**U. S. COAST AND GEODETIC SURVEY**
DEPARTMENT OF COMMERCE

**DESCRIPTIVE REPORT**

<table>
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<tr>
<th>Type of Survey</th>
<th>Topographic</th>
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<tbody>
<tr>
<td>Field No.</td>
<td>Ph-56</td>
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<tr>
<td>Office No.</td>
<td>T-9686 thru</td>
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**LOCALITY**

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<tr>
<td>General locality</td>
<td>Bering Sea</td>
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<tr>
<td>Locality</td>
<td>Hooper Bay to Angoyararak</td>
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**1950-51**

**CHIEF OF PARTY**

- M.J. Tonkel, Chief of Field Party
- E.H. Kirsch, Balto. Photo. Office
- L.W. Swanson, Div. of Photo. Wash, D.C.

**LIBRARY & ARCHIVES**

<table>
<thead>
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<th>DATE</th>
<th>Nov. 7, 1958</th>
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DATA RECORD

9686 - ISSOROTULIK SLOUGH
9687 - KEOKLEVIK RIVER
9688 - ANGYOYARAVAK BAY
9689 - KASHUNKUK RIVER

Project No. (II): Ph-56

Field Office (II): Portland, Oregon
Photogrammetric Office (III): Baltimore, Md.

Chief of Party: M. J. Tonkel
Officer-in-Charge, E. H. Kirsch

Copy filed in Division of Photogrammetry (IV)

Instructions dated (II) (III):
8 Sept. 1949 14 Dec. 1951
2 April 1951 21 Dec. 1951
21 May 1951

Method of Compilation (III): Reading Nine-lens Plotter

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

Scale Factor (III): 1.0

Date received in Washington Office (IV):

Date reported to Nautical Chart Branch (IV):

Applied to Chart No. Date:

Date registered (IV): 9/2/58

Publication Scale (IV):

Geographic Datum (III): N A 1927 adj.

Publication date (IV):

Vertical Datum (III):
Mean sea level except as follows:
Elevations shown as (25) refer to mean high water
Elevations shown as (2) refer to sounding datum
i.e., mean low water or mean lower low water

Reference Station (III):

Lat.: Long.:

Adjusted Unadjusted

Plane Coordinates (IV):

State:

Zone:

Y = X =

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)
(II) (III)
T-9686, 9687, 9688, 9689
DATA RECORD

Field Inspection by (II): V. E. Serena Date: May-Sept. 1951

Planetable contouring by (II): Date:

Completion Surveys by (II): Date:

Mean High Water Location (III) (State date and method of location): From office photos corrected with 1951 Field Inspection

Projection and Grids ruled by (IV): A. Riley Date:

Projection and Grids checked by (IV): A. Riley Date:

Control plotted by (III): J. J. Schleupner Date: 5/6/55

Control checked by (III): J. Steinberg Date: 5/6/55

Radial Plot of Stereoscopic: Date: 9/21/55
Control extension by (III):

Stereoscopic Instrument compilation (III): W. Heinbaugh Date: 9/23/56

Contours

Manuscript delineated by (III): W. Heinbaugh Date: 8/26/56

J. B. McDonald

Photogrammetric Office Review by (III): L. Levin Date: 10/22/56

Elevations on Manuscript checked by (II) (III): L. Levin Date: 10/22/56
Camera (kind or source) (III): Nine Lens "B"

PHOTOGRAPHS (III)

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<th>Scale</th>
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<td>8/14/50</td>
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This list includes both field and metal mounted office photos. See index on following page.

Tide (III)

Reference Station: Kodiak

Washington Office Review by (IV):
T-4676 Carter
T-4677 Harrington
T-4677 Dining

Final Drafting by (IV):
T-4676 Carter
T-4677 Harrington
T-4677 Dining

Drafting verified for reproduction by (IV): R. O. Keller

Proof Edit by (IV):

Land Area (Sq. Statute Miles) (III):

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

Shoreline (Less than 200 meters to opposite shore) (III):

Control Leveling - Miles (II):

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

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

Number of Recoverable Photo Stations established (III):

Number of Temporary Photo Hydro Stations established (III):

Remarks:

* See sketch on following page for tide data.
Tide Data
Reference Site: Kodiak
Ratio of Range = ( )
Time Diff. = ( ) Bering Sea
Tide Curves

Station: Kodiak, Alaska, 1950

August 13

August 14
Field Inspection Report

T-9686 thru T-9689

The field inspection report for the entire project is filed with the Descriptive Report for T-9679.
21. **AREA COVERED:**

This radial plot covers the area of Surveys T-9686 thru T-9690 and T-9693. These surveys cover the area between Hooper Bay and Hazen Bay along the Bering Sea, on the west coast of Alaska. The surveys will be compiled with the Reading Plotter.

22. **METHOD - RADIAL PLOT**

Map Manuscripts:
Vinylite sheets with polyconic projections in black and Universal Transverse Mercator grids in red, at a scale of 1:20,000, were furnished by the Washington Office.

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

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

Photographs:
All photographs used were nine-lens metal mounted at a scale of 1:20,000. The forty-seven (47) photographs used in the radial plot were numbered as follows:

- 28503 thru 28513
- 28831 and 28832
- 28836 thru 28845
- 29039 thru 29048
- 38060 thru 38085
- 38103 thru 38107

Templets:
Vinylite templets were made from all photographs using a master templet to adjust for errors due to chamber displacement. Radial lines were scratched on the templets and filled in with china marking pencils. Red pencil was used for all shoreline (rectification) pass points and black pencil was used for all other radial lines.

Closure and adjustment to control:
The radial plot was laid on the map manuscripts starting with photograph 29048 and continuing southeastward to photograph 29039. Then the flight starting with photograph 28836 was laid extending it southeastward. The first two flights were well controlled and continuous, offering a good starting point for the plot. The other flights, to the west and east were then laid. No difficulties were encountered laying the plot.
22. METHOD - RADIAL PLOT

Transfer of Points:
The positions of all centers, pass points, and control stations
were pricked on the top templets and circled with a 3 mm circle.
They were then established on the remaining templets and map manuscripts
by drilling down through them with a small (.01 inch) jeweler’s drill.
All points were circled on each templet, as it was removed, and on the
map manuscripts.

23. ADEQUACY OF CONTROL

The horizontal control was adequate for a satisfactory radial plot.
All control stations were held.

24. SUPPLEMENTAL CONTROL

None

25. PHOTOGRAPHY

The definition of the photographs was good and the coverage was
adequate in all surveys except the northeast corner of T-9687 where there
was no coverage.

Photographs 29047 and 38082 were found to be tilted. No tilt deter-
mination was made for the tilted photographs as it is unnecessary to
correct for it in the plot.

Photographs 29042 and 29044 had chamber I blank, but this caused
no serious difficulty in the radial plot.

26. VERTICAL CONTROL

After the plot was completed, azimuths to vertical control points
were checked with field identified points and elevations computed.

Vertical control stations HV-010 and HV-011 are points on lakes
in marsh and can be used without adjustment, similar to shoreline points,
for rectification.

27. RECOVERABLE TOPOGRAPHIC STATIONS

All identified recoverable topographic stations were established
in the radial plot. Those identified by a substitute station were plotted
with a steel protractor before the manuscripts were disassembled.

Approved and forwarded
E.H. Kirsch

Respectfully submitted
21 September 1955

Albert Queen, Jr.
Carto. Photo. Aid

Mr. H. Kirwan
Comdr. USCGS
Officer in charge
Baltimore District Office
LAYOUT SKETCH
PROJECT PH 56
Surveys T-9686 thru T-9690 T-9693

O Nine-Lens Office Photographs
\* Control Stations (Identified)
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<th>SOURCE OF INFORMATION (INDEX)</th>
<th>DATUM</th>
<th>LATITUDE OR x-COORDINATE</th>
<th>LONGITUDE OR y-COORDINATE</th>
<th>DISTANCE FROM GRID IN FEET, OR PROJECTION LINE IN METERS</th>
<th>DATUM CORRECTION</th>
<th>N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS</th>
<th>FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS</th>
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<td>61 25 38.581</td>
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CHECKED BY: A. Queen DATE: 4/15/54
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COMPUTED BY: E.L. Williams

DATE: 5/9/55

CHECKED BY: A. Green

DATE: 5/9/55
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<td>551.7  (347.1)</td>
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1 FT = 0.3048 METER

COMPUTED BY: C. O. DeMarr  DATE: 9/13/54
CHECKED BY: A. Queen  DATE: 4/15/55
Compilation Report
T-9686, T-9687, T-9688, T-9689

31. Delineation:

These manuscripts were delineated both graphically and on the Reading nine-lens plotters using rectified metal mounted photographs. The MHWL on the coast and on the large streams was delineated on the Reading plotter. All of the other detail such as ponds and small streams were delineated graphically from the rectified prints.

32. Control:

See Radial Plot Report for discussion of horizontal control. The vertical control was adequate. There were sufficient tidewater streams to enable the instrument operator to use water level exclusively to orient all stereo models.

33. Supplemental Data: None

34. Contours & Drainage

There were no contours on any of these maps.

35. Shoreline & Alongshore Details:

The field inspection of the MHWL was adequate. An approximate low water line was drawn, using the 29,000 series photos which were taken near low water. Nuuk Spit on T-9686 and the outer coast on T-9688 were not covered by low water photos and consequently no approximate LWL has been delineated in these areas.

36. Offshore Details: No comment.

37. Landmarks and Aids: None

38. Control for Future Surveys:

Form 524 cards have been submitted for topographic stations ZONE and CHEN - T-9686, BEAN T-9687 and DIME T-9688. Notes to the hydrographer are appended for all manuscripts.

39. Junctions:

All junctions were made with adjoining maps as shown on the index. The northeast corner of T-9687 was not mapped due to insufficient photography.
40. Horizontal & Vertical Accuracy - No comment.

46. Comparison with Existing Maps:

    The largest scale topographic map available is "Hooper Bay", USGS, 1:250,000 scale, 1945.

47. Comparison with Nautical Charts:

    Chart No. 9302 corrected to 6/15/53.

    Items to be applied to nautical charts immediately - none.

    Items to be carried forward - none.

Submitted by:

[Signature]

Louis Levin,
Supervisory Cartographer

Approved by:

[Signature]

K. N. Maki
Cartographic Engineer
GEOGRAPHIC NAMES
Survey No. T-9686

ALASKA
BERING SEA
NUOK SPIT
HOOPER BAY
NINGLIKFAK RIVER
KEOKLEVIK RIVER
PAINOROYUN SLough
ISSOROTULIK SLough

Names approved:

[Signature]
L. Heck
GEOGRAPHIC NAMES

Survey No. T-9687

NIGLIKPAK RIVER (see T-9686)
KEOKLEVIK RIVER
KASHUNUK RIVER

Names approved:

[Signature]
GEOGRAPHIC NAMES
Survey No. T-9688

ALASKA
BERING SEA
ANGYOYARAVAK BAY
PUNOARAT POINT

Names approved:

[Signature]
L. Heck
GEOGRAPHIC NAMES

Survey No. T-9689

ALASKA
ANGYOYARA
YAK
KASHUNUK
KASHUNUK RIVER

Names approved:

[Signature]
Notes to the Hydrographer
T-9686

The following topographic stations were established:

ZONE, 1951
CHEN, 1951 (Position determined by triangulation and listed in G.P.'s)

No photo hydro stations were established.
Notes to the Hydrographer

T-9687

One topographic station, BEAN, 1951 was established and located by radial plot.

No photo hydro stations were established.
Notes to the Hydrographer
T-9688

One topographic station, DIME, 1951 was established.

No photo hydro stations were established.
Notes to Hydrographer

T-9689

No topographic stations nor photo hydro stations have been established.
Review Report
of Topographic Maps T-9686 thru T-9689
February 1957

62. Comparison with Registered Topographic Surveys

T-2336  1:200,000  1898
T-2432  1:120,000  1899

These reconnaissance-type topographic surveys are inadequate for comparative evaluation.

63. Comparison with Maps of other Agencies:

See Item 46

64. Comparison with Contemporary Hydrographic Surveys

H-7936  1:20,000  1951

This small hydrographic survey of the entrance to Hooper Bay is the only contemporary hydrographic survey of the subject manuscripts area. The shoreline has not been detailed on H-7936; but hydrography will readily accommodate shoreline of corresponding topographic surveys.

65. Comparison with Nautical Charts

9302  1:1,534,076  1952 corr. to 12-24-56

This is the only nautical chart covering all topographic surveys of this project.

66. Adequacy of Results and Future Surveys

Shoreline inspection appears adequate. Lack of inshore inspection (except for control) may have resulted in minor inaccuracies in office interpretation. Other than these, no deficiencies in accuracy and adequacy were indicated.

Reviewed by:

[Signature]

Approved by:

[Signature]  [Signature]

Chief, Review & Drafting Sec.  Chief, Nautical Chart Branch
Photogrammetry Division  Charts Division

[Signature]  [Signature]

Chief, Photogrammetry Division  Chief, Coastal Surveys

7 Mar 1958
History of Hydrographic Information for AMS Quadrangle

A small area of hydrography (portion of entrance of Hooper Bay) was available. This information was added to manuscript T-9686 in accordance with AMS Technical Instructions.

Depth curves and soundings are in fathoms at mean lower low water and originate with

H-7936 1:20,000 1951

Hydrography was compiled by J. J. Streifler in December 1956.
Summary to Accompany Topographic Maps T-9686 thru T-9689

This covers the area between Hooper Bay and Anguyararar Bay, Bering Sea of Ph-24090 (6056). See accompanying project index.

Extensive low marsh areas were compiled graphically and direct from rectified photographs. All other features were compiled on the Reading nine-lens plotters.

After addition of limited hydrographic information, a portion of subject manuscripts will be published by the Army Map Service as a standard topographic quadrangle at scale of 1:50,000 - see accompanying project index.

A "Cronar" film positive at manuscript scale and the descriptive report, as well as a cloth-backed print of the AKS quadrangle in color after final printing, will be registered and filed in the Bureau Archives.

February 1957
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*(Note: Column A contains initials; Column B contains numbers; Column C contains notes; Column D contains additional notes; Column E contains 'All caps'; Column F contains initials; Column G contains initials; Column H contains initials; Column K contains numbers.)*
The image contains a map of the Alaska-Bering Sea region, specifically Scammon Bay to Kuskokwim Bay and Nunivak Island. The map is part of the Topographic Mapping Project 6056, with the scale 1:20,000 and 1:50,000 for AMS. The map includes a sub-total of 2,685 square miles.

The map also notes that it was compiled from 1:20,000 scale nine-lens photographs taken in August 1950 and June 1951, with additional nine-lens photography to be taken in the Season 1952. It references Air-Photo Indexes B-42, 50, 51, 52, and E-118.