

9369

Diag. Cht. No. 9400

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Planimetric

Field No. Ph-42 (49) Office No. T-9369

LOCALITY

State Alaska

General locality Chukchi Sea

Locality Epizetka River to Kokolik River

194 9

CHIEF OF PARTY

R. A. Earle, Chief of Field Party

H. A. Paton, Baltimore Photo. Office.

LIBRARY & ARCHIVES

DATE May, 1957

9369

DATA RECORD

T - 9369

Project No. (II): Ph 42 (49) Quadrangle Name (IV):

Field Office (II): Barrow, Alaska

Chief of Party: R. A. Earle

Photogrammetric Office (III): Baltimore, Maryland

Officer-in-Charge: Hubert A. Paton

Instructions dated (II) (III): Field: 4 February 1948

15 February 1949

Office: 16 January 1950

Copy filed in Division of
Photogrammetry (IV)

Method of Compilation (III): Graphic

Manuscript Scale (III): 1:40,000

Stereoscopic Plotting Instrument Scale (III):

Scale Factor (III): 1,000

Date received in Washington Office (IV):

OCT 29 1952

Date reported to Nautical Chart Branch (IV):

NOV 3 1952

Applied to Chart No.

Date:

Date registered (IV):

Publication Scale (IV):

Publication date (IV):

Geographic Datum (III): Barrow, 1945

*Correction to N.A. 1927
available.*

LT, 1933

Vertical Datum (III): MHW

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): BETH, 1949

The difference between *Point Barrow, 1945* Datum *
and ~~Barrow~~ N.A. 1927 Datum is Lat. plus/minus

37.40 m. and Long. plus/minus *161* m.

Omitted in compliance with project instructions. *h.e.h.*

Lat.:

Long.:

Adjusted *Corrected*

Unadjusted

Plane Coordinates (IV):

State:

Zone:

Y=

X=

*The difference between Preliminary NA 27 Datum and the NA 27 Datum (adjusted) positions are within plotting tolerance.

Therefore, the compilation can be used without applying any additional Datum correction.

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)

Planimetric

DATA RECORD

Field Inspection by (II):

Date: *Control, 1949*

Planetable contouring by (II):

Date:

Completion Surveys by (II):

Date:

Mean High Water Location (III) (State date and method of location): *7-26-49*
Photogrammetric

Projection and Grids ruled by (IV): T. L. Janson

Date: 2-1-50

Projection and Grids checked by (IV): H. D. Wolfe

Date: 2-1-50

Control plotted by (III): M. F. Kirk

Date: 2-6-50

Control checked by (III): L.A. Senasack

Date: 2-6-50

Radial Plot or Stereoscopic

~~Control extension~~ by (III): F. J. Tarcza

J. Steinberg

Planimetry

Stereoscopic Instrument compilation (III):

Contours

Date:

2-14-50

8-22-51

Date:

Date:

Manuscript delineated by (III): Bernice Wilson
M. L. Bloom

Date: 2-24-50

9-18-50

Photogrammetric Office Review by (III): R. Glaser
E. L. Williams

Date: 2-28-50

10-15-52

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

Date:

Camera (kind or source) (III): U.S. Navy single lens, focal length 6".

PHOTOGRAPHS (III)

Number	Date	Time	Scale	Stage of Tide
KAS * 3 - 058 to 061	7-23-49	unknown	1:40,000	approx 0.7' below MLLW
KAS - 4 - 103 " 107	7-26-49	"	"	approx 0.9' below MLLW
BAR-143 - 007 " 014	6-16-49	"	1:20,000	unknown
143 - 065 " 072	"	"	"	"
158 - 045 " 051	6-22-49	"	"	"
203 - 079 " 086	6-16-49	"	"	"
- 098 " 105	"	"	"	"
162 " 170	"	"	"	"
182 " 189	"	"	"	"

Tide (III)

From actual observations at
Reference Station: Point Lay Camp, Kasegaluk Lagoon, Alaska
Subordinate Station:
Subordinate Station:

Ratio of Ranges	Mean Range	Spring Range
	0.5'	

Washington Office Review by (IV): *Lana J. Stevens*

Date: *14 Aug. 1953*

Final Drafting by (IV): *Lach*

Date: *30 JUNE 55*

Drafting verified for reproduction by (IV):

Date:

Proof Edit by (IV):

Date:

Land Area (Sq. Statute Miles) (III): 73 sq. mi.

Shoreline (More than 200 meters to opposite shore) (III): 43 st. mi.

Shoreline (Less than 200 meters to opposite shore) (III): 4 " "

Control Leveling - Miles (II):

Number of Triangulation Stations searched for (II):

Recovered:

Identified: 4 *

Number of BMs searched for (II):

Recovered:

Identified:

Number of Recoverable Photo Stations established (III): None

Number of Temporary Photo Hydro Stations established (III): None (see item 38)

Remarks:

* of the five stations established in 1949, four were identified.

Summary to Accompany
Planimetric Map T-9369

Ph-42(49) is that part of continuing project CS-320 (which includes the whole Arctic Coast of Alaska) extending from $69^{\circ} 07\frac{1}{2}'$ to $70^{\circ} 49\frac{1}{2}'$; i.e., from the north limit of Ph-28(47) to the south limit of Ph-27(47).

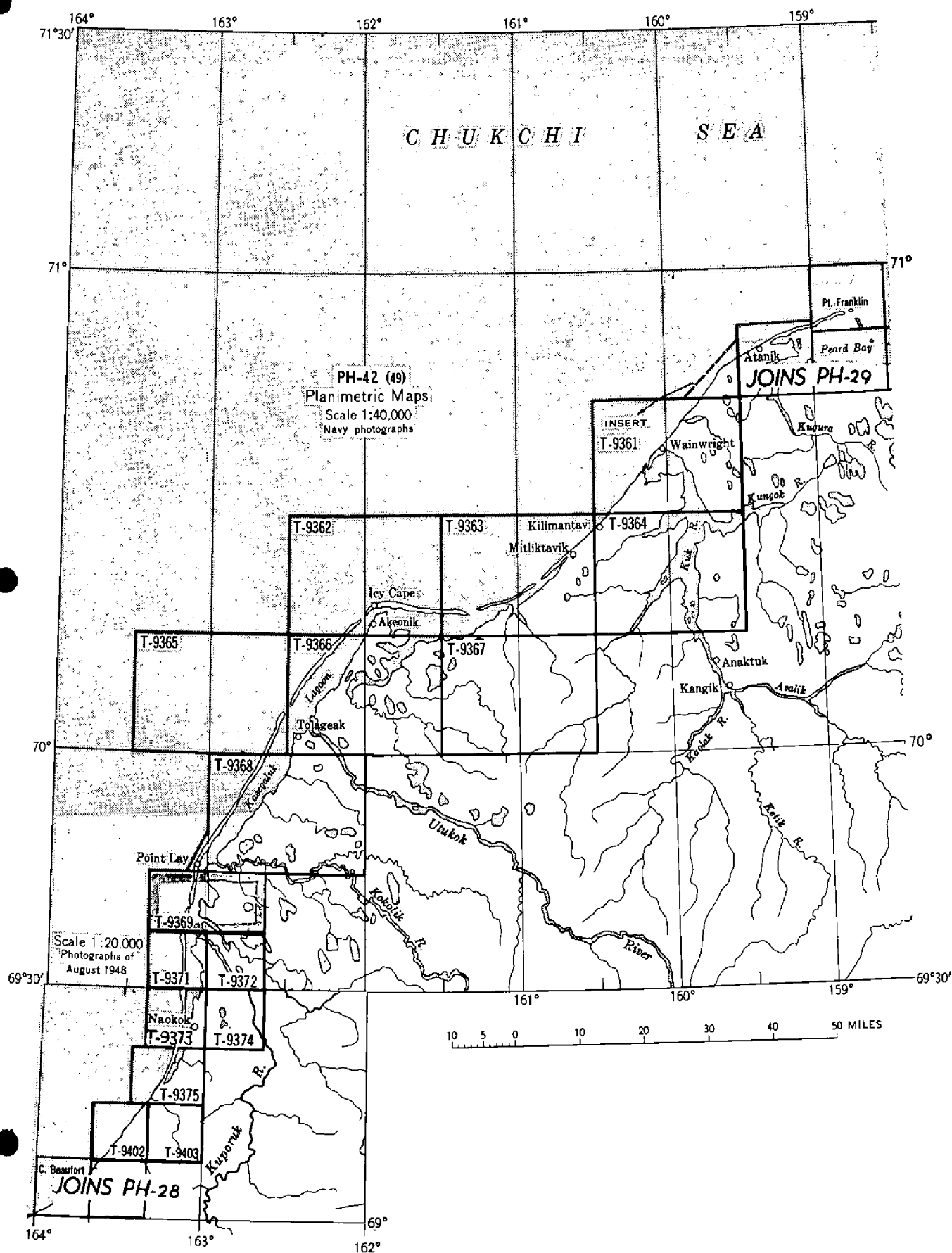
Ph-42(49) has 17 maps; T-9361-69; T-9371-75; and T-9402 and T-9403, the latter two being additions to the original southern limits. T-9369 includes that part of Kasegaluk Lagoon which received drainage from the Epizetka and Kukpowruk Rivers. Kukpowruk Inlet affords entrance to the lagoon in this area.

The field work consisted solely of control establishment in 1949, without benefit of photograph coverage. The area was photographed by the Navy in July 1949. Prior to laying the radial plot, the control was pricked on the 1949 vertical photographs by the aid of oblique pictures of the control station sites. These obliques were taken by our own field party with a K-20 camera at 1000 feet elevation, August 1949.

After all the maps in the project have been reviewed, reproduced, and registered, a Completion Report will be written and filed in the Bureau Library under the project number. This report will include a brief text describing the project; any important correspondence; copies of the various instructions, and special reports; statistical data; and a list of the data not bound with the Compilation Report, but filed elsewhere.

PLANIMETRIC MAPPING PROJECT PH-42

ALASKA, Chukchi Sea, C. Beaufort to Atanik



SUPPLEMENTAL
PHOTOGRAMMETRIC PLOT REPORT
PROJECT PH-42(49)
SURVEY T-9369

27. SUPPLEMENTAL RADIAL PLOT

This supplemental radial plot is an extension of that part of the original plot covering Survey T-9369, scale 1:40,000, and was run from additional photographs furnished for coverage of the interior area of this survey.

The photographs used in this plot were single lens, 9" x 9" contact prints, scale 1:20,000, dated 6-16-49 and 6-22-49, taken by the U. S. Navy with cameras using a focal length of 6". Fifty-five photographs were used, their numbers are as follows:

BAR 143-007 thru 014
BAR 143-065 thru 072
BAR 203-182 thru 189
BAR 203-162 thru 170
BAR 203-098 thru 105
BAR 203-079 thru 086
BAR 158-045 thru 051

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

All control stations and pass points pricked on the 1:40,000 scale photographs used in the original plot were transferred to the 1:20,000 photographs. Additional pass points to extend the plot were also pricked on the 1:20,000 photographs. Conjugate centers were carefully transferred because they were to be used entirely for azimuth in extending the plot, as no additional control was available in the interior of the survey.

Vinylite templets, scale 1:40,000, were made of the 1:20,000 scale photographs by drawing rays midway between centers and image points.

Pass points established on survey T-9172, scale 1:20,000, were transferred to manuscript T-9369 graphically.

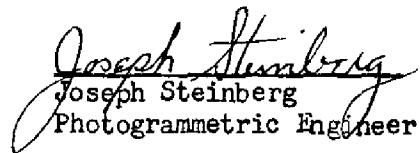
The plot was laid directly on the manuscript.

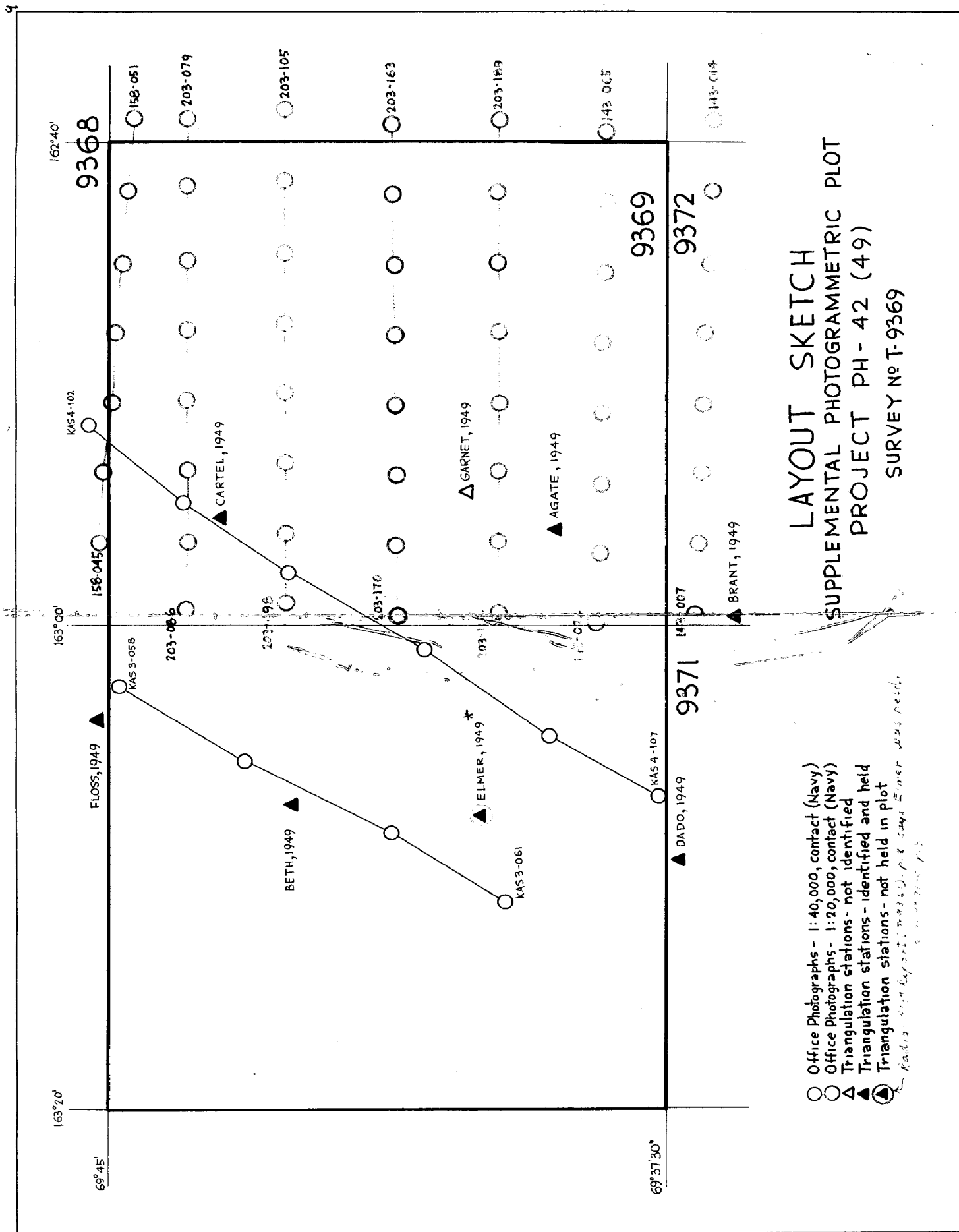
Control stations and the pass points established in the previous plots were held and the plot extended easterly to the limit of the survey, holding to flight azimuths very closely. Except for some slight scale adjustments, which required relaying two flights, no difficulty was encountered. It is believed that the positions of the additional pass points established are within 1mm. of their true positions, except in the southeast corner of the survey.

Since the plot covered only a small area of Survey T-9369, it was possible to turn the completed assembly over and circle the positions of photograph centers and pass points, that were established, directly on the back of the manuscript.

The coverage of the photographs was adequate for a satisfactory radial plot. The definition of the photographs is good and none were found to be badly tilted.

Respectfully submitted


Joseph Steinberg
Photogrammetric Engineer



LAYOUT SKETCH
 SUPPLEMENTAL PHOTOGRAMMETRIC PLOT
 PROJECT PH - 42 (49)
 SURVEY No T-9369

- Office Photographs - 1:40,000, contact (Navy)
- Office Photographs - 1:20,000, contact (Navy)
- △ Triangulation stations - not identified
- ▲ Triangulation stations - identified and held
- ⊙ Triangulation stations - not held in plot

Partial 1:20,000 map (PH-42) was used.

COMPILATION REPORT
T-9369

FIELD REPORT

Refer to report on "Airphoto Control Identification, Arctic Coast of Alaska, Kasegaluk Lagoon, Project CS-320, 1949", submitted by Karl B. Jeffers.

PHOTOGRAMMETRIC PLOT REPORT

Refer to the photogrammetric plot report for Surveys T-9361 to T-9369 inclusive, which is part of the descriptive report for Survey No T-9361.

A supplemental photogrammetric plot report for the area of survey T-9369 is part of this report.

31. DELINEATION

This manuscript was delineated by graphic methods. The larger scale photographs were used in the vertical projector for application to the manuscript. There was no field inspection except in the immediate vicinity of the control stations.

Refer to item 31 of the report for Survey No. T-9361 for a discussion of tundra areas.

32. CONTROL

Refer to the photogrammetric plot reports.

33. SUPPLEMENTAL DATA

The following maps were available for general information and for general information and for geographic names:

- (1) U.S.G.S. Reconnaissance Map of Northwestern Alaska, scale 1:500,000 dated 1930, reprinted 1939.
- (2) U.S.C. & G.S. Chart No 9400, scale 1:1,587,870 published 1-16-50 corrected to 2-13-50.
- (3) World Aeronautical Chart, Point Hope, Alaska (64), scale 1:1,000,000, third edition dated 12-8-48.

Large scale low oblique K-20 photographs of six control stations were used to aid in photograph interpretation.

Photos 48-0-282 to 287 were available also for interpretation purposes.

Probably mean 2 photos for each of 3 stations:
Elmer, Cortel, Route
Dado on T-9371 & 0-282
Brant " T-9372 0-282
Belk " 48-0-287

find 2 photos for each of 3 stations
Elmer
Cortel
Belk

34. CONTOURS AND DRAINAGE

Contours - not applicable.

Drainage - Refer to item 34 of the report for Survey No. T-9361.

35. SHORELINE AND ALONGSHORE DETAILS

No shoreline inspection was furnished. The delineation of the MHW and the MLLW lines was based on office interpretation of the photographs.

A cemetery at Pt. Lay (village) and a quonset hut on the bar south of Kukpowruk Inlet were identified by Comdr. Paton, officer in charge, who spent several seasons in the area.

36. OFFSHORE DETAILS

None

37. LANDMARKS AND AIDS

None

38. CONTROL FOR FUTURE SURVEYS

Two hydrographic signals were located by fourth order triangulation in 1949. Forms 524 were submitted for these stations. Refer to item 49.

(They are included in 945/GA, G-8293)

39. JUNCTIONS

Junction to the north with survey T-9368 and to the south with surveys T-9371 and T-9372 (1:20,000) have been made and are in agreement.

40. HORIZONTAL AND VERTICAL ACCURACY

The horizontal accuracy of the eastern part of this manuscript is considered weak because the radial plot was extended a large distance beyond identified control.

41. - 45.
Inapplicable.

46. COMPARISON WITH EXISTING MAPS

This survey was compared with the maps listed in item 33 and with the U.S.G.S. Preliminary Map, Naval Petroleum Reserve No 4, scale 1:48,000 dated September 1948 (sheet H-23).

47. COMPARISON WITH CHARTS

This survey has been compared with the following charts:

- (1) U.S.C. & G.S. Chart No 9400, scale 1:1,587,870 published 1-16-50 corrected to 2-13-50.
- (2) U.S.C. & G.S. World Aeronautical Chart, Point Hope (64) scale 1:1,000,000 published 12-8-48.


Items to be applied to Nautical Charts immediately:

None


Items to be carried forward:

None

Respectfully submitted


Joseph W. Vonasek
Carto. (Photo.)

Approved and Forwarded


Hubert A. Paton
Comdr. U.S.C. & G.S.
Officer in Charge

48. GEOGRAPHIC NAMES

Chukchi Sea
Epizetka River
Kasegaluk Lagoon
Kokolik River
Kukpowruk Inlet Pass

Names approved
8-17-53 L. Heck

* Taken from Coast Pilot, Alaska Supplement dated 1-1-51.

49. NOTES TO HYDROGRAPHER

The following are the fourth order control stations in the area of this survey:

IRK, 1949

OAR, 1949

NOTES TO REVIEWER

According to Comdr. Paton, the name Chukchi Sea is preferable to ARCTIC OCEAN in this area. He also states that the long sand bars contain no appreciable amounts of gravel.

The emergency landing area indicated on the aeronautical chart south of Point Lay cannot be defined on the photographs and was not delineated.

50.

PHOTOGRAMMETRIC OFFICE REVIEW

T. 9369

1. Projection and grids ☒ 2. Title ☒ 3. Manuscript numbers ☒ 4. Manuscript size ☒

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 None
9. Plotting of sextant fixes None 10. Photogrammetric plot report ☒ 11. Detail points ☒

ALONGSHORE AREAS

(Nautical Chart Data)

12. Shoreline ☒ 13. Low-water line ☒ 14. Rocks, shoals, etc. ☒ 15. Bridges None 16. Aids to navigation None 17. Landmarks None 18. Other alongshore physical features ☒ 19. Other along-shore cultural features ☒

PHYSICAL FEATURES

20. Water features ☒ 21. Natural ground cover ☒ 22. Planetable contours None 23. Stereoscopic instrument contours None 24. Contours in general None 25. Spot elevations None 26. Other physical features ☒

CULTURAL FEATURES

27. Roads None 28. Buildings ☒ 29. Railroads None 30. Other cultural features ☒

BOUNDARIES

31. Boundary lines None 32. Public land lines None

MISCELLANEOUS

33. Geographic names ☒ 34. Junctions ☒ 35. Legibility of the manuscript ☒ 36. Discrepancy overlay None 37. Descriptive Report ☒ 38. Field inspection photographs None 39. Forms ☒
40. Ed. N. Williams Frank J. Tarca
Reviewer Supervisor, Review Section or Unit

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:

Review Report
Planimetric Map T-9369
14 August 1953

61. General.-From Utukok River in the southwestern part of T-9366 (70° 04'), there is a marked change in topography. Ridges, hills, and mesa-like remnants of a more elevated formation lie on the lower formation that constituted the "higher tundra" of the areas mapped to the north, where the drained ponds and very wet depressions formed the "lower tundra". This "lower tundra" was delineated by the inundation symbol in order to display the pattern caused by the contrast between the lower, more wet areas and the somewhat higher, less wet areas.

South of the Utukok River "higher tundra" was used in the original compilation to mean only those ridges, hills, and mesa-like remnants which rise probably 20 to 50 feet above the "higher tundra" of the area north of T-9368 (Ph-27 and Ph-42) and along the Arctic Coast east of Point Barrow (Ph-29). Thus, the term "lower tundra" in the area south of 70° 04' became expanded to include the zone between the old pond depressions and the high remnants mentioned above. This alteration in the application of the terms had the advantage of emphasizing salient features that might be noted from seaward; but had the disadvantage of losing the abandoned ponds and very wet depressions which gave "pattern" to the maps to the north.

Now a new classification has been adopted for the area south of Utukok River (T-9366 to T-9375; T-9402, T-9403) in order to retain the "pattern" of the maps to the north. The term "drier tundra" is used to include both the "higher tundra" and the hills, ridges, and mesa-like remnants described in paragraph 1, above; and the term "wet tundra" supplants "lower tundra". This means that the interior of southwestern T-9366, and all the maps southward have been redelineated with respect to tundra.

Channels in the Kukpowruk Inlet-Kukpowruk River portion of Kasegaluk Lagoon were added during review by using Navy photographs BAR 143-074 and BAR 203-180. These photographs seemed to make the lagoon a mud flat at their water-stage, but the flats may be very dirty ice in the last stages of disintegration (June 16, 1949), therefore only the channel lines were utilized as mapping data.

The north channel as taken from Navy BAR 203-180 was tested against the sounding-line channel on H-7752. It was found to precisely coincide. This indicates that the other channel lines may be accepted.

62. Comparison with Registered Surveys.-No earlier surveys of this area have been made.

63. Comparison with Maps of Other Agencies.-

USGS Point Lay, Alas. (Recon.) 1:250,000, 1951.
Astronomical Datum.

The general shape of shoreline, drainage, and large ponds are similar. The quadrangle shows an airplane landing area south of Point Lay Village. No mention of landing facility or feasibility was made in field reports, so the area is not labeled on T-9369.

64. Comparison with Contemporary Hydrographic Surveys.-

H-7752	1:20,000	1949	Kukpowruk Inlet
H-7754	1:40,000	1949	Kukpowruk Pass to Kokalik Pass
H-7755	1:40,000	1949	Kukpowruk Pass to Neakok Pass

The shoreline from this series of maps under review were already applied to the hydrographic surveys.

The only change in shoreline was that of an island in the lagoon north of Kukpowruk Inlet.

Channel lines were added, but the low water line north of Epizetka River was removed, because the lagoon appears to be so shallow that a small lowering of the water would be likely to place the low water line much farther from the high water line than was delineated on the map manuscript. (see heading 61, paragraphs 4 & 5).

65. Comparison with Charts.-

9400 1:1,587,870 at 70° ed. May 1947, rev. June 1952

The small scale of the chart precludes more than a superficial comparison, but no conflict was noted.

66. Accuracy.-The sand bars and the shore area in this map area are well controlled so that the shoreline is as accurate as office interpretation can give. The interior (eastern part of the map) was not controlled and was compiled by office interpretation. This portion of the map can be said only to meet interior charting needs.

Reviewed by:

Lena T. Stevens
Lena T. Stevens

Approved:

L. C. Gunde
Chief, Review Branch
Div. of Photogrammetry

W. J. Dawson
Chief, Div. of Photogrammetry

Max H. Little
Chief, Nautical Chart Branch
Division of Charts

S. B. Jewell
W. J. Bowie
Chief, Div. of Coastal Surveys

11 April 57

HORIZONTAL DATUM ADJUSTMENT

CHUKCHI SEA, ALASKA

Corrections to Preliminary N.A. 1927 Datum from the various independent horizontal datums on the coast of the Arctic Ocean and Chukchi Sea in 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 at adjusted N.A. 1927 Datum stations at about the 63rd Parallel on the Canadian Boundary, following the 141st Meridian (IBC Datum) to the Arctic Ocean, thence westward through the Barter Island and Flaxman Island Datums, and southwestward through the Point Barrow 1945 Datum, to a connection with N.A. 1927 Field 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-42(49)

Cape Beaufort to Atanik

T-9361 through T-9369
and

T-9371 through T-9375, T-9402 & T-9403

The correction from Point Barrow 1945 Datum to Preliminary N.A. 1927 Datum was computed for each map by multiplying the correction in seconds to the value of one second in latitude and longitude at the latitude of the reference station of each map. This correction was recorded with the following stamp:

The difference between Pt. Barrow 1945 Datum
and preliminary N.A. 1927 Datum is Lat. plus/minus
40 m. and Long. plus/minus X m.

*The value of one second in meters
varies from 11.030 m. (T-9402) to
10.276 m. (T-9361).

in the Descriptive Report on the first page of the data record, and on each manuscript near the title block.

See the Special Report on Corrections from the Point Barrow 1945 Datum to Preliminary N.A. 1927 Datum, filed with the completion report for Ph-42(49) for a Project Index showing the correction for each map in this project.

NAUTICAL CHARTS BRANCH

SURVEY NO. T9369

Record of Application to Charts

[illegible]

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.