.2		
90a - 90a 1	-0.4		
90a 2 - 96a	0.0		
97a - 97a 3	0.8		
97a 4 - 117a	0.0		
118a 1	-0.2		
118a 2 - 132a	0.0		
132a 1 - end	-0.2		

Initial Corrections  
 PI-2350 H-7846      Launch #4

Pos.	Corr.
a-day 9 Aug.	
Init. 1.0	
1a - 54a	0.0
54 1 end	-0.2
b day 17 Aug.	
Init 2.0	
1b - end	0.0
c day 18 Aug.	
Init 2.0	
1c - 14c 2	0.0
14c 3 - 15c 5	-0.2
16c - 23c 3	0.0
24c - 25 1	-0.2
25 2 - 26 1	0.0
26 2 - 29 1	-0.2
29 2 - 30 2	0.0
30 3 - 31 3	0.2
31 4 - 32	0.0
33c - 35 1	-1.0
35 2 - 66 3	-0.2
67c - 70c 3	-0.0
71c - 80c	-0.2
81c - 84 2	0.0
84 3 - 91 3	-0.2
92c - 115c	0.0
115 1 - 133 3	-0.2
134c - 138 3	-0.4
139c - 141c	0.0
142c - only	0.4
142 1 - 161	0.0
161 1 - 162 4	-0.2
163c - 223 3	0.0

Pos.	Corr.
C-day (Cont'd)	
223b 4 - 226c	-0.2
227c - end	0.0
d-day 19 Aug. 1950	
Init. 1.0	
1d - 19 3	0.0
20d - 23d	-0.2
24d - 45d	0.0
45 1 - only	-0.2
45 2 - end	0.0
e-day 22 Aug.	
Init. 2.0	
1e - 50 7	0.0
51 - 70e	-0.2
70 1 - 70 3	-7.4
70 4 - 75e	0.0
75 1 - 81 1	-0.2
81 2 - 103 5	0.0
103 6 - 109	-0.2
109 1 - 116	0.0
116 1 - 121 1	-0.2
121 2 - end	0.0

SHORAN SUMMARY - 1950 SEASON

SHIP PIONEER

Project CS-213 Sheets PI-4150, 8150, 8250, 16150  
Project CS-341 Sheets PI-2150, 2250, 2350, 2450, 2550, 4250  
H-7846

The following Shoran Stations were installed and operated by the Ship PIONEER during the 1950 field season:

Station GARD on NW side Gareloi Id., Aleutians, elevation 840 ft.  
Station SEMI on east side Semisopochnoi Id., Aleutians, elevation 820 ft.  
Station HILL 3.7 naut. miles NE of Nome, Alaska, elevation 380 ft.  
Station QUON 2.0 naut. miles NW of Nome, Alaska, elevation 45 ft.  
Station PHEL 0.5 naut. miles East of Wales, Alaska, elevation 770 ft. ✓  
Station LAC 12.3 naut. miles NE of Wales, Alaska, elevation 70 ft.  
Station TINY 25.2 naut. miles NE of Wales, Alaska, elevation 155 ft. ✓  
Station TAN 3.0 naut. miles WNE of Wales, Alaska, elevation 50 ft.

In addition Station TINY installed by the Ship EXPLORER on the eastern end of Anchitka Id. (Constantine Harbor), Aleutian Ids. was used for a short time.

This season a refinement was used in taking the periodic "zero checks". The receiver was tuned to approximately 250 mcps (the normal received pulses on the ship equipment are 310 mcps) and only the high frequency output pulse from the ship transmitter was used on both the rate and drift channels (the two output frequencies of the ship equipment are 230 and 250 mcps). The various zero check readings agreed so closely that an average correction was applied for each shore station.

Prior to leaving Oakland each shore set was taken to a triangulation station approximately 29 statute miles southeast of the ship site and was calibrated against each ship set. In all cases the zero set reading was adjusted so that actual or true distance readings were observed on the ship indicators.

On the two shore installations in the Aleutian Ids. (GARD AND SEMI) it was not practicable to calibrate the observed distances against true distances due to rough seas and inclement weather. Selected fixes that occurred on the GARD\*SEMI range were abstracted and the shoran distances were compared to the true distance (computed). The average distances for the shoran failed to add to the true distance by less than .01 mile and therefore there were no corrections applied to GARD or SEMI. The zero check readings for these two stations have a run of ~~plus~~ .005 mile from the average. The correction for TINY was obtained while plotting smooth Sheet PI-8250 to obtain a minimum jump on the sounding lines when changing the shoran stations.

Three-point fixes were used to obtain the correction for HILL and QUON. Triangulation stations were used in all cases with an average distance of 3 miles for the ship and Launch #3 (Launch #3 was in the chocks and the angles were taken at the Launch antenna) and 2.5 miles for Launch #4. Simultaneously with the fixes the shore distances were read. The true distances were obtained mathematically.

For the field work around Cape Prince of Wales the same shore equipment was used at LAG, CHUK, and MAN with the only difference being in the length of coax cables (150 feet for CHUK and 82 feet for LAG and MAN). The equipment at MAN was now changed during the time the station was in operation. Three-point fixes or triangulation stations were used to obtain the shore corrections on MAN and CHUK (the data on CHUK used also for LAG and MAN). The Ship and Launch were close to the station, as in the case for HILL and QUON. There were no tests made for Launch #4 (it was assumed that the test for Launch #3 would suffice as the installations were similar) as the shore equipment kept breaking down due to an inadequate power supply - an Onan Gasoline Generator was mounted on the fantail and the roll and pitch of the Launch caused excessive voltage fluctuations.

The various zero-check readings for HILL, QUON, MAN, LAG, CHUK and MAN agreed closely - plus or minus .003 mile being the maximum from the average.

SHORAN CORRECTIONS 1950

Project CS-218, CS-341

Ship PIONEER

GARE	Ship	Plot as observed
SEMI	Ship	Plot as observed
TINY	Ship	Plot as observed
HILL	Ship, Launch #3 Launch #4	Add .03 miles Plot as observed
QUON	Ship, Launch #3 Launch #4	Add .02 miles Plot as observed
PRIN	Ship (Set #4) Ship (Set #3) Ship, (Set #3) Launch #3 & #4	Add .02 miles Add .01 miles for sheets <u>PI 2350, 2450 &amp; 2550</u> Plot as observed for sheets PI 2250, 4250 Plot as observed
CHUK	Ship (Set #4) Ship (Set #3) Ship (Set #3) Launch #3 & #4	Subtract .01 mile Subtract .02 miles for sheet PI 2350 Subtract .01 mile for sheets PI 2450 & 2550 Plot as observed
LAG	Ship Launch #3 & #4	Subtract .02 miles Plot as observed
MAN	Launch #3	Plot as observed

H-7846

STATISTICS FOR HYDROGRAPHIC SURVEY H-7846  
(PI-2350)

Ship PIONEER

Project CS-341

Day	Vol. No.	Date	No. of Pos.	No. of St. Mi.
Ship				
A	1	1 Aug. 1950	164	79.4
B	1,2	2 Aug. 1950	212	138.6
C	3	21 Aug. 1950	103	66.2
D	3	22 Aug. 1950	9	6.3
Launch #3				
a	4	2 Aug. 1950	133	47.0
b	4	9 Aug. 1950	52	13.1
c	4,5	18 Aug. 1950	188	79.4
d	5,6	19 Aug. 1950	232	100.4
e	6	22 Aug. 1950	94	38.9
Launch #4				
a	7	9 Aug. 1950	61	14.6
b	7	17 Aug. 1950	38	9.1
c	7,8	18 Aug. 1950	291	74.6
d	9	19 Aug. 1950	167	40.4
e	9	22 Aug. 1950	125	31.2
<b>Totals</b>	<b>9</b>		<b>1869</b>	<b>739.2</b>

Area of survey 77.0 sq. St. Mi.



APPROVAL SHEET TO ACCOMPANY SURVEY H-7846  
(Field No. PI-2350)

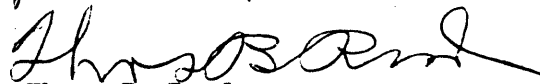
The field work was supervised closely and the boat sheets were inspected daily.

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

The survey is considered adequate with the exception noted in paragraph J of this report.

Review,  
par. 9

*Shore line should be added to the sheet when the airphoto compilation becomes available.*



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

TIDE NOTE

Project CS-341

Ship PIONEER

Field Season 1950

Surveys H-7845, H-7846, H-7847, H-7848, H-7849, H-7850

The portable tide gage at Lopp Lagoon, Cape Prince of Wales, Alaska, (Lat.  $65^{\circ} 46'$  N., Long.  $167^{\circ} 43'$  W ) was used for the reduction of all soundings with the exception of those on 18,19,21 and 22 Aug. and 10,11,12 and 13 Sept. On these days the portable tide gage at Port Clarence, Alaska, (Lat.  $65^{\circ} 15.42'$  N., Long.  $166^{\circ} 50.81'$  W) was used with a time correction of plus 3 hours and a range correction of 0.5.

A height of 2.8 ft. on the staff at Lopp Lagoon corresponds to mean lower low water.

A height of 2.4 ft. on the staff at Port Clarence corresponds to mean lower low water.

Hourly heights from the gage at Port Clarence were obtained from the Ship EXPLORER.

Tides - PI-2350 - Feet  
H-7846

From	To	Corr.
	1 Aug. (Lopp Lagoon)	
0840	1000	0.2
1001	1430	0.0
1431	1730	0.2
	2 Aug.	
0530	0900	0.4
0901	1000	0.2
1001	1200	0.0
1201	1700	-0.2
1701	1803	0.0
	9 Aug.	
1335	1643	-0.2
	17 Aug.	
0700	0830	-0.4
	18 Aug. (Port Clarence)	
0600	0615	-0.4
0616	1030	-0.2
1031	1200	-0.4
1201	1906	-0.6
	19 Aug.	
0647	0930	-0.6
0931	1100	-0.8
1101	1820	-1.0
1821	1938	-0.8
	21 Aug.	
0735	0800	-0.4
0801	0900	-0.2
0901	1120	0.0
1121	1300	-0.2
1301	1510	-0.4
1511	1731	-0.6
	22 Aug.	
0054	0120	-0.4
1415	1512	-0.8
1513	2007	-1.0

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. PI-B & C-50 to be  
(Graphic Control sheets subsequently destroyed)  
REGISTER NO.

State ALASKA

General locality Seward Peninsula

Locality N.E. of Cape Prince of Wales

Scale 1:20,000 Date of survey August, 1950

Vessel Ship PIONEER

Chief of party CDR. Thos. B. Reed

Surveyed by W.N. Martin

Inked by W.N. Martin

Heights in feet above \_\_\_\_\_ to ground to tops of trees

Contour, Approximate contour, Form line interval \_\_\_\_\_ feet

Instructions dated \_\_\_\_\_, 19\_\_\_\_

Remarks: Project No. CS-341

DESCRIPTIVE REPORT TO ACCOMPANY GRAPHIC  
CONTROL SHEETS PI-B-50 & PI-C-50

INSTRUCTIONS:

Date of instructions 19 May 1950

A. GENERAL:

These sheets cover the shoreline of the northwest coast of the Seward Peninsula from about 12 miles northeast of Cape Prince of Wales to the small Eskimo Settlement of Ikpek. This coastline, except where indented by inlets and lagoons, is a continuous low flat sand beach varying in width from 60 to 200 meters. Back of the beach the land is low and marshy with lagoons, ponds, and sand dunes, extending from 10 to 15 miles to the foot of the mountains of the interior.

} G.C. sheets  
to be destroyed

B. LANDMARKS:

There are no distinctive landmarks in this area suitable for charting. The narrow inlets along the coast are not visible beyond three miles of the beach.

C: CONTROL:

The basic control used was first order triangulation stations established in 1944 and 1949. It included stations LOPP, 1944, LYNX, 1949, DAVID, 1949 and IKPEK, 1949.

Shoran station CHU&K, only 32 feet away from IKPEK, 1949 was located by theodolite and tape. A 100-foot wooden tower was built over this station to elevate the shoran mast. The tower was visible throughout the limits of this survey and thus it offered a very convenient signal for orientation on both sheets. Two main traverses were run, from IKPEK to DAVID and from the vicinity of signal RAK to LYNX. The IKPEK to DAVID traverse was run with the plane-table, using the Alidade for azimuth and a 300 foot tape for distance. The starting azimuth was from IKPEK to IKPEK Azimuth Mark. To locate LOPP AZIMUTH an auxiliary resection setup point was located on the beach north of station LOPP, 1944. This point together with an azimuth line to the tall tower at CHU&K was transferred to PI-C-50 to begin the traverse on this sheet.

Because it was a rainy day and impracticable to use a plane table, the traverse from the vicinity of RAK to LYNX was run with a 4 inch theodolite and 300 foot tape. The data were later plotted on the sheet with a steel protractor. The tie-in at LYNX and the location of LYNX AZIMUTH were made by theodolite intersections from three traverse points. Shoran station LAG was located by theodolite and tape from station LYNX.

## LIST OF PLANETABLE POSITIONS

Object & Description	Lat. ° ' "	D.M. m.	Long. ° ' "	D.P. m.	Remarks
Lopp Azimuth Mark	65 49	1156.1	167 30	94.0	Marked with standard azimuth disk. Set in 1944.
Dug	65 48	961.5	167 34	719.0	Center of northwest face of old Eskimo dugout.
Lynx Azimuth Mark	65 46	760.0	167 4 <sup>4</sup> <sub>5</sub>	638.0	Standard azimuth disk set in 1949.

D. CLOSING ERROR OF TRAVERSE:

The closure of the IKPEK-DAVID traverse was 16 meters or about 3 meters per mile, mostly in azimuth. A straight line adjustment was made.

The RAK-LYNX traverse closed flat and needed no adjustment.

E. LIST OF PLANETABLE POSITIONS:

Attached.

Respectfully submitted

*Fred Hatella*  
for William N. Martin

Approved and Forwarded

*Thos B Reed*

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

POSITION COMPUTATION, THIRD-ORDER TRIANGULATION

		° ' "		° ' "		° ' "		° ' "	
$\alpha$	2	to 3	226	56		$\alpha$	3	to 2	
2d L		&	+ 73	37		3d L		&	
$\alpha$	2	to 1	300	33		$\alpha$	3	to 1	
$\Delta\alpha$			180	00	00.0	$\Delta\alpha$			180 00 00.0
$\alpha'$	1	to 2				$\alpha'$	1	to 3	
FIRST ANGLE OF TRIANGLE									
$\phi$	65	53	38.433 2	TKPEK	$\lambda$	167	16	43.182	
$\Delta\phi$			00.160	32 Ft. m	$\Delta\lambda$			00.663	
$\phi'$	65	53	38.273 1	CHUK	$\lambda'$	167	16	42.519	
° ' "									
$s$	0.989 18	Logarithms		$\frac{1}{2}(\phi+\phi')$		$s$		Logarithms	
$\text{Cos } \alpha$	9.706 11	Values in seconds		1185.5 (673.0)		$\text{Cos } \alpha$		Values in seconds	
B	8.508 99	1st term		0.1600		B		1st term	
h	9.204 28	2d term		+		h		2d term	
$s^2$	1.978	3d term		+		$s^2$		3d term	
$\text{Sin}^2 \alpha$	1.751	- $\Delta\phi$		1600		$\text{Sin}^2 \alpha$		- $\Delta\phi$	
C						C			
$h^2$						$h^2$			
D	2.266					D			
° ' "									
$s$		Logarithms		$\frac{1}{2}(\phi+\phi')$		$s$		Logarithms	
$\text{Cos } \alpha$		Values in seconds		538.5 (221.4)		$\text{Cos } \alpha$		Values in seconds	
B		1st term				B		1st term	
h		2d term		+		h		2d term	
$s^2$		3d term		+		$s^2$		3d term	
$\text{Sin}^2 \alpha$		- $\Delta\phi$				$\text{Sin}^2 \alpha$		- $\Delta\phi$	
C						C			
$h^2$						$h^2$			
D						D			

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WNM  
ACH



POSITION COMPUTATION, THIRD-ORDER TRIANGULATION

$\alpha$	2	Lynx	to 3	AZMK	227	47	05.2	$\alpha$	3	to 2			
$2^d L$			&		+278	09	20.6	$3^d L$		&			
$\alpha$	2		to 1		145	56	25.8	$\alpha$	3	to 1			
$\Delta\alpha$								$\Delta\alpha$					
$\alpha'$	1		to 2		180	00	00.0	$\alpha'$	1	to 3			

FIRST ANGLE OF TRIANGLE

$\phi$	65	46	15.405	2	Lynx	$\lambda$	167	45	14.215	$\phi$			
$\Delta\phi$			05.605		209.556m	$\Delta\lambda$		+	09.223	$\Delta\phi$			
$\phi'$	65	46	21.010	1	Lag (Shoran)	$\lambda'$	167	45	23.438	$\phi'$			

$s$	2.321 3001	Values in seconds		$\frac{1}{2}(\phi+\phi')$	Logarithms	Values in seconds	$s$	Logarithms	Values in seconds	$\frac{1}{2}(\phi+\phi')$	Logarithms	Values in seconds
$\text{Cos } \alpha$	9.918 2696	(650.8 (1207.7))					$\text{Cos } \alpha$					
B	8.508 9991						B					
h	0.748 5688	1st term		$\text{Sin } \alpha$	9.748 2295	(465.3)	h					
$s^2$	4.64 260			A'	8.508 5008		$s^2$					
$\text{Sin}^2 \alpha$	9.49 646			$\text{Sec } \phi'$	0.386 8342		$\text{Sin}^2 \alpha$					
C	1.74 880			$\Delta\lambda$	0.964 8646	9.2228	C					
$h^2$	5.88 786	2d term		$\text{Sin } \frac{1}{2}(\phi+\phi')$			$h^2$					
D		-D.0001		$-\Delta\alpha$			D					
		3d term										
		-D $\phi$										
		+										
		-D $\phi$										

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P1-2-50

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

8 March 1951

Division of Charts: R. H. Carstens

Plane of reference approved in 9  
volumes of sounding records for

HYDROGRAPHIC SHEET 7846

Locality East of Prince Wales Shoal, Bering Strait

Chief of Party: T. B. Reed in 1950  
Plane of reference is mean lower low water, reading  
2.8 ft. on tide staff at Lopp Lagoon  
17.8 ft. below B. M. 1 (1950)

Height of mean high water above plane of reference is 0.3 foot.

Condition of records satisfactory except as noted below:

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

GEOGRAPHIC NAMES

Survey No. H- 7846

Name on Survey	On Chart No.		On previous survey No.		On U. S. quadrangle Maps		From local information		On local Maps		P. O. Guide or Map		Rand McNally Atlas		U. S. Light List	
	A	B	C	D	E	F	G	H	K							
<u>Alaska</u>				(bar title)												1
<u>Seward Peninsula</u>				( " " )												2
<u>Prince of Wales Shoal</u>				( " " )												3
																4
																5
																6
																7
																8
																9
																10
<u>Lopp lagoon</u>				(location of tide gage)												11
<u>Port Clarence</u>				( " " " " )												12
																13
																14
																15
																16
																17
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																26
																27

Names underlined in red are approved 3-5-5 Heick

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7846...

Records accompanying survey:

Boat sheets .2...; sounding vols. .9...; wire drag vols. ....;  
 bomb vols. ....; graphic recorder rolls 7 env...;  
 special reports, etc. 1 Smooth Sheet  
 ..... 1 Complete ship shoran plotting abstract

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

	Preliminary Verification	Final Verification
Number of positions on sheet	.....	1869
Number of positions checked	...4..	137
Number of positions revised	...0..	14
Number of soundings revised (refers to depth only)	...10..	170
Number of soundings erroneously spaced	...0..	212
Number of signals erroneously plotted or transferred	...0..	0
Topographic details	Time .....	16
Junctions	Time ...3..	8
Verification of soundings from graphic record <i>Prel. Inspection - G.F.W.</i>	Time ...24.. 4 11-8-51	215
Verification by <i>C.B. Samuel</i> .....	Total time 2.39..	Date 11:3:53
<i>Prel. verification by: Stanley K. Jeffers</i>	Total time: 27	Date: 12/14/51
Reviewed by..... <i>A. J. Hoffman</i> .....	Time 18 hrs.	Date 5/19/52

Total time 270 hrs.

Addendum - A.R. Stini -

20 hrs

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7846

FIELD NO. PI-2350

Alaska-Seward Peninsula, East of Prince of Wales Shoal

Project No. CS-341

Surveyed in August 1950

Scale 1:20,000

Soundings:

808 Fathometer

Control:

Shoran  
Sextant fixes on shore signals

Chief of Party - T. B. Reed

Surveyed by - J.O. Phillips, A.E. Greaves, P.O. Reimer, P.A. Weber,  
W.N. Martin, H.W. Keith, R.A. Marshall, A.R. Benton, Jr.,  
F. Natella and B.C. Stokes, Jr.

Protracted by - B. C. Stokes, Jr.

Soundings plotted by - B. C. Stokes, Jr.

Preliminary Verification by - S. K. Jeffers

Verified and inked by - *C.B. Samuel*

Reviewed by - A. J. Hoffman, 19 May 1952

Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline will be added to the present survey at the time the verification and inking is completed. Air-photographic surveys T-9639, T-9640 and T-9641 of 1950 cover the area of the present survey.

The source of the signals 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, except in inshore areas where the low-water line was not developed by the regular system of sounding lines because of the low range of tide (0.3 ft.).

The bottom for the most part is smooth. In the inshore area the bottom is characterized by numerous sand ridges paralleling the beach.

4. Junctions with Contemporary Surveys

The present survey junctions adequately with H-7847a and b (1950) on the north. The junction with H-7845 (1950) on the west will be considered in the review of that survey. There is no contemporary survey on the east registered at the present time.

5. Comparison with Prior Surveys

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

6. Comparison with Chart 9380 (Print date 8/6/51)

a. Hydrography

The charted hydrography originates with advance information of the present survey contained in Chart Letter No. 799 (1950). Charted soundings are not materially affected by revisions made during smooth-plotting and preliminary verification.

b. Aids to Navigation

There are no charted aids to navigation in the area of the present survey. No new bottom features dangerous to navigation were revealed by the present survey.

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was very well done.
- c. The preliminary verification of this survey was confined to critical soundings, discrepancies at crossings and junctions, and an inspection for conflicts with topographic detail. Completion of the verification, inking and application of remaining shoreline is deferred until some future date, at which time the inspection of the junctions, curves and shoreline will be completed by the reviewer.


8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.


9. Additional Field Work Recommended

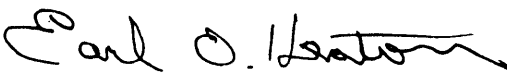
This is an excellent basic survey and no additional field work is recommended. As a matter of record it is noted that adequate development along the beach between long. 167° 33'- and 167° 38', was prevented by weather conditions and the close of the field season.

Examined and approved:

  
H. R. Edmonston  
Chief, Nautical Chart Branch

  
H. Arnold Karo  
Chief, Division of Charts

  
L. S. Hubbard  
Chief, Section of Hydrography

  
Earl O. Heaton  
Chief, Division of Coastal Surveys

Addendum to Review

H-7846 (1950)

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Inked by - C. B. Samuel

Review Addendum by - A. R. Stirni

5/29/56

Inspected by - R. H. Carstens

The verification of this survey is now complete. In accordance with paragraph 1 of the review the shoreline has been added from reviewed air-photographic surveys T-9639 (1950), T-9640 (1950) and T-9641 (1950).

Junctions with Contemporary Surveys

Junctions with H-7847 a & b (1950) on the north and with H-7845 (1950) on the west have been completed. Surveys on the east have not yet been registered.

Comparison with Chart 9380 (Drawing - not dated)

The charted hydrography originates with the present survey after verification and preliminary review. All charted information is in accord with the present survey.

Condition of Survey

Verification of the survey revealed disagreements in depths in the junction between the shoran-controlled work and the inshore sextant-fix work, and unnatural irregularity in inshore curves. Several days of verification time were spent adjusting the inshore ends of the shoran lines, which were controlled by weakly intersecting distance-arcs, to the sextant-fix work in order to effect a better agreement of soundings and a more natural curve pattern. The condition should have been recognized in the Processing Office and would have suggested its solution by plotting the strongly controlled sextant-fix hydrography before plotting the shoran hydrography.

Approved:



Acting Chief, Chart Division



