

6582

6582

Form 504
Rev. April 1935

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. H-6582
Hydrographic }

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
JUN 25 1941

Acc. No.

State Alaska

LOCALITY

Gulf of Alaska

Lituya Bay and approaches

193/40

CHIEF OF PARTY

R. L. Schoppe

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. H6582

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

Field No. 2140

REGISTER NO. H-6582

State Alaska

General locality south coast Gulf of Alaska

Locality Lituya Bay and approaches

Scale 1:20,000 Date of survey April - May, 1940

Vessel SURVEYOR

Chief of Party R. L. Schoppe

Surveyed by G. A. Nelson

Protracted by Edgar E. Smith

Soundings penciled by Edgar E. Smith

Soundings in fathoms feet

Plane of reference MLLW

Subdivision of wire dragged areas by

Inked by L. G. Taylor

Verified by "

Instructions dated Feb. 2, 1940

Remarks: Projection and smooth plotting by
Seattle Processing Office.

DESCRIPTIVE REPORT

to accompany

Hydrographic Sheet Register No. H-6582

(Field No. 2140)

U S C & G S S SURVEYOR, R.L.Schoppe, Comdg., Season of 1940

AUTHORITY

This survey was made under authority of the Director's instructions dated Feb. 2, 1940.

AREA

This sheet comprises development and additional work to sheet Register No. H-4608, ⁽¹⁹²⁶⁾ Lituya Bay and approaches, south coast of Alaska.

CONTROL

The triangulation of 1926 was the basis of the control. This was supplemented by several topographic signals shown on T-4244 ⁽¹⁹²⁶⁾ which could be identified. In addition, several objects were located by the hydrographic party. North of the bay on the outside coast, control is based on the traverse of 1940.

METHOD OF SURVEY

Standard methods were used; three-point sextant fixes on shore objects. Hand lead soundings were taken to depths of 10 - 11 fathoms and wire beyond that. Scale of sheet 1:20,000; N.A. 1927 Datum.

JUNCTIONS WITH PREVIOUS SURVEYS

This sheet is an addendum to sheet Register No. H-4608.(1926)

The 11 fm. sounding shown on sheet H-4608 in Lat. 58° 39', Long. 137° 31.5' was developed with no substantial decrease in controlling depth being found. Found 10 fms.

The development in Anchorage Cove, just inside the entrance, was occasioned by some questionable $2\frac{1}{2}$ to 3 fathom soundings obtained by the Dorsey fathometer on the Ship SURVEYOR when she was coming to anchor. Subsequent launch development as shown disproved these flashes.

The junction between sheet H-4648¹⁹²⁶ and sheet H-4608¹⁹²⁶ was surveyed as shown. Soundings, in general, were in good agreement. Exception was noted at the approach to the entrance to Lituya Bay where the 1926 soundings average 1 fm. deeper.

This sheet joins sheet Register No. H-6583¹⁹⁴⁰ (Field No. 2240) on the north.

GENERAL

Considerable erosion to the softer portion of the upper reaches of the bay was caused by the sudden break of an ice dam in one of the glaciers several years ago. The sudden onrush of the large amount of water swept vegetation clear to a height of about 50 feet at the head of the bay and at decreasing heights towards the mouth. Triangulation stations TU 1926, CLIFF 1926 and YA 1926 were probably destroyed at this time.

Rough copy of descriptive report
submitted to Processing Office
without signature by Ship SURVEYOR.

ADDITIONAL NOTES BY SEATTLE PROCESSING OFFICE

DISCREPANCIES

<u>Lat. & Long.</u>	<u>Positions</u>	<u>Soundings</u>	<u>Remarks</u>
58° 35.4' 137° 39.1'	42d	26 fms.	Seems 2 - 3 fathoms too deep. Accepted
58° 40.2'	20h	Breakers noted in Vol. 3, p. 16, apparently in error. The bottom is even, smooth and sandy. Soundings indicate gradually deepening water near 10 fm. curve. It is believed that recorder has placed note at offshore instead of the inshore end of the line by mistake. See boat sheet where a penciled line alongshore indicates breakers near the sounding limits. Explanation accepted	

GENERAL

Note the bar extending from Lat. 58° 36' Long. 137° 38' southeastward parallel to the shore for a mile and a half.

The water inshore from it is one to two fathoms deeper. This feature is verified by the soundings of "c" and "f" days.

Two reference marks were used as hydro signals. The positions were computed from distance and azimuth from triangulation station to the R.M. The obtained positions follow:

YA R.M.2 58° 38' 02.308" 71.4 (-1785.1) meters
137° 32' 30.090" 485.5 (-482.6) meters

HALF R.M.2 58° 39' 05.116" 158.3 (-1698.2) meters
137° 40' 33.414" 538.9 (-428.8) meters

E. E. Smith
Assoc. Cart. Engr.

Forwarded
Geo. L. Bean
Geo. L. Bean
Officer in Charge
Seattle Processing Office.

STATISTICS - Sheet H-6582

Date	Day	Stat.miles sdg.line:			No. soundings			No. Pos.
		Wire	H.L.	Total	Wire	H.L.	Total	
Apr.27	a	3.5		3.5	91		91	39
29	b	6.4	4.4	10.8	156	200	356	123
30	c	11.5	15.8	27.3	193	357	550	171
May 1	d	21.1		21.1	338		338	129
2	e	31.5		31.5	476		476	176
5	f	22.4	8.3	30.7	299	234	533	148
28	g	19.8		19.8	258		258	92
29	h	15.8	13.0	28.8	210	386	596	145
30	j	9.5	3.5	13.0	108	105	213	56
Totals:		141.5	45.0	186.5	2129	1282	3411	1079

Number of volumes = 3.

TIDAL NOTE

H6582

Sheet H-6582

A tide staff was established inside Lituya Bay at the same location as that of 1926.

Connections were made to the 1926 bench marks and all soundings inside the bay were reduced on this datum.

Outside the bay, reducers obtained from the Yakutat tide station were used.

Yakutat Tide Station:

Latitude 59° 32.8'

Longitude 139° 44.1'

Length of series April 24, 1940 to

MLLW on staff 3.4 ft.

Highest tide recorded 15.3 ft. May 22, 1940

Lowest tide recorded 0.8 ft. June 21, 1940

501

TIDE NOTE FOR HYDROGRAPHIC SHEET

Coastal Surveys

July 7, 1941

Division of ~~Hydrography and Topography~~:

Division of Charts: Attention: Mr. H. R. Edmonston ✓

Plane of reference approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET 6582

Locality Vicinity of Lituya Bay

Chief of Party: R. L. Schoppe

Plane of reference is mean lower low water reading

3.4 ft. on tide staff at Yakutat

28.2 ft. below B. M. 1

4.4 ft. on tide staff at Lituya Bay

10.0 ft. below B. M. 1

Height of mean high water above plane of reference is 9.3 feet at
Yakutat and 8.0 feet at Lituya Bay.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

Remarks.

Decisions

1	Remarks.	Decisions
2		585 375
3		
4		
5		
6		
7	* See Bull. 836 B (1930), Dept. of Int.	
8	↙ See Hermonway, Room 1107	
9		
10		
11		
12		
13	See H-4608 and T-4244 for other names	
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
M 23*		

GEOGRAPHIC NAMES
Survey No. **H6582**

Name on Survey	8505											
	A	B	C	D	E	F	G	H	K			
<u>Gulf of Alaska</u>												1
<u>Lituya Bay</u>												2
<u>Penotaph Island</u>												3
<u>Anchorage Cove</u>												4
<u>Harbor Pt.</u>												5
<u>La Chaussee Spit</u>												6
<u>Lituya glacier</u> *												7
<u>Cascade</u> " *												8
<u>Crillon</u> " *												9
												10
Names underlined appear sufficient											11	
for this sheet. Several of names in											12	
pencil have been submitted to Board											13	
											L.H.	14
												15
												16
												17
												18
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												21
												22
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												25
												26
												27

Names underlined in red approved
by L. Heck on 2/15/41

Dead glacier also with flower

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H6582**

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

Number of positions on sheet	.1977.
Number of positions checked	..62..
Number of positions revised	... 5 ⁶ ...
Number of soundings recorded	..3411..
Number of soundings revised	..25...
Number of soundings erroneously spaced	..18....
Number of signals erroneously plotted or transferred	..None..

Date: July 30 - 41

Verification by *R. G. Taylor*

Time: 80 hrs.

Review by *Harold W. Murray*

Time: 18 hrs

HYDROGRAPHIC SURVEY NO. H6582

Smooth Sheet One

Boat Sheet One

Records; Sounding 3 Vols., Wire Drag Vols., Bomb Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) None

Special Chart for Lighthouse Service -----
(Circular Nov.30, 1933)

Hydrography: Total Days 9 ; Last Date May 30, 1940

Remarks Fathometer Corrections 1940 Alaska Season filed

with sounding volumes of this sheet.

MEMORANDUM IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
~~PHOTOSTATIC~~

No. H **H6582**
~~No. H~~

{ received June 25, 1941
registered June 26, 1941
verified
reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25	✓	HRC	Pages 2 and 3
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
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✓ TBOR

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H H6582

Verified and Inked by *Lorne G. Taylor*

Date *July 30 - '41*

1. The descriptive report was consulted and appropriate action taken.
Yes
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.
Yes
3. All references to survey sheets mentioned in the descriptive report include the registry number and year.
Yes
4. Geographic names of hydrographic features are in slanting lettering and of topographic features in vertical lettering.
Yes
5. All items effecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.
Yes
6. All positions verified instrumentally were check marked in the sounding records.
Yes
7. All critical soundings are clear and legible.
Yes
8. The metal protractor has been checked within the last three months.
Yes
9. The protracting and plotting of all bad crossings were verified.
Yes
10. All detached positions locating critical soundings, rocks or buoys were verified.
Yes
11. The boat sheet was compared with the smooth sheet.
Yes
12. The spacing of soundings as recorded in the records was closely followed.
Yes
13. The bottom characteristics were shown on outstanding shoals.
Yes
14. The reduction and plotting of doubtful soundings were checked.
Yes

15. The transfer of contemporary topographic information was carefully examined.
Yes
16. All junctions were transferred.
Contemporary Junctions were transferred, except for developed Areas in Lituya Bay
17. The notation "JOINS H" was added for all contemporary adjoining or overlapping sheets now registered.
Yes
18. The depth curves have been drawn to include the significant depths.
Yes
19. All triangulation stations and transfer of topographic and hydrographic signals were checked by the field party.
Yes
20. Heights of rocks were checked against range of tide.
No rocks plotted from sounding records
21. Rocks transferred from topographic survey have a dotted curve where shown thereon.
Yes
22. Unnecessary pencil notes have been removed.
Yes
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.
None
24. The low water line and delineation of shoal areas have been properly shown (see letter of October 20, 1934).
Yes
25. Degree and minutes values and symbols have been checked.
Yes
26. Source of shoreline and signals (When not given in report).
*Shoreline taken from {4760-1940}
{4240-1926}
{4244-1926}*
27. Depth curves were satisfactory except as follows:
Curves were too irregular. Fractions of fathoms were used to make smooth curves wherever possible.

28. Sounding line crossings were satisfactory except as follows:

Satisfactory

29. Junctions with contemporary surveys were satisfactory except as follows:

Junction with H4608 (1922) shows soundings about 1 fm. deeper ✓

30. Condition of sounding records was satisfactory except as follows:

Satisfactory except note mentioned in report, concerning breakers in Vol 3. p. 16. of Sounding Records. OK ✓

31. The protracting was satisfactory except as follows:

Satisfactory

32. The field plotting of soundings was satisfactory except as follows:

Field plotting in error between 81 $\frac{1}{2}$ and 86c. ✓

33. Notes to reviewer: Name of Island in Lituya Bay does not check with corrected ^{name} that given on Topog. sheet #4244 (1926). Tracings that include the developed Areas in Lituya Bay have been taken from H-4608 for comparison. ✓

DIVISION OF CHARTS

SURVEYS SECTION

REVIEW OF HYDROGRAPHIC SURVEY NO. 6582 (1940) FIELD NO. 2140

Alaska, Gulf of Alaska, Lituya Bay and Approaches
Surveyed in April - May 1940, Scale 1:20,000
Instructions dated February 2, 1940 (SURVEYOR)

Soundings: Handlead
and Wire

Control: Visual Fixes on
Shore Signals

Chief of Party - R. L. Schoppe
Surveyed by - G. A. Nelson
Protracted by - Edgar E. Smith
Soundings plotted by - Edgar E. Smith
Verified and inked by - L. G. Taylor
Reviewed by - Harold W. Murray, August 11, 1941
Inspected by - H. R. Edmonston

1. Shoreline and Signals

The shoreline on the northwest is from T-6760 (1940).
The balance of the shoreline is from earlier 1926 work,
T-4240 and T-4244.

The signals originate with the above surveys and have
been supplemented by several hydrographic signals.

2. Sounding Line Crossings

Agreement of sounding line crossings is satisfactory.

3. Depth Curves

The usual depth curves may be satisfactorily delineated
within the limits of the survey.

4. Junctions with Surveys

- a. The junction inshore of and in the vicinity of
the 10-fm. curve and in Lituya Bay with H-4608
(1926) is generally satisfactory. Considerable
overlap exists with this 1926 survey and because
of differences of 1 to 2 fms. only a fringe of
soundings has, in general, been transferred.
The agreement within the common area in Lituya
Bay is good.

- b. The junction on the southeast with H-4642 (1926) is excellent.
- c. The junction with contemporary surveys H-6583 (1940) on the north and with H-6581 (1940) along the southwest will be considered in the review of that work. At this time consideration will be given to a possible junction with H-4648 (1926) on the extreme south.

5. Comparison with Prior Surveys

- a. H-2665 (1903), Scale 1:600,000

This is a reconnaissance survey and contains no information that needs specific consideration in this review.

- b. H-4608 (1926) and H-4648 (1926), Scales 1:20,000 and 1:100,000

These two surveys taken together practically cover the entire area of the present survey.

Agreement of depths with the present survey is generally good in Lituya Bay and to the southward of the entrance. At the entrance and to the northward, differences of 1 to 2 fms. are quite common with those of the present survey being, generally, shoaler. This shoaling is particularly noticeable opposite the entrance. In Lat. $58^{\circ} 35'$, Long. $137^{\circ} 36'$, the agreement was sufficiently good that several soundings were carried forward to supplement the wide sounding line spacing on the present survey. Just inshore of this area, the long bar enclosed by the 2-fm. curve is apparently building up since the scattered soundings on the old survey are about 1 fm. deeper.

The two detached developments in Lituya Bay are essentially additional work. The development in Lat. $58^{\circ} 39.5'$, Long. $137^{\circ} 31.5'$ is an investigation of two 11-fm. depths called for in the review of H-4608 (1926). The development disclosed a least depth of 10 fms. However, a 13-fm. depth adjacent to depths of 21 fms. was found about 300 m. southwest where the widely spaced soundings on the old survey indicated 50 fms. This 37-fm. difference is quite substantial.

The Descriptive Report of the present survey, page 2, states that the detached development just

inside the entrance was occasioned by some questionable 2-1/2- to 3-fm. soundings obtained by the Dorsey fathometer on the Ship SURVEYOR when she was coming to anchor. The launch development is considered adequate to disprove these questionable flashes.

The present survey with the indicated additions supersedes these surveys.

6. Comparison with Chart 8505 (New Print date 6-1-40)
Chart 8002 (New Print date 1-8-41)

a. Hydrography

Hydrography on the chart originates with surveys discussed in the preceding paragraphs. Several items of interest were noted on the 20,000 scale chart 8505 which also has a 1:10,000 scale insert.

- (1) The chart is not on the North American 1927 Datum. The adjustment is approximately 260 m. in latitude and 20 m. in longitude and is therefore quite substantial. The change in datum will be automatically taken care of when the chart is revised.
- (2) The rock awash 300 m. off La Chaussee Spit at the entrance is actually a sunken rock on T-4244 (1926) but has been charted as a rock awash with the notation "awash lowest tides." The authority for this treatment is a statement in the Descriptive Report of T-4244 (1926) that the rock is actually awash at a minus two-foot tide. A rock awash symbol with an appropriate notation has been shown on the present survey. Similar treatment was made of the sunken rock about 300 m. southeast.
- (3) The 11-fm. shoal sounding in Lat. 58° 39.4', Long. 137° 31.6' (N. A. 1927 Datum) is obscured by the compass rose. This shoal feature will be more distinct when replaced by the 10-fm. sounding and the accompanying curve on the present survey.

b. Aids to Navigation

Harbor Point light located by triangulation in 1926 and recovered in 1940 agrees with the charted position. The Descriptive Report of H-4608 (1926) states that this light is an aid for coasting vessels but of little value in entering the entrance.

7. Compliance with Instructions for the Project

Satisfactory.

8. Condition of Survey

Satisfactory.

9. Additional Field Work Recommended

This is an excellent survey and no additional work is required.


The Descriptive Report, page 2, states that "considerable erosion to the softer portion of the upper reaches of the bay was caused by the sudden break of an ice dam in one of the glaciers several years ago. The sudden onrush of the large amount of water swept vegetation clear to a height of about 50 feet at the head of the bay and at decreasing heights towards the mouth."

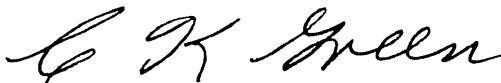
10. Superseded Surveys


H-2665 (1903)	In part
H-4608 (1926)	" "
H-4648 (1926)	" "

Examined and approved:


Chief, Surveys Section


Chief, Division of Charts


Chief, Section of Hydrography


Chief, Division of Coastal Surveys

Applied to chart 8505 October 21, 1941. Lam.