9458 9459
9460

Diag. Cht. No. 9400.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Topographic

Field No. Ph-28(47) Office No. T-9458 T-9459 T-9460

LOCALITY

State Alaska

General locality Kotzebu Sound

Locality Hotham Inlet

1948-50

CHIEF OF PARTY

A.N.Stewart, Chief of Field Party
H.A.Paton, Chief B'more Photo.Office
~~L.J.Reed, Div. of Photo.,Wash.,D.C.~~

LIBRARY & ARCHIVES

DATE January 30, 1958

8-1870-1 (1)

9458 9459
9460

DATA RECORD

T-9458, 9459,9460

Project No. (II): Ph-28(47)

Quadrangle Name (IV): T-9458 = STATION QUICK
T-9459 = PEAK 307
T-9460 = PEAKS 310 & 311

Field Office (II): Portland, Oregon

Chief of Party: A.Newton Stewart

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

Officer-in-Charge: Hubert A.Paton
Louis J. Reed, Chief,
Stereoscopic Mapping Section
Photogrammetry (IV)

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 (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):

Lat.:

Long.:

Adjusted

Plane Coordinates (IV):

State:

Zone:

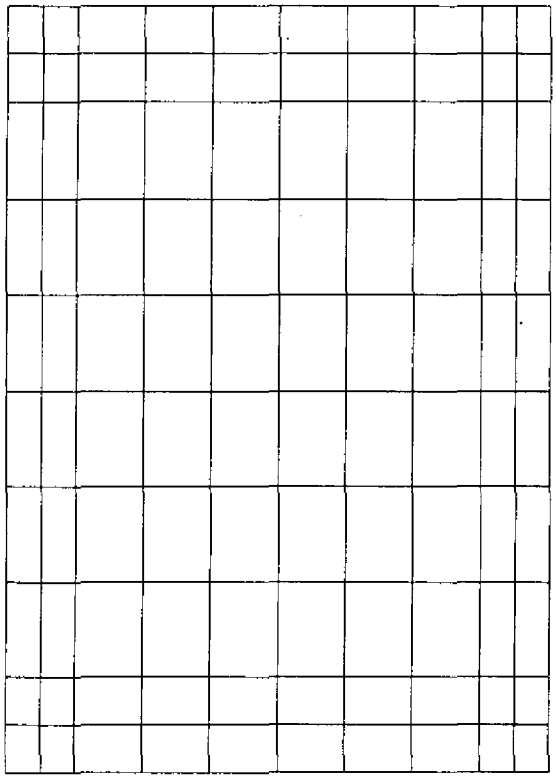
Y=

X=

Military Grid: Universal Transverse Mercator, Zone No. 3 & 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)
(III)

100% detailed by Louis Levin

M-2618-12 (4)

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. Taroza Date: 26 Jan 51

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

Radial Plot ~~or Stereoscopic Control extension~~ by (III): Frank J.Taroza Date: 26 Jan 51

Stereoscopic Instrument ~~compilation~~ delineation by (III): Planimetry Louis Levin Date: 11 Jun 51
Contours Date:

Manuscript ~~delineated~~ compiled by (III): John B. McDonald Date: 29 Jun 51

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

Elevations on Manuscript checked by ~~(X)~~ (III): Louis J. Reed Date: 10 Jul 51

Camera (kind or source) (III): USC&GS 9-Lens Camera, Model B, f = 8.25 inches

PHOTOGRAPHS (III)

Number	Date	Time	Scale	Stage of Tide
27549 thru 27551		1049 ~~through~~ 1050		
and	22 Jul 50	~~11:20~~	20,000	~~None~~ No appreciable tide
27577 thru 27595		1121 through 1144		

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.

Tide (III)

	Ratio of Ranges	Mean Range	Diurnal ~~Spring~~ Range
Reference Station: ~~Icy Cape~~			~~0.6'~~
Subordinate Station:			
Subordinate Station:			

Washington Office Review by (IV): B.J. Colner Date: 7-27-53

Final Drafting by (IV): Pat. Lach Date: 3-16-56

Drafting verified for reproduction by (IV): W.O. Hallmin Date: 5-31-56

Proof Edit by (IV): Date:

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): None Recovered: Identified:

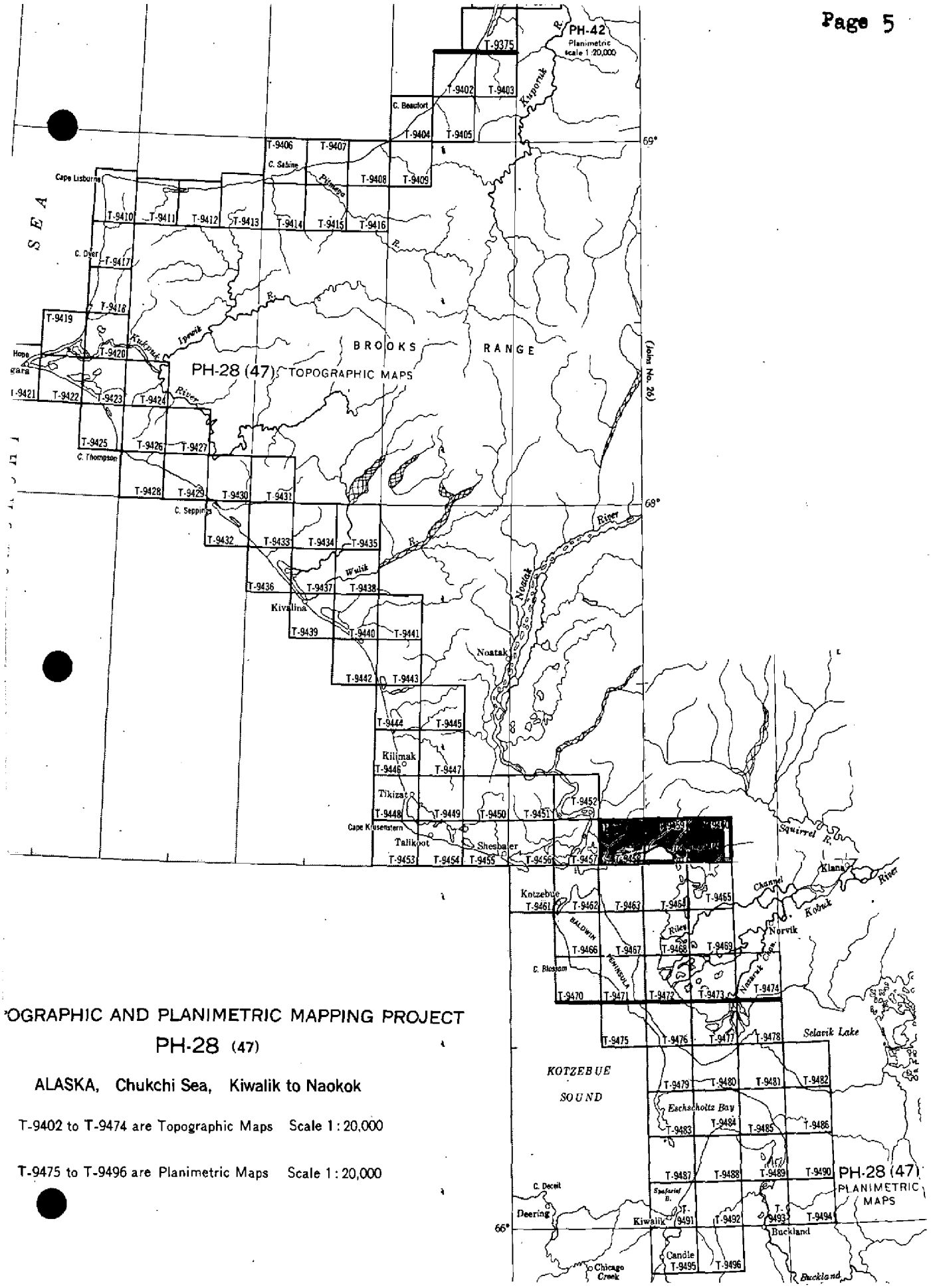
Number of Recoverable Photo Stations established (III): 3

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

Remarks:

	LAND AREA	SHORELINE
T-9458 =	59 sq mi	6.5 miles
T-9459 =	66 sq mi	19 miles
T-9460 =	69 sq mi	4.5 miles

M-2618-12(4)



'OGRAPHIC 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-28(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~~ consists of 94 topographic surveys ~~and twenty-two (T-9402 to 9434) are planimetric.~~ and T-9436 through T-9496).

T-9458 through T-9460 are topographic surveys of the shore north of Hotham 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-backed lithographic~~ Cronaflex 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-28(47) July to Sept 1948

A. Newton Stewart, Chief of Party

Louis J. Reed, Chief
Stereoscopic Mapping Section
Photogrammetric Engineer

PHOTOGRAMMETRIC 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 Hotham 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 U.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 templets 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. [illegible], 1949 is on the edge of the photographs, and there is no control to the north of this flight. NOATAK, 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 templets were made. But the new adjusted templets 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 templets and circled with 3mm blue circles. These positions were transferred to all templets and map manuscripts by drilling down through them with a small jeweler's drill (about .01 inch diameter). All points were circled on each templet 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:-

See Review Report

(1) Peak 306, 1950 - the radially-plotted position falls 6.8mm 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 1°20'. For the others, the graph for finding the midpoint was used and new templets 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 repricked 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 800 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 SHESUALEK, 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 SACK, 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

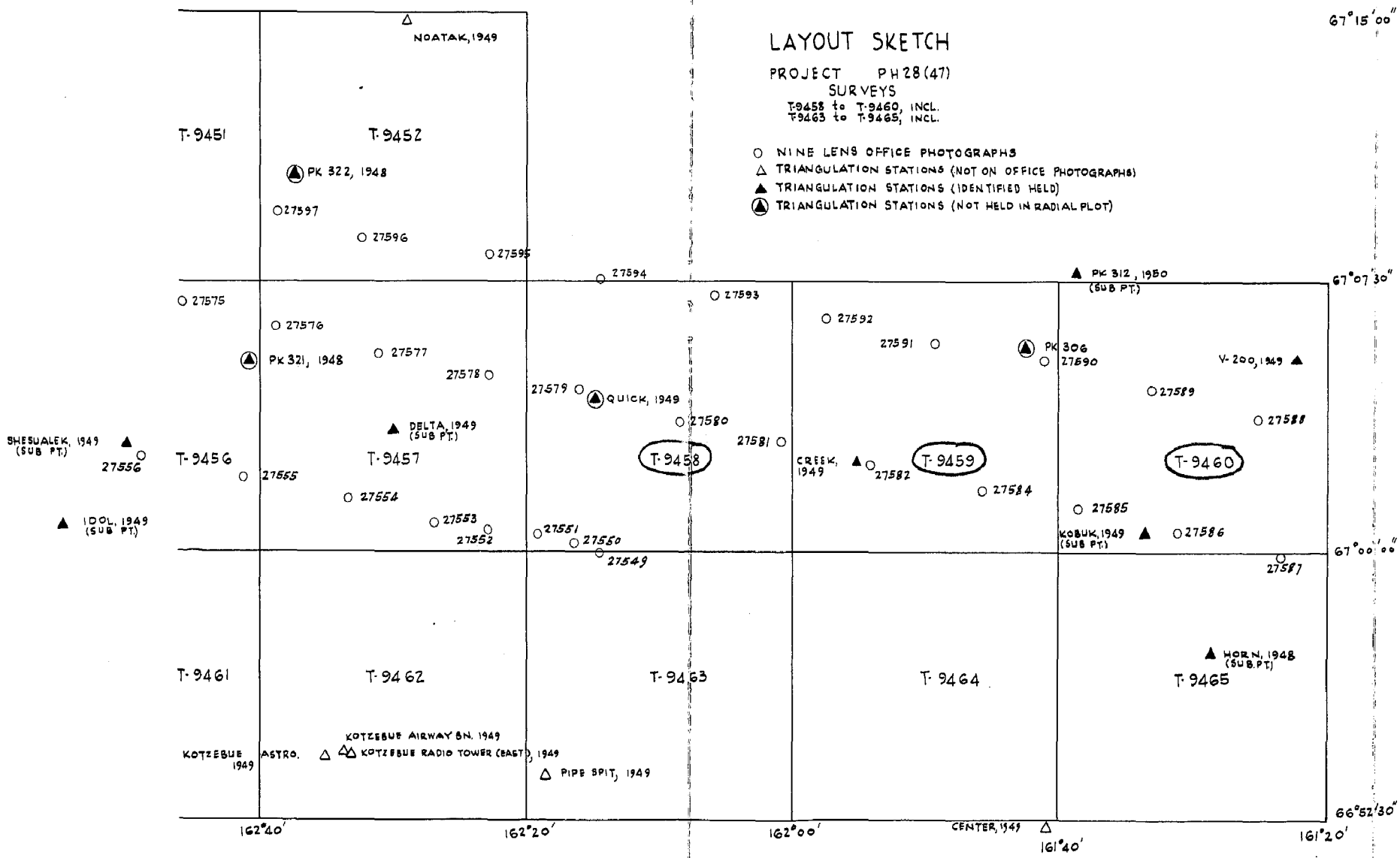
Hubert A. Paton
Comdr., C&GS
Officer in Charge

Respectfully submitted
Frank J. Tarcza
Frank J. Tarcza
Cartographic Engineer

LAYOUT SKETCH

PROJECT PH28(47)
SURVEYS
T-9458 to T-9460, INCL.
T-9463 to T-9465, INCL.

○ NINE LENS OFFICE PHOTOGRAPHS
△ TRIANGULATION STATIONS (NOT ON OFFICE PHOTOGRAPHS)
▲ TRIANGULATION STATIONS (IDENTIFIED HELD)
(▲) TRIANGULATION STATIONS (NOT HELD IN RADIAL PLOT)



COMPILATION REPORT

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 amd 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 1948, 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:

a. Advance proof of NOATAK, Alaska, USGS, Reconnaisance Topographic Series, Second Judicial Division, 1: 250,000, 1951 edition.
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:

a. ARCTIC COAST, Alaska, No 9400, 1; 1,587,870, May 1946, 6th edition, last correction date of 27 Nov 50.
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 unmumbered page, following.

50. Compilation Office Review:

See T-2 form, following.

Submitted by:

Orvis N. Dalbey
Orvis N. Dalbey
Cartographer-Photogrammetric

Approved and Forwarded by:

Louis J. Reed
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

GEOGRAPHIC NAMES

Survey No.
T-9458
T-9459
T-9460

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
T-9458										1
Hotham Inlet										2
Noatak River Delta										3
										4
										5
										6
T-9459										7
Hotham Inlet										8
										9
										10
										11
										12
T-9460										13
Hotham Inlet										14
										15
										16
					Names approved					17
						7-27-53				18
							a.j.w.			19
										20
										21
										22
										23
										24
										25
										26
										27

Review Report T-9458 through T-9460
Topographic Maps
July 27, 1953

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, Nautical Chart Branch
Division of Charts

Chief, Div. of Photogrammetry
22 January 1958

Chief, Div. of Coastal Surveys

Form T-2

PHOTOGRAMMETRIC OFFICE REVIEW

T-9458, 9459, 9460

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) 8 9 N 7. Photo hydro stations ✓ 8. Bench marks N
9. Plotting of sextant fixes N 10. Photogrammetric plot report ✓ 11. Detail points N

✓ = checked
N = non-existant

ALONGSHORE AREAS
(Nautical Chart Data)

12. Shoreline ✓ 13. Low-water line N 14. Rocks, shoals, etc. ✓ 15. Bridges N 16. Aids to navigation N 17. Landmarks N 18. Other alongshore physical features ✓ 19. Other alongshore cultural features N

PHYSICAL FEATURES

20. Water features ✓ 21. Natural ground cover ✓ 22. Planetable contours N 23. Stereoscopic instrument contours ✓ 24. Contours in general ✓ 25. Spot elevations ✓ 26. Other physical features N

CULTURAL FEATURES

27. Roads N 28. Buildings N 29. Railroads N 30. Other cultural features N

BOUNDARIES

31. Boundary lines N 32. Public land lines N

MISCELLANEOUS

33. Geographic names ✓ 34. Junctions ✓ 35. Legibility of the manuscript ✓ 36. Discrepancy overlay N 37. Descriptive Report ✓ 38. Field inspection photographs ✓ 39. Forms ✓
40. _____

Reviewer

Louis J. Reed
Supervisor, Review Section or Unit

Louis J. Reed, Chief
Stereoscopic Mapping Section
Photogrammetric Engineer

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:

M-2623-12