

7638

Diag. Cht. No. 8202-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. SU-05250 Office No. H-7638

LOCALITY

State ALASKA

General locality GASTINEAU CHANNEL

Locality JUNEAU

1945

CHIEF OF PARTY

G. E. BOOTHE

LIBRARY & ARCHIVES

DATE

Jan 11 - 1951

8-1870-1 (1)

7638

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. H-7638

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-7638

Field No. SU 05250

State Alaska ✓

General locality Gastineau Channel ✓

Locality Juneau, Alaska ✓

Scale 1:5000 ✓ Date of survey 3 - 4 October 1950 ✓

Instructions dated 16 August 1950

Vessel SURVEYOR

Chief of party Glendon E. Boothe ✓

Surveyed by Edgar F. Hicks, Jr. ✓

Soundings taken by fathometer, graphic recorder, hand lead, wire 808 Fathometer

Protracted by E. F. Hicks, Jr.

Soundings penciled by E. F. Hicks, Jr.

Soundings in fathoms ~~feet~~ at ~~MLLW~~ MLLW ✓

REMARKS: _____

Descriptive Report to Accompany
HYDROGRAPHIC SHEET FIELD NO. SU05250

Vicinity of Juneau, ALASKA
SOUTHEAST, ALASKA

SCALE 1:5000

USC&GSS SURVEYOR

GLENDON E. BOOTHE, COMDG.

PROJECT:-

The authority for this is contained in Director's instructions 22/MEK, S-2-SU dated 16 August 1950 under subject Special Surveys. ✓

SURVEY LIMITS AND DATES:-

This survey was in the vicinity of Juneau, Alaska and included the shoal at the mouth of Lawson Creek and the shoals fringing the base of the Alaska - Juneau mine rock dump. Field work was started 2 October 1950 and completed 4 October 1950. Junction was made with Survey No. 6177a (1936). ✓

VESSEL AND EQUIPMENT:-

The survey was made using ship's launch No. 93 operating from the ship. ✓

TIDE STATION:-

Staff readings on standard tide station at Juneau made during sounding hours were used to reduce the soundings. This station was inspected and staff leveled to bench marks before beginning work. ✓

SMOOTH SHEET:-

Smooth Sheet projection was made by hand on board ship, triangulation stations plotted using DM^s and DP^s, topographic signals transferred from photostats of old topographic surveys by tracing paper, and hydrographic signals located this season plotted with steel protractor. Cuts for hydro. signals are recorded in Vol. 1, of present survey. ✓

CONTROL STATIONS:-

Positions for triangulation stations were furnished by Washington Office, Accession No. of Computations G-609 located 1921 and 1936. Topographic signals TOW and BURN were taken from Topographic Sheet No. 6519, surveyed in 1936. Signal BURN is a sawdust burner and signal TOW is a black and yellow radio tower. Triangulation Station LAW is in the yard of a private dwelling and existing clothes lines prevented erection of a signal over the signal, temporary signal WAS was established 10.35 ✓

meters from station LAW towards and in range with topographic signal TOW. All stations are on North American 1927 datum.

SHORE LINE AND TOPOGRAPHY:-

Shore line and topography was omitted from the sheet due to extensive changes particularly in the vicinity of the Alaska - Juneau mine rock dump. Air photographs covering the area were inspected and control stations located so that a new air photo plot of the shore line may be made. This work has been previously sent in to the office. The low water line is adequately defined except for a few places around the Alaska - Juneau mine rock dump. These omissions were caused by steep slope of the bottom, high fill and scarcity of signals making it impossible to locate positions when close inshore. When the shore line is plotted in these cases it will be found very near the soundings taken.

SOUNDINGS:-

All soundings were taken with 808 Fathometer No. 47. Corrections were determined by bar checks.

CONTROL OF HYDROGRAPHY:-

All hydrography was controlled by three point sextant fixes.

ADEQUACY OF SURVEY:-

* Review, pars. 4, 8 & 9.

The survey is complete over the area it covers and should supersede prior surveys for charting purposes. *The junctions are satisfactory. The zero, five and ten fathom depth curves are the only curves drawn on the sheet as it is believed other curves would tend to confuse the reviewer due to the steep slopes. (Add'l curves added during verification)

CROSS LINES:-

Crosslines run were 8% of the regular system of lines - all crossings agreed very well except at position 221b, Lat. $58^{\circ} 16.98'$, Long. $134^{\circ} 23.95'$ where one fathom discrepancy was found in depth of apparently 2.5 fathoms. Here the slope is steep and a horizontal shift of approximately five meters in either line would eliminate the discrepancy. (Discrepancy eliminated)

COMPARISON WITH PRIOR SURVEYS:-

In general a very close agreement was obtained in the Westerly or Lawson Creek side of the channel with the prior survey, sheet H6177a surveyed in 1936. On the easterly or Juneau side the ten fathom curve of the two surveys is in fair agreement from the northern limit of the sheet to Lat. $58^{\circ} 17.05'$, Long. $134^{\circ} 23.45'$. At this point the ten fathom curve on the new survey lies further offshore than that on the old survey. The five fathom curve on the southerly part of the sheet shows considerable shifting which is to be expected due to continuous dumping of rocks from the mine. The two fathom soundings obtained in 1936, Lat. $58^{\circ} 17.10'$ Long. $134^{\circ} 23.55'$ were not verified, the shoalest depth in this area found in the new survey being three and two tenths fathoms. Sounding

lines at about twenty meter intervals crossed this area and while no other investigation was made it is considered doubtful if soundings much shoaler than those shown could have been obtained. It is probable that the scouring action of the current caused this increase of depth. At the southeast corner of the sheet there is considerable difference noted largely due to the addition of another dump which lies outside the area surveyed. *see Review, par. 5b.*

COMPARISON WITH CHART:-

The survey agrees very closely with existing chart except for discrepancies previously noted.

DANGERS AND SHOALS:-

No dangers were found inside the usual channel.

AIDS TO NAVIGATION:-

One fixed and two floating aids to navigation are within the limits of this survey.

The position of Lawson Creek Bar Light is given in C.L. 31 (1951)

Red Lighted Nun buoy No. 4, located position 2a, Lat. $58^{\circ} 17.18'$, Long. $134^{\circ} 23.80'$ in 12.5 fathoms of water, located 3 October 1950.

Red Nun buoy No. 2,, located position 3a, Lat. $58^{\circ} 17.07'$, Long. $134^{\circ} 23.60'$ in 9.2 fathoms of water, located 3 October 1950.

GEOGRAPHIC NAMES:-

No new names are recommended.

LANDMARKS FOR CHARTS:-

Form 567 previously submitted.

MISCELLANEOUS:-

The anchored float, Lat. $58^{\circ} 17.32'$, Long. $134^{\circ} 24.58'$, located between positions 176 - 177a and 205 - 206a is not shown as it is believed it is of a temporary nature and should not be charted. not plotted

On position 173a, Lat. $58^{\circ} 17.52'$, Long. $134^{\circ} 25.02'$ there was an indication on the fathogram of a sounding at 2.8 fathoms with a bottom sounding of 7.6 fathoms. This is believed to be a submerged object, probably a log or similar object and should not be charted as a sounding. not plotted

There are two rows of pilings parallel to the shore line at the northwest corner of this survey which are used to tie log rafts to. The locations of these pilings are mentioned in the sounding records, position 207 - 211a and 272 - 276b, but the information is not sufficient to locate them. They were spotted on the air photographs

and may be located from them. (deferred until air-photo compilation is available)
(a row of piling has been temporarily carried fwd. from H- 6177a (1936))

STATISTICS:-

<u>Date</u>	<u>Vol. No.</u>	<u>Day Ltr.</u>	<u>No. of Pos.</u>	<u>Stat. Mi.</u>	<u>Naut. Mi.</u>
3 Oct. 1950	1	a	211	19.6	17.0
4 Oct. 1950	1 & 2	b	280	19.3	16.8
TOTALS			491	38.9	33.8

Area in sq. statute miles - 0.79

TABULATION OF DATA:-

Air photographs forwarded to office 7 November 1950.
Recovery cards Triangulations Stations forwarded to office 7 November 1950.
Sheet graph paper showing Tide Reducers.
Boat Sheets.
Smooth Sheet.
Fathograms.

Respectfully submitted

Edgar F. Hicks Jr.
Edgar F. Hicks Jr.
Lt. Comdr., USC&GS

Approved and Forwarded:

Glendon E. Boothe
Glendon E. Boothe
Commander, USC&GS
Chief of Party

TIDE NOTE
(to accompany Survey Field No. SU 05250)

Soundings were reduced to plane of Mean Lower Low Water by means of staff readings made by this party on the staff of the primary tide station at Juneau.

This plane corresponds to a reading of 5.0 feet on the staff or 28.39 feet below BM #2 (1911) the primary mark at Juneau.

Fathometer Corrections H-7634
(to accompany Sheet Field No. SU 05250)

Abstract of Bar Checks

Day	2	5	7	10	15	(Bar Depth)
a	2.00	5.10	7.10	10.10	15.15	
	1.95	5.05	7.15	10.30	15.40	
	2.00	5.05	--	--	--	
b	1.90	5.00	7.05	10.20	15.40	
	1.95	4.95	7.00	10.00	15.10	
	1.95	5.00	7.05	10.20	15.30	
Mean	1.96	5.02	7.07	10.16	15.27	
Fath. Corr.	+0.04	-0.02	-0.07	-0.16	-0.27	

Corrections

0 - 1.8 fms.	0.1
1.9 - 5.8	+0.0
5.9 - 9.9	-0.1
10.0 - 13.9	-0.2
14.0 - 18.0	-0.3
18.1 - 22.0	-0.4

Above values were determined from a straight line curve plotted using mean bar check values.

LIST OF SIGNALS H-7638
used on Sheet Field No. SU 05250

TRIANGULATION

NAME ON SHEET

ORIGIN OF STATION

✓ SNOW	58°16' 56.992 + 1763.3m	134° 22' 14.897 + 242.8m	SNOW 1921
✓ LAND	58°16' 36.271 + 1122.2m	134° 23' 06.053 + 98.7m	LAND 1921
✓ SON	58° 17' 30.205 + 934.4m	134° 25' 15.443 + 251.6m	SON 1921
✓ LAW	58° 17' 08.953 + 277.0m	134° 24' 29.071 + 473.7m	LAW 1921
✓ DOME	58° 18' 05.153 + 159.4m	134° 24' 33.799 + 353.6m	DOME 1921
✓ RED	58°17' 57.14 + 1767.9m	134° 25' 41.56" + 677.0m	Douglas BRIDGE WEST END RED LIGHT 1936

TOPOGRAPHIC SIGNALS

BURN

Sawdust burner Topo
Sheet 6519

TOW

Radio Tower Topo
Sheet 6519

WAS

Distance and Azimuth
by this party from
triangulation station

HYDROGRAPHIC SIGNALS

AEE

Page 51 - Vol. 1 Sound-
ing record

POL

Page 51 - Vol. 1 Sound-
ing record

LIT

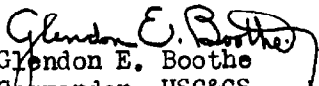
Page 3 & 4 - Vol. 1
Sounding record

Approval Sheet to Accompany H-7638
Descriptive Report for Hydrographic Sheet SUR 05250

1950

The smooth sheet, SUR 05250, boat sheet, fathograms, and accompanying sounding volumes have been examined and approved by me.

The boat sheet was examined at the close of each day's work. The survey is considered adequate, under the instructions, and should supersede all previous surveys for charting purposes. No further hydrography is recommended for the area covered by this sheet. Since this area is well covered by previous surveys bottom characteristics were not taken.


Glendon E. Boothe
Commander, USC&GS
Comdg. USC&GSS SURVEYOR
Chief of Party, C&GS

GEOGRAPHIC NAMES

Survey No. H-7638

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
<u>Southeastern Alaska</u>			(for title)									1
<u>Gastineau Channel</u>			"	"								2
<u>Juneau</u>			"	"						USGB		3
												4
<u>Lawson Creek</u>												5
<u>Douglas</u>												6
<u>Juneau</u>												7
												8
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												27
												M 234

Names underlined in red are approved. 1-23-51. L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7638.....

Records accompanying survey:

Boat sheets .1...; sounding vols. 2.....; wire drag vols.; bomb vols.; graphic recorder rolls 1 envel. special reports, etc. 1 overlay tracing; 1 sheet, Abstract of Bar Checks & 1 sheet, Fathometer Corrections

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

Number of positions on sheet	.....	491
Number of positions checked	.....	20
Number of positions revised	.....	5
Number of soundings revised (refers to depth only)	.....	12
Number of soundings erroneously spaced	.....	16
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	.....0
Junctions	Time	.....3 hrs.
Verification of soundings from graphic record	Time	.....2 hrs.
		<i>5 hrs checking signals</i>
Verification by... <i>J.A. Dinsmore</i>	Total time	38 hrs. Date 6 Aug. 1951
Reviewed by... <i>J.A. Dinsmore</i>	Time	26 hrs. Date 10 Aug. 1951

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7638

FIELD NO. SU-05250

Alaska, Gastineau Channel, Juneau

Project No. Special Instructions dated
16 August 1950

Surveyed in October 1950

Scale 1:5,000

Soundings:

Control:

808 Fathometer

Sextant fixes on shore signals

Chief of Party - G. E. Boothe
Surveyed by - E. F. Hicks Jr.
Protracted by - E. F. Hicks Jr.
Soundings plotted by - E. F. Hicks Jr.
Verified and inked by - T. A. Dinsmore
Reviewed by - T. A. Dinsmore, 10 August 1951
Inspected by - R. H. Carstens

1. Shoreline and Signals

The transfer of shoreline to this survey is deferred until a compilation of air photographs taken in 1948 is available for this area.

The origin 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.

The bottom of the channel proper is fairly regular. Steep slopes occur along the southwestern bank and considerable irregularity marks the bottom along the northeastern slope. The bottom irregularities here are caused principally by the extension of the mine rock dump immediately northward.

4. Adjoining Surveys

No contemporary surveys adjoin the present survey. A satisfactory butt junction, however, was effected with H-6177a & b (1936) on the northwest. Because of radical bottom changes in the extreme southeastern part of the present survey, no junction could be made with H-6177a (1936) on the southeast. These bottom changes are discussed in paragraph 5b. *Partial junction made*

5. Comparison with Prior Surveys

- a. H-2058 (1890) 1:20,000 H-3376 (1912) 1:10,000

These early surveys have been compared with and superseded by H-6177a & b (1936). Further comparison and consideration of the early surveys in the present review is deemed unnecessary.

- b. H-6177a (1936) 1:10,000 and b. (1936) 1:5,000

These prior surveys cover the area of the present survey. A comparison between the prior and present surveys reveals radical bottom changes along the eastern slope of the channel. The most conspicuous differences in depths are found in lat. $58^{\circ} 17.06'$, long. $134^{\circ} 22.74'$, and lat. $58^{\circ} 16.87'$, long. $134^{\circ} 22.56'$, where prior depths of 13 and 22 fms., respectively, are now superseded by depths of 0 to minus 1 fm. In this general vicinity, the 10-fm. curve has moved offshore as much as 300 meters from its prior position.

Noticeable shoaling is also disclosed in the vicinity of lat. $58^{\circ} 16.97'$, long. $134^{\circ} 23.00'$, where prior depths of 8-16 fms. are now superseded by depths of 1.9-2.8 fms.

The major shoaling indicated in the above examples is believed to be caused by the extension of the mine rock dumps which lie immediately northward and eastward.

The 2-fm. sounding charted in lat. $58^{\circ} 17.12'$, long. $134^{\circ} 23.59'$, from H-6177a and the 2½-fm. sounding charted 90 meters southeastward should be disregarded. Present development which shows a least depth of 3.4 fms. on the shoal indicates a slight deepening in this general area. The deepening has probably resulted from a scouring current action over the unstable bottom off the edge of the rock dump.

Except as noted, no important differences between prior and present depths were noticed elsewhere in the area.

Several inshore soundings, rocks and bottom characteristics have been retained from the prior surveys. With the indicated additions, the present survey is adequate to supersede the prior surveys within the common area.

c. H-4201 (1921) W.D. 1:20,000

Because of the expansion of the mine rock dump and the offshore shoals created therefrom, a detailed comparison between the prior wire-drag survey and the present survey is considered valueless. High ground now exists in a large area which was previously cleared by effective drag depths of 72-83 feet. The prior wire-drag survey is now considered to have little charting value within the limits of the present survey.

6. Comparison with Chart 8235 (Latest print date 3/5/51)

A. Hydrography

Charted hydrography originates with the prior surveys discussed in paragraph 5b which need no further consideration. The present survey supersedes the charted hydrography.

B. Aids to Navigation

The buoys charted in lat. $58^{\circ} 17.22'$, long. $134^{\circ} 23.73'$, and lat. $58^{\circ} 17.10'$, long. $134^{\circ} 23.60'$, were located about 100 meters southwestward and 75 meters southward, respectively, on the present survey. The survey positions which are subsequent to the charted positions more adequately mark the extended limits of the offshore shoals delineated on the present survey.

Except as noted, other aids to navigation located on the present survey are in substantial agreement with their charted positions and adequately serve the purpose intended.

7. Condition of Survey

- a. The sounding records are complete; the Descriptive Report covers all matters of importance.
- b. The smooth plotting was accurately done.

8. Compliance with Project Instructions

The survey complies with the Project Instructions except that a satisfactory junction was not made between the present survey and H-6177a (1936) on the southeast.


9. Additional Field Work


Radical bottom changes that have taken place at the eastern limits of the survey have been described in paragraph 5 of this review. In view of these changes it is recommended that survey operations be extended southeastward to include the new rock dump and to a satisfactory junction with H-6177a (1936). *Add'l work accomplished; see H-7961 (1952)*

Examined and approved:


H. R. Edmonston
Chief, Nautical Chart Branch


H. Arnold Karo
Chief, Division of Charts


L. S. Hubbard
Chief, Section of Hydrography


W. M. Scaife
Chief, Division of Coastal Surveys

RHC

FORM 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

23 January 1951

Division of Charts: R. H. Carstens

Plane of reference approved in 2
volumes of sounding records for

HYDROGRAPHIC SHEET 7638

Locality Gastineau Channel, Alaska

Chief of Party: G. E. Boothe in 1950
Plane of reference is mean lower low water, reading
5.0 ft. on tide staff at Juneau
28.4 ft. below B. M. 2 (1911)

Height of mean high water above plane of reference is 15.6 feet.

Condition of records satisfactory except as noted below:

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

