

7645

Diag. Cht. No. 8864-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PI-2248 Office No. H-7645

LOCALITY

State Alaska - Aleutian Islands

General locality Rat Islands

Locality Kiska Island to McArthur Reef

1948

CHIEF OF PARTY

H. E. Finnegan

LIBRARY & ARCHIVES

DATE 21 SEPT. 1949

7645

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. H-7645

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-7645

Field No. PI-2248

Alaska-
State Aleutian Islands ✓

General locality Rat Islands ✓

Locality Kiska Island to Mc Arthur Reef ✓

Scale 1 : 20,000 ✓ Date of survey 7 June - 21 July 1948 ✓

Instructions dated 3 February 1938, 1 March 1938, 10 February 1948, 8 April 1948

Vessel Ship PIONEER

Chief of party H. E. Fianegan ✓

Surveyed by G.R. Fish, E.B. Lowey, and C.J. Beyma ✓

Soundings taken by fathometer, graphic recorder, ~~XXXXXXXXXXXX~~

Fathograms scaled by H.W.K., E.A.C., J.P.O.

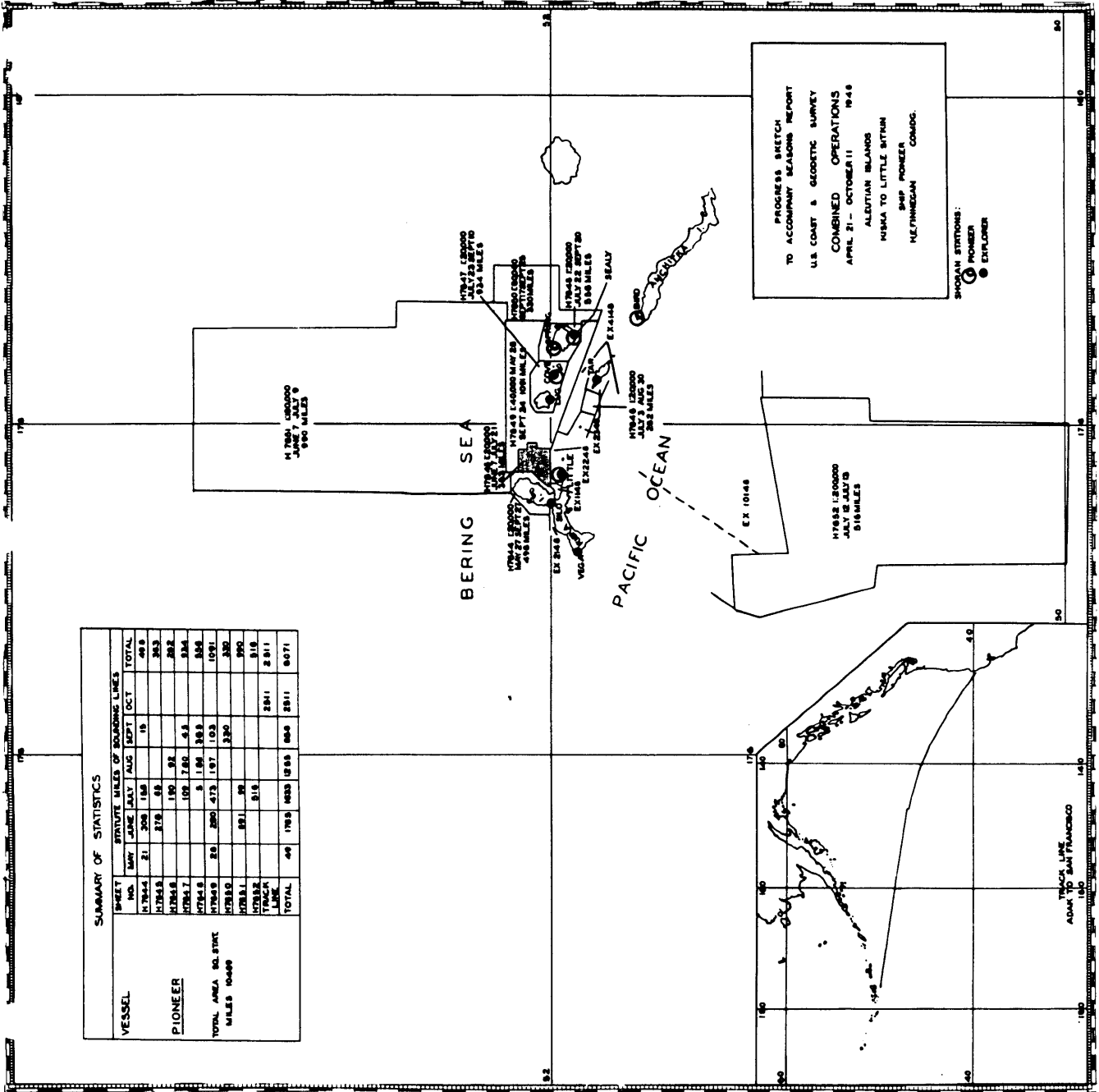
Fathograms checked by S.D.P., & H.W.K.

Protracted by James I. Best

Soundings penciled by James I. Best.

Soundings in fathoms ~~XXXX~~ at ~~XXXX~~ MLLW ✓

REMARKS:
.....
.....
.....
.....
.....



SUMMARY OF STATISTICS

VESSEL	SHEET NO.	STATUTE MILES OF SOUNDING LINES					TOTAL
		MAY	JUNE	JULY	AUG.	SEPT. OCT.	
PIONEER	H7844	21	208	158		15	402
	H7845		278	88			366
	H7846		190	92			282
	H7847		102	780	43		925
	H7848		5	184	363		552
TOTAL AREA SO. BYTC	H7849	28	290	472	187	103	1090
MILES 10-400	H7850		89	28			330
	H7851		81	218			299
	H7852						818
	TOTAL	49	1783	1833	1858	888	2811
							8071

PROGRESS SKETCH
TO ACCOMPANY SEASONS REPORT
U.S. COAST & GEODETIC SURVEY
COMBINED OPERATIONS
APRIL 21 - OCTOBER 11
1948
ALEUTIAN ISLANDS
NUSKA TO LITTLE BITNAN
SHIP PIONEER
HELVINGEAN COMOG.

SHOALS STATIONS:
● PIONEER
● EXPLORER

TRACK LINE
ADAK TO SAN FRANCISCO

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY

H- 7645

(Field No. PI-2248)

Project CS-218

Field Season of 1948

Ship PIONEER Henry E. Finnegan, Chief of Party

Scale 1:20,000

Surveyed by: G.R. Fish
 E.B. Lewey
 C.J. Beyma

A. PROJECT

The work was done in accordance with the following instructions for Project CS-218:

Original Instructions dated 3 February 1938 ✓
Amended Instructions dated 1 March 1938
Supplemental Instructions dated 10 February 1948
Supplemental Instructions dated 8 April 1948

B. SURVEY LIMITS AND DATES

The general locality is the Aleutian Islands. The survey consists of the offshore hydrography between Kiska Island and McArthur Reef north of Latitude 52° 00' N. and south of Latitude 52° 07' N., and McArthur Reef itself. ✓

Field work began on the 7 June 1948 and ended on 21 July 1948.

This survey joins H-7644 ⁽¹⁹⁴⁸⁻⁴⁹⁾ (PI-2148) on the west, H-7649 ⁽¹⁹⁴⁸⁾ (PI-4148) on the north and east, and EX-2248 on the south. (also H-7625 (1947-48) on the south) ✓
(H-7708) (1948)

C. VESSEL AND EQUIPMENT

The hydrography over McArthur Reef and the hydrography west of Longitude 177° 42' E. was done by Launch No. 3, and the rest of the area was done by the Ship PIONEER. ✓

The following sounding equipment was used:

Ship PIONEER - NMC-2 Fathometer No. 117, 808J Recorder No. S-108

Launch No. 3 - 808A Recorder No. S-69, 808J Recorder No. S-129

In general on the PIONEER, the 808J Recorder was used up to approximately 100 fathoms, and the NMC-2 Fathometer for greater depths. However, at times when the 808J was not working properly, the NMC-2 Fathometer was used for all depths. On Launch No. 3 the 808 Recorders were used for the full range. Daily bar checks were taken by the launch. ✓

D. TIDE AND CURRENT STATIONS

Data obtained from the tide gage at Gertrude Cove, Kiska Island, Alaska, were used for the reduction of all soundings. No time or range corrections were applied.

F. CONTROL STATIONS

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

Shoran stations Little and Silo were located directly on the triangulation stations LITTLE 1904 and SILO 1945. Station Tar was located by the Ship EXPLORER. Station Spring was located as described in the Triangulation Report, Ship PIONEER, 1948.

Some of the signals used for hydrographic control were located by planetable, some by sextant cuts, and others by air photographs. All of the signals used for control were plotted on aluminum mounted graphic control survey sheets *Nos. T-7078 and T-7079. A statement as to the method of locating the various signals is included in the descriptive reports accompanying the control sheets. (~~Desc. Reports attached to H-7644 (1948-49)~~)

* subsequently destroyed

H. SOUNDINGS

Depths were obtained by fathometers as described in Paragraph C. All soundings were scanned from the graphs and then verified.

I. CONTROL OF HYDROGRAPHY

Hydrography on "a" day for Launch No. 3, at the western edge of the sheet, was done by visual fixes. The remainder of the launch work was controlled by shoran.

The ship hydrography was controlled by shoran except for the northwest corner of the work, where the shoran stations were blocked by land areas. In this area, visual fixes were used.

J. ADEQUACY OF SURVEY

It is considered that this survey is adequate to supersede prior surveys for charting.

K. CROSSLINES

The crosslines consist of 5% of the total lines run. With respect to the boat sheet the crossings were generally satisfactory.

L. COMPARISON WITH PRIOR SURVEYS * Review, par. 5.

Except as noted under Paragraph M, this survey agrees in general with prior surveys,* and the junction with contemporary surveys is satisfactory.

M. COMPARISON WITH CHARTS

Chart 9155 (May 1944)

The greatest discrepancy between this survey and Chart No. 9155 is in the shape, location and depths over McArthur Reef. The shoal as presently charted extends some 3/10 mile too far to the southeast. The shoalest depth obtained on this reef was 2½ fathoms. It is recommended that no rock awash symbols be used on McArthur Reef, but that sunken rock symbols be used to show positions of the breakers. See last paragraph, Page 3.

The deep trench running north and south about 0.8 mile west of McArthur Reef does not agree well with this survey, nor do other soundings near and around McArthur Reef agree. The present survey is considered adequate and should supersede the soundings as charted. ✓ Review, par. 5.

* The charted sounding of 34 fathoms at Latitude $52^{\circ} 03.08'$ N. Longitude $177^{\circ} 40.90'$ E. was not found. A fairly even bottom of approximately 50 fathoms was found in this area. It is recommended that this sounding be deleted. ✓

* The charted sounding of 145 fathoms at Latitude $52^{\circ} 02.45'$ N. Longitude $177^{\circ} 43.0'$ E. was not found. Depths of 70 to 80 fathoms were found in this area. It is recommended that this sounding be deleted. ✓

* The charted sounding of 150 fathoms at Latitude $52^{\circ} 01.91'$ N. Longitude $177^{\circ} 43.04'$ E. was not found. Depths of approximately 106 fathoms were found in this area. It is recommended that this sounding be deleted. ✓

* The charted sounding of 58 fathoms at Latitude $52^{\circ} 04.27'$ N. Longitude $177^{\circ} 47.28'$ E. was not found. Soundings of 64 fathoms were found in this area. Due to the even nature of the bottom it is thought that this sounding is out of position and recommended that it be deleted. ✓

* The 57 fathom sounding charted at Latitude $52^{\circ} 04.4'$ N. Longitude $177^{\circ} 48.52'$ E. was not found. Surrounding depths of 61 to 71 fathoms were found. It is recommended that this sounding be deleted. ✓

* The charted sounding of 55 fathoms at Latitude $52^{\circ} 00.56'$ N. Longitude $177^{\circ} 44.25'$ E. was not found. Soundings of 62 to 74 fathoms were found in this area. It is recommended that this sounding be deleted. ✓

* The charted sounding of 34 fathoms at Latitude $52^{\circ} 00.0'$ N. Longitude $177^{\circ} 42.58'$ E. was not found. The high point of this shoal area lies within the limits of the EXPLORER'S sheet EX-2248. (H-7708, 1948) *least depth of 36 fms.* ✓

All the above latitudes and longitudes are on the NA 1927 datum and not the datum of Chart 9155.

* Review, par. 5.

N. DANGERS AND SHOALS

McArthur Reef - Latitude $52^{\circ} 03.7'$ N. Longitude $177^{\circ} 52.3'$ E.

The least depth by fathometer was $2\frac{1}{2}$ ^{*Smooth sheet*} fathoms obtained on the first sounding after position 31 "b" of Launch No. 3. The shoalest sounding obtained by hand lead was 5 fathoms obtained 2 soundings after position 101 "b" by Launch No. 3. The reef is approximately 0.8 mile in diameter and is marked by heavy kelp and slicks. ✓

On June 22, 1948, the ship proceeded to McArthur Reef for the express purpose of observing the reef at a minus tide and to locate any rocks which might be visible. The Commanding Officer and the Officer of the Watch observed the reef carefully with binoculars from 1130 to 1200 from the east and southwest sides, at a distance of $\frac{1}{2}$ to $\frac{3}{4}$ mile, and determined that no rocks are visible, even at one foot minus tide. ✓

From 1400 to 1430 on the 22 of June, gyro bearings were taken to intermittent breakers on the reef. There appeared to be two general areas of breakers but no definite or fixed points in these areas. Therefore the bearings are somewhat scattered over these areas. There was a moderate NNE'ly swell with a gentle to moderate NNW'ly breeze during the period of the observations. ✓

Information on the above reef was reported in a letter to The DIRECTOR dated 27 October 1948. (A copy of the letter is included with this report.) ✓
(1.648(1948))

O. COAST PILOT INFORMATION

See the special report on Coast Pilot Notes submitted 3 December, 1948.

Q. LANDMARKS FOR CHARTS

See the special report on Landmarks for Charts submitted 15 February 1949. (C.L. 160, 1949) ✓

R. GEOGRAPHIC NAMES

There are no new geographic names in the area covered by this survey. ✓

U. VELOCITY CORRECTIONS

An abstract (2 pages) of Velocity Corrections applied to echo soundings is included as a separate entry in this report. Also included are the Initial and Phase Corrections of the Ship PIONEER and the Phase Corrections of Launch No. 3. For the determination of the above data see the special report "REPORT ON FATHOMETER AND VELOCITY CORRECTIONS" for the Ship PIONEER, 1948. (filed with records of present survey) ✓

V. SHORAN

An abstract of Shoran Zero Settings is included in this report. For determination of these values see the special report "REPORT ON DETERMINATION OF SHORAN ZERO SETTINGS" for 1948 records. ✓

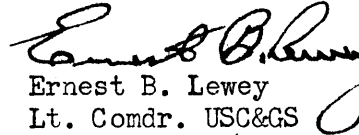
W. MISCELLANEOUS

The following data ^{is} included in this report:

- Title Sheet
- Index of Sheets
- Tide Note
- List of Stations
- Letter to The DIRECTOR dated 27 October, 1948 ^{648 (1948)}
- Subject: Dangers to Navigation


- Velocity Corrections (2 pages)
- Initial and Phase Corrections Ship PIONEER
- Phase Corrections Launch No. 3
- Shoran Zero Settings
- Abstract of Statistics

Submitted by:


Ernest B. Lewey
Lt. Comdr. USC&GS


Hubert W. Keith Jr.
Ensign, US&GS

Approved and forwarded:


Henry E. Finnegan
Comdr. USC&GS
Comdg. Ship PIONEER

MEMORANDUM TO SEATTLE PROCESSING OFFICE LISTING OFFICE WORK
ON SURVEY H-7645 (PI-2248)

Office Work done by personnel of Ship PIONEER:

1. Fathograms scanned and verified.
2. Tidal Reducers entered and checked.
3. Velocity Corrections entered and checked.
4. Initial Corrections entered and checked.
5. Phase Corrections entered and checked.
6. Shoran Corrections entered and checked.
7. Shoran Distances corrected and checked.
8. Hydrographic Title Sheet (Form 537) (partially complete).
9. Descriptive Report.
10. Following data submitted to accompany final Descriptive Report:
 - a. Index of Sheets.
 - b. Tide Note.
 - c. List of Stations.
 - d. Copy of Letter to Director, "Dangers to Navigation".
 - e. Abstracts of Velocity Corrections.
 - f. Abstracts of Initial and Phase Corrections for fathometers.
 - g. Abstract of Shoran Zero Settings.
 - h. Abstract of Statistics.
 - i. Approval Sheet by Chief of Party.

Office Work remaining to be done by Processing Office:

1. Reduction and checking of soundings in Sounding Records.
 2. Construction and inking of smooth-sheet projection, the plotting and inking of control stations, and the drawing of Shoran Distance Circles.
 3. Plotting the positions, Visual and Shoran.
 4. Penciling the soundings.
 5. Drawing the depth curves in pencil.
 6. Completion of the Title Sheet (Form 537).
 7. Additions to Descriptive Report (if required).
- E. C. B. d.*

LIST OF STATIONS - H-7645 - 1948

<u>Name used in Hydro - Station</u>	<u>Origin of Station</u>	
AGE	AGE (USE) 1943 - 1945	
ANT	T - 7078	
CHUTE	Chute - 1904, 1945	
CLIMB	Climb, 1904, 1935	
COB	T-7078	
DUD	T-7078	
GAL	T-7079	<i>graphic control surveys T-7077, 78 & 79 (1948) subsequently destroyed</i>
HAY	Haycock - 1948	
HOE	T-7078	
JOY	T-7078	
* LITTLE	Little - 1904	
NOR	Northeast Rock - 1948	
OIL	T-7079	
PEN	Pen - 1948	
* SILO	Silo - 1945	
SIR	T-7077 & T-7078	
* SPRING	Spring - 1948	
* TAR	Tar - 1948	
TUB	T - 7079	
* shoran station		

Same as letter in
these reports H. 7644

Ship PIONEER
P. O. Box 2039
Oakland, California

Chart letter
648 (1948)

27 October 1948

To: The DIRECTOR
U. S. Coast and Geodetic Survey
Washington 25, D.C.

Subject: Dangers to Navigation

In addition to dangers reported in letter of 20 August 1948, the following principal dangers and shoals are reported. They were discovered by the past season's surveys in the Rat Islands, Aleutian Island Project CS - 218.

Depth (fathoms)	Latitude (North)	Longitude (East)	N. A. Datum - 1927		Reference landmark and Remarks
			Dist. (N.Mi.)	Bearing (True)	
¹⁴ 3.0	51-59.55	178-17.55	0.35	38	N. end Khvostof Island
⁶ 6.5	51-58.98	178-19.46	0.87	18	N. end Pyramid Island
2.5	51-58.80	178-18.90	0.63	353	N. end Pyramid Island
¹¹ 9.0	51-58.11	178-22.42	0.35	40	E. end Davidof Island
^{2x} 4.2	51-58.68	178-15.60	0.33	228	W. end Khvostof Island
Rock Awash	51-58.80	178-26.72	0.13	322	Tip of peninsula, S. of William Cove, N.W. side of Little Sitkin Island. (See Chart 8246 8844)
11.0	52-00.47	178-29.69	0.80	344	Islet, N.E. of Williams Cove, N. end Little Sitkin Island.
¹ 2.5	52-03.70	177-52.30	7.60	26	Center Tanadak Island. (Shoal- est spot McArthur Reef.)
²³ 3.0	52-04.42	177-30.82	1.63	23	Witchcraft Point, ^{Supposed to be} _{49 hand lead}

N.A. Datum - 1927

<u>Depth</u> (fathoms)	<u>Latitude</u> (North)	<u>Longitude</u> (East)	<u>Dist.</u> (N.Mi.)	<u>Bearing</u> (True)	<u>Reference landmark</u> <u>and Remarks</u>
5.0 5.0	52-04. ⁷⁰ 79	177-29-76	1.80	00	Witchcraft Point. (Shoalest depth obtained in extensive shoal area extending approx. 2 miles NNW of Witchcraft Pt. Very thick kelp and tide rips in this area.) <i>See L.S. 76 (49) mag. not verified least depth in area is 6.8 fms (hand lead)</i>
6.0	52-00.52	177-27.83	2.68	206	Witchcraft Point
6.8 ⁰			0.10	170 180	Above 6 fm. spot
10.0	52-01.00	177-29.05	1.96	194	Witchcraft Point
5.4 6.0	52-01.10	177-29.52	1.81	185	Witchcraft Point
2.0	52-00.10	177-36.12	2.08	321	Little Kiaka Head

From further investigation in the eastern part of the pass between Sea Lion Rock and Rat Island, the following dangers are reported:

2.0	51-50.12	178-06.85	5.62	119.7	Sea Lion Rock
0.8	51-50.08	178-11.75	8.41	109.5	Sea Lion Rock <i>Not on Recounts 9180 23 fms on H 7646</i>

The following charts are effected:

9124, 9155, 9180, 8864, 9102.


Henry E. Finnegan
Commanding Ship PIONEER
By George A. Nelson
Executive Officer

APPROVAL SHEET TO ACCOMPANY

SURVEY H-7645 PI-2²48

The field work was supervised closely and the boat sheet was inspected after each days work.

The records have been inspected and have been approved.


Henry E. Finnegan
Comdr. USC&GS
Comdg. Ship PIONEER

23 February 1949

H 7645
Pi 2248
Kiska Island to McArthur Reef.

Processing Office Notes.

Projection

The projection is hand-made. The shoran distance circles were controlled by points computed along two radii from each shoran station, at distances which were multiples of one statute mile. These points were plotted on the sheet. The distances along the radii were then subdivided into statute mile intervals. The circles were swung thru these points. ✓

McArthur Reef. (Breakers shown on smooth sheet by sunken rock symbols) The breakers at the tips of arrows on the smooth sheet were noted by the launch party. Many cuts to breakers observed from the PIONEER on "D" day were plotted on an overlay tracing which is attached to the smooth sheet. (subsequently destroyed) ✓

Position 94 A.

Positions 92 and 93 A are each plotted on one shoran distance. Positions 89 to 91 were plotted from two returns. If this course were continued it would pass 0.2 mile to eastward of pos. 94A as plotted from the three point fix. On the boat sheet the line swung in a reverse curve from 91 A to 94 A and it has been similarly plotted on the smooth sheet. ✓

Similarly, on the southbound course positions 97 to 101A are visual. Positions, 102, 103, and 104 A are shoran points and the general position of this part of the line is about 200 meters east of the line plotted from visual fixes. It is not unusual to find discrepancies between shoran and visual fixes for which we cannot account. When they occur a decision has to be made between them. } Concur with decision made ✓

Edgar E. Smith

Edgar E. Smith
Capt. Engr.

Seattle Processing Office.
9/12/49

H 7645
Pi 2248

Kiska Island to McArthur Reef

List of geographic names
penciled on smooth sheet.

Bering Sea

Kiska Island

McArthur Reef

McArthur Pass

STATISTICS FOR HYDROGRAPHIC SURVEY - H-7645 (1948)

Ship - PIONEER Project CS - 218

Ship - PIONEER

<u>Day</u>	<u>Vol. No.</u>	<u>Date</u>	<u>No. Positions</u>	<u>No. St. Mi.</u>
A	1	7 June	110	46.0
B	1&2	16 June	266	94.7
C	2	17 June	142	50.3
D	2	22 June	36	----
E	2	28 June	23	5.0
F	2	7 July	40	12.2
G	2&3	21 July	222	59.3
			<u>839</u>	

Launch No. 3

a	4	15 June	61	23.0
b	4	17 June	106	24.7
c	4&5	21 June	112	34.8
d	5	21 July	47	13.0
			<u>326</u>	
			1165	

SHEET TOTALS: No. of Positions..... 1165
 Statue Miles..... 363.0
 Square Statue Miles..... 58.0

copy v 36R

TIDE NOTE

Project CS - 218

Ship PIONEER

Field Season of 1948

The tide gage at Gertrude Cove, Kiska Island, Aleutian Islands, Alaska, Latitude $51^{\circ}56.2'$ North and Longitude $177^{\circ}27.5'$ East was used for the reduction of all soundings.

A height of 4.4 feet on the tide staff corresponds to mean lower low water (The Director's letter, 36-tmo, dated 31 August 1948 to the Commanding Officer, Ship EXPLORER). No corrections for differences in time or height were applied to the observed tides.

Hourly heights were obtained from the Ship EXPLORER, except for the following periods: August 25-31 and September 24-27, which were obtained from the Washington Office.

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

31 October 1949

~~Division of Hydrography and Topography~~

Division of Charts: R. H. Carstens

Plane of reference approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 7645

Locality Rat Islands, Aleutian Islands

Chief of Party: H. E. Finnegan in 1948
Plane of reference is mean lower low water, reading
4.4 ft. on tide staff at Gertrude Cove
7.3 ft. below B. M. 2 (1947)

Height of mean high water above plane of reference is 3.2 feet.

Condition of records satisfactory except as noted below:

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

GEOGRAPHIC NAMES

Survey No. H-7645

Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>			(for title)								1
<u>Aleutian Islands</u>			" "								2
<u>Rat Islands</u>			" "						USGB		3
<u>Bering Sea</u>									"		4
<u>Kiska Island</u>									USGB		5
<u>Little Kiska Island</u>									"		6
<u>McArthur Pass</u>											7
<u>McArthur Reef</u>									USGB		8
											9
											10
											11
											12
											13
<u>Gertrude Cove</u>			(location of tide gage)								14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names underlined in red are approved. 11-9-49 L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7645...

Records accompanying survey:

Boat sheets ¹.....; sounding vols. 5.....; wire drag vols.;
 bomb vols.; graphic recorder rolls ¹envel.
 special reports, etc.

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

Number of positions on sheet		..1165..
Number of positions checked		...182
Number of positions revised	18
Number of soundings revised (refers to depth only)		...127
Number of soundings erroneously spaced		...142
Number of signals erroneously plotted or transferred	0
Topographic details	Time20
Junctions	Time8
Verification of soundings from graphic record	Time15
Verification by <i>William Klein</i>	4	5-4-50
Verification by <i>William Klein</i>	Total time	...158.. Date 4-25-50
Reviewed by <i>J.A. Drummond</i>	Time	26 Date 15 Sept. 1950

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7645

FIELD NO. PI-2248

Alaska-Aleutian Islands, Rat Islands, Kiska Island to McArthur
Reef
Surveyed in June - July 1948 Scale 1:20,000
Project No. CS-218

Soundings:

NMC-2 Fathometer
808 Fathometer

Control:

Shoran
Sextant fixes on shore signals

Chief of Party - H. E. Finnegan
Surveyed by - G. R. Fish, E. B. Lewey and C. J. Beyma
Protracted by - J. I. Best
Soundings plotted by - J. I. Best
Verified and inked by - W. Klein
Reviewed by - T. A. Dinsmore, 15 September 1950
Inspected by - R. H. Carstens

1. Shoreline and Signals

No shoreline is shown on this offshore survey.

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

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated. Several supplementary depth curves between 50-and 100-fms. have been added to aid in defining more clearly the configuration of the bottom.

The present survey covers McArthur Pass which lies between Kiska Island and McArthur Reef. The reef and the submarine canyon which heads immediately northwest of the reef are the most conspicuous features in the area. The prominent

depression delineated by the 100-fm. depth curve in lat. 52° 01.7', long. 177° 44.5', together with minor irregularities elsewhere in the area contribute to the unevenness of the bottom.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7649 (1948) on the north and east, H-7625 (1947-48) and H-7708 (1948) on the south and H-7644 (1948-49) on the west.

5. Comparison with Prior Surveys

a. H-2701 (1904) 1:20,000

This prior survey covers all but the extreme north and eastern portions of the present survey. Except where steep slopes occur, no appreciable differences were found between the prior and present depths. Differences on slopes are attributed to slight inaccuracies in positions of the prior soundings.

b. H-6900 (1935) 1:30,000 H-6902 (1935) 1:60,000

These reconnaissance surveys by the U. S. Navy cover the area of the present survey. Appreciable differences are found between prior and present depths in several localities. In the vicinity of McArthur Reef, the following differences are noted:

<u>Prior Depths(fms.)</u> (Charted)	<u>Latitude</u> (N.A. 1927 Datum)	<u>Longitude</u> (N.A. 1927 Datum)	<u>Present Depth</u> (fms.)
Rock awash	52° 03.30'	177° 52.35'	20
10	52° 03.38'	177° 52.70'	20
9	52° 03.23'	177° 52.40'	40
7	52° 03.13'	177° 52.45'	70
4½	52° 03.02'	177° 52.70'	100

About a mile west of McArthur Reef, a prior line of soundings running north and south with depths ranging from 112-152 fms. (charted) falls in present depths of 70-80 fms.

Because of the dead-reckoning control of the prior surveys, the prior soundings are considered to be displaced in position. In most instances, a shift of a few hundred meters in the prior soundings would effect agreement with present depths. In connection with the prior rock awash, present development together with close observation of the reef during a one-foot minus tide determined that no rocks were visible or awash. The least depth obtained

on the present survey was 2.1 fms. Breakers cut-in at several locations on the present survey are indicated by sunken rock symbols.

The 150-fm. sounding charted in lat. $52^{\circ} 02.02'$, long. $177^{\circ} 42.80'$, from H-6900 falls in present depths of 106 fms. Other prior soundings in the vicinity are correspondingly deeper than present depths. The prior soundings are considered to be inaccurate in depth probably because of faulty fathometer operation. In the depression in which the above sounding falls, prior leadline soundings on H-2701 (1904) are in excellent agreement with present depths.

The 34-fm. sounding charted in lat. $52^{\circ} 03.20'$, long. $177^{\circ} 40.75'$, from H-6900 falls in depths of 50-54 fms. on both the prior and present surveys. The unsupported 34-fm. sounding was probably recorded in error and should be disregarded.

Except where otherwise noted, the positions of charted soundings are referred to the chart (Kiska) datum.

Several bottom characteristics have been retained from the prior surveys. With these additions, the present survey is adequate to supersede the prior surveys within the common area.

6. Comparison with Chart 9155 (Latest print date 5/5/44)

A. Hydrography

Charted hydrography originates with the prior surveys which need no further consideration. The present survey supersedes the charted information.

B. Aids to Navigation

No aids to navigation are charted within the limits of the present survey.

7. Condition of Survey


- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was satisfactory.


8. Compliance with Project Instructions

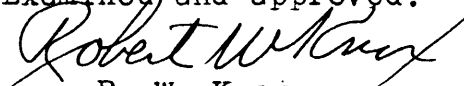
The survey adequately complies with the Project Instructions.


9. Additional Field Work

The survey is considered basic for the area covered. As a matter of record, additional split lines between widely spaced lines in the immediate vicinity of McArthur Reef would aid in defining more completely the configuration and extent of the reef.


H. R. Edmonston
Chief, Nautical Chart Branch


L. S. Hubbard
Chief, Section of Hydrography

Examined and approved:

R. W. Knox
Chief, Division of Charts


W. M. Scaife
Chief, Division of Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7645

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
8/29/50	9102	<i>JHE</i>	<i>Verified only</i> Before After Verification and Review
11/1/50	9180	<i>S.A.M.</i>	Before <u>After</u> Verification and Review <i>Partially applied.</i>
11/6/50	9155	<i>S.A.M.</i>	Before <u>After</u> Verification and Review <i>Partially applied. (Sdg-5 fm. extend curve)</i>
8/18/57	9124	<i>G. Pisgari</i>	Before After Verification and Review <i>Part appld.</i>
9-29-54	<i>Reconstn</i> 9124	<i>Chas R. Wittman</i>	Before After Verification and Review <i>(fully)</i>
July 1955	<i>Reconstn.</i> 9180	<i>C.R.W.</i>	Before After Verification and Review <i>gma</i>
MAY 22, 57	9102	<i>Wittman</i>	Before After Verification and Review <i>Ver. via reconstn. chart 9180 371a</i>
11/16/61	8864	<i>JHE</i>	Before After Verification and Review
			Before After Verification and Review
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			Before After Verification and Review

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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.