9743 9744
9745 9746

9744 9746
9743 9745

Diag Cht 9400

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

[redacted]

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.,

19~~4~~51

CHIEF OF PARTY

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

LIBRARY & ARCHIVES

DATE April 18, 1955

8-1870-1 (1)

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): 1/13/48, 3/8/50, 2/6/51, 3/16/51 (Field) 12/14/49, 1/27/50, 11/9/50 11/23/51 (Office) Copy filed in Division of 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 1952 Date reported to Nautical Chart Branch (IV): SEP 25 1952

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

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

Geographic Datum (III): Point Barrow

Correction figures to NA 1927 are now available. LTS Dec. 1952

The difference between Point Barrow, 1945 Datum and preliminary N.A. 1927 Datum is Lat. plus/~~minus~~ 40 m. and Long. ~~plus~~/minus 149 m. G.B.W, 8/54 lcl.

Vertical Datum (III): Mean ~~Sea~~ Level (High Water)

Mean sea level except as follows:
Elevations shown as (25) refer to mean high water
Elevations shown as (5) refer to sounding datum
i.e., mean low water or mean lower low water

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

Lat.: Long.: Adjusted / Unadjusted ✓

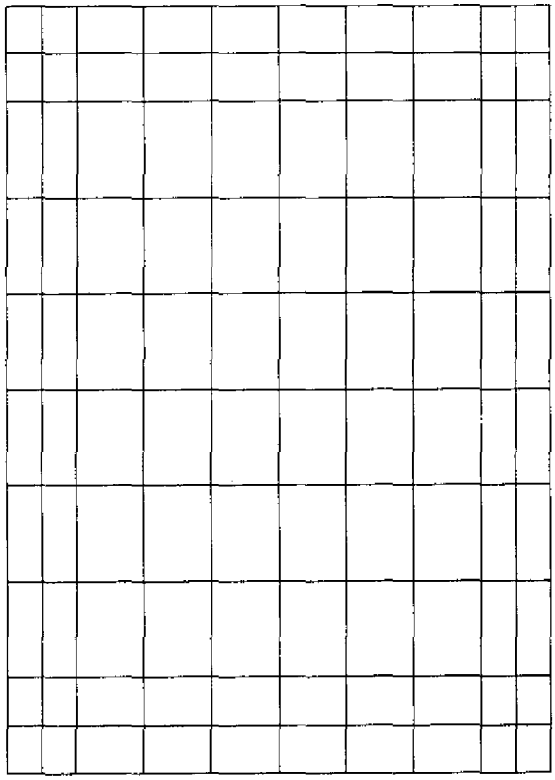
Plane Coordinates (IV): State: Zone:

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.

M-2618-12(4)



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 Control extension by (III): J.L. Harris & J.E. Deal Date: 4-9-52

Stereoscopic Instrument compilation (III): Planimetry Date:

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

Manuscript delineated by:-	Shoreline	Date	Interior	Date
T-9743	R.H. Barron	4/14/52	L.L. Graves	6/19/52
T-9744	R.A. Davidson	4/14/52	L.L. Graves	8/7/52
T-9745	J.L. Harris	4/15/52	J.L. Harris	7/22/52
T-9746	R.H. Barron	4/11/52	R.H. Barron	7/7/52

Manuscript reviewed by:-	Shoreline	Date	Interior	Date
T-9743	J.E. Deal	4/17/52	J.E. Deal	7/22/52
T-9744	R.H. Barron	4/16/52	J.E. Deal	8/21/52
T-9745	R.H. Barron	4/18/52	J.E. Deal	7/31/52
T-9746	J.E. Deal	4/15/52	J.E. Deal	7/29/52

Camera (kind or source) (III): U.S.C. & G.S. - 9 lens - focal length 8.25 inches

PHOTOGRAPHS (III)

Number	Date	Time	Scale	Stage of Tide
19869 thru 19879	7/20/47	13:38	1:20000	0.8 ft. above M.L.L.W.
19951 " 19958	7/20/47	16:06	1:20000	0.6 ft. above M.L.L.W.
19962 " 19966	7/20/47	16:34	1:20000	0.5 ft. above M.L.L.W.
19983 and 19984	7/20/47	17:01	1:20000	0.45 ft. above M.L.L.W.

Tide (III)

Diurnal

Ratio of Ranges	Mean Range	Spring Range
	6.6	8.5
0.1	0.4	0.5

Reference Station: Kodiak, Alaska
Subordinate Station: Point Barrow
Subordinate Station:

Washington Office Review by (IV): L.T. Stevens Date: 12-23-52

Final Drafting by (IV): W.P. TAYLOR Date: 8-[illegible]-53

Drafting verified for reproduction by (IV): W.O. Hellum Date: 9-21-53

Proof Edit by (IV): Date:

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): 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):

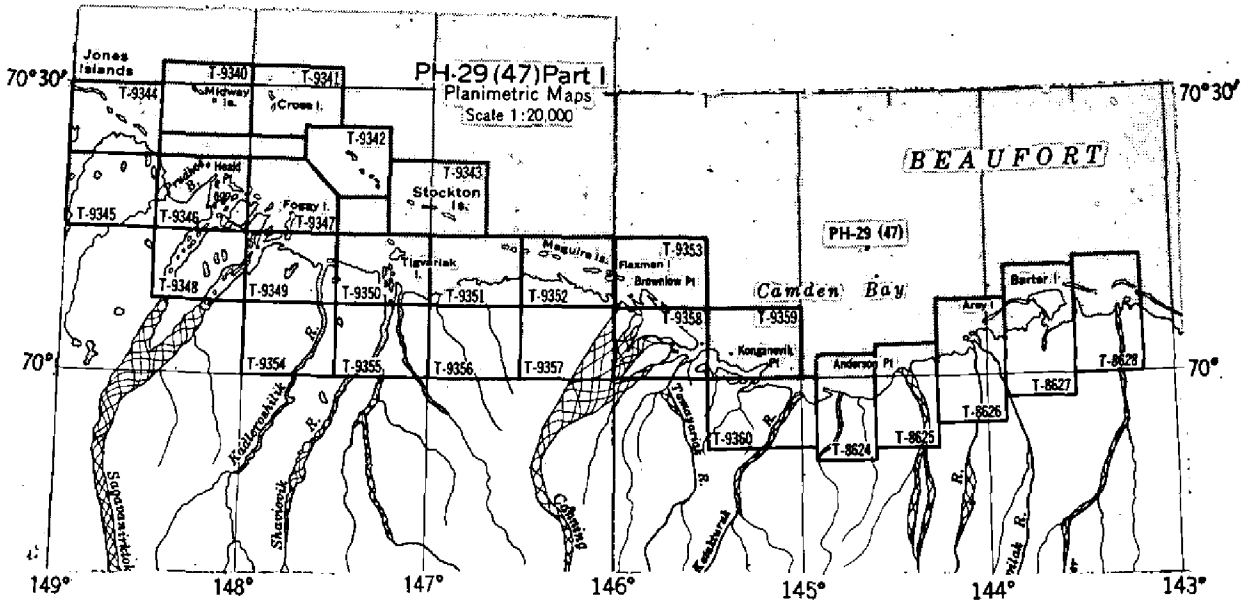
Remarks:

PLANIMETRIC MAPPING PROJECT PH-29(47)

Photographs taken July 1947 Scale 1:20,000

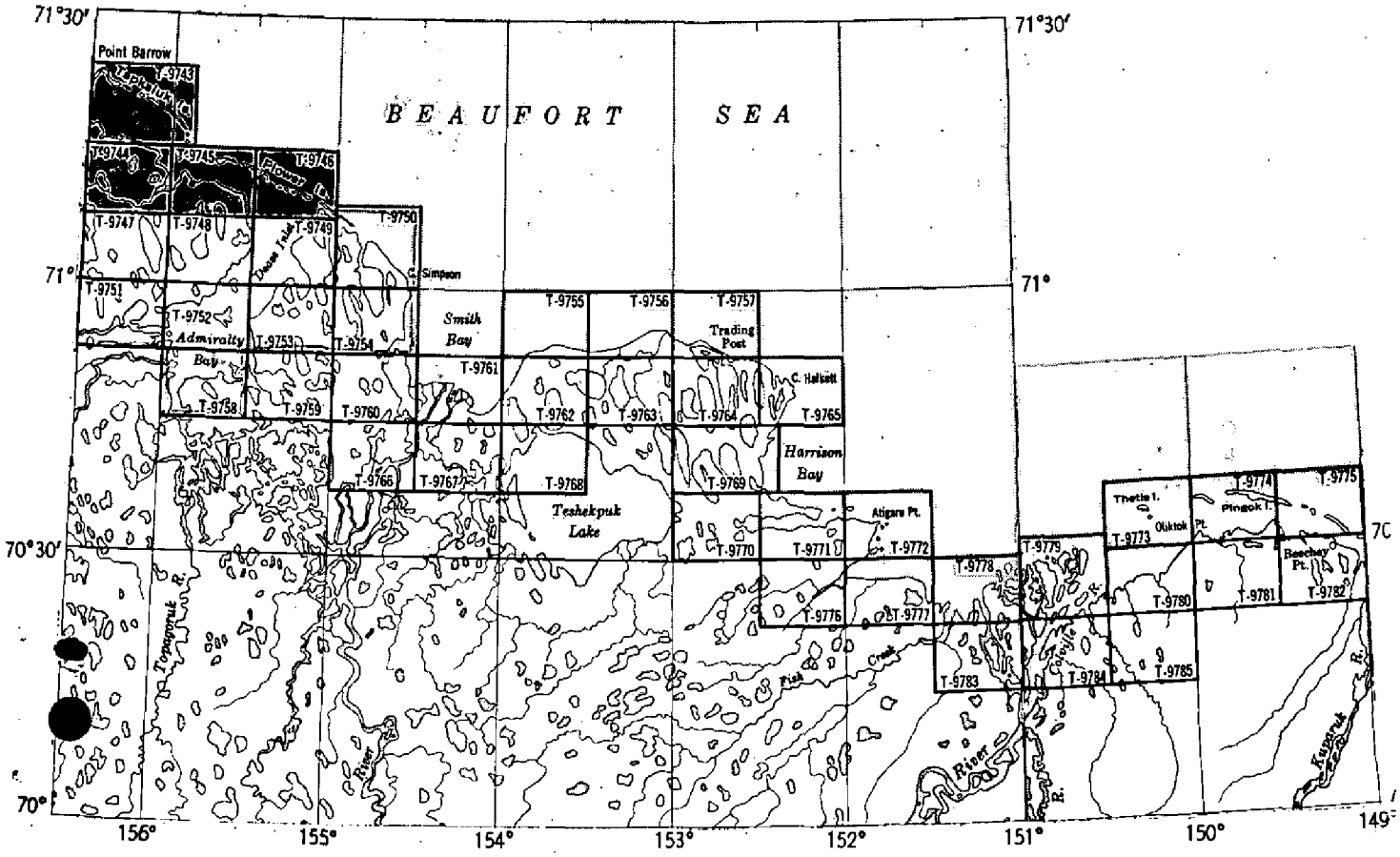
Part I

ALASKA Barter Island to Jones Islands



Part II

ALASKA Jones Islands to Point Barrow



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 Islands) 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 143° 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 Dease 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 Completion 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 Tapkaluk 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

No control on T-9747, T-9751

being the best for use in the radial plot. These selected sub-stations 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 T-9752

Change initial to locate sub-station from R.M. 1 to R.M. 2.

Station BUNNY, 1951 T-9754

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.

Refer to paragraph 2 and 3 of sub-heading 25. "Photography" of the Descriptive Report for T-9773 thru T-9775 Project Ph-29(47) II (1951).

Approved:

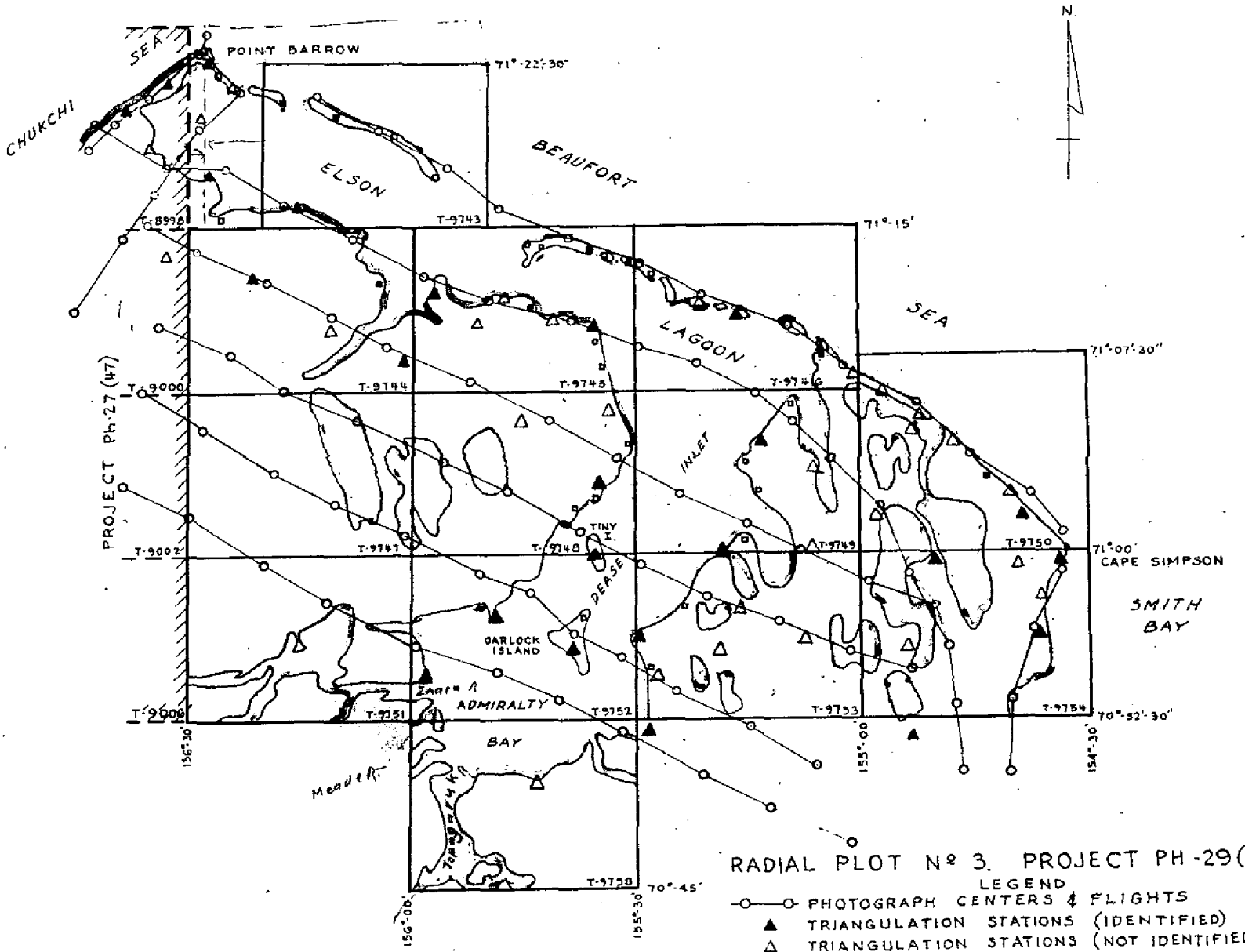
Fred A. Riddell

Fred A. Riddell
Officer in Charge

Respectfully submitted:

J. Edward Deal Jr.

J. Edward Deal, Jr.
Cartographer


SEA
POINT BARROW
CHUKCHI
71°-22'-30"
ELSON
BEAUFORT
N.
T-8998
T-9743
71°-15'
SEA
LAGOON
71°-07'-30"
T-9000
T-9744
T-9745
T-9746
PROJECT PH-27 (47)
INLET
TINY I.
T-9747
T-9748
T-9749
T-9750
71°-00'
CAPE SIMPSON
T-9002
DEASE
SMITH BAY
OARLOCK ISLAND
ADMIRALTY
T-9751
T-9752
T-9753
T-9754
70°-52'-30"
T-9004
BAY
Meade R.
156°-30'
155°-00'
154°-30'
T-9758
70°-45'
156°-00'
155°-30'
RADIAL PLOT Nº 3. PROJECT PH-29(47)II
LEGEND
PHOTOGRAPH CENTERS & FLIGHTS
TRIANGULATION STATIONS (IDENTIFIED)
TRIANGULATION STATIONS (NOT IDENTIFIED)
TOPO OR HYDRO STATIONS (IDENTIFIED FOR HORIZONTAL CONTROL)
TOPO OR HYDRO STATIONS (NOT IDENTIFIED)

COMPILATION REPORT
Map Manuscripts T-9743 thru T-9746
Project Ph-29(47) II

These four map manuscripts portray the planimetric details of Tapkaluk 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.

Inst. Dec 14, 1949. and 3-3-50 10-30-52

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-aal 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.

39. Junctions.

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.

T-8998 & T-9000 revised to conform to T-9743 & T-9744 respectively. LTS Dec. 1952

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:

No. 9400, Scale 1:1,587,870 at Lat. 70° 00',
published May 1947 (6th Edition) corrected
11-27-50.

No. 9445, Scale 1:40,000, published March 1950 (2nd Edition) corrected 3/20/50.

No. 9495, Scale 1:125,000 at Lat. 71° 08' Pt. Barrow Datum, published May 1950 (2nd Edition) now obsolete, corrected 8/27/50.

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.

J. Edward Deal, Jr.
Cartographer

48. 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:

T-9743

Beaufort Sea
Deadmans Island
Doctor Island
Elson Lagoon
Eluitkak Pass
Plover Islands
Point Barrow
~~Sanigaruak Pass~~ (does not belong here)
Tapkaluk Island ~~(Takaluk Island)~~

T-9746

Beaufort Sea
Dease Inlet
Igalik Island
Kulgurak Island
Martin Island
Plover Islands
Sanigaruak Island
Sanigaruak Pass
Tangent Point

T-9744

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

T-9745

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

Reindeer Lake

Kilukruak Entrance

Sources:

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

Names underlined in red are approved on basis of 1951 Names Report by Panuow and Eaton. 12-19-52. L. Heck

29 711-aal

Chief, Review Section, Div. of
Photogrammetry, and
Chief, Geographic Branch, Div. of Charts

3 June 1953

Tech. Asst. to Chief, Div. of Photogrammetry

40

Surface elevations, vicinity of Point Barrow

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.

See photo. copy as part of Compl. Rept.

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

* M. G. Ricketts

Review Report T-9743 - 46
Planimetric Maps
23 December 1952

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.-

H-7919	1:20,000	1951	Pt. Barrow & Doctor Id.
H-7859	"	"	Not available

The shoreline of H-7919 is that of T-9743 except for inaccuracies of transfer.

65. Comparison with Charts.-

9400	1:1,587,870 at 70°	May 1947 rev. June 1952
9445	1:40,000	Mar. 1950, rev. Aug. 1951

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 9745 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 data record)

Reviewed by:

Lena T. Stevens

Lena T. Stevens

APPROVED

L C Lande
Chief, Review Section
Div. of Photogrammetry

H R Edmonston
Chief, Nautical Chart Branch
Division of Charts GFJ

Max S Ricketts
Chief, DIv. of Photogrammetry

Earl O. Heaton
Div. of Coastal Surveys

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 141st Meridian (IBC Datum) to Beaufort Sea (Arctic Ocean), thence westward through the Barter Island 1948, 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.

PLANIMETRIC 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 -3.00 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-9784-9785. 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~~
X m. and Long. ~~plus~~/minus X 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.

T9743 } applied to Chart 9403 thru Cht. 9464 H.E.M. Apr. 1955.
T9744 }

T9743, T9745 } applied to Cht 9403 thru Cht 9465 H.E.M. Apr 1955
T9744, T9746 }