

8156

Diag. Cht, No. 8700

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. SU-2154 Office No. H-8156

LOCALITY

State Alaska - Shumagin Islands

General locality Unga Island

Locality Zachary Bay

194 54

CHIEF OF PARTY

Frank G. Johnson, CDR., USC&GS

LIBRARY & ARCHIVES

DATE May 4, 1955

B-1870-1 (1)

8156

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-8156

Field No. SU-2154

State Alaska - Shumagin Islands

General locality Unga Shumagin Islands

Locality Zachary Bay

Scale 1:20,000 Date of survey May - July 1954

Instructions dated 25 January 1954 & 24 Feb. 1954

Vessel Launches 1 & 3 - & Ship SURVEYOR

Chief of party Frank G. Johnson

Surveyed by Omar H. Quade

Soundings taken by ~~fathometer~~ graphic recorder, ~~double exposure~~

Fathograms scaled by OHQ - WFG<sup>F</sup> Glover

Fathograms checked by WFG - OHQ Quade

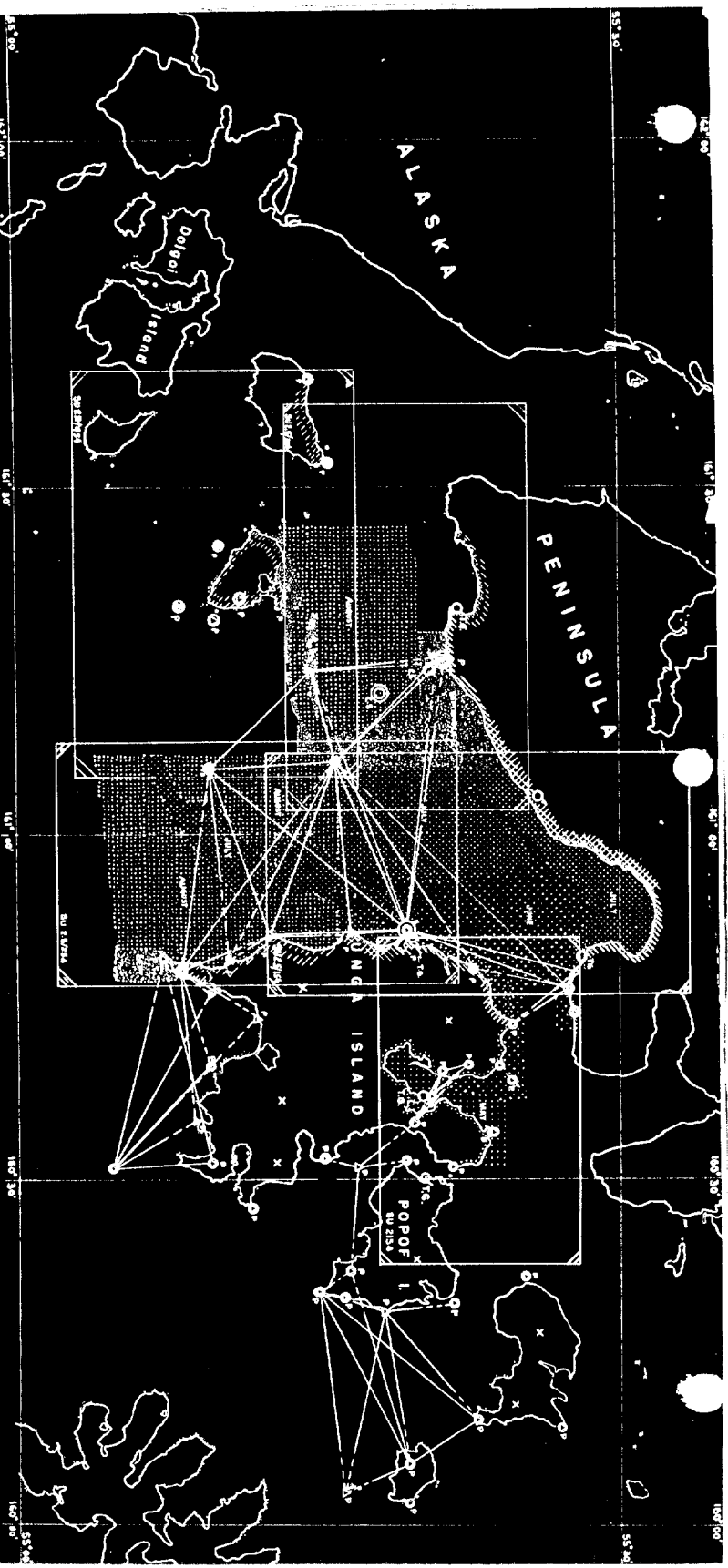
Protracted by WFG

Soundings penciled by WFG

Soundings in fathoms <sup>and</sup> ~~feet~~ at MLW MLLW and are based on a

REMARKS: velocity of 800 fms./sec.

*Handwritten mark*



**LEGEND**

- HYDROGRAPHY**  
 Area surveyed  
 Signal Buildings & Photo-Hydro  
 Tide Gage  
 Current Station
- TOPOGRAPHY**  
 Shoreline Inspection  
 Control Station Photo Identification
- TRIANGULATION**  
 Recovered Station  
 New Station  
 Observed Line, one direction  
 Elevation
- Other Symbols:**  
 Magnetic Station  
 Sheran Station

**U. S. COAST & GEODETIC SURVEY**  
**R. F. A. STUDDS, DIRECTOR**  
**PROGRESS SKETCH**  
**COMBINED OPERATIONS**  
**SOUTH SIDE OF ALASKA PENINSULA**

PROJECT CS-344  
 9 MAY - 25 SEPTEMBER 1954  
 U.S.C.G.S. SURVEYOR - F. E. JOHNSON, COMD.  
 SCALE OF CHART 8853

DESCRIPTIVE REPORT to Accompany HYDROGRAPHIC SURVEY H-8156  
(Field No. SU-2154)

Project CS-344  
Scale: 1:20,000

USC&GS Ship SURVEYOR  
F. G. Johnson, Chief of Party

A. PROJECT AND INSTRUCTIONS -

The work covered in this report is a part of Project CS-344. Original instructions and an amendment to the instructions are addressed and dated as follows:

To:	Date:
Commanding Officer - Ship SURVEYOR	25 January 1954
Commanding Officer - Ship SURVEYOR	24 February 1954

B. SURVEY LIMITS AND DATES -

Work on this project was begun 9 May 1954; and was completed 8 July 1954. In addition, two splits were run on 22 September 1954.

This survey is joined on the north and east by surveys executed in the 1953 field season, and on the west by a survey executed in the 1954 field season. It joins survey H-8047, scale 1:20,000, on the north and east, and survey H-8157, scale 1:25,000, on the west. It supersedes survey H-3574, scale 1:20,000 (1913), of this area which is inadequate for modern surveys. *2H-8048 (1953) on East, south of Cape Aliaksia*

C. VESSELS AND EQUIPMENT -

The entire area covered by this report was surveyed with Launch No. 1 operating from a shore camp located at Lat 55-20.3 Long 160-35.7 during the period 9 May 1954 to 18 July 1954. From 19 June 1954 to 8 July 1954 Launch No. 1 operated from the SURVEYOR. The value of the turning radius of this vessel is not essential as no soundings were recorded on turns.

The 808 type fathometer was used in the entirety of this survey. Two such fathometers were used; their registry numbers being 158SPX and 137SP. Soundings were taken in feet and fathoms and on the "A" Scale only.

Two splits were run 22 September 1954 by Launch No. 3 operating from the ship. The 808 type fathometer No. 47S was used for these splits.

(H-8157) Op J 1944-47  
(Sheet not in W.O.)  
1-25-57 Aug

#### D. TIDE STATION -

All soundings on this survey were reduced to mean lower low water using data obtained from portable tide gages at Zachary Bay, Shumagin I., Lat 55-20.1 Long 160-37.0, and at <sup>\*not on</sup> Beaver Bay, Alaska <sup>H-8156</sup> Peninsula - South Side, Lat 55-28.4 Long 160-50.4.\* The Beaver Bay gage was used 8 July 1954 after the removal of the Zachary Bay tide gage. Two splits run 22 September 1954 off Unga Spit Light were reduced to mean lower low water using inferred tide data from the Coal Bay portable tide gage Lat 55-21.9 Long 161-19.5\*. The data were used without correction for time and height.

The tide gages at Zachary Bay, Beaver Bay, and Coal Bay were used interchangeably in accordance with the Acting Director's letters 36-rjb dated 1 September 1954 and 36-9-982s dated 27 October 1954.

#### E. SMOOTH SHEET -

The smooth sheet projection was made at the Washington Office <sup>TP-1 Review</sup> presumably by ruling machine. The topographic detail was transferred to the smooth sheet by the Seattle Processing Office. Transfer of shoreline and topographic detail were made in accordance with paragraph 757 of the Hydrographic Manual.

#### F. CONTROL STATIONS -

The positions of the triangulation stations used for control on this sheet were obtained from the List of Geographic Positions of Triangulation Stations, Anchorage to Attu Island, Alaska, Volume 5.

The triangulation upon which this survey was based were those established in 1913-1914 by J. B. Miller, and in 1953 and 1954 by this party.

Two new stations, Round 2, 1954 and Un 2, 1954 were established.

Two marked topographic stations were established by photogrammetric methods. Reference is made to the Photogrammetric Report, 1954. <sup>(Bak and Able)</sup>

The Photo-Hydro signals were located by photogrammetric methods, four of which were re-located by cuts from hydrographic stations and triangulation stations.

Station Par, Lat 55-19.58 Long 160-40.08, was located by a sextant 3 point fix at the station.

Station Wit, Lat <sup>(Hydro)</sup> 55-27.45 Long 160-44.43 was not <sup>(Hydro)</sup> located in the photogrammetric manuscripts. Two cuts from station Fed, Lat 55-24.60 Long 160-43.65 were measured and station Wit assumed to be at the intersection of the cut and the high water line. Additional cut from

station Hid was rejected. There were no apparent displacements in hydrographic positions as a result of this location.

#### G. SHORELINE AND TOPOGRAPHY -

The shoreline and topographic details for the Smooth Sheet were obtained from photogrammetric manuscripts No. T-11106, T-11107, T-11110 and T-11111. *of 1952-53,*

#### H. SOUNDINGS -

All soundings were taken with Model 808 J Depth Recorders equipped with tachometer reeds calibrated at 800 fathoms per second. Standard methods were followed to obtain initial, index, phase, and tide corrections. Refer to the Fathometer Report, Ship SURVEYOR, 1954. *in Library*

#### I. CONTROL OF HYDROGRAPHY -

Standard methods for the control of visual hydrography were used. No unusual methods were used nor were any horizontal adjustments made.

#### J. ADEQUACY OF SURVEY -

This survey is complete and adequate to supersede prior surveys for charting.

The junctions with adjoining surveys are satisfactory. All depth curves can be adequately drawn.

There were no non-standard depth curves used.

#### K. CROSSLINES -

Approximately 9 per cent of the lines run were crosslines. An examination of the Smooth Sheet shows that all crosslines are satisfactory and fall within the requirements of Paragraphs 3571 and 7771 of the Hydrographic Manual.

The discrepancies at the crosslines vary not more than 2 per cent at the total depth.

#### L. COMPARISON WITH PRIOR SURVEYS -

Comparison with prior survey #3574, (1913) scale 1:20,000, indicates generally good agreements. A few areas where the depth is ten fathoms and over, the old survey shows depths which are up to two fathoms greater. These discrepancies can be attributed to the use of hand lead and a possible southward displacement of the lines. The

*Review  
7P56*

9.0 fathom shoal, Lat 55-22.55 Long 160-36.49, indicated on this sheet agrees exactly with the prior survey. The 5.6 fathom shoal at Lat 55-23.15 Long 160-35.02 is shown as a 5 2/6 fathom shoal on the prior survey. There is a discrepancy of 0.4 fathoms on the 2.9 fathom shoal Lat 55-21.12 Long 160-37.20, the shoaler depth being on this survey.

M. COMPARISON WITH CHART -

Comparison with charts 8700 and 8859 is satisfactory with the exception of the 2.9 fathom shoal mentioned in Section L. of this report. *TP.6 Review*

N. DANGERS AND SHOALS -

There were no new dangers or shoals found with this survey. A comparison to the shoals found by previous surveys is discussed in section L. of this report

O. COAST PILOT INFORMATION -

Reference is made to the Coast Pilot Notes, Ship SURVEYOR, 1954.

P. AIDS TO NAVIGATION -

The Unga Spit Light, Lat 55-24.5 N Long 160-43.4 W is within the area covered by this sheet but was located during the previous years work.

There are no ferry routes, bridges, submarine cables, telephone or telegraph lines in this area.

Q. LANDMARKS FOR CHARTS -

No new landmarks are suggested for this area; however, it is advised that the buildings at Lat 55-20.7 Long 160-39.3 and the name "Coal Harbor" be expunged from charts 8700 and 8859.

R. GEOGRAPHIC NAMES -

No new geographic names appear on this sheet.

S. SILTED AREAS -

No silted areas were noted on the fathograms.

T. BY-PRODUCT INFORMATION -

None

U.-Y. MISCELLANEOUS -

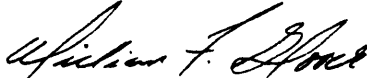
Green ink was used as the day letter color on the boat sheet, but since this project was executed almost entirely by one vessel, the color was changed to violet on the smooth sheet so that the day letters would be more legible and better photo reproduction would be possible.

Z. TABULATION OF APPLICABLE DATA -

The following items have been forwarded to the Washington Office:

Smooth Sheet SU-2154  
Sounding Volumes (14)  
Fathograms  
Fathometer Report  
Coast Pilot Notes  
Landmarks for Charts  
Photogrammetry Report

Respectfully Submitted

  
WILLIAM F. GLOVER  
Ensign, USC&GS



STATISTICS FOR HYDROGRAPHIC SURVEY SU-2154

<u>Day</u>	<u>Number of Positions</u>	<u>Statute Mi. of Sdgs.</u>
a	165	37.7
b	129	26.1
c	163	36.4
d	185	39.0
e	171	26.0
f	45	5.9
g	68	10.4
h	141	25.8
j	140	28.2
k	91	13.6
l	167	31.2
m	2	- -
n	95	20.2
p	145	25.2
q	154	31.1
r	225	40.9
s	41	7.0
t	173	27.2
u	186	32.2
v	166	23.0
w	185	22.6
x	144	19.1
y	179	25.6
z	3	0.3
aa	116	15.5
ba	49	5.5
ca	181	36.1
da	158	31.0
ea	137	22.4
fa	91	18.9
ga	46	7.7
a	<u>9</u>	<u>1.2</u>
TOTAL	3950	693.1

*data*

HYDRO SIGNALS  
H-8156

<u>Name</u>	<u>Method of Location</u>
Able - Able 1954 (Topo)	Radial plot
Ace	Photo point
Act	Photo point
ALIK, 1913	Triangulation
Bag	Photo point
Bake - Bake 1954 (Topo)	Photo point
Bat	Photo point
Bob	Radial plot
Bon	Photo point
Cab	Photo point
Cam	Photo point
Cap	Photo point
Car	Photo point
Cat	Photo point
COT - COT 2, 1953	Triangulation
Day	Photo Point
Daw	Photo point
Deb	Radial plot
Doc	Photo point
Ear	Photo point
Eat	Photo point
Eel <i>Tripod</i>	Radial plot
Fal	Radial plot
Fed	3 Point fix and cuts Vol 4, p. 2
Fun	Photo point
Gad	Photo point
Gag	Photo point
Gal	Radial plot
Gus	Radial plot
GULL 2, 1953	Triangulation
Hag	Photo point
Hat	Photo point
Hex	Radial plot
Hid <i>Tripod</i>	Radial plot
Ice	Photo point
Ida <i>Tripod</i>	Radial plot
Ike	Radial plot
Irk	Photo point
Jap	Photo point
Jar	Photo point
Jay	Radial plot
Ked	Photo point
Ken	Photo point
Key	Photo point

HYDRO SIGNALS  
(Cont.)  
H-8156

<u>Name</u>	<u>Method of Location</u>
Lam	Photo point
Lax	Radial plot
Leg	Photo point
Log	Photo point
Mag	Radial plot
Man	Topo feature from T-11111
Mar	Photo point
Mug	Photo point
Nat	Photo point
Nut	Sextant fix Vol 1. page 2
Oak	Radial plot
Odd	Radial plot
Oil	Photo point
Pad	Photo point
Par	Sextant fix
Peg	1953 signal
Pot	Radial plot
Quo	Detail point office I.D.
Rag	Photo point
Ram	Radial plot
Roc	1953 signal
ROCK - Rock off Cape Aliakson, 1913 - 1953	Triangulation
ROUND - ROUND 2, 1954	Triangulation
Rut	1953 signal
Sad	Photo point
Sag	Radial plot
SPIT - 1953 - UNGA SPIT LT 2	Triangulation
Tan	Photo point
UN - UN 2, 1954	Triangulation
Use	Photo point
Val	Photo point
Vet	Radial plot
Wag	Radial plot
Wet	1953 signal
Wit	Sextant cuts
Yak	Photo point
Yam	Radial plot
ZACHARY 1913 - 1954	Triangulation

GEOGRAPHIC NAMES

Survey No. H-8156

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>			(for title)								1
<u>Amunagin Islands</u>			"	"					BG	N	2
<u>Zachary Bay</u>			"	"							3
											4
<u>Cape Aliaksia</u>											5
<u>Unga Strait</u>											6
<u>Unga Spit</u>											7
<u>Unga Island</u>											8
<u>Quartz Point</u>											9
<u>Coal Harbor</u>											10
<u>Round Island</u>											11
<u>North Head</u>											12
<u>West Head</u>											13
											14
											15
											16
<u>Beaver Bay</u>			(tide station off sheet)								17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names approved 5-11-55  
L. Heck

See chart 8700 for best placement of names.

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. .8156....

Records accompanying survey:

Boat sheets ..1..; sounding vols. .14...; wire drag vols. ....;  
 bomb vols. ....; graphic recorder rolls .16.enr.  
 special reports, etc. 1. Smooth sheet.....  
 .....

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

Number of positions on sheet	.....	3950
Number of positions checked	.....	70
Number of positions revised	.....	13
Number of soundings revised (refers to depth only)	.....	18
Number of soundings erroneously spaced	.....	7
Number of signals erroneously plotted or transferred	.....	1*
Topographic details	Time	.....
Junctions	Time	16 hrs
Verification of soundings from graphic record	Time	4 hrs

Verification by *Ernest E. Thomas* Total time *170 hrs* Date *12-20-56*

Reviewed by *J. J. Jeske* Time *35* Date *2-4-57*

\* hydro signal Nut, control from stations outside limits of this survey Effected 8 positions only.

RHC

### TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DIVISION OF HYDROGRAPHY AND TOPOGRAPHY:~~

11 May 1955

Division of Charts: R. H. Carstens

Plane of reference approved in  
14 volumes of sounding records for

HYDROGRAPHIC SHEET 8156

Locality Zachary Bay, Alaska

Chief of Party: F. G. Johnson

Plane of reference is mean lower low water, reading

3.0 ft. on tide staff at Zachary Bay

12.7 ft. below B. M. 1 (1913)

3.6 ft. on tide staff at Beaver Bay

10.8 ft. below B.M. 1 (1954)

1.7 ft. on tide staff at Coal Bay

10.9 ft. below B.M.1 (1954)

Height of mean high water above plane of reference is as follows:

Zachary Bay . = 6.7 ft.

Beaver Bay = 6.6 ft.

Coal Bay = 6.4 ft.

Condition of records satisfactory except as noted below:

*E. C. McKay*  
Tides Branch

Chief, Division of Tides and Currents.

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8156

FIELD NO. SU 2154

Alaska, Shumagin Islands, Unga Island, Zachary Bay

Project No. CS-344

Surveyed - May - July, 1954

Scale 1:20,000

Soundings:  
308 Fathometer  
Leadline

Control:  
Sextant fixes on  
shore signals

Chief of Party - F. G. Johnson  
Surveyed by - O. H. Quade  
Protracted by - O. H. Quade  
Soundings plotted by - O. H. Quade and W. F. Glover  
Verified and inked by - E. E. Thomas  
Reviewed by I. M. Zeskind 2-4-57  
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with unreviewed air-photographic surveys T-11106, T-11107, T-11110 and T-11111 of 1952-53.

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

2. Sounding Line Crossings

The sounding line crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated, except close inshore where the foul character of the bottom sometimes prevented development to the low-water line. The 6-fm. curve was added in several areas to better define offshore features.

The bottom is fairly irregular in depths less than 10 fms. and generally smooth in greater depths. Submarine features such as ledges, reefs, shoals and ridges contribute to the inshore bottom irregularity.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-8047 (1953) on the north and east. The junction with H-8048 (1953) on the east in the vicinity of Cape Aliaksin will be considered in the review of that survey. The project survey on the west has not as yet been received in the Washington Office.

5. Comparison with Prior Surveys

- a. H-3654 (1913-14), 1:100,000  
H-3722 (1914), 1:100,000

Only a few soundings from these small-scale reconnaissance surveys fall within the northwest portion of the present survey. A comparison between the prior and present surveys reveals no important differences in depths.

The present survey is adequate to supersede the prior surveys within the common area.

- b. H-3574 (1913), 1:20,000

This prior survey falls within the area of the present survey. A comparison between the prior and present surveys reveals only minor differences of about one fm. except at Inga Spit which has accreted about 100 meters in a north-westerly direction with the resultant change in bottom configuration.

The present survey is adequate to supersede the prior survey within the common area.

- c. H-6927 (1943), 1:40,000

This survey covers only a small part of the northern and western portions of the present survey. Only minor differences of 1 - 2 fms in depths are noted between the prior and present surveys.

The present survey is adequate to supersede the prior survey within the common area.

6. Comparison with Chart 8700 (Latest print date 5-7-56)a. Hydrography

The charted hydrography originates with the previously discussed prior surveys which need no further consideration and with soundings from advance information of the present survey (Rp 51943). The following discrepancies with the present survey are noted:



1. The bare rock charted in lat.  $55^{\circ}23.4'$ , long.  $160^{\circ}47.2'$ , originates with air-photographic survey T-8459 (1942). The rock is not shown on contemporary air-photographic survey T-11106 (1952-53) or the present survey. No reference to the rock appears in the sounding records for lines run in the vicinity of the rock, although hydrography was accomplished here at low-tide. The rock is believed to be non-existent and should, therefore, be deleted from the chart.

2. The bare rocks charted in lat.  $55^{\circ}23.5'$ , long.  $160^{\circ}47.0'$ , and lat.  $55^{\circ}23.7'$ , long.  $160^{\circ}46.2'$ , originate with advance information of the present survey (Rp. 51943). These rocks are shown on the smooth sheet of the present survey as rocks awash.

The present survey is adequate to supersede the charted hydrography within the common area.

B. Aids to Navigation

There are no floating aids to navigation within the area covered by the present survey. The present survey position of Unga Strait Light, the only fixed aid to navigation falling within the limits of the present survey, is in agreement with the charted position and adequately marks the feature intended.

7. Condition of Survey

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


8. Compliance with Project Instructions

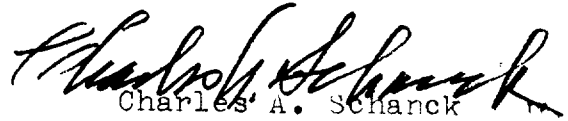
The survey adequately complies with the Project Instructions.

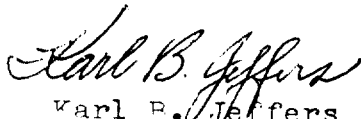
9. Additional Field Work Recommended


The survey is considered basic and no additional field work is recommended.

Examined and Approved:

  
Max G. Ricketts  
Chief, Nautical Chart Branch

  
Charles A. Schanck  
Chief, Division of Charts

  
Karl B. Jeffers  
Chief, Hydrography Branch

  
Samuel B. Grenell  
Chief, Division of Coastal Surveys



