U. S. COAST AND GEOETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Planimetric
Field No. Ph-29(47) II Office No. T-9743 thru T-9746

LOCALITY
State Alaska
General locality Beaufort Sea, North Arctic Coast
Locality Plover Islands, Tapkaluk Island,
Elson Lagoon, Christie Point, Tangent Pt.,

1951

CHIEF OF PARTY
Max G. Ricketts, Chief of Party
Fred A. Riddell, Portland, Oregon Photo Office

LIBRARY & ARCHIVES

DATE April 18, 1955
DATA RECORD

T-9743 thru T-9746

Project No. (II): Ph-29(47) II Quadrangle Name (IV):

Field Office (II): Arctic Field Party (West Unit) Chief of Party: Max G. Ricketts
Photogrammetric Office (III): Portland, Oregon Officer-in-Charge: Fred A. Riddell

Instructions dated (II) (III): 1/13/49, 3/3/50, 2/6/51, 3/16/51 (Field Copy filed in Division of
12/14/49, 1/27/50, 11/9/50 11/23/51 (Office) Photogrammetry (IV)

Method of Compilation (III): Graphic
Manuscript Scale (III): 1:20000 Stereoscopic Plotting Instrument Scale (III):
Scale Factor (III): None

Date received in Washington Office (IV): SEP 16 1954 Data reported to Nautical Chart Branch (IV):

Applied to Chart No. Date: Date registered (IV): 26 Aug. 1954

Publication Scale (IV): Publication date (IV):
Geographic Datum (III): Point Barrow Vertical Datum (III): Mean Sea Level
Corrections figures to NA 1927 are now available. Mean sea level except as follows:
LTS Dec. 1952 Elevation shown as (H) refer to mean high water
The difference between Point Barrow, 1945 Datum Elevation shown as (L) refer to soundings datum
and preliminary N.A. 1927 Datum is Lat. plus/minus i.e., mean low water or mean lower low water
40.4 m. and Long. plus/minus 144.1 m. G.G.M., 1954

Reference Station (III): (See paragraph 12 of Office Instructions Project Ph-29(47)
dated 14 December 1949) Adjusted

Lat.: Long.: 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)
DATA RECORD

Field Inspection by (II): Leo W. Eason II 

Date: 2nd Sept. 1951

Planetable contouring by (II):

Date:

Completion Surveys by (II):

Date:

Mean High Water Location (III) (State date and method of location): Delineated by stereoscopic examination of photographs, with the aid of spot locations shown on reverse side of field photographs.

Projection and Grids ruled by (IV):

Date:

Projection and Grids checked by (IV):

Date:

Control plotted by (III): L.L. Graves, R.O. Risvold

Date: 3-20-52

Control checked by (III): R.O. Risvold & R.H. Barron

Date: 3-24-52

Radial Plot or Stereoscopic: J.L. Harris & J.E. Deal

Control extension by (III):

Date: 4-9-52

Planimetry

Stereoscopic Instrument compilation (III):

Contours

Date:

Manuscript delineated by (III): See reverse side

Date:

Photogrammetric Office Review by (III): See reverse side

Date:

Elevations on Manuscript checked by (II) (III): J.E. Deal

Date: 8-21-52

Form T-Page 3
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**Tide (III)**

Reference Station: Kodiak, Alaska
Subordinate Station: Point Barrow

Washington Office Review by (IV): L.T. Stevens
Final Drafting by (IV): W.P. Taylor
Drafting verified for reproduction by (IV): W.O. Hallman

**Diurnal**

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<tr>
<td>0.1</td>
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<td>0.5</td>
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Date: 12-23-52

Land Area (Sq. Statute Miles) (III): 120.9
Shoreline (More than 200 meters to opposite shore) (III): 114.4
Shoreline (Less than 200 meters to opposite shore) (III): 22.5
Control Leveling - Miles (II):
Number of Triangulation Stations searched for (II):
Number of BMs searched for (II):
Number of Recoverable Photo Stations established (III):
Number of Temporary Photo Hydro Stations established (III):

Remarks:
Summary to Accompany
Descriptive Report T-9743-46

Planimetric project Ph-29(47) consists of 69 maps, scale 1:20,000, 26 in Part I (Barter Island westward to Jones Island) and 43 in Part II (Jones Islands westward to Point Barrow). The project covers that part of the Arctic Ocean coastal area (Beaufort Sea) which extends from 113° 10' to 156° 30' west longitude.

This project was designed as surveys for new nautical charts at a much larger scale than the present nautical chart, and to furnish bases to the U.S. Geological Survey for projected topographic maps.

The T-9743-46 group is the most northwestern portion of Part II. It extends from Point Barrow eastward to Tangent Point at the eastern side of the entrance to Barrow Inlet, and includes Topaluk Islands, Plover Islands and a narrow strip of the mainland south of them.

When all the map manuscripts in this project have been reviewed, smooth-drafted, reproduced, and registered, a Completion Report will be filed in the Bureau Archives. This report will describe the project as a whole, and will list the materials received, with a statement of their disposition.
FIELD INSPECTION REPORT
Map Manuscript T-9743 thru T-9746
Project Ph-29(47) II

Refer to Descriptive Report "Shoreline - Photogrammetric,
Alaska, North Arctic Coast, Point Barrow to Cape Halkett, 1951"
Max G. Ricketts, Chief of Party.

Filed in Archives with Complete Report.
PHOTOGRAMMETRIC PLOT REPORT
Map Manuscripts Nos. T-9743 thru T-9754 and T-9758
Project Ph-29(47)II

21. Area Covered.

This radial plot covers a strip of land, approximately 20 miles wide, along the shore of Beaufort Sea (North Arctic Coast, Alaska) from Cape Simpson to Point Barrow. It also includes Tukpakuk Island and the offshore group of islands known collectively as Plover Islands. It comprises Map Manuscripts Nos. T-9743 thru T-9754 and T-9758.

22. Method.

A polyconic projection, scale 1:20,000, in one minute intervals for latitude and two minute intervals for longitude, drawn on sheets of vinylite, was furnished this office for each manuscript. Also shown on these sheets are the Universal Transverse Mercator Alaska Grids.

The original projections furnished for T-9743 thru T-9749, T-9751 thru T-9753, and T-9758 were received at the Portland Photogrammetric Office on 18 March 1952 in a damaged condition.

In order to make these sheets of vinylite lie flat, when joined together for laying the radial plot, it was necessary to cut a 12" x 17" piece from the corners in the overlap area and replace these cut out portions with .005" vinylite material (refer to letter to Chief, Division of Photogrammetry dated 20 March 1952, Subject, "Projections on Vinylite", to the Preliminary Monthly report dated 25 March 1952, and to letter to The Director, dated 17 April 1952, Subject, "Ph-29, Manuscripts for Group III").

The radial plot was completed on these damaged projections and the shoreline was then compiled. On 11 June 1952 new projections were furnished to replace those damaged. The previously compiled shoreline, all horizontal control stations and photogrammetric points, located during the radial plot, were transferred to these new sheets.

The usual methods were followed for plotting the horizontal control stations and for the preparation of the photographs.

The pricking and transferring of photogrammetric points on
the office photographs was done by the floating mark method under a prism stereoscope.

Master Calibration Templet No. 21682, dated September 1948, was used in the preparation of the plotting templets.

A small projection was constructed at this office which extended the west limits of T-9743 to a junction with T-8998 Project Ph-27. T-8998 was then included in the radial plot and the several horizontal control stations at Point Barrow were utilized to aid in controlling the photographs.

The templets as originally prepared could not be oriented to all the identified horizontal control stations.

This was not the case in previous radial plots along the Arctic Coast in which photographs taken during the same period were used. There were, however, six flights of photographs in this plot which covered large land areas. The previous plots were covered for the most part by only two flights of photographs over large water areas where only the small land portions of many of the photographs could be used.

After much investigation the conclusion was that the cause of the trouble was vacuum failures which were evident at the outer limits of all photographs. A circle, having a radius of 14.5 inches, was drawn on each photograph and radials to all points falling outside the limits of this circle were eliminated from the templets.

The templets were then easily oriented to the identified horizontal control stations and an excellent radial plot was completed. This method gave three or more radials to each point in all but a few cases as there was good end and side overlap in all six flights of photographs.

The radial plot could not be completed for most of T-9758 and for the south portion of T-9751 because of insufficient photograph coverage.

23. Adequacy of control.

An adequate number of horizontal control stations were identified to satisfactorily control the orientation of the templets. Two or more sub-stations were located in the field for each identified horizontal control station and for each of these stations, one sub-station was evaluated in the office as
being the best for use in the radial plot. These selected substations were pricked on all office photographs on which they appeared and were held in the radial plot after the following changes were made in the field data:

Station TINY, 1945 7-97752
Change initial to locate sub-station from R.M. 1 to R.M. 2.

Station BUNNY, 1951 7-97754
Change distance on pricking card shown to Sub Pt. "a" to apply to Sub Pt. "b".
Change distance on pricking card shown to Sub. Pt. "b" to apply to Sub. Pt. "a".

24. Supplemental data.
No supplemental data were furnished.

25. Photography.
Refer to paragraph 10 and 11 of sub-heading 22. "Method" of this photogrammetric plot report.


Approved:

Fred A. Riddell
Officer in Charge

Respectfully submitted:

J. Edward Deal, Jr.
Cartographer
These four map manuscripts portray the planimetric details of Tagkaluk Island, the Plover Islands, and the planimetry adjacent to the shoreline of Elson Lagoon from Dease Inlet to Point Barrow.

31. Delineation.

Graphic methods were used for the compilation of these map manuscripts.

Data relative to the shoreline of the offshore islands which may have been shown on boat sheets were not furnished this office.

In general the photographic interpretation of interior planimetric details was done at the compilation office by stereoscopic examination of the photographs aided by discussions with field personnel who had served on assignments with the Arctic Party. Descriptions and pricking card sketches of horizontal control stations also were thoroughly examined for data which would help in determining the character of the planimetry in the vicinity of the stations.

The "Low Area or Area of Seasonal Inundation" symbol has been used to show the extent of lake and pond beds which probably were dry at the time of photography. Other low areas which are believed to be flooded at some period of the year also are indicated by this symbol. Outside the limits of dry lake beds and other low places the ground is higher but usually contains numerous small ponds and in general could probably be considered wet. The inundation symbol was not used to cover these higher areas because it is believed that it would distract from the general character of the maps and also destroy the general drainage pattern in the area which can be easily distinguished on the map manuscripts as compiled. If desired, the inundation symbol may easily be added for these areas during the smooth draft.

Scattered throughout the interior and along the shoreline are areas of high tundra bounded by eroded bluffs. Information contained in station descriptions indicates several of these places to be at an elevation of about 40 feet above Mean Sea Level. The hachure symbol has been used to portray this feature and also for several pingo mounds in the area.
Bluffs believed to be higher than 5.0 ft. have been shown. Banks of drainage streams were shown only where the slope of the banks appeared to be steep. The extent of the stream bed or "wash" has been indicated with the inundation symbol.

32. Control.

Refer to side heading 23. "Adequacy of Control" of the photogrammetric plot report.

33. Supplemental data.

There were no supplemental data.

34. Contours and drainage.

Drainage was delineated by stereoscopic study of the photographs and then detailed. The intermittent stream symbol has not been used in accordance with instructions contained in letter 78-sal from Chief, Division of Photogrammetry, dated 28 July 1952, Subject, "Inspection of Compilation of T-9785, Project Ph-29(47)".

Contours are inapplicable.

35. Shoreline and alongshore details.

Sketches made in the field on the reverse side of the field photographs show detailed delineation of the mean high-water line at numerous places. Elsewhere the mean high-water line has been delineated by stereoscopic examination of the photographs.

Approximate low-water lines have been shown as they appeared from stereoscopic examination of the photographs.

The field inspection data indicates that there have been many major changes in the shoreline since the time of photography and in general the mean high-water line should be considered as being of the date of photography except where detailed sketches were made during the field season of 1951.

36. Offshore details.

Refer to side heading VIII "Offshore Features" of the field inspection report.
37. Landmarks and aids.

Refer to side heading IX "Landmarks and aids to Navigation" of the field inspection report.

38. Control for future surveys.

Not applicable.


Satisfactory junctions have been made between all map manuscripts included in this compilation report and with all other adjoining map manuscripts. A small projection was constructed in this office and attached to the west limits of T-9743 on which a new compilation of planimetry in the east part of T-8998 Project Ph-27 is shown. Also a print of T-8998 is being submitted showing a junction at Longitude 156° 28' and corrections in red crayon necessary for a satisfactory junction with T-9743. A print of T-9000, Project Ph-27 is submitted showing corrections in red crayon necessary in that sheet for a satisfactory junction with T-9744. These changes in previously compiled planimetry are justified because accurate field identifications of horizontal control stations GOON, ELSON, and LAG were made during the 1951 field season which enabled the completion of a much stronger radial plot at the junctions with Project Ph-27.

40. Horizontal and vertical accuracy.

No areas are believed to be of sub-normal horizontal accuracy.

Vertical accuracy is not applicable.

46. Comparison with existing maps.

None were available to this office for comparison purposes.

47. Comparison with nautical charts.

Comparison was made with the following nautical charts:


Items to be applied to nautical charts immediately "None".

Approved:

Fred A. Riddell
Officer in Charge
Portland Photogrammetric Office

Respectfully Submitted:

J. Edward Deal Jr.
Cartographer
Geographic Names List.

The geographic names report, side heading XIV of the field inspection report was not furnished the compilation office.

The following were from sources listed below:

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**T-9743**

- Beaufort Sea
- Deadmans Island
- Doctor Island
- Elson Lagoon
- Eluktak Pass
- Plover Islands
- Point Barrow
- Sanigerak Pass (does not belong here)
- Tapkaluk Island (Tal节日Island)

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**T-9746**

- Beaufort Sea
- Dease Inlet
- Igalik Island
- Kuligak Island
- Martin Island
- Plover Islands
- Sanigerak Island
- Sanigerak Pass
- Tangent Point

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**T-9744**

- Ahvak Bay
- Ahvak Point (Scott Point)
- Ahvak River
- Elson Lagoon
- Iko Bay

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**T-9745**

1. Christie Point
2. Cooper Island
3. Dease Inlet
4. Elson Lagoon
5. Iko Bay
6. Katchakeek Bluff
7. Martin Island
8. Oloksralakik Bay
9. Oloksralakik Point (Ross Point)
10. Plover Islands

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Sources:

- Nautical Charts Nos. 9400 - 9445 - 9495
- Various Aerchnautical Charts of Area
- Field Inspection Notes
- Descriptions of Stations

Names underlined in red are approved on basis of 1951 Names Report by Pauver and Eaton.

12-19-52. L. Heck
Chief, Review Section, Div. of Photogrammetry, and
Chief, Geographic Branch, Div. of Charts
Tech. Asst. to Chief, Div. of Photogrammetry

Surface elevations, vicinity of Point Barrow

3 June 1953

Attached is a copy of a letter from the Chief of the Arctic Party and a copy of the blueprint showing surface elevations in the vicinity of Point Barrow. These are forwarded for filing in the Geographic Branch.

This information is forwarded through 88 in case it is of interest to aeronautical charting.

Mr. Griffith, please cross reference the existence of these elevations in your project report for Ph-29. It might also be well to cross reference it in the Descriptive Report for the planimetric maps in the immediate vicinity of Point Barrow.

E. G. Jones, Tech. Asst. to Chief, Division of Photogrammetry

* M. G. MacKells
62. **Comparison with Registered Surveys.** - There are no earlier surveys for this area.

63. **Comparison with Maps of Other Agencies.** - None

64. **Comparison with Contemporary Hydrographic Surveys.** -

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<td>Pt. Barrow &amp; Doctor Id.</td>
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The shoreline of H-7919 is that of T-9743 except for inaccuracies of transfer.

65. **Comparison with Charts.** -

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No record is attached to the descriptive report to indicate that these map manuscripts have been applied to the charts prior to review.

The shoreline is that of the 1945 hydrographic surveys. The style of planimetry on 9445 is similar to that of the 1951 surveys, but differs somewhat in detail.

66. **Junctions.** -

T-8998 and T-9000 (Ph-27-47) join T-9743 and T-9744, respectively.

The planimetry on T-8998 and T-9000 has been altered to agree with T-9743 and T-9744, because the latter were from a better controlled radial plot. A note has been added to the descriptive report for Ph-27(47) to explain the changes.

67. **Accuracy.** - These maps were delineated almost entirely from office interpretation of shoreline and terrain. T-9743, 9744, and all of 9445 except the eastern margin were controlled by recovered 1945 triangulation. Eastern T-9745 and eastern T-9746 were controlled by 1951 triangulation supplementing the 1945 control. Because the plot was well held and the delineation was well done, these maps meet the National Standards of Accuracy.

The maps are based on the Point Barrow datum, and no office adjustment to N.A. 1927 has yet been made to any of the control between Point Barrow and Cape Halkett. (see p. 2 for data record)

Reviewed by:

 Lena T. Stevens
HORIZONTAL DATUM ADJUSTMENT

ARCTIC OCEAN AREA, ALASKA

Corrections to Preliminary N.A. 1927 Datum from the various
independent horizontal datums on the north coast of Alaska have
been determined by the Division of Geodesy, being computed from
field positions, allowing for closure in azimuth and length.
This procedure was started from adjusted N.A. 1927 Datum
stations at about the 63rd Parallel on the Canadian Boundary,
followed the 111st Meridian (IBC Datum) to Beaufort Sea (Arctic
Ocean), thence westward through the Bering Island 1946, Flaxman
Island and Point Barrow 1945 Datums to a connection with adjusted
N.A. 1927 Datum in the area of Kotzebue Sound, off Chukchi Sea.
The position of the stations in this area is subject to further
adjustment after more geodetic field work.

PLANEOMETRIC MAPPING PROJECT

Ph-29(47) PART II

Point Barrow to Jones Island, Alaska

T-9743 thru T-9785

T-9743 thru T-9772: Point Barrow 1945 Datum, correction to
Preliminary N.A. 1927 Datum in Latitude is +1.30 sec. on all the
maps, and in Longitude, ranges from -14.93 sec. on T-9743 to -15.26
sec. on T-9772. These corrections were converted into meters, and
stamped on page T-2 of each Descriptive Report, and near the title
block of each manuscript and registered cloth-backed map, with the
following stamp:

T-9773 thru T-9785: Flaxman Island Datum, correction to
Preliminary N.A. 1927 Datum use ranges from -1.26 sec. on T-9777
to -1.00 sec. on T-9782, and in Longitude from plus 8.95 sec. on
T-9777 to plus 9.90 sec. on T-9782. These corrections were stamped
on page T-2 of each Descriptive Report, and near the title block of
each manuscript and cloth-backed registered map, with the exception
that the cloth-backed maps have not been completed for T-9777, T-9779
thru 9782, and T-978h-9785. When these maps are completed they
should be stamped the same as have been their descriptive reports,
with the following stamp:

The difference between Point Barrow 1945 Datum
and preliminary N.A. 1927 Datum is Lat. plus/minus
\[ \Delta \text{m. and Long. plus/minus } \Delta \text{m.} \]

See the Special Report on HORIZONTAL DATUM ADJUSTMENT for
Ph-29(47), Parts I, II, & III, filed with the completion report
for a project index showing the correction for each map.