DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. Patton, Director

State: S. W. ALASKA

DESCRIPTIVE REPORT

LOCALITY
MAKUSHIN BAY
UNALASKA ISLAND

1935
CHIEF OF PARTY
H. B. Campbell
Applied to drawing of Chart No. 8802
Applied to Chart 9003 Nov. 18, 1938
Applied to Confidential Chart 9222 Nov. 17, 1938

[Signatures and dates]
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

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

Field No. A

REGISTER NO. 6423

State S. W. Alaska

General locality Unalaska Island

Locality Makushin Bay

Scale 1:20,000 Date of survey June & July, 1935.

Vessel U.S.C. & G.S.S. DISCOVERER (WESTDAHL)

Chief of Party H. B. Campbell

Surveyed by E. B. Lewey

Inked by E. B. Lewey

Heights in feet above M.H.W. to ground

Approximate Form line interval 100 feet

Instructions dated April 13, 1934.

Remarks

GPO
DESCRIPTIVE REPORT
TO ACCOMPANY TOPOGRAPHIC SHEET "A"

MAKUSHIN BAY
UNALASKA ISLAND, S. W. ALASKA

- O -

SEASON OF 1935

H. B. Campbell, Commanding Officer

U.S.C. & G.S.S. DISCOVERER
DESCRIPTIVE REPORT
TO ACCOMPANY TOPOGRAPHIC SHEET "A"

MAKUSHIN BAY
UNALASKA ISLAND, S. W. ALASKA

INSTRUCTIONS:

The work done on this sheet was done in accordance with the Director's Instructions for Project HT - 177, dated April 13, 1934.

LIMITS:

The area included on this sheet lies between Latitudes 53° 41.5' North and 53° 47.0' North, and between Longitudes 166° 54.0' West and 167° 04.0' West.

A junction is made with Topographic Sheet "D", 1934, at triangulation station "Fair, 1934", in Latitude 53° 43.16' North, Longitude 166° 55.76' West.

A junction is made with Topographic Sheet "B", 1935, at topographic station "Yah" in Latitude 53° 45.33' North and Longitude 166° 53.64' West.

A junction is made with Topographic Sheet "J", 1935, at triangulation station "Mak, 1935", in Latitude 53° 46.96' North, and Longitude 167° 03.96' West.

CONTROL:

The topography was controlled by the second order and third order schemes of triangulation executed by the DISCOVERER in 1934 and 1935.
All triangulation is based on the Dutch Harbor Datum.

**SURVEY METHODS:**

Standard planetable survey methods were used. A combination traverse and resection method was used in locating topographic signals, shoreline and other topographic details. Rocks and reefs were located by rod readings. When possible, signals were verified by cuts from triangulation stations.

All traverses closed satisfactorily.

**FORM LINES:**

All elevations, except the heights of the smaller offshore rocks, were determined by standard planetable methods. The heights of the smaller and lower offshore rocks were estimated by comparing their heights with the telemeter rod.

**COMPARISON WITH PREVIOUS SURVEYS:**

There are no previous detailed surveys of this area.

**GENERAL DESCRIPTION:**

This sheet covers the entrance and western part of Makushin Bay. At the entrance, the bay is 2½ miles wide; just inside the entrance it widens to 3½ miles, and then narrows again to 2 miles in width. This portion of the bay runs east and west and is approximately 6 miles long. The entrance is marked on the north side by a large rock, or islet, 104 feet in height, which lies ½ mile south-west of Makushin Point.
With few exceptions, the shores are steep and rocky and are
fringed with boulders and reefs. Nowhere, however, are there
dangers more than 1/4 mile offshore.

Makushin Point, on the north side of the entrance to Maku-
shin Bay, rises to 762 feet in height and is grass covered. Its
shores are defined by rocky bluffs varying in height from 144
feet to 557 feet. The point is made quite prominent by a number
of small grass covered knolls scattered over its top. Just north
of Makushin Point lies a low valley which extends from Makushin
Village in a north-westerly direction to Volcano Bay. A very
prominent low and wide valley comes into Makushin Bay one mile
north-east of the Village. Its direction is approximately north-
erly and is bounded on each side with steep bumpy ridges.

The southern shore of Makushin Bay is unusually steep, ris-
ing rapidly from the water's edge to a height of approximately
1500 feet. There is only one valley on the south side of the bay,
a narrow and deep valley extending in a southerly direction from
topographic station "Pete", Latitude 53° 43.0' North and Longitude
166° 57.4' West. This valley is noticeable only from the center
of the bay. There are high and prominent rocky cliffs on each
side of the mouth of this valley.

The valleys and slopes to a height of approximately 750
feet are grass covered. The higher land is bare.
The only sand beaches on the sheet are at Makushin Village
and at the mouth of the valley one mile north-east of the
Village.

DISTORTION:

The sheet was tested in the field, but no distortion was
noted. A 24" x 31" aluminum mounted sheet was used.

MAGNETIC OBSERVATIONS:

Observations were made at triangulation stations "Isle,
with the declinioire.

Respectfully submitted,

Ernest B. Lewey,
Jr. H. & C. Engineer,
U.S.C. & G.S.S. DISCOVERER.

Approved and forwarded,

M.B. Campbell
Jr. H. & C. Engineer,
U.S.C. & G.S.S. DISCOVERER.
STATISTICS
TO ACCOMPANY TOPOGRAPHIC SHEET "A"

Number of statute miles of shoreline ....................... 24.0
Number of square statute mile of area surveyed .............. 26.0
Number of elevations determined............................. 188
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

Seattle, Washington,

March 16, 1938.

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the
description given below, and should be charted.

H. S. Campbell
Captain, Senior, Comdg., DISCOVERER
Chief of Party.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>POSITION</th>
<th>METHOD OF DETERMINATION</th>
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"PRIEST ROCK" scaled from Topographic Sheet "A", 1935.

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must
be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive
report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church
spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstaffs and like objects are not sufficiently permanent to chart.
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<td>Makushin Point</td>
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<td>Cape Starichkof</td>
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Names unscheduled in red approved on 4/4/36.
MEMORANDUM
IMMEDIATE ATTENTION

SURVEY DESCRIPTIVE REPORT \{ No. H \}
PHOTOSTAT OF \{ No. T 6423 \}

received April 9, 1936
registered April 14, 1936
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.

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RETURN TO

| 82 |         |

C. K. Green April 16, 36
REVIEW OF TOPOGRAPHIC SURVEY No. 6423 (1935) Field No. A

Title (Par. 56) Makushin Bay, Unalaska Island, S.W. Alaska

Chief of Party H. O. Campbell, Surveyed by E. B. Lewey, Inked by E. B. Lewey

Ship DISCOVERER Instructions dated Apr. 13, 1934; Surveyed in June + July, 1935

1. The survey and preparation for it conform to the requirements of the Topographic Manual. (Par. 7, 8, 9, 13, 16.)

2. The character and scope of the survey satisfy the instructions.

3. The control and closures of traverses were adequate. (Par. 12, 29.)

4. The amount of vertical control that the Manual specifies for contours-formlines- was accomplished. (Par. 18, 19, 20, 21, 22, 23.)

5. The delineation of contours-formlines- is satisfactory. (Par. 49, 50.)

6. There is sufficient control on maps from other sources that were transmitted by the field party to enable their application to the charts. (Par. 28.) None submitted.

7. High water line on marshy and mangrove coast is clear and adequate for chart compilation. (Par. 16a, 45, 44.)

8. The representation of low water lines, reefs, coral reefs and rocks, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41.)

9. Rocks and other important details shown on previous surveys and on the chart were verified. (Par. 25, 26, 27.)

From Long. 167°01'07" to Long. 167°04'11" verified, May 7, 1934 N. W. M.

(See Note A on back.)

From Long. 167°08'7" to East limit of survey verified, Aug. 10, 1936 E. R.

10. The open, draw and clearance of bridges are shown. (Par. 16c.)

11. Locations and elevations of summits are given. (Par. 19, 51.)

12. The tree line was shown on mountains. (Par. 16g.) No trees are in this area. (See D.R. page 3, last par.)

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Use reverse side for extending remarks.
Paragraph 9, Continued.

A. The source of the topography shown on the chart could not be ascertained but was first adopted on the first edition of Chart 889 of 1893, which chart was subsequently replaced by the present chart in 1909. It is noted that the topography differs considerably in geographic position with that of the present surveys, being approximately 43 minutes south in latitude and 15 minutes southward in longitude of that shown on the present surveys. Allowing for this difference, topography is in fair agreement with the present surveys. However, the present surveys were entirely asymptomatic from Makushin Point and the charted positions and containing point mentioned of Cape Storich kof, while agreeing with the present survey in agreement, nevertheless differ considerably as to distance off shore. In view of the uncertain origin and accuracy of the charted information and the many accounts delineated on the present surveys, the present survey should completely replace this information for charting purposes.

Harold D. Murray

B. The only outstanding feature that needs comment in this report is the charted bare rock between Makushin Pkt. and the 40 ft. sounding. Its charted location falls about ½ mile offshore where no rock was located by either the present hydro and topo surveys. The origin of the rock cannot be traced and probably was taken from an old Russian Chart. In view of the uncertain origin, and accuracy of the charted material in general, mention in par. A. above, the rock should be deleted from the chart.

S. Pregari
13. The descriptive report covers all details listed in the Manual, in so far as they apply to this survey. (Par. 64, 65, 66, 67.)

14. The descriptive report also contains additional information required in aerotopyography relative to type of photographs, method of compilation and type of ground control.

15. The descriptions of recoverable stations and references to shore line were accomplished on Form 524. (Par. 29, 30, 57, 67 except scaling of DMs and DPs, 68.)

16. A list of landmarks for charts was furnished on Form 567 and plotting checked. (Par. 16d, e, 60.)

17. The magnetic meridian was shown and declination was checked. (Par. 17, 52.)

18. The geographic datum of the sheet is Dutch Harbor Datum and the reference station is correctly noted. (Par. 34.)

19. Junctions with contemporary surveys are adequate.

20. Geographic names are shown on the sheet and are covered by the Descriptive report. (Par. 64, 66k.)

21. The quality of the drafting is good. (Par. 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46, 47, 48, 49, 50.)

22. No additional surveying is recommended.

23. The Chief of Party inspected and approved the sheet and the descriptive report after review by.

24. Remarks:

Reviewed in office by Harold W. Murvay May 7, 1936
Examined and approved:

Chief, Section of Field Records

Chief, Division of Charts

Chief, Section of Field Work

Chief, Division of Hyd. and Top.
Paragraph 19, continued.

at the junction with T-6228 (1934), an overlapping area of about 1/4 square mile is common to the two surveys, and which T-6228 (1934) is more detailed. The high water line and a small portion of the adjacent topography appears to be noted on the present survey but does not entirely agree with the delineation on T-6228 (1934).

The main portion of the contours on the present survey appears to have been transferred from T-6228 (1934). In addition, the elevation of a rise (1934) is shown on the present survey as 330 feet and 477 feet by T-6228 (1934). The coordination of this matter has been referred to the field party.

letter to field written June 12, 1936

* 330 feet elevation of rise accepted as correct. See letter from Mr. Lewey attached to this report.

To: The Director, U. S. Coast and Geodetic Survey, Washington, D. C.

From: The Commanding Officer, U.S.C. & G.S.S. PIONEER.

Subject: Topographic surveys T-6228 (1934) (surveyed by P. L. Bernstein), and T 6423 (1935) (surveyed by E. B. Lewey).

Reference: 80-DRM.

The photostats forwarded with your letter referred to above have been forwarded to Lieutenant Lewey with a request that he inform you as to the correct elevation of Triangulation Station RISE.

In this connection I wish to state that in 1934 it was planned to end the topography of Anderson Bay at Station SPIT. At the very last of the season and under very unfavorable conditions as to weather and time available, I required Mr. Bernstein to extend the survey to station FAIR so as to permit the location of the reef lying off that station. This reef was not discovered until late in the season. Mr. Bernstein did not have a good opportunity to do a complete job of this shore line from FAIR to SPIT. I realize that this should have been taken up in the descriptive report and that it was my fault that it was not so handled.

During the season of 1935 Mr. Lewey had time and weather suitable for this work and I consider that his should be more accurate and detailed survey and that preference should be given to it for charting purposes. (See par. 3 of letter from Mr. Lewey attached and note office disposition). A.L.S.(8-14-36).

H. B. Campbell,
Chief of Party,
Commanding SHIP PIONEER.
June 12, 1936.

To: Lieutenant Commander H. B. Campbell,
U. S. Coast and Geodetic Survey,
Ship PIONEER,
Box 530,
Long Beach, California.

From: The Director,
U. S. Coast and Geodetic Survey.

Subject: Topographic surveys T 6228 (1934) (surveyed by P. L. Bernstein), and T 6423 (1935) (surveyed by E. B. Lewey)

There are inclosed photocasts of sections of your subject topographic sheets, Makushin Bay, Alaska. There is approximately a 1 1/2 mile overlap at the junction of these sheets in the vicinity of triangulation station "Fair". The topographer of the 1935 survey apparently had available a tracing of the 1934 work in this area, since the form lines of the two surveys are practically identical. There are several differences in other detail, however. The offlying rocks in the immediate vicinity of triangulation station Fair seem to be in greater detail on the later survey. The elevation of triangulation station "Rise" is shown as 427 feet on the 1934 work and as 330 feet on the 1935 work.

These differences should be adjusted in the field before the sheets are forwarded to this office. Please call this matter to the attention of Lieutenant (J.g.) E. B. Lewey, the topographer of T 6423, with a view to advising this office as to the correct elevation of triangulation station Fair. Lieutenant Lewey is now attached to the Ship DISCOVERER, 601 Federal Office Building, Seattle, Washington.

(Signed) J. H. P.A. [Signature]

Inclosures. Acting Director.
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ship DISCOVERER

False Pass, Alaska
July 26, 1936

To: The Director,
U. S. Coast & Geodetic Survey,
Washington, D. C.

From: Ernest B. Lewey, Jr., H. & G. E.,
601 Federal Office Bldg.,
Seattle, Washington.

Through: Commanding Officer,
Ship DISCOVERER.

Subject: Topographic Surveys T-6223 (1934), and T-6423 (1935).

In reply to a letter from the Acting Director, dated June 12, 1936, concerning the above topographic surveys, it is my belief that the details and elevations shown on T-6423 are correct.

The 1935 survey was made in good weather and executed to the best of my ability. I am sure of the location and elevation of the reefs and rocks off Station FAIR (1934-35) as shown on T-6423, since I was at FAIR at dead low water and carefully rodded in those details. As to the elevation of RISE (1934), I am reasonably sure that the 330 ft elevation is correct. Cuts were obtained on RISE from SPIT (1934), FAIR (1934), and from directly across the bay and all the cuts agreed satisfactorily.

With the exception of the reefs and rocks off FAIR (mentioned above) and the topographic signals, no detailed survey of the shoreline was made between SPIT and FAIR in 1935. The topographic signals in the stretch of shoreline, as used during the 1935 season, were located by cuts from across the bay. I do not know if the signals were rebuilt on exactly the same spots as they were originally built in 1934; I was not with the party that rebuilt these signals.

I did have a tracing of the connection with the 1934 survey, but do not remember seeing an elevation of RISE. I do not believe it was on the tracing. The details of the shoreline between SPIT and FAIR, as shown on T-6423, were obtained from the tracing of the previous year's survey.

Forwarded, approved:
Jack Senior, Lt. Comdr., C.& G.S.,
Commanding, Ship DISCOVERER.

Ernest B. Lewey
Jr., H. & G. E.,
Ship DISCOVERER.

* To eastward of Fair, T-6228 (1934) is accepted for details along shore and is so indicated on the sheet. A.L.S. (8-14-36).