

5745

U. S. COAST & GEODETIC SURVEY
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GUIDELINES AS DESCRIBED IN SECTION
3.3(a) EXECUTIVE ORDER 12356.

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

H. S. PATTON, Director

State: ALASKA

DESCRIPTIVE REPORT

Topographic } Sheet No. U-2334
Hydrographic }

LOCALITY

UNALGA PASS

ALEUTIAN ISLANDS

1934

CHIEF OF PARTY

A. M. SOBIERALSKI, H. & G.E.

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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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LIBRARY AND RECORDS
MAY 1 1935
REG. NO.
Acc. 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. U-2334

REGISTER NO. 5745

State ALASKA

General locality ALEUTIAN ISLANDS

Locality UNALGA PASS

Scale 1:20,000 Date of survey AUGUST - OCTOBER, 1934

Vessel Ship SURVEYOR, Launch WILDCAT and Launch #3.

Chief of Party A. M. SOBIERALSKI

Surveyed by A. M. SOBIERALSKI, L. C. WILDER, R. C. ROWSE, F. B. QUINN, H. B. CONERLY.

Protracted by E. H. SHERIDAN

Soundings penciled by E. H. SHERIDAN

Soundings in fathoms feet

Plane of reference M. L. L. W.

Subdivision of wire dragged areas by -

Inked by J. G. Bowers, P. H. Scherr

Verified by P. H. Scherr

Instructions dated APRIL 13, 1934

Remarks: _____

DESCRIPTIVE REPORT

to accompany

SHEET U-2334 (FIELD NUMBER)

UNALGA PASS, ALEUTIAN ISLANDS, ALASKA.

PROJECT HT-176, 1934

DATE OF INSTRUCTIONS:

April 13, 1934.

LIMITS:

Joins sheet 4134 south of Unalga Island; sheet U-2234 south of Brundage Head; and unsounded areas at Erskine Point and at the northwest and southeast ends of Unalga Island. A few ship lines were run to Cape Kalekta and northeastward therefrom.

CONTROL:

See extra sheet in this report entitled "Datum"

SURVEY METHODS:

Regular methods and fixed control were used. The ship SURVEYOR took fathometer soundings; the launch WILDCAT used wire and handlead soundings, and used a skiff for handlead in parts of English Bay; and launch #3 used handlead.

DISCREPANCIES:

No discrepancies were noted.

TIDE RIPS:

Numerous notes were made in the sounding volumes of tide rips but not plotted on the sheet. A clearer knowledge of tide rips in these waters is presented in the "Coast Pilot Notes" submitted on January 21, 1935.

DANGERS:

There were no dangers found more than 1/3 mile from shore. One important danger and other spots to be noted are:

(1) A small rocky shoal with a least depth of ~~8~~^{2 1/2} fathoms at MLLW was found 1/3 mile off the south side of Unalga Island at latitude 53° - 57.0', longitude 166° - 08.85'. ✓ ✓

(2) A depth of 12 fathoms was found on the rocky mid-channel bank northeast of Brundage Head at latitude 53° - 56.8', longitude 166° - 11.7'. ✓ ✓

(3) A kelp-marked shoal area with rocks awash extends 1/8 mile from the southwest end of Unalga Island at the narrowest part of Unalga Pass. ✓ ✓

(4) Kelp and rocks awash extend 400 yards north of Fisherman Point, latitude 53° - 56.7', longitude 166° - 13.7'. The rocks awash nearby at latitude 53° - 56.6', longitude 166° - 13.4', are covered at high water. ✓ ✓

ANCHORAGES:

English Bay (Chart 9196) is a secure anchorage for small vessels, but in entering care must be taken to avoid being set off the course by the strong currents in Unalga Pass which have an estimated maximum velocity of 9 knots. The most secure anchorage is in the narrow part of the bay 3/4 mile from its head where 6 - 7 fathoms of water and mud bottom are found. It is just southwest of the low flat grassy point extending from the northern shore. ✓

Good anchorage with more swinging room can be found eastward of this point in 8 - 10 fathoms, but a shoal area extending 400 yards off the northwestern shore must be avoided. ✓

Good holding ground for temporary anchorage will be found nearer the entrance of the bay in 12 - 20 fathoms. ✓

COMPARISONS WITH PREVIOUS SURVEYS:

There was good agreement with the 1901 1:10,000 sheet of English Bay, register number 2544, but this sheet¹⁹³⁴ should supersede the old one.

Respectfully submitted,

Francis B. Quinn

FRANCIS B. QUINN,
Jr. H. & G. E.

Approved & forwarded:

A. M. Sobieralski

A. M. SOBIERALSKI,
Chief of Party,
Commanding, Str. SURVEYOR.

FATHOMETER SOUNDINGS

In numerous places, lines of fathometer soundings occur between lines of vertical cast soundings, and the fathometer soundings are almost invariably several fathoms shoaler. These differences are so consistent that there can be little doubt that they are due to the method of sounding, and are not indications of shoals. An attempt was made to eliminate these discrepancies in the fathometer corrections, but the factor computed from comparative readings with vertical casts would not eliminate them. It is possible that the fathometer reads a little low in strong currents and tide rips, the greater amount of air bubbles etc in the water affecting the velocity of sound. Under such conditions it is also difficult to get good vertical casts, the current tending to make the vertical cast sounding too deep. The combination of these two effects might well account for the differences encountered. ✓

No practicable way to adjust these discrepancies can be suggested. The only effect is a slight irregularity in the depth which at times makes the depth curves rather irregular.

there appears to be a uniform 2 fathom difference and the fathometer sds agree closely with the prior surveys vertical cast sds. in the area south of Unalga Id.

D A T U M

The topographic work in the vicinity of the Krenitzin group was started using the 1901 geographic positions, and the positions of supplemental stations were computed from the 1901 lines as a base. These preliminary positions were used to control the topography.

Later in the season, the whole scheme of triangulation was recomputed from a newly measured base resulting in changes which amounted to from 2 to 5 meters in the vicinity of Unalga Pass to a maximum of about 10 meters in the eastern limits of the work. As a result, the triangulation stations as plotted will not agree exactly with the 1934 field computations, as submitted to the office. That is, the recovered 1901 stations are plotted from the original geographic positions, but the 1934 stations are plotted from preliminary positions which are not in strict accordance with the positions resulting from the final field computations as submitted in the list of geographic positions. The difference will correspond approximately to the difference between the 1901 and 1934 positions of recovered stations in the vicinity.

To eliminate these discrepancies, a slight change in the projection is necessary, but it is difficult to show the small correction, so that it has been indicated only on the sheets where it exceeds 5 meters. The correction to the projection brings the sheet to the Unalaska Datum as determined by the 1934 field computations.

The discrepancies on this sheet, field number U-2334, are less than 5 meters and have been disregarded. ←

STATISTICS

SHEET U-2334 (FIELD NUMBER)

<u>Volume</u>	<u>Day</u>	<u>Date</u>	<u>Positions</u>	<u>Soundings</u>	<u>Statute Miles</u>	
<u>Launch WILDCAT</u>						
1	A	8-27-34	20	31	4.7	
1	B	28	25	34	4.7	
1	C	30	134	163	28.1	
1	D	31	170	196	23.9	
1	E	9-1-34	76	80	9.0	
1	F	5	97	140	13.7	
2	G	6	135	202	16.3	
2	H	13	51	67	6.9	
2	J	14	138	315	17.3	
2	K	25	39	54	4.3	
2	a(skiff)	26	35	110	3.4	
2	L	27	71	150	8.2	
3	b(skiff)	28	38	121	3.4	
3	M	28	<u>72</u>	<u>75</u>	<u>6.2</u>	
Total WILDCAT:--			1101	1738	150.1	
<u>Launch #3</u>						
4	a	10-6-34	153	407	24.5	
<u>Ship SURVEYOR</u>						
5	A	8-29-34	24	96	11.7	
5	B	9- 5-34	5	21	2.3	
5	C	21	26	144	9.5	
5	D	25	17	94	11.2	
5	E	10-6-34	42	169	16.0	
5	F	10	<u>85</u>	<u>386</u>	<u>39.0</u>	
Total SURVEYOR:--			199	910	89.7	
Total launches & ship:-				1453	3055	264.3

SECTION OF FIELD RECORDS

Verifier's Report on H-5745

1. The records conform to the requirements of the General Instructions.
2. The usual depth curves are drawn. ←
3. The field plotting was complete with the following exceptions. The transfer of rocks, low water line, and Kelp from the topographic sheet was not complete. Tide rips were not located on the sheet.
4. No drafting done by the field party was changed with the exception that signal "BUN" plotted as a topographic^{signal} was changed to a triangulation station^{signal} corresponding to the topographic sheet. ←
5. The junctions with H-5728 (1934) and H-5738 (1934) are satisfactory. ←
6. Remarks.

An Page 28 of Volume 5, lone 4-5, "eday, a 16 fathoms sounding is questioned, as doubtful. This was not inked. ←

Doubtful but not enough evidence to disprove.

Respectfully submitted,

P. Scherr

P. Scherr.

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TIDE NOTE FOR HYDROGRAPHIC SHEET

May 22, 1935

Division of Hydrography and Topography:

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

Tide Reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 5745

Locality Unalga Pass, Aleutian Islands, Alaska

Chief of Party: A. M. Sobieralski in 1934
Plane of reference is mean lower low water reading
3.1 ft. on tide staff at Biorka Village
12.6 ft. below B.M. 1

3.7 ft. on tide staff at Dutch Harbor
12.5 ft. below B. M. 1

4.9 ft. on tide staff at English Bay
8.1 ft. below B.M. 1

Height of mean higher high water above plane of reference at
Biorka Village is 4.9 feet; at Dutch Harbor 3.7 feet, and
at English Bay 3.0 feet.

Condition of records satisfactory except as noted below:


Acting Chief, Division of Tides and Currents.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. ..5745

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

Number of positions on sheet	1453
Number of positions checked	14
Number of positions revised	2
Number of soundings recorded	3055
Number of soundings revised	8
Number of signals erroneously plotted or transferred	✓

Date:

Inking by J. G. Bowers . 13hrs.
Verification by P. H. Scherr. 14hrs.

} Time: 27 hrs.

Review by H. T. Welsh
R. J. Christman

Time: 18 hrs
4 hrs.

HYDROGRAPHIC SURVEY NO. 5745

Smooth Sheet 1

Boat Sheet No

Sounding Records 5 Vols. _____

Descriptive Report Yes

Title Sheet Yes

List of Signals _____

Landmarks for Charts (Form 567) Acc. H-5728 (List 324/1935)

Statistics Yes

Approved by Chief of Party A. M. Sobieralski

Recoverable Station Cards (Form 524) _____

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

Remarks _____

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5745 (1934) - FIELD NO. U-2334

Unalga Pass, Aleutian Islands, Alaska
Surveyed in Aug. - Oct., 1934
Instructions dated April 13, 1934 (SURVEYOR)

Hand Lead, Machine and Fathometer 3 Point fixes on shore signals
Soundings

Chief of Party - A. M. Sobieralski
Surveyed by - A. M. S., L. C. Wilder, R. C. Rowse, F. B. Quinn
Protracted by - E. H. Sheridan
Soundings penciled by - E. H. Sheridan
Verified by P. H. Scherr
Inked by J. G. Bowers, P. H. Scherr.

1. Condition of Records

The records are neat and legible and conform to the requirements of the Hydrographic Manual except that no boat sheet has been received in the office. The descriptive report is clear and comprehensive and adequately covers all matters of importance.

2. Compliance with Instructions for the Project

The plan, character, and extent of the survey comply with the instructions for the project.

3. Shoreline

The shoreline and topographic signals on this sheet originate with T 4920 (1934).

4. Sounding Line Crossings

Such crossings as occur in the work as well as adjacent lines are in fair agreement, with the following exceptions:

The fathometer soundings are generally several fathoms shoaler than the lines of vertical cast soundings. (See statement on page 3, descriptive report.) The ship fathometer line from pos. 4 E red (lat. $54^{\circ} 55.8'$, long. $166^{\circ} 11.2'$) to pos. 12 E red (lat. $54^{\circ} 58.2'$, long. $166^{\circ} 14.9'$) shows numerous shoal indications which were not verified by the adjacent vertical cast soundings. This line should have been re-run with up and down

soundings. At the junction south of Unalga Island, the fathometer soundings of H 5728 (1934) are generally a few fathoms shoaler than the vertical cast soundings of the present survey.

5. Depth Curves

The usual depth curves may be satisfactorily drawn, including portions of the 1, 2, 3 and 5 fathom curves.

6. Junctions with Contemporary Surveys

The junction on the south with H 5728 (1934) is adequate but the offshore (fathometer) soundings are consistently 2 fathoms shoaler than the vertical casts on H 5745 (1934). Strong currents are mentioned in the records and it may be the wire soundings were inclined. The fathometer soundings are in closer agreement with the prior survey.

The junction with H 5738 (1934) is satisfactory.

There are no junctions on the northern limits of the sheet.

7. Comparison with Prior Surveys

(a) H 2541 (1901)

This survey, on a 1:60,000 scale, covers with sparse development, Unalga Pass and the area south of it on the present survey and two lines crossing the present sounding lines north of Unalga Island in the vicinity of lat. $54^{\circ} 06'$, long. $166^{\circ} 14'$.

In the area south of the pass the soundings are uniformly 1 to 2 fathoms shoaler than on the present survey except at positions 23 to 25 N'. It was noted that this line was run across the passage with a favoring current and it is believed that these positions should have been plotted not in a straight line but about $2/5$ of a mile to the eastward where they would be in reasonable agreement with the present survey. The soundings as plotted should not be used for charting.

At the northern end of Unalga Pass the agreement with the present fathometer lines is somewhat better, but the development is insufficient for close comparison. North of lat. $54^{\circ} 04'$ the present survey is consistently about 2 fathoms shoaler than the 1901 survey.

There is no development on H 2541 (1901) just northeast of Brundage Head (lat. $53^{\circ} 56'$ to $57'$, long. $166^{\circ} 12'$, approx.), where several doubtful soundings appear on the present survey.

A 28 fathom sounding in lat. $53^{\circ} 58.8'$, long. $166^{\circ} 15.2'$ was erroneously charted as 23. The 23 should be expunged from the chart.

The shoreline on H 2541 (1901) was transferred from T 2544 (1901), on a 1:40,000 scale. There is a good general agreement of the offshore rocks on the present survey with the following exceptions:

- (1) A bare rock shown on T 2544 (1901) and H 2541 (1901) at lat. $53^{\circ} 56.68'$, long. $166^{\circ} 14.92'$ is evidently 60 meters too far offshore, since the present topographic survey, T 4920 (1934) locates it farther inshore and a sounding line of the present survey passes through the old position of the rock.
- (2) Just south of this, two bare rocks are shown on the 1901 surveys at lat. $53^{\circ} 56.55'$, long. $166^{\circ} 14.85'$. No mention is made of these in the sounding records of H 2544 (1901), (the large scale development of English Bay), and the present hydrography passes close by, noting edge of kelp at this place, and it is believed that the location is in error as the shifting of these rocks inshore by the same amount as with the rock mentioned in the previous paragraph brings them into reasonable agreement with rocks awash shown on the present survey.
- (3) The rocks off Fisherman Pt. agree with the present survey as to position but the character of these rocks should be taken from the present survey.
- (4) A small rock just off the southernmost tip of Unalga Island at lat. $53^{\circ} 57.22'$, long. $166^{\circ} 05.92'$ is shown as part of the point on H 5745 (1934). This will be disposed of in the review of the contemporary topographic sheet T 4920 (1934).

(b) H 2544 (1901)

This survey, on a 1:10,000 scale, covers English Bay with moderate development only. The shoreline was transferred from T 2544 (1901), on a scale of 1:40,000 and the offshore rocks from that sheet have been discussed under paragraph 7 (a).

There is a good agreement with H 5745 (1934) but in spite of the smaller scale of the present survey there is considerable closer development, especially in the inshore area and this survey should supersede completely the former survey.

8. Comparison with Charts No. 8860 and No. 9196

(a) Hydrography

Within the area of the present survey the charts are based on surveys discussed in the foregoing paragraphs and contain no further information that needs consideration in this review.

9. Field Plotting

The field protracting and plotting were good except that some of the offshore rocks were not transferred. This was accomplished in the office.

10. Doubtful Sounding

A 16-fathom sounding at lat. $53^{\circ} 55.9'$, long. $166^{\circ} 11.2'$ is questioned in the record (pos. 4 E) and is considered doubtful but is retained pending further investigation. Several shoal soundings appear on this same line (between positions 4 E and 7 E) outside of deeper water, and these soundings should have been further investigated.

11. Additional Field Work Recommended

This survey is in general complete south of lat. $53^{\circ} 58.5'$. The ship lines north of this point are evidently a part of future surveys.

The following additional work is recommended:

- (1) The examination of several shoal indications on the fathometer sounding line between positions 4 E and 12 E (see paragraphs 4 and 10).
- (2) Additional sounding lines on each side of the 38-fathom spot in lat. $53^{\circ} 59.5'$, long. $166^{\circ} 14.5'$.
- (3) Additional drift soundings in the following areas:
 - (a) 20 fathoms, lat. $53^{\circ} 55.9'$, long. $166^{\circ} 10.4'$.
 - (b) 20 fathoms, lat. $53^{\circ} 56.6'$, long. $166^{\circ} 11.1'$.
 - (c) To the east of the 15 fathoms, lat. $53^{\circ} 56.4'$, long. $166^{\circ} 11.5'$.

12. Note to Compiler

The $2 \frac{1}{4}$ fathom sounding, charted in lat. $53^{\circ} 57.00'$, long. $166^{\circ} 08.85'$ from advance field information (Chart letter No. 93, 1935) has been reduced by office reduction to $2 \frac{1}{6}$ fathoms.

Applied to Chart 8860, 8802 + 9302 Oct 10-1925

P.B. Easton.

25 Jan 3, 1936

E.H.B.

Applied to new compilation of Chart No. 9007 (extended)

S.P. Aug. 1938.

" " " " " " " " 8720 S.H.S. Apr. 1943