Form 804
U.S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey: Topographic
Field No. Ph-28(47) Office No. T-9459
T-9459
T-9460

LOCALITY
State: Alaska
General locality: Kotzebue Sound
Locality: Hotham Inlet

1948-50

CHIEF OF PARTY
A.N. Stewart, Chief of Field Party
H.A. Paton, Chief B'more Photo Office
E.J. Reed, Div. of Photo., Wash., D.C.

DATE: January 30, 1953
DATA RECORD

T-9458, 9459, 9460

Project No. (II): Ph-28(47) Quadrangle Name (IV):

Field Office (II): Portland, Oregon

Photogrammetric Office (III): Baltimore, Md Washington, D.C.

Instructions dated (II) (III):

(II) = 21 Apr 48
(III) = 23 Oct 50

Method of Compilation (III): Reading Plotter B

Manuscript Scale (III): 1:20,000 Stereoscopic Plotting Instrument Scale (III): 1:20,000

Scale Factor (III):

Date received in Washington Office (IV): 10 Jul 51 Date reported to Nautical Chart Branch (IV): JUL 13 1951

Applied to Chart No. Date: Date registered (IV): 26 April 1957

Publication Scale (IV): Publication date (IV):

 Geographic Datum (III): NA 1927 (unadjusted)

Vertical Datum (III):
Mean sea level except as follows:
Elevations shown as (2) refer to mean high water
Elevations shown as (0) refer to sounding datum
i.e., mean low water or mean lower low water

Reference Station (III):

Lat.: Long.: Adjusted

Plane Coordinates (IV):

Y= X=  

Military Grid: Universal Transverse Mercator, Zone No. 30-4

Roman numerals indicate whether the item is to be entered by (II) Field Party, (III) Photogrammetric Office, or (IV) Washington Office.

When entering names of personnel on this record give the surname and initials, not initials only.
Areas contoured by various personnel
(Show name within area)

100% detailed by Louis Levin
DATA RECORD

Field Inspection by (II):  A. Newton Stewart  Date: 1948

Planetable contouring by (II):  None  Date:

Completion Surveys by (II):  None  Date:

Mean High Water Location (III) (State date and method of location):

Shoreline was delineated on the plotting instrument guided by 1948 field inspection location of it.

Projection and Grids ruled by (IV):  Theodore L. Janson  Date: 23 Oct 50

Projection and Grids checked by (IV):  Howard D. Wolfe  Date: 25 Oct 50

Control plotted by (III):  Frank J. Turoza  Date: 26 Jan 51

Control checked by (III):  John C. Richter  Date: 26 Jan 51

Radial Plotting Check by (III):

Control checked by (III):  Frank J. Turoza  Date: 26 Jan 51

Delineation by:

Stereoscopic Instrument plotted by (II):  Louis J. Levin  Date: 11 Jun 51

Compiled by:  John B. McDonald  Date: 29 Jun 51

Photogrammetric Office Review by (III):  Louis J. Reed  Date: 10 Jul 51

Elevations on Manuscript checked by (II) (III):

Louis J. Reed  Date: 10 Jul 51
Camera (kind or source) (I): USGS 9-Lens Camera, Model B, f = 8.25 inches

Photographs (III):

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<th>Number</th>
<th>Date</th>
<th>Time</th>
<th>Scale</th>
<th>Stage of Tide</th>
<th>Reference Station:</th>
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<td>27549</td>
<td></td>
<td>1049 through</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>thru</td>
<td></td>
<td>1050</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27551</td>
<td>22 Jul 50</td>
<td>11:40</td>
<td>20,000</td>
<td>No appreciable tide</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>11:24 through</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>27577</td>
<td></td>
<td>11:44</td>
<td></td>
<td></td>
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<td>27595</td>
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</table>

NOTE: Mr. Disney of Tides and Currents states (7 May 51) that for all practical purposes no tide exists in this area.

L.J.R.

Diurnal

<table>
<thead>
<tr>
<th>Ratio of Ranges</th>
<th>Mean Range</th>
<th>0.61</th>
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Reference Station: Icy Cape

Subordinate Station:

Subordinate Station:

Washington Office Review by (IV): B.J. Colner

Final Drafting by (IV): Pat. Lach

Drafting verified for reproduction by (IV): W.O. Hallman

Proof Edit by (IV): 

Land Area (Sq. Statute Miles) (III): See remarks below:

Shoreline (More than 200 meters to opposite shore) (III): See remarks below:

Shoreline (Less than 200 meters to opposite shore) (III): None

Control Leveling - Miles (II): None

Number of Triangulation Stations searched for (II): Recovered: Identified: 3

Number of BMs searched for (II): Recovered: Identified:

Number of Recoverable Photo Stations established (III): 3

Number of Temporary Photo Hydro Stations established (III): 1

Remarks:

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<tr>
<th>LAND AREA</th>
<th>SHORELINE</th>
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<tr>
<td>T-9458 = 59 sq mi</td>
<td>6.5 miles</td>
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<tr>
<td>T-9459 = 66 sq mi</td>
<td>19 miles</td>
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<tr>
<td>T-9460 = 69 sq mi</td>
<td>4.5 miles</td>
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TOPOGRAPHIC AND PLANIMETRIC MAPPING PROJECT
PH-28 (47)

ALASKA, Chukchi Sea, Kiwalik to Naokok

T-9402 to T-9474 are Topographic Maps  Scale 1:20,000

T-9475 to T-9496 are Planimetric Maps  Scale 1:20,000
Summary to Accompany T-9458 through T-9460

Ph-26(47) covers the eastern shore of the Chukchi Sea in Alaska and runs from Candle on the Kiwalik River on the South to Cape Beaufort to the North.

Seventy-three of the quadrangles (T-9402 to 9474) of this project are topographic surveys and twenty-two (T-9410 to 9434) are planimetric, and T-9436 through T-9496.

T-9458 through T-9460 are topographic surveys of the shore north of Rotan Inlet and contains part of the Noatak River Delta at the west portion of this group of manuscripts.

Each map manuscript consists of one sheet, 7½ minutes in latitude and 20 minutes in longitude, at a scale of 1:20,000, with a contour interval of 50 feet. A cloth-basted lithographic print of each map at the compilation scale will be registered with the descriptive report in the Bureau Archives.
FIELD INSPECTION REPORT

2-20:

See separate report entitled:

PROJECT REPORT
AERIAL PHOTOGRAPH CONTROL AND INSPECTION
KOTZEBUE SOUND, ALASKA
Project Ph-26(47) July to Sept 1946
A. Newton Stewart, Chief of Party

Louis J. Reed, Chief
Stereoscopic Mapping Section
Photogrammetric Engineer
PHOTOMETRIC PLOT REPORT
PROJECT PH-28(47)
SURVEYS T-9458, T-9459, T-9460
T-9463, T-9464 & T-9465

21. AREA COVERED

This radial plot covers the areas of six topographic surveys, Nos. T-9458 to T-9460 and T-9463 to T-9465. They are located along the north shore of Notcham Inlet an arm of Kotzebue Sound. Surveys T-9452, T-9457 and T-9462, adjoining these surveys on the west, were also used in this radial plot but due to lack of office photographs at the time this was started they could not be completed and are being held for extending the radial plot westward.

22. METHOD—RADIAL PLOT

Map Manuscripts — Vinylite sheets, with polyconic projections and T.T.M. grids ruled at a scale of 1:20,000 were furnished by the Washington Office. No base sheets were used.

All control stations and substitute stations were plotted using beam compass and meter bar.

A sketch showing layout of surveys and distribution of control and photograph centers is attached to this report.

Photographs — The photographs used in this radial plot are nine-lens metal mounted photographs, scale 1:20,000. Thirty photographs were used, numbered as follows:

27549 to 27556, inclusive
27575 to 27582, inclusive
27584 to 27597, inclusive.

The symbols used on photographs were given in special instructions for radial plot with nine lens photographs which will be used later for contouring. A 4mm circle was used for control and pass points, and both 4mm and 6mm circles were used to designate centers.

Templets — Vinylite templets were made of all photographs, using a master templet to adjust for errors due to paper distortion and chamber displacements. The center was marked using 3mm and 5mm red circles. On the templets where an approximate tilt determination was made, blue circles were used instead of red. Radial lines scratched on templets are in red for shoreline (rectification) pass point and in black for all elevated image points.

Closure and adjustment to control

The radial plot was constructed directly on the map manuscripts. A preliminary radial plot was constructed to determine whether there were any badly tilted photographs. The amount of tilt was estimated
by observing the displacement of the red dots placed on the templates at the image points on the shoreline points. The preliminary plot did not disclose any photographs tilted badly enough to affect the radial plot seriously.

The final plot was begun at the eastern end where four stations appeared on photograph 27589. It was found that both PEAK 306 and SUB. PT. PEAK 312, 1950 could not be held at the same time. After some adjustment, PEAK 306 was disregarded since the radial plot could not be extended westward to hold CREEK, 1949 using this peak. The eastern half of radial plot offered no further difficulty after eliminating PEAK 306.

In the western half of this radial plot, there was considerable difficulty extending the plot westward beyond QUICK, 1949. On the middle flight, photograph 27575 to 27580, SUB. PT. BANZAI, 1949 is on the edge of the photographs, and there is no control to the north of this flight. MOATAI, 1949 was identified on field photographs, scale 1:30,000, but 1950 office photographs do not reach this station. The positions of PEAK 321, 1948 and PEAK 322, 1948 were found to be in error and radially plotted positions will be established in the next radial plot. In order to have a good tie to control, the flight 27549 to 27556 was needed. These did not give a satisfactory plot westward beyond QUICK, 1949, but several photographs appeared tilted. A tilt determination was made on 27552, one of the five 27549 to 27553 which appeared tilted. The position of the midpoint, for use as radial center, of the other four was obtained from a graph attached to letter of instructions dated 17 February 1947 which gave a practical method for finding the midpoints. Since most image points were shoreline (rectification) pass points, the isocenter was used as the radial center and new templates were made. But the new adjusted templates did not solve the problem. After considerable attempts and adjustments, the difficulty was isolated to one bad chamber, No. 8, in the nine-lens photographs. There appears to be some distortion or vacuum failure in this chamber. When the radial plot was relaid disregarding the radials in the outer part of this chamber, a satisfactory plot was accomplished.

Transfer of Points - The positions of all centers, pass points and control were pricked on the top templates and circled with 3mm blue circles. These positions were transferred to all templates and map manuscripts by drilling down through them with a small jeweler's drill (about .01 inch diameter). All points were circled on each template before it was removed, and on map manuscripts.

Since the positions of PEAK 321, 1948 and PEAK 322, 1948 are incorrect, there is not a good fix at the end of the flights prepared in the first plot. Points were pricked and drilled to about the middle of Surveys T-9452 and T-9457 near DELTA, 1949.
23. Adequacy of Control

Since there was some difficulty due to distortion or other error in Chamber No 8 of the photographs, control on Surveys T-9458 and T-9459 was inadequate for an accurate radial plot in interior areas and especially along the northern edges of the surveys. Where the points along the northern limits are determined by three radials, one of which is in Chamber 8 of photographs 27590 to 27597, these points are weak and circled in green on the map manuscripts. In the western part of the radial plot, the positions of PEAK 321 and PEAK 322 were found to be in error. Since the office photographs which contained the next control stations to the west were not yet prepared at the time of this plot, no good radially plotted positions could be established at this time. Therefore, positions west of DELTA, 1949 were not pricked in this radial plot.

Two horizontal control stations were not held in this radial plot:

(1) PEAK 306, 1950 - the radially-plotted position falls 6.8 mm northeast of the geographic position. There is no peak at the published position which is on the slope of the ridge. When a protractor was used to check the angle from stations from which vertical angles and check horizontal angles were available, the direction was through the radially plotted position. The geographic position is apparently in error. A similar check was made on PEAK 321 and PEAK 322, previously mentioned, and similar errors were found in their geographic positions when checked with angles at station DELTA, 1949.

(2) QUICK, 1949 - The radially plotted position is 0.3 mm north of the geographic position. This is a small discrepancy and possibly due to identification. Station is pricked direct on highest point of a tundra mound. Although the identification appears good, the geographic position also falls on top of the mound. It is also possible that the radial plot is slightly in error due to giving too much weight to radials in Chamber No. 8, but the small discrepancy was not considered serious enough for any further investigation or attempt to relay the plot.

24. SUPPLEMENTAL DATA

No graphic control surveys were used.

25. PHOTOGRAPHY

Photographic coverage was adequate for all shoreline areas. There is incomplete coverage on the northern part of T-9452 since NOATAK, 1949 is off photographs. The definition of photographs is good. Photographs 27586 to 27590, incl. have some areas covered by clouds. There were five photographs which were noticeably tilted, 27549 to 27558, incl. A tilt determination was made on 27552 and the tilt was found to be 12°20'. For three others, the graph for finding the midpoint was used and new templet were made of all five photographs using the isocenter as radial center. Photograph 27575 was also tilted but since it is the last in the flight in this radial plot, no tilt determination was made. It will be made in the next plot if needed. Chamber No. 8 was found to be bad in several photographs. It is possible that it is bad in all photographs and should be used with caution. The master templet did not remove the error. It is
possible due to vacuum failure or error in master templet.

26. VERTICAL CONTROL

Following the completion of the radial plot, the elevations of a number of peaks and water surfaces of lakes were computed. The vertical angles were observed in the field but the positions were established in the radial plot. As an aid in field identification, single horizontal angles were observed in the field from an azimuth station to the peaks and lakes. These were also found to be of value in finding reasons for discrepancies in computed elevations. The angles were turned on the manuscripts with a steel protractor and a check could be made to see if the peak identified is the same as observed in the field. The following discrepancies were observed during this check on vertical control points and discrepancies in computed elevations.

Division of Geodesy's position and elevation accepted.

PEAK 306 (T-9459) As mentioned previously, the radially plotted position was checked. The geographic position and elevation furnished by Division of Geodesy are in error. The elevation was recomputed from the new position.

PEAK 311 (T-9460) - Elevations from CENTER, 1949 did not check other three. PEAK 602 was mistaken for this peak. The vertical angle was used for computing PEAK 602 and the elevation checked.

PEAK 310 (T-9460) Elevation from PIPE SPIT, 1949 did not check other two. This was PEAK 602 again, as with PEAK 311. PEAK 357 (T-9459) - All three horizontal angles, from stations where vertical angles were observed, indicated that another peak of about the same elevation about 600 meters south was the correct peak. This was reprinted and a new elevation computed. It was labeled PEAK 357 (OFFICE).

PEAK 508 (T-9458) There is no definite hill or peak at the point identified in the field. Another hill about 600 meters to the west was pricked in the office as a possible peak used. When the angle was turned with the protractor it indicated that the peak was east of the identified points. No definite peak could be found which would check with the angle. This peak should be disregarded. It is unsuitable for vertical control.

PEAK 315 (T-9458) There were two sets of elevations from two stations each, indicating that two peaks were observed for elevation. The horizontal angles from NOATAK, 1949 and SHEHUALEK, 1949 checked the identified peak. Horizontal angles from V-190 and V-191 proved this to be another peak 1500 meters northeast which had been pricked as a pass point. The elevation of this peak, labeled PEAK 315 (Office) was computed from V-190 and V-191.

27. The description of topographic station SMOK, 1948 did not appear to correspond to the description given. A pass point was pricked about 1000 meters southeast which appeared to fit the description. Theshorelines at the two areas are similar but the elevations are different. At the point identified the substitute point appears too low, and not on the top of the bluff. The station elevation is given as 75 feet.

Approved and forwarded
Hubert A. Paton
Constr., C&GS
Officer in Charge

Respectfully submitted
Frank J. Taraza
Cartographic Engineer
31. Delineation:

Contours and cultural features were delineated simultaneously on the Reading Plotter, model B. The total land area of each of the three quads of this report have been mapped except a narrow N-S strip along the east edge of T-9460 where photo coverage was lacking.

32. Control:

Refer to side-heading 23 of the radial plot report on page 10 of this report where mention is made of inadequate horizontal control for T-9458 and T-9459 pending the completion of the adjoining radial plot to the west. At this time that plot has been laid and positions in this plot have been verified. Therefore the detail in the area of this report is considered to be sufficiently strong to meet standards.

Vertical control for contouring purposes was furnished by a combination of sea-level along the shoreline and elevations on inland peaks. Vertical control was adequate but very close to minimum requirements.

33. Supplemental Data:

a. Graphic Control Surveys:

None.

b. Hydrographic Surveys:

None.

c. Plotting Instrument Photos (Metal-mounts):

27549, 50, 51, 27579 thru 27595.

d. Field Inspection Photographs:

20841 thru 20849, 20765 thru 20767.

e. Elevation Computations:

One bound volume covering the area of Plot A entitled, "TABULATION OF ELEVATIONS AND COMPUTATIONS OF ELEVATIONS BY MAP MANUSCRIPTS FOR VERTICAL CONTROL STATIONS IN THE AREA OF MAP MANUSCRIPTS T-9458, T-9459, T-9460, T-9463, T-9464, and T-9465."
34. Contours and Drainage:

Contour Interval 50'

with 25' supplemental contours

Photograph quality was very good. No areas of questionable contours exist.

35. Shoreline and Alongshore Details:

Shoreline inspection was complete and quite adequate within minimum requirements. No low-water or shoal lines were located by field inspection; the shallow water area along the shoreline on T-9459 and T-9460 was instrument delineated.

36. Offshore Details:

Not applicable.

37. Landmarks and Aids:

None recommended.

38. Control for Future Surveys:

Three topo and one hydro stations were selected and photo-identified in the field. All four have been positioned by the radial plot and are shown on the manuscript in correct symbol and label. The three topo stations were actually identified by the sub-station method; see 524 cards made for each station by the field inspector. The stations are to be found on the manuscripts as follows:

T-9458: topo sta ITCH 1946, and hydro sta No.756
T-9459: topo stations HANG 1948 and SACK 1948
T-9460: none

39. Junctions:

Refer to sheet layout, page 13. The two common match edges are in agreement. The three match edges common with T-9463, 64, and 65 to the south are in agreement. The west edge of T-9458 has been transferred to T-9457 which will be completed in the near future. No quads exist to the north of each quad or to the east of T-9460; therefore no junction problem exists there.

40. Horizontal and Vertical Accuracy:

Standard.
46. Comparison with Existing Maps:
   b. Advance proof of BAIRD MOUNTAIN, same as Noatak above.
   c. Compilation—copy of TIGARA, Alaska, 1:200,000, USGS.

47. Comparison with Nautical Charts:
   b. Provisional chart, CAPE PRINCE OF WALES TO POINT BARROW, CHUCKI SEA, Alaska—Arctic Coast, No9402, 1: 750,000, May 1950, 1st edition.

48. Geographic Name List:
   See separate numbered page, following.

49. Notes for the Hydrographer:
   See separate unnumbered page, following.

50. Compilation Office Review:
   See T-2 form, following.

Submitted by:

Orvis N. D Albey
Cartographer—Photogrammetric

Approved and Forwarded by:

Louis J. Reed, Chief
Stereoscopic Mapping Section
Photogrammetric Engineer
49. Notes for the Hydrographer:

**T-9458**

a. Topo Stations:

ITCH 1948 -- identified on photo 20843 -- see 524 card

b. Hydro Stations:

No. 756, identified and described on photo 20843, as follows, "6 ft post at S end of most N'ly of three small mounds."

**T-9459**

a. Topo Stations:

HANG 1948 -- identified on photo 20846 -- see 524 card
SACK 1948 -- identified on photo 20846 -- see 524 card

**T-9460**

No topo or hydro stations are located on this quad.

Louis J. Reed, Chief
Stereoscopic Mapping Section
Photogrammetric Engineer
<table>
<thead>
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<th>Survey No.</th>
<th>T-9458</th>
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Names approved 7-27-53

Page 16
62. **Comparison with Registered Topographic Surveys.** - None

63. **Comparison with Maps of other Agencies.** -
   
   USGS Alaska Map, Noatak 1:250,000 1951 edition
   Comparison not satisfactory because of scale difference.

64. **Comparison with Contemporary Hydrographic Surveys.** - None

65. **Comparison with Nautical Charts.** -
   
   9400 1:1,587,870 June 1952
   9402 1:750,000 May 1950
   
   Comparison not possible with these charts because of scale difference.

66. **Adequacy of Results and Future Surveys.** -
   
   These maps comply with project instructions and are adequate as bases for hydrographic surveys and the construction of nautical charts.

67. **Horizontal and Vertical Control.** -
   
   Peak 306, 1950 (T-9459)
   The Division of Geodesy recomputed the geographic position for Peak 306, 1950. The radial plot position for this station agrees with the new geographic position.

Reviewed by:

B. J. Colner

APPROVED:

Chief, Review Branch
Div. of Photogrammetry

Chief, Div. of Photogrammetry
22 January 1958

Chief, Nautical Chart Branch
Division of Charts

Chief, Div. of Coastal Surveys
PHOTOGRAMMETRIC OFFICE REVIEW
T. 9458, 9459, 9460


CONTROL STATIONS
5. Horizontal control stations of third-order or higher accuracy __________ 6. Recoverable horizontal stations of less than third-order accuracy (topographic stations) __________ 7. Photo hydro stations __________ 8. Bench marks __________

ALONGSHORE AREAS
(Nautical Chart Data)

PHYSICAL FEATURES

CULTURAL FEATURES

BOUNDARIES
31. Boundary lines __________ 32. Public land lines __________

MISCELLANEOUS
40. __________

41. Remarks (see attached sheet)

FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT
42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.

Compiler ____________________________ Supervisor ____________________________

43. Remarks: ____________________________