

7860

Diaz, Cht. No. 8252-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC
PA-05150
Field No. PA-1250 Office No. H-7860

LOCALITY

State S. E. ALASKA
General locality SALISBURY SOUND
Locality VICINITY OF KAKUL NARROWS AND

SUKOI INLET

194 50

CHIEF OF PARTY

L. C. Johnson

LIBRARY & ARCHIVES

DATE AUGUST 28, 1951

7860

AUG 28 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 7860

Field No. Pa 1250

State S. E. Alaska

General locality Salisbury Sound

Locality *Kakul Narrows and* Sukoi Inlet

Scale *1:5000* & 1/10 000

Date of survey *25 Aug - 29 Sept. 1950*
6 Oct 1951
~~20 Sept. - 25 Sept. 1950~~

Instructions dated 5 August 1947 and 14 March 1950

Vessel PATTON - Launch No. 92

Chief of party L.C. Johnson

Surveyed by W.C. Russell and Julian W. Flint

Soundings taken by fathometer, graphic recorder, *hand lead, wire* 808-A Depth recorder
Hand lead & wire (bottom samples)

Fathograms scaled by H.W.H.

Fathograms checked by L.C.J. and J.W.F.

Protracted by Ruth Cox

Soundings penciled by Ruth Cox

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

REMARKS:

The field party prepared separate reports for Pa 05150 and Pa 1250. As these sheets have been plotted on the same H 7860 the separate reports are here bound together. The usual sheets of Statistics, Tide Note and List of Geographic Names are inside the back cover

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY NO. H-7860 (PA-1250)
SUKOI INLET, S. E. ALASKA
SCALE 1:10,000 - DATE 1950
U.S.C.& G.S.S. PATTON, L. C. JOHNSON, COMDG.

* * * *

A. PROJECT:

This survey was accomplished under Instructions - Project CS-247, Paragraph 12, dated 5 August 1947, and Supplemental Instructions, Project CS-247, dated 14 March 1950, both issued by The Director.

B. SURVEY LIMITS AND DATES:

This sheet covers all of Sukoi Inlet from its entrance, on an approximate line between Sukoi Point and Hayward Point, to its southern extremity.

Junction was made at the entrance to Sukoi Inlet, with Sheet No. H-7861 (1:10,000, 1950).

Sextant cuts for locating hydrographic stations were accomplished on June 29th and 30th, 1950. Hydrography began on 20 September 1950 and was completed on 25 September 1950.

C. VESSEL AND EQUIPMENT:

All hydrography was done in Launch No. 92 operating from the PATTON. Soundings were taken with an 808-A recording fathometer No. 51, supplemented by hand lead soundings on shoals and in kelp. Bottom samples were taken by wire with hand sounding machine mounted on the launch.

D. TIDES AND CURRENT STATIONS:

In accordance with Instructions - Project CS-247, dated 5 August 1947, Paragraphs 1 and 22, relative to tides in Sukoi Inlet, the records from the primary tide station at Sitka were used for the reduction of soundings for the entire survey. No time or range corrections were required.

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

E. SMOOTH SHEET:

The smooth sheet has been constructed by personnel of the Seattle Processing Office, and will be plotted by that office.

F. CONTROL STATIONS:

During the current season, second order triangulation was taken from a line HAYWARD 1895 - GRIT 1895, at the northern entrance to Neva Strait, and extended through Sukoi Inlet to its southern extremity.

The triangulation records, computations and a special report will be forwarded to the Washington Office.

Additional hydrographic control stations were established and located by three point sextant fixes and check angles, from triangulation stations.

G. SHORELINE AND TOPOGRAPHY:

The shoreline and topography will be compiled from air photographs, which were field inspected by this party during the current season. The delineation of the shoreline, offlying rocks and vegetation are incorporated in the Photogrammetric Field Report and records for this project, and will be forwarded to the Washington Office.

The low water line was established by hydrography wherever possible. From the entrance of Sukoi Inlet to about 1-1/2 miles inside, both shores are very abrupt and rocky with overhanging trees. Beyond this point to its southern extremity, numerous tide flats and scattered rock ledges exist close to the shores. The southern end of Sukoi Inlet is a shallow and foul area. Sounding lines were run as close to the beach as circumstances would permit.

H. SOUNDINGS:

Soundings were taken with an 808-A recording fathometer No. 51, operated on the fathom scale. Hand lead soundings were taken in critical areas, on shoals, and in kelp. Wire soundings were taken when obtaining bottom samples.

Velocity corrections to fathometer soundings were computed from serial temperature and salinity observations made in Salisbury Sound near the entrance to Sukoi Inlet.

I. CONTROL OF HYDROGRAPHY:

The hydrography was controlled by three point sextant fixes on signals ashore. No unusual or substandard methods were used for this purpose.

J.. ADEQUACY OF SURVEY:

The survey is adequate and considered complete, with one exception (See "N", Paragraph 7) and should supercede previous surveys of the area. The junction with survey enumerated in "B" is satisfactory. The shoal soundings at the junction, about 100 meters northeast of triangulation station BIGOT, on Sheet No. H-7861 (1:10,000, 1950) are discussed in the above mentioned paragraph.

K. CROSSLINES:

The crosslines on this sheet, exclusive of development, constitute approximately 10% of the total miles of sounding lines. The crossings are good.

L. COMPARISON WITH PRIOR SURVEYS:

Prior survey: within this area is listed as follows:

<u>Date</u>	<u>Scale</u>	<u>Registry Number</u>
1896	1:20,000	H-2287

On the old survey, with the exception of an area at the entrance and the southern extremity of Sukoi Inlet, the sounding lines were widely spaced. The new survey is much more detailed and complete.

In general, the depths agree with the previous survey, with the exception of the southern end, where there are numerous tide flats and the depths on the present survey indicate a shoaling close to the shore.

No additional shoals were found over previous surveys, or those shown on the latest edition of Chart No. 8281.

Instructions for this survey called for an investigation of a 4-3/4 fathom sounding in Latitude 57° 16.93', Longitude 135° 40.48'. Information from the preliminary review by the Division of Charts of Chart 8281, dated 16 July 1947, indicate that this sounding could be 4

fathoms greater.

Upon investigation and development of area, it was found that the above questioned sounding existed, in the stated location. The development verified the existence of a rock ledge and shoal extending from the shoreline out to and including the sounding investigated. The offshore shoal sounding which could be a danger to navigation, is ²⁶~~3-1/10~~ fathoms at M.L.L.W., located in Latitude $57^{\circ} 16.97'$, Longitude $135^{\circ} 40.46'$, Position 186-a. ✓

M. COMPARISON WITH CHART NO. 8281:

The comparison drawn in "L" is applicable when comparison is made between the new survey and the latest edition of Chart No. 8281. Confirmation of shoals on the chart are enumerated in "N". ✓

N. DANGERS AND SHOALS:

Most dangers and shoals are located in the proximity of the shoreline or near small islets, with the exception of two dangers in the shallow area near the head of the inlet, in the southern limits of the survey. ✓

Dangers:

1. A rock reef uncovers 1-1/10 fathom at M.L.L.W., about 30 meters wide in a northeast - southwest direction, and located on the northwest and southeast ends by positions 237-a and 238-a respectively, in location whose center is Latitude $57^{\circ} 16.09'$, Longitude $135^{\circ} 39.75'$. This reef is shown on Chart No. 8281 as a rock awash. ✓

2. At center of a 1-fathom shoal which is about 30 meters in a north - south direction and about 10 meters in an east - west direction, located in Latitude $57^{\circ} 16.20'$, Longitude $135^{\circ} 39.95'$, Position 239-a. This shoal is shown as a sunken rock and a danger to navigation, by a hand correction to the latest edition of Chart No. 8281. (1 on CH) ✓

3. Rock uncovers ^{3 ft} 6/10 fathoms at M.L.L.W. near the west shore in Latitude 57° 17.38', Longitude 135° 41.05', Position 114-b. It is shown on the chart as a rock awash. * (3)

4. Rock ledge uncovers ^{7 ft} 1-2/10 fathoms at M.L.L.W. at its offshore edge in Latitude 57° 17.70', Longitude 135° 40.75', Position 102-c. This ledge is about 25 meters wide in an eastward - westward direction and extends in a northeasterly direction to the shore. Positions 101-c and 103-c were located on the rock ledge. It is shown on the chart. * (2)

5. A least depth of 2[✓] fathoms was found on a previously located small shoal, very close to the western shore in Latitude 57° 18.30', Longitude 135° 41.68', Position 65-a plus 60 seconds. The previous survey and latest chart shows a least depth in this location as 1-3/4 fathoms. Since the old sounding was not disproved and is shoaler than the present survey, it is recommended that it be retained on the chart, as a matter of safety.

6. A least depth of ^{rock awash} 2/10 fathom on a rock reef, close to the east shore, near the entrance to Sukoi Inlet, in Latitude 57° 19.00', Longitude 135° 41.42', Position 22-c. It is shown on the old survey as a rock awash, and it is recommended that it be shown on the new chart by the same symbol. * (2)

7. A least depth of 1-9/10 fathoms was located on a sounding line, about 60 meters east-southeast of a small rock islet on the west side of the entrance to Sukoi Inlet, in Latitude 57° 19.36', Longitude 135° 41.6', Position 33-c plus 15 seconds. A shoal of 1/2 fathom is shown in this location on the old survey H-2287, and on Chart No. 8281. Due to an oversight by the hydrographer, the location and depth of this shoal was not transferred to the boat sheet and as a result, a

*area adequately developed
in 1951*

complete investigation was not made for the least depth in this area. This shoal extends for about 200 meters to the north of the above described position and sounding, and is included in the southern limits of Sheet No. H-7861 (PA 1150), at the junction. It had been indicated by the presence of kelp, and outlined on Photograph No. 09550, during the field inspection of shoreline on 12 July 1950. The location and extent of the shoal on the photograph compares favorably with the shoal as represented by the soundings on this and the adjacent survey. It is recommended that until further investigation can be made, the least depth of 1/2 fathom be charted on this shoal. *Investigated in 1951 * awash MLLW*

O. COAST PILOT INFORMATION:

Coast Pilot notes have been furnished in letter to the Director, dated 3 January 1951.

P. AIDS TO NAVIGATION:

There are no aids to navigation within the limits of this survey.

Q. LANDMARKS FOR CHARTS:

See Photogrammetric Field Report, Project CS-247, 1950 field season.

R. GEOGRAPHIC NAMES:

There are no new names or changes in charted names of geographic features.

S. SILTED AREAS:

Indications from the fathograms and bottom samples are that the silted area is enclosed within the southern half of the sheet within the 5 to 15 fathom curve. The layer of silt is approximately 6 feet in thickness.

Z. TABULATION OF APPLICABLE DATA:

The following listed Special Reports are pertinent to this survey and report:

1. Photogrammetric Field Report, Project CS-247, 1950

Season

2. Temperature and Salinity Observations

*Fath Corr. filed
with H-7861*

3. Coast Pilot Notes

4. Triangulation Report

Applicable Data attached to this report:

1. Table of Statistics

2. Tide Note

3. List of Signals

4. Table of Velocity Corrections

Submitted by

William C. Russell

William C. Russell

LCDR USC&GS

USC&GSS PATTON

Approved and Forwarded:

L. C. Johnson

L. C. Johnson

CDR USC&GS

Cmdg., USC&GSS PATTON

STATISTICS FOR HYDROGRAPHIC SURVEY H-7860 (PA-05150)

U.S.C.& G.S.S. PATTON - PROJECT CS-247

Date 1950	Day Letter	Vol. No.	Handlead & Wire Soundings	Positions	Statute Miles of Soundings
25 August	a	1	--	151	26.4
28 August	b	1 & 2	--	118	14.0
29 August	c	2	--	38	4.6
31 August	d	2 & 3	1	211	21.0
18 September	e	3	2	16	1.5
25 September	f	3	10	10	Bottom Samples
28 September	g	3	4	4	" "
29 September	h	3	6	6	" "
Totals:			23	554	67.5

Area: 1.2 sq. statute miles

VELOCITY CORRECTIONS

U.S.C. & G.S.S. PATTON

L. C. JOHNSON, COMMANDING

LOCALITY: SUKOI INLET

S. E. ALASKA

HYDROGRAPHIC SURVEY NO. PA-1250

FOR USE BETWEEN 20 SEPTEMBER AND 25 SEPTEMBER 1950

LAUNCH NO. 92

TABLE OF FATHOMETER CORRECTIONS

6.0	Fms.		to	5.5	Fms.
-0.1	"	From 5.6 Fms	to	15.0	"
-0.2	"	From 15.1 Fms	to	24.0	"
-0.4	"	From 24.1 Fms	to	43.0	"

LIST OF SIGNALS - PA 1250

A AFT ABE*	B BUT* BALE BIG BAG*	C CUT* COP CAB*	D DUO* DUTCH DAW*	E EVA* END EGO*	F FAT	G GEN GYP GAD*	H HAG* HOL HAY HUT*	I IPP IVY*	J JET JUT*
K KIM*	L LIN LAD*	M MAM MUM* MAG* MIG	N NAN NAT*	O ORT	P PAR PAD* PUT*	Q QUO*	R REG RAG*	S SET SAD*	T TAN* TRI THI TROUT
U -	V VAL* VES	W WAL WAD* WAT	X -	Y YAK* YEB	Z ZAG*				

* Denotes sextant cut-in hydrographic signals

All others are triangulation stations

STATISTICS FOR HYDROGRAPHIC SURVEY H-7860 (PA-1250)

U.S.C. & G.S.S. PATTON - PROJECT CS-247

<u>Date</u> <u>1950</u>	<u>Day</u> <u>Letter</u>	<u>Vol.</u> <u>No.</u>	<u>Hand Lead &</u> <u>Wire Sndgs.</u>	<u>Positions</u>	<u>Statute Miles</u> <u>of Soundings</u>
20 September	a	1	1	251	39.4
22 September	b	1	1	18	1.5
23 September	c	1	4	103	12.4
25 September	d	2	26	26	Bottom Samples
Totals:			32	308	53.3

Area: 1.5 square statute miles

H 7860
Pa 05150

TIDE NOTE

One tide gage was used for the entire survey, as prescribed in the Acting Director's Letter No. 36-reb, dated 26 July 1950. The staff was located on the west side of Salmonberry Cove in Latitude $57^{\circ} 22.38'$, Longitude $135^{\circ} 42.03'$.

It was read and recorded in Form 277, during periods of hydrography, and was applied in the reduction of soundings.

The plane of reference is Mean Lower Low Water and corresponds to the reading on the tide staff of 1.2 feet, as stated in the Acting Director's Letter No. 36-mk, dated 25 August 1950.

No difference in time or heights were applied to the observed tides.

H 7860
Pa 1250

Sukoi Inlet

TIDE NOTE

TYPE OF GAGE: Standard Automatic

LOCATION: Sitka, Baranof Island, S. E. Alaska
Latitude $57^{\circ} 03.1'$, Longitude $135^{\circ} 20.5'$

PLANE OF REFERENCE: Mean Lower Low Water

The gage was operated and maintained by personnel of the Sitka Magnetic Observatory. The hourly heights of the tide were furnished by the Washington Office.

H 7860
S.E. Alaska
Salisbury Sound

List of geographic names
penciled on smooth sheet.

Pa 05150

Salisbury Sound

Peril Strait

Kakul Narrows

Salmonberry Cove

Bradshaw Cove

Louise Cove

Pt. Kakul

Range Point.

Struya Point

Baranof Island.

Chichagof Island

Pa 1250

Sukoi Inlet

Partofshikof Island

Kruzof Island

Sukoi Point

Hayward Point

AUG 28 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 7860

Field No. Pa 05150

State S.E. Alaska

General locality Salisbury Sound
~~Kakul Narrows~~

Vicinity of

Locality Kakul Narrows, Salmonberry Cove and SW half Bradshaw and Louise coves

Scale 1/5 000 Date of survey 25 Aug. - 29 Sept. 1950

Instructions dated 14 March 1950

Vessel PATTON - Launch No. 92

Chief of party L.C. Johnson

Surveyed by L.C. Johnson, W.C. Russell & Julian W. Flint.

Soundings taken by fathometer, graphic recorder, hand lead, wire 308-A Depth recorder
Hand lead and wire (Bottom samples)

Fathograms scaled by L.C.J. & H.W.H.

Fathograms checked by L.C.J., J.W.F., H.W.H.

Protracted by Ruth Cox

Soundings penciled by Ruth Cox

Soundings in fathoms ~~xxx~~ at ~~MLLW~~ and are true depths

REMARKS:

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY NO. H-7860 (PA-05150)
KAKUL NARROWS, S. E. ALASKA
SCALE 1:5,000 - DATE 1950
U.S.C.& G.S.S. PATTON, L. C. JOHNSON, COMDG.

* * * *

A. PROJECT:

This survey was accomplished under Supplemental Instructions for Project CS-247, issued by The Director on 14 March 1950.

B. SURVEY LIMITS AND DATES:

This sheet covers all of Kakul Narrows, and the southwestern half of Bradshaw Cove and Louise Cove.

Junction was made on the west and east limits of the survey with Sheet No. H-7861 (1:10,000, 1950)

Field work was started on 25 August 1950. This sheet was worked in conjunction with Survey Sheet No. H-7861 (PA-1150), when weather and current permitted hydrography in this area. Field work was completed on 29 September 1950.

C. VESSEL AND EQUIPMENT:

All hydrography was done in Launch No. 92 operating from the PATTON. Soundings were taken with 808-A recording fathometers (Nos. 51 and 74), supplemented by hand lead soundings on shoals and in kelp. Bottom samples were taken by wire with hand sounding machine mounted on the launch, and in deeper portions by the PATTON using an electric wire

sounding machine.

D. TIDE AND CURRENT STATIONS:

The tide station used for the entire sheet, was established on the west side of Salmonberry Cove, as prescribed in the Acting Director's Letter No. 36-reb, dated 26 July 1950. No time or range corrections were required in reducing the soundings.

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

E. SMOOTH SHEET:

The smooth sheet has been constructed by hand by personnel of the Seattle Processing Office. No unusual methods were used in plotting the hydrographic control. It will be plotted by the above mentioned office.

F. CONTROL STATIONS:

During the current season, second order triangulation was carried through Salisbury Sound, Kakul Narrows, and through Sergius Narrows, from a line HAYWARD 1895 - GRIT 1895 at the northern entrance to Neva Strait. This triangulation served for the major portion of the hydrographic control. Additional hydrographic signals were located as needed, by sextant cuts.

The triangulation records, computations, and a special report will be forwarded to the Washington Office.

G. SHORELINE AND TOPOGRAPHY:

The shoreline and topography will be compiled from air photographs which were field inspected by this party during the current season. The delineation of the shoreline, offlying rocks, and vegetation are incorporated in the Photogrammetric Field Report and records, and

will be forwarded to the Washington Office.

With the exception of a few places in Bradshaw Cove, Louise Cove and Salmonberry Cove, where there are tide flats, low water line could not be established by hydrography. On both sides of Kakul Narrows the shoreline is rocky, jagged, and abrupt, with numerous foul areas, generally indicated by kelp. Sounding lines were run as close to the beach and offlying rocks as circumstances would permit.

H. SOUNDINGS:

Soundings were taken with 808-A type recording fathometers Nos. 51 and 74, operated on the fathom scale. Hand lead soundings were taken in some critical areas, on shoals, and in kelp. Wire soundings were taken when obtaining many of the bottom samples.

Velocity corrections to fathometer soundings were computed from serial temperature and salinity observations made in deep water in Salisbury Sound, near the west entrance to Kakul Narrows.

I. CONTROL OF HYDROGRAPHY:

The hydrography was controlled by three point sextant fixes on signals ashore. No unusual or substandard methods were used for this purpose.

J. ADEQUACY OF SURVEY:

The survey is adequate and considered complete and should supersede previous surveys of the area. The junctions with survey enumerated in "B" were made by transferring the soundings at the junction of Sheet No. H-7861 (1:10,000) to a 1:5000 tracing paper projection, ⁽¹⁹⁵⁰⁾ for direct comparison. The junction on the east limits of the survey is very good, and depth curves can be adequately drawn. On the west limit of the survey, the junction for the most part is good, with a few exceptions of some soundings close to shore, where the bottom is very

uneven and changing rapidly. Since the sounding lines on Sheet No. H-7861 (1:10,000) were run normal to the current by necessity and the lines on this survey were run in line with the current, it is considered there may be some slight displacement of sounding lines due to this factor. It is recommended, that in the few cases where discrepancies at the junction do exist, that weight be given in favor of sounding on this sheet, due to scale, closer spacing of lines and intervals of soundings, and possibly the least amount of displacement of soundings because of direction of lines and current.

K. CROSSLINES:

The crosslines on this sheet, exclusive of development, constitute approximately 10% of the total miles of sounding lines. The crossings appear good, considering the very irregular bottom and the possible slight displacement of some lines due to the direction of the crosslines which were across the current.

L. COMPARISON WITH PRIOR SURVEYS:

Prior surveys within this area are listed as follows:

<u>Date</u>	<u>Scale</u>	<u>Registry Number</u>
1896	1:20,000 & 1:10,000	2286 & 2287
1926	1:10,000	2286b (wire drag survey)
1928	1:20,000	H-4847

On the old surveys, the sounding lines were widely spaced and only limited development was accomplished. The new survey is much more detailed and complete. In general the depths agree with previous surveys. Developments were made over all previously located shoals. On the southeast side of Kakul Narrows, the depths of shoals were the same or lesser depths were found. An attempt was made to obtain hand lead soundings on these shoals, but due to strong currents and bad weather at the time, it was found impracticable.

In Latitude $57^{\circ} 22.38'$, Longitude $135^{\circ} 41.32'$, a bank whose least depth of ¹⁸ 9 fathoms at Position 151-d, was found. It was not shown on any previous survey. In the development, the ~~next~~ shoalest sounding found was ¹⁸ ~~13-3/10~~ fathoms at Position 92-b plus ⁴⁵ ~~60~~ seconds. It is believed this bank to be very small in area and sloping rapidly, as only a few relatively shoal soundings could be obtained on, or close to the location, during the investigation. *9 rescanned as stray*

Instructions for this survey called for an investigation of a 2-1/2 fathom depth in Salmonberry Cove, originated with a report contained in Chart Letter 351 (1898), in Latitude $57^{\circ} 22.36'$, Longitude $135^{\circ} 41.87'$. During the field inspection of air photographs, this location was found to be a kelp patch, and had been indicated on the photographs as rock and foul area when preliminary shoreline manuscripts were being made. The hydrographic development of this location produced a least depth of ^{2.9} ~~1-4/10~~ fathoms on the fathogram at Position ^{195 to 196 d} ~~193-d~~ plus ~~37~~ seconds, and 2-7/10 fathoms with the handlead on rock at position 2-e. *another 21 35 meters south*

It is recommended that the hand lead sounding be charted in favor of the ^{deeper} ~~shoaler~~ fathometer sounding. After careful study of the fathogram, the hydrographer believes the least depth is possibly the top of kelp, and not the true sounding of the bottom.

M. COMPARISON WITH CHART NO. 8248:

The comparison drawn in "L" is applicable when comparison is made between the new survey and the latest edition of Chart No. 8248. Confirmation of shoals shown on the chart are enumerated in "N".

N. DANGERS AND SHOALS:

Dangers such as Brad Rock and Kakul Rock are well marked by buoys, charted, and described in U. S. Coast Pilot. The other dangers are

well outside of the path normally used by ships passing through Kakul Narrows, but are a menace to those fishing boats who drag and troll for fish in the area.

Dangers:

1. Attempts were made at two different times to obtain the least depth by handlead soundings on Brad Rock. Its area is very small, and indications were that it is a pinnacle rock. After a diligent investigation, the least depth obtained by hand lead sounding was 2-4/10 fathoms Position 2-d and by fathometer was ^{3²} ~~17/10~~ fathoms Position 2-c in Latitude 57° 22.42', Longitude 135° 41.37'. There are indications that the depth as obtained by the fathometer may not be the true sounding of the bottom, since kelp was prevalent in the area.

In view of the fact that the examination was believed to be complete, with the existing methods, it is recommended that the presently charted depth of 1-1/4 fathoms, as obtained from prior surveys, be retained as a matter of safety. *Prior sdg retained as 1.2 fms.*

It will be noted on the boat sheet that the location of the buoy, at least during the investigation, was to the west of the rock and in line with the shoal and Kakul Narrows Light. It is shown on Chart No. 8248 and stated in the U. S. Coast Pilot as being east of the rock. Since the location of the buoy was obtained at or near slack water, it may lie in slightly different positions at full or varying strengths of current.

2. ²⁹ ~~1-9/10~~ fathoms was the least depth found on Kakul Rock in Latitude 57° 21.76', Longitude 135° 41.67', Position ^{9d} ~~15-d~~ plus 52 seconds. There is a ^{5⁴} ~~2-1/10~~ fathom depth ^{10 meter east} ~~about 40 meters to the west~~ of above located least depth. It is recommended that the present charted depth and location of 2 fathoms over Kakul Rock, which is in agreement with the Wire Drag Survey, Register No. 2286b, dated 1926 and the present survey, be retained.

*2.2 fms retained from H-2286b
Charted as 2 fms. on Reconstr. 8281 as recommended and also to allow for
leadline correction per records H-2286b. 3ma 6-4-59.*

3. 1-8/10 fathoms was the least depth found on a shoal previously located on prior survey Registry No. 2286, dated 1896, with least depth of 3 fathoms, in Latitude $57^{\circ} 22.03'$, Longitude $135^{\circ} 41.32'$, Position 26-c minus 15 seconds. It is recommended that the 1-8/10 fathoms sounding be charted on this shoal. ✓

4. ~~2-3/10~~^{3⁶} fathoms was the least depth found on a shoal, in Latitude $57^{\circ} 22.13^2$, Longitude $135^{\circ} 41.23^4$, Position 8-b minus 38 seconds. Prior survey, Registry No. 2286, dated 1896, showed a depth of 3 fathoms for this location. It is recommended that the 3 fathoms as shown on the Chart No. 8248 for this location be retained. ✓

5. For shoal in Salmonberry Cove see "L".

O. COAST PILOT INFORMATION:

Coast Pilot information furnished in letter to Director dated 3 January 1951.

P. AIDS TO NAVIGATION:

The only fixed aid to navigation within the limits of the survey is Kakul Narrows Light. It was reported to Washington Office on 3 October 1950 on Form 567. ✓

There are two floating aids to navigation, located by sextant fixes, within the limits of the survey, and are listed as follows:

1. Brad Rock Buoy 1; Black; 2nd-cl can; Located at Position 1-c on 29 August 1950 in 41 feet; Latitude $57^{\circ} 22.42'$, Longitude $135^{\circ} 41.39'$. ✓

2. Kakul Rock Buoy 2; Red; 1st-cl. nun; Located at Position 38-c on 29 August 1950, Lat. $57^{\circ} 21.76'$, Long. $135^{\circ} 41.77^75$ '. ✓

Q. LANDMARKS FOR CHARTS:

There are no landmarks for charts within the limits of this survey. ✓

R. GEOGRAPHIC NAMES:

There are no new names or changes in charted names of geographic features.

S. SILTED AREAS:

There are no clear indications of silt, either from observing the fathograms or from the bottom samples, within the limits of the survey. The strong currents in the vicinity of Kakul Narrows, undoubtedly, prevents such action.

Z. TABULATION OF APPLICABLE DATA:

The following listed Special Reports are pertinent to this survey and report:

1. Photogrammetric Field Report
2. Temperature and Salinity Observations *Filed with H-7861*
3. Triangulation Report

Applicable Data attached to this Report:

1. Table of Statistics
2. Tide Note
3. List of Signals
4. Table of Velocity Corrections

Respectfully submitted

William C. Russell
William C. Russell
LCDR USC&GS
USC&GSS PATTON

Approved and Forwarded:

L. C. Johnson
L. C. Johnson
CDR USC&GS
Cmdg., USC&GSS PATTON

LIST OF SIGNALS - SHEET PA-15150

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>F</u>	<u>G</u>	<u>J</u>	<u>K</u>	<u>R</u>	<u>S</u>	<u>T</u>	<u>W</u>
ACTIVE ACHE	BORE	CHAN CLOUD CLOCK COVE	DIN	FRESH FIG* FRY*	GRIP GUS*	JIB* JAP*	KAK KID*	RUY RIO*	STRO	TOM*	WINDS

* Sextant cut-in hydrographic stations

All others are triangulation stations

Kakul Narrows and Sukoi Inlet.
Processing Office Notes

Smooth sheet.

These two small surveys have been plotted on separate projections made by hand on one Whatman sheet. The basic control is the triangulation of Johnson 1950 which was plotted from the field computations. The hydrographic signals were plotted from sextant angles observed at the signal being located. There were usually three angles observed on Δ points. The angles were laid out on templates so that all signals observed were used simultaneously when plotting. The locations of the hydrographic signals were very satisfactory.

Shoreline.

No shoreline has been placed on the sheet. This is to come from the photo compilation when made.

*HW line added
in Washington
Office*

Shoreline on boatsheet Pa 05150 is from the preliminary shoreline manuscript RS 385.

Sheet Pa 1250.

This seems simple, clear and obvious. The soundings need no special mention. Around the head of Sukoi Inlet the LWL has been sketched as on the boatsheet, with modifications as needed to fit the reduced soundings of the smooth sheet.

Sheet Pa 05150-Important soundings.

	ϕ	λ	Position	Fathoms.
1.	57 21.75	135 41.67	21-22 b 15-16 d	1.9 3.4 5.4
2.	21.95	41.47	44-45 d	6.7
3.	22.04	41.30	26 c	1.8
4.	22.12	41.13 ²⁵	7-8 b	3.6
5.	22.33	41.87	2 e	2.7 hand lead.
6.	22.35	41.86	9-10 e	2.7 3.2
7.	22.43	41.38	2 c	0.4
8.	22.44	41.36	1 d	0.8 3.5
9.	22.38	41.34	151 d	19.09.0 bank in middle of narrows.
10.	22.49	40.92	113 a	6.6 shore ledge off Chan.Pt.Et.

Of the items noted above Nos. 3, 4, 5 & 6 fall on areas where ledges or bare rocks are shown on shoreline manuscript RS 385. Nos. 5 & 6 were examined at length. Bottom could be seen at 3 fms. Least depth found was 2.7 fms. There are no rocks above chart datum here.

Nos. 3 & 4 did not receive the same lengthy examination, but no rocks were seen during the season. The least depths found on the sounding lines are as shown, subject to further examination.

Edgar L. Smith
Cart. Engr.

Edgar L. Smith

8/20/51

VELOCITY CORRECTIONS

U.S.G. & G.S. SHIP PATTON

L. C. JOHNSON, COMMANDING

LOCALITY: SALISBURY SOUND AND KAKUL NARROWS

S. E. ALASKA

HYDROGRAPHIC SURVEY NO. PA-1150 & NO. PA-05150

FOR USE BETWEEN 13 AUGUST AND 30 SEPTEMBER 1950

SHIP PATTON AND LAUNCH NO. 92

TABLE OF FATHOMETER CORRECTIONS

* * *

0.0 Fms.		to 5.2 Fms.
-0.1 "	from 5.3 Fms.	" 13.5 "
-0.2 "	" 13.6 "	" 21.8 "
-0.3 "	" 21.9 "	" 25.5 "
-0.4 "	" 25.6 "	" 37.0 "
-0.6 "	" 37.1 "	" 49.0 "
-0.8 "	" 49.1 "	" 56.5 "
-1.0 "	" 56.6 "	" 67.0 "
-1.2 "	" 67.1 "	" 77.0 "
-1.4 "	" 77.1 "	" 87.5 "
-1.6 "	" 87.6 "	" 97.5 "
-1.8 "	" 97.6 "	" 105.0 "
-2.0 "	" 105.1 "	" 115.0 "

GEOGRAPHIC NAMES

Survey No. H-7860

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
<u>Southeastern Alaska</u>				(for title)							1
<u>Salisbury Sound</u>									B.G.M.		2
<u>Peril Strait</u>											3
<u>Kiakul Narrows</u>											4
<u>Salmonberry Cove</u>											5
<u>Point Kiakul</u>									B.G.M.		6
<u>Louise Cove</u>											7
<u>Range Point</u>											8
<u>Struya Point</u>									B.G.M.		9
<u>Bradshaw Cove</u>											10
<u>Baranof Island</u>									B.G.M.		11
<u>Chichagof Island</u>									"		12
											13
<u>Part of Shikof Island</u>									B.G.M.		14
<u>Kruzof Island</u>									"		15
<u>Hayward Point</u>											16
<u>Sukoi Inlet</u>									B.G.M.		17
<u>Sukoi Point</u>									"		18
											19
											20
											21
											22
											23
											24
<u>Sitka</u>				(location of one tide gage)					B.G.M.		25
											26
											27

Names underlined in red are approved.

9-12-51
L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ..H-7860.

Records accompanying survey:

Boat sheets .2...; sounding vols. ..5..; wire drag vols.;
 bomb vols.; graphic recorder rolls 2 env.;
 special reports, etc. .1.Descriptive Report; .1.Smooth Sheet;.....
1 additional volume 1951 + 1 additional envelope graphic records

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

Number of positions on sheet	.....	862
Number of positions checked	.....	120
Number of positions revised <i>additional work plotted by myself</i>	.....	95 135 positions
Number of soundings revised (refers to depth only)	.....	14
Number of soundings erroneously spaced	.....	20
Number of signals erroneously plotted or transferred	.....	2
Topographic details	Time	.....20
Junctions	Time	.....8
Verification of soundings from graphic record	Time	.....20

Verification by.....*O. Svendsen*.....Total time *180*... Date *12 Apr '55*

Reviewed by.....*A. R. STIRNI*..... Time *82*... Date *5/3/55*

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO.- H-7860

FIELD NO. PA-05150
PA-1250

S. E. Alaska, Salisbury Sound, Kakul Narrows and
Sukoi Inlet

Project No. CS-247

Surveyed - Aug.- Sept. 1950, Oct. 1951

Scale 1:5000
1:10,000

Soundings:

808 Fathometer
Leadline

Control:

Sextant fixes on
shore signals

Chief of Party - L. C. Johnson
Surveyed by - W. C. Russell, J. W. Flint
Protracted by - Ruth Cox
Soundings plotted by - Ruth Cox
Verified and inked by - O. Svendsen
Reviewed by - A. R. Stirni 3 May 1955
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with reviewed air-photographic surveys T-8484 (1942-50), T-8485 (1942-50) and T-9900 (1942-50) and was added in the Washington Office.

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

2. Sounding Line Crossings

Depths at sounding line crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The rugged, foul nature of the inshore area prevented complete delineation of depth curves of five fathoms and less, however, deeper curves are, in general adequately defined. Sukoi Inlet slopes steeply from both sides and levels off at depths ranging from 6 fms. at the head of the inlet to 30 fms. at the mouth. In Kakul Narrows, the bottom is very irregular with numerous

offlying reefs and steep gradients.

4. Junctions with Contemporary Surveys

The Kakul Narrows survey joins unverified survey H-7861 (1950) on both the northeast and the southwest and the Sukoi Inlet survey joins H-7861 on the north. These junctions were examined for agreement with the present survey; however, they will be discussed in the review of H-7861.

5. Comparison with Prior Surveys

H-2286 (1896), 1:10,000, 20,000	H-2287 (1896), 1:20,000
H-2286 a & b (WD) ¹⁹²⁵ (1896) ₁₉₂₆ , 1:10,000	H-4847 (1928), 1:20,000

The only prior coverage of Sukoi Inlet was furnished by survey H-2287 (1896). Kakul Narrows was surveyed in entirety in 1896 (H-2286) and in part in 1928 (H-4847). The wire drag survey of 1928 (H-2286 a&b) was made to clear a channel through Kakul Narrows and also to investigate the position of Kakul Rock, which prior to 1928, had been erroneously charted in depths of 50-60 fathoms at lat. 57°21.59', long. 135°41.86'. The effective depths do not conflict with the present survey. The prior surveys were made at small scales and with wide sounding line spacing. However, the critical shoals in the areas were adequately located. A comparison of prior and present surveys reveals random differences of 1-3 fathoms which are attributed to the displacement of soundings on the prior surveys. Five soundings have been carried forward to the present survey from H-2286, H-2287, and H-2286b.

The present survey with the addition of the five soundings carried forward is adequate to supersede the prior surveys within the common area.

6. Comparison with Charts 8248 (Latest print date 6/8/53)
8281 (Latest print date 3/16/53)

A. Hydrography

Charted hydrography originates principally with the previously discussed surveys supplemented by partial application of the present survey prior to verification and review.

The three rocks awash charted at lat. 57°22.15', long. 135°40.40' and one rock awash charted at lat. 57°22.12', long. 135°41.24' originate with a preliminary air-photographic survey (Bp. 46335-1950) compiled from photographs taken at or near M.H.W. Neither the prior topographic and hydrographic surveys, the present survey nor the present field inspected topographic survey T-9900 (1942-50) verify the

existence of the rocks, and they should be disregarded.

The rock awash charted in lat. $57^{\circ}16.04'$, long. $135^{\circ}39.65'$ from CL-686 (1947) is not disproved by the present survey and should be retained on the chart. It is noted that the rock awash is referenced to a charted rock awash having a new position on the present survey. *Added to account 8281 (1959)*

Except for the rock awash mentioned above the present survey supersedes the charted information.

B. Aids to Navigation

Aids to navigation located on the present survey are in substantial agreement with the charted aids with the exception of Black Can Buoy C-1, at lat. $57^{\circ}22.42'$, long. $135^{\circ}41.40'$, which plots on the west of Brad Rock rather than on the east as charted. Buoy C-1, was located by only one sextant fix without check angles. The dangers in Kakul Narrows are adequately marked. No new dangers were revealed in the area by the present survey.

7. Condition of Survey

(a) The sounding records are generally complete and the Descriptive Report covers all matters of importance.

(b) Smooth plotting was generally satisfactory. However, due to the absence of shoreline on the pencilled sheet and the weak location of 2 hydrographic signals, 30 fixes were shifted in position by the verifier as much as 120 meters in order to reconcile the hydrography with the shoreline which was applied in the Washington Office. Hydrographic signal Fry located by only two sextant cuts forming a weak intersection was shifted 6 mm. during verification of the survey.

(c) In several instances sounding lines were run directly over or adjacent to the non existent rocks noted in paragraph 6A which had been applied to the boat sheet from preliminary photogrammetric information. No comments regarding the disposition of the rocks were made on the boat sheet. As the boat sheet frequently becomes a source of advance charting information it is important that the information thereon be complete and all conflicting information be resolved.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work

This is a good basic survey and no additional field work is recommended

Examined and Approved:

Wallace A. Bruder
W. A. Bruder
Acting Chief, Nautical Chart Branch

E. R. McCarthy
E. R. McCarthy
Acting Chief, Chart Division

J. C. Bull
J. C. Bull
Chief, Hydrography Branch

Earl O. Heaton
Earl O. Heaton
Chief, Division of Coastal Surveys

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DIVISION OF HYDROGRAPHY AND TOPOGRAPHY~~

21 November 1951

Division of Charts: R. H. Carstens

Plane of reference approved in
1 volume of sounding records for

HYDROGRAPHIC SHEET 7860

Locality Salisbury Sound, Alaska

Chief of Party: R. J. Sipe in 1951
Plane of reference is mean lower low water, reading
5.0 ft. on tide staff at Sitka
13.1 ft. below B. M. 8 (1924)

Height of mean high water above plane of reference is 9.1 feet.

Condition of records satisfactory except as noted below:

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

