

6338

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Form 504
Rev. April 1935
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Topographic }
Hydrographic } Sheet No. H 6338

State S. E. ALASKA

LOCALITY

Glacier Bay

Berg Bay

1938

CHIEF OF PARTY

H. Arnold Kero

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

MAR 20 1939

REG. NO.

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.

Field No. 1138

REGISTER NO. H-6338

State S.E. Alaska

General locality Glacier Bay

Locality Berg Bay

Scale 1-10,000 Date of survey Aug-Sept., 19 38

Vessel Tender No. 1

Chief of Party H. Arnold Karo

Surveyed by George E. Morris Jr.

Protracted by George A. Nelson, J.H.S. Billmyer

Soundings penciled by George A. Nelson

Soundings in fathoms feet

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by H.F. Stegman

Verified by H.F. Stegman

Instructions dated March 10, 19 38

Remarks:

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET NO. H 6338

Field No. 1138

Berg Bay , Glacier Bay , S.E. Alaska.

(a) Date of Instructions:

Work was done under instructions dated March 10 , 1938 , ✓
Project HT - 221.

(b) Survey Methods:

Standard methods of obtaining depths and positions were followed. Signals used in taking three point sextant positions were located by triangulation or plane table topography. ✓
Depths within the range of the hand lead were measured with the wire centered hand lead line with a twelve pound lead. Greater depths were measured with a power driven sounding machine using stranded wire and a twenty-five pound lead.

(c) Discrepancies:

There are no discrepancies.

In running lines directly toward the beach , the speed of the sounding launch was never intentionally decreased before the end of the line. In running lines away from the beach , the launch always reached sounding speed before the sounding was started.

See par. 2,
review.

(d) Dangers:

A shoal of $8 \frac{4}{6}$ fathoms , position 209h , lies in latitude $58^{\circ} - 32.3'$, longitude $136^{\circ} - 09.5'$. This shoal was buoyed during development and 21 minutes were spent in searching for the least depth. ✓

A shoal of $8 \frac{4}{6}$ fathoms , position 85r , lies in latitude $58^{\circ} - 31.9'$, longitude $136^{\circ} - 09.3'$. This shoal was buoyed during development and 18 minutes were spent in searching for the least depth. ✓

A rock bearing $6\frac{1}{2}$ feet M.L.L.W. , positions 53f and 57f , lies in latitude $58^{\circ} - 32.7'$, longitude $136^{\circ} - 08.4'$.
(See -e- Channels) ✓

A rock bearing 6 feet M.L.L.W. , positions 54f and 58f , lies in latitude $58^{\circ} - 32.6'$, longitude $136^{\circ} - 08.5'$.

A rock bearing 5 feet M.L.L.W. , position 79b , lies in latitude $58^{\circ} - 32.1'$, longitude $136^{\circ} - 08.1'$.

A rocky shoal with a least depth of 4 feet , position 2c , lies in latitude $58^{\circ} - 31.8'$, longitude $136^{\circ} - 08.0'$.
(See -e- Channels)

Another shoal spot of $2\frac{1}{2}$ fathoms , position 185r , lies in latitude $58^{\circ} - 31.7'$, longitude $136^{\circ} - 08.0'$. (See -e- Channels)

A shoal of $1\frac{5}{6}$ fathoms , position 17f , lies in latitude $58^{\circ} - 31.5'$, longitude $136^{\circ} - 08.7'$. (See -e- Channels)

(e) Channels:

There are two channels entering Berg Bay. The northerly of the two is not recommended for use. The rocks in latitude $58^{\circ} - 32.7'$ obstruct the Glacier Bay end and the low water line makes out on both sides between hydrographic signals GUY and SUB and constricts the Berg Bay end. The controlling depth is 5 feet.

The main entrance lies between Entrance Island and Berg Island. (See -i- Geographic Names) The shoal $\frac{4}{6}$, position 2c , obstructs the channel at the Glacier Bay end. Deeper water lies on either side of this spot but the $2\frac{1}{2}$ fathom spot , position 185r , further obstructs the southern half of the channel. The 4 foot spot was buoyed with a small red mooring buoy. The $1\frac{5}{6}$ fathom spot in latitude $58^{\circ} - 31.5'$, longitude $136^{\circ} - 08.7'$ was buoyed with a wooden buoy. It is probable that the ice will take out both buoys during the winter. In entering Berg Bay a vessel should pass midway between the 4 foot spot and the low water line on the north side of the channel on course 237° true. Controlling depth is $3\frac{4}{6}$ fathoms. Care should be taken not to steer south of this course until past longitude $136^{\circ} - 08'$ to avoid the shoal area making out from triangulation station TREE. Do not pass south of the $1\frac{5}{6}$ fathom spot in latitude $58^{\circ} - 31.5'$, longitude $136^{\circ} - 08.7'$. It is advisable to make passage at or near high water. Kelp grows in about six fathoms but the strong currents make the kelp tow under most of the time except during slack water.

A narrow tortuous channel into the southeastern arm of Berg Bay lies just to the east of triangulation station TREE. Use of this channel is advised against. The bottom is rocky with many boulders. The currents are strong except for a short time directly preceeding and following high water. Below about half tide there is a decided gradient between Berg Bay proper and the water in the arm.

(f) Anchorages:

The WESTDAHL found good anchorage in about 18 fathoms in latitude $58^{\circ} - 31'$, longitude $136^{\circ} - 09.4'$. Smaller craft could anchor inshore for protection from southerly winds. ✓ *sheet 1*

Good anchorage with protection from northerly winds can be had in the northerly arm in latitude $58^{\circ} - 32.9'$, longitude $136^{\circ} - 09.6'$. ✓

Good anchorage for small craft can be had in the westerly arm in latitude $58^{\circ} - 31.2'$, longitude $136^{\circ} - 13.4'$. ✓
The gnats were worse here than at either of the other anchorages.

(g) Comparison with Previous Surveys: 25

The only prior survey of Berg Bay is a 1 : 40 000 scale reconnaissance survey executed in 1907 , sheet No. 2847. This survey does not agree with the present work. Depths of 5 and 6 fathoms are shown where depths of 20 to 35 fathoms were found. It has been suggested that an earthquake may have caused this change. However , the general outline of the bay does not differ from that obtained in 1907 so that it seems unlikely ~~there~~ has been a sufficiently severe earthquake to account for the great change in the depths. It is recommended that none of the 1907 soundings be retained. *See par. 5, review.*

(i) Geographic Names:

Glacier Bay and Berg Bay are charted names.

Entrance Island and Berg Island are names suggested by the topographer. (See Descriptive Report for topographic sheet T 6636) ✓

(j) Statistics:

Statistics for sheet H 6338 , field no. 1138.

2615 Positions

9831 Soundings

7736 Hand Lead

2095 Wire

215.3 Statute miles sounding lines.

4 Square statute miles area.

Miscellaneous:

The bottom characteristic "Ooze" refers to very soft mud rather than to decomposed vegetation. ✓

Respectfully submitted,

George E. Morris, Jr.

George E. Morris , Jr.
Jr. H. & G. Engineer.

Examined and Approved:

H. & G. Engineer
Chief of Party

All records for field sheet No. 1138, Registry
No. H 6338 have been examined and are approved.

A handwritten signature in cursive script, appearing to read "Arnold Karo". The signature is written in black ink and is positioned above the printed name.

H. Arnold Karo

TIDE NOTE FOR HYDROGRAPHIC SHEET

Division of Hydrography and Topography:

April 17, 1939

✓ Division of Charts: Attention: Mr. E. P. Ellis

Plane of reference

~~Tide Records~~ approved in
8 volumes of sounding records for

HYDROGRAPHIC SHEET 6338

Locality Berg Bay, Glacier Bay, Southeast Alaska.

Chief of Party: H. Arnold Karo in 1938

Plane of reference is mean lower low water reading

6.5 ft. on tide staff at Bartlett Cove
20.2 ft. below B.M.1

Height of mean high water above plane of reference is ^{12.8} 6.2 feet.

Condition of records satisfactory except as noted below:



Acting Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES

Survey No. H-6338

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
<u>Glacier Bay *</u>											1
<u>Berg Bay</u>											2
<u>Berg Island</u>											3
<u>Entrance Island</u>											4
											5
											6
											7
											8
											9
											10
											11
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											26
											27

Names underlined in red approved
 L. Heck on 2/31/39
 Also 7/9/42

Netland II - U.S.G.B. 5/27/42

Lars I - " "

Remarks

Decisions

	Remarks	Decisions
1		USGB 580355
2		585360
3	Pending with U.S.G.B.	585360
4	Netland I. proposed to U.S.G.B.	585360
5		
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M 234		

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H6338**

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

Number of positions on sheet	2615
Number of positions checked	38
Number of positions revised	0
Number of soundings recorded	2831
Number of soundings revised	33
Number of soundings erroneously spaced	0
Number of signals erroneously plotted or transferred	None

Date: *May 20, 1939*

Verification by *H.F. Stegman*

Review by *J.A. McCormick* 5/25/39

Time: *92 ³/₄ hours*

Time: *9 hrs.*

HYDROGRAPHIC SURVEY NO. H6338

Smooth Sheet Yes

Boat Sheet Yes

Records; Sounding 8 Vols., Wire Drag Vols., Bomb Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Vol.#1

Landmarks for Charts (Form 567) None

Statistics Page #3 of D.R.

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) None

Special Chart for Lighthouse Service None
(Circular Nov.30, 1933)

Hydrography: Total Days 16 ; Last Date Sept. 29, 1939

Remarks _____

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT } No. H-6338
~~PHOTOSTAT OF~~ } ~~No. H-6338~~

{ received Mar. 18, 1939
 { registered Mar. 22, 1939
 { 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	✓		Page 3 entered in CP 245
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
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✓ JBR

VERIFICATION REPORT

ON H-6338 (1938)

1. CONDITION OF RECORDS

The records are neat and legible, and conform to the requirements of the Hydrographic Manual.

The Descriptive Report, page 2 paragraph 4, mentions a shoal of $2\frac{1}{2}$ fm., pos. 185r. A sdg of $2\frac{1}{2}$ fm was obtained 10 meters south of this spot just before pos. 32f. Corrected in D.R.

2. SHORELINE AND SIGNALS

Shoreline originates with sheet ^{T-6630 (1935)} ~~Field Letter H 1938~~ of the party of H.A.KARO

Signals originate with 1938 triangulation and topo sheets ^{T-6629 T-6630} Field letters F and H, 1938

3. SOUNDING LINE CROSSINGS

The Descriptive Report states that there are no discrepancies. This is true except for the work done on P day in the south arm of Berg Bay (vicinity of $136^{\circ}08$, $58^{\circ}31'$) which is about one fathom shoaler than the work done on Q and R days. The entrance to this arm of the bay is narrow and shallow except near

high water, and therefore below about half tide there is a difference in the tide stage between this arm and the bay proper. As the tide gauge for this sheet was located at Bartlett Cove, some distance from the area surveyed, and with no time correction applied to the soundings in the southeast arm, the work of P day (after pos 72P) surveyed on a rising tide from $\frac{2}{3}$ tide, was rejected by instruction of the Chief of Section. Noted in review.

Since the work of Q and R days, in this arm of the bay, was in good agreement, and since this area is of minor importance, the sdgs of these two days were accepted, although there is some doubt of their absolute correctness. (These soundings were taken near high water when the error, if it existed, would be at a minimum)

This disposition accepted.

4. DEPTH CURVES

Within the area of this survey the usual depth curves could be completely drawn, except that:

Due to the irregularity of the zero curve, with a bottom of gravel and boulders, sdgs were not always obtained inside of this curve, thus leaving a few small gaps in the low water line.

However, such gaps as exist are very small, and do not constitute

an error of omission. In the opinion of the verifier this survey is very thorough and complete, and no further development in this area is necessary.

5. JUNCTIONS WITH CONTEMPORARY SURVEYS

No junctions have been made as H-6340 (1938) which joins this sheet southeast of Entrance Island has not yet been verified. There are no other contemporary surveys joining this sheet.

6. FIELD PLOTTING

Field plotting was neat and complete. Features between the high and low water lines were transferred from the Topo sheet ^{T-6630} (H-1938) by the verifier.

Respectfully submitted

Harold F. Stegman

May 20, 1939

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6338 (1938) FIELD NO. 1138

Berg Bay, Glacier Bay, South East Alaska
Surveyed in Aug.-Sept., 1938, Scale 1:10,000
Instructions dated March 10, 1938 (WESTDAHL)

Hand Lead and Machine Soundings 3 Point fixes on shore signals

Chief of Party - H. A. Karo
Surveyed by - G. E. Morris, Jr.,
Protracted by - G. A. Nelson, J. H. S. Billmyer
Soundings plotted by - G. A. Nelson
Verified and inked by - H. F. Stegman

1. Shoreline and Signals

Shoreline and topographic signals originate with T-6629 (1938) and T-6630 (1938).

2. Sounding Line Crossings

Soundings obtained on p day in the south arm of Berg Bay (vicinity of Lat. 58°31', Long. 136°08') average about one fathom shoaler than those of q and r days in the same area. As the entrance to the arm is narrow, it is probable that the differences are largely due to the tidal reducers applied without correction from observations at Bartlett Cove, a considerable distance away (see also descriptive report, page 2, last paragraph). Soundings of q and r days, being in good agreement with each other, have been accepted as the most nearly correct and those of p day (after position 72) rejected. The area is of little importance, the controlling depth into the arm being 1/2 fathom. There are no other notable discrepancies on the survey.

3. Depth Curves

The usual depth curves, including most of the low water line, may be satisfactorily drawn.

4. Junctions with contemporary Surveys.

The junction with H-6340 (1938) on the southeast will be considered in the review of that survey. New surveys have not as yet been made on the east or north but are contemplated for the 1939 field season.

5. Comparison with Prior Surveys
T-2847 (1907), Scale 1:40,000 (contains hydrography)

This is a reconnaissance survey which contains a few sounding lines in the entrance to Berg Bay. It is makeshift hydrography, lines being controlled by theodolite cuts from shore and soundings obtained with an old leadline borrowed from the Launch "Spray". Minimum depth obtained in the entrance was 23 feet which compares favorably with depths surrounding the 4 foot shoal on present survey. Both inside and outside the entrance the old survey shows maximum depths of 8 fathoms as compared with depths of as much as 39 fathoms on the present survey. All soundings were taken with a hand lead on regular 30 second intervals with the launch underway at a speed of approximately two knots. It is not believed that earthquakes are responsible for the differences as has been suggested (see descriptive report, page 3, paragraph g) and it may safely be assumed that all soundings taken in deep water were no bottom soundings. In any event the present survey is considered adequate and should supersede the old survey in future charting of the common area. An appropriate note regarding the soundings has been placed on T-2847 (1907).

6. Comparison with Chart 8306 (New Print dated April 13, 1939)

Within the area of the present survey the chart is based principally on the survey discussed in the preceding paragraph. The sunken rock charted in Lat. 58° 31.6', long. 136° 08.2' originates with chart Letter 444 of 1924 and is undoubtedly identical with the 4 foot rocky shoal in this vicinity on the present survey. The position of the latter as reported in advance in chart Letter 592 of 1938 from the field party was 1° 00.72' in error in latitude. The one degree error was readily detected but the 00.72' difference resulted in the charting of a 1/4 fathom sounding in the center of the cove south of Entrance Island rather than in the main entrance. The 4 ft. sounding should replace the sunken rock symbol on the chart.

7. Condition of Survey

- (a) The sounding records are neat and legible.
- (b) The descriptive report is satisfactory.
- (c) The field plotting was satisfactory.

8. Compliance with Instructions for the Project.

Satisfactory.

9. Additional Field Work Recommended

None.

10. Aids to Navigation.

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

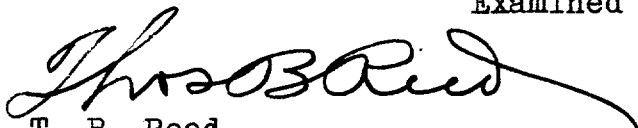
11. Superseded Old Surveys

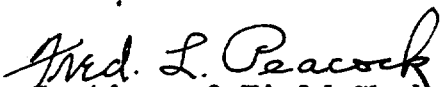
T-2847 (1907) entirely (hydrography only).

12. Reviewed by - J. A. McCormick, May 25, 1939.

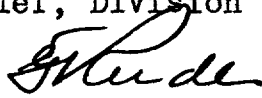
Inspected by - E. P. Ellis

Examined and approved:


T. B. Reed,
Chief, Section of Field Records


Chief, Section of Field Work


K.T. Adams
Chief, Division of Charts


Chief, Division of H. & T.

Applied to drawing of chart 8202 3/7/40
Applied to drawing of chart 8306 4/11/40

J.R.
Hem.

17318 4/16/79 H.J. Borowski

Fully app'd hydro after
inspection

John 3070
930