8453 thru 8458

8453 thru 8458

Diag. Cht. No. 8802 & 8700

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Photogrammetric Shoreline

Field No. T-8453 thru Office No. T-8458

LOCALITY

State Alaska

General locality Alaska Peninsula

Locality Nagai Island to Big Koniuji Island to Bird Island

1942

CHIEF OF PARTY

R.W.Knox

LIBRARY & ARCHIVES

DATE February 16,1950

8-1870-1 (1)

DATA RECORD

T-8453 thru T-8458

Project No. (II): None

Quadrangle Name (IV):

Field Office (II):

Chief of Party: R.W. Knox Chief of Nautical Chart Branch

Photogrammetric Office (III): Washington Office

Officer-in-Charge: L. C. Lande chief compilation unit, Photogrammetric Section

Instructions dated (II) (III):

Copy filed in Division of Photogrammetry (IV)

Method of Compilation (III): Graphic Compilation

Manuscript Scale (III): 1:20,000

Stereoscopic Plotting Instrument Scale (III):

Scale Factor (III): 1.0

Date received in Washington Office (IV):

Date reported to Nautical Chart Branch (IV):

Applied to Chart No.

Date:

Date registered (IV): 7 Feb 1950

Publication Scale (IV):

Publication date (IV):

Geographic Datum (III): Unalaska

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):

Lat.:

Long.:

Adjusted X
Unadjusted

Plane Coordinates (IV):

State:

Zone:

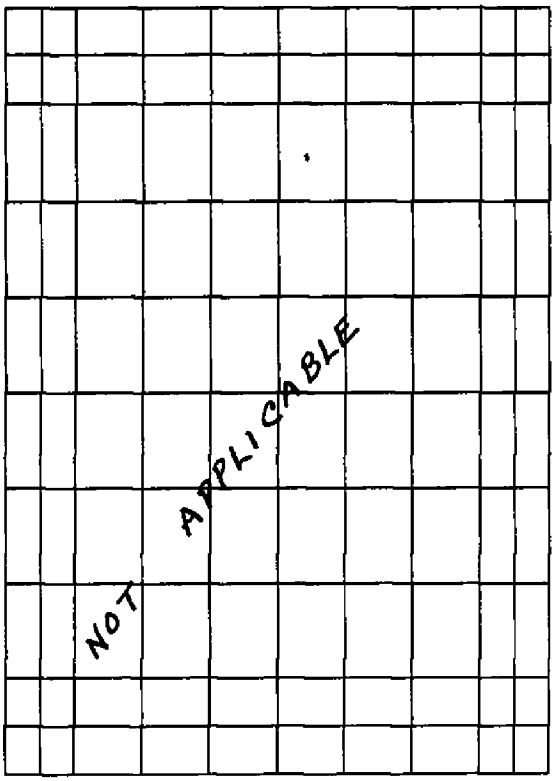
Y=

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): None — Date:

Planetable contouring by (II): — Date:

Completion Surveys by (II): — Date:

Mean High Water Location (III) (State date and method of location):

Projection and Grids ruled by (IV): Ruling Machine — Date: 1943

Projection and Grids checked by (IV): Washington Office — Date: 1943

Control plotted by (III): Washington Office — Date: 1943

Control checked by (III): Washington Office — Date: 1943

Radial Plot or ~~Stereoscopic~~ Control extension by (III): Washington Office — Date: 1943-1944

Stereoscopic Instrument compilation (III): Planimetry — Date:

Contours — Date:

Manuscript delineated by (III): Washington Office — Date: 1943-1944

Compilation Unit of Photogrammetric Section, Montreal Chief Bureau.

Photogrammetric Office Review by (III): — Date:

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

Camera (kind or source) (III):

PHOTOGRAPHS (III)

Number	Date	Time	Scale	Stage of Tide
11079, 80, 82, 85 thru 11107, 09, 11 thru 21, 25 thru 29, 31, 32, 34 thru 37, 11139, and 11141 thru 44.				
	9/13/42		1:20,000	

Tide (III)

	Ratio of Ranges	Mean Range	Spring Range
Reference Station:			
Subordinate Station:			
Subordinate Station:			

Washington Office Review by (IV): G. B. Willey Date: Dec. 23, 1949

Final Drafting by (IV): Date:

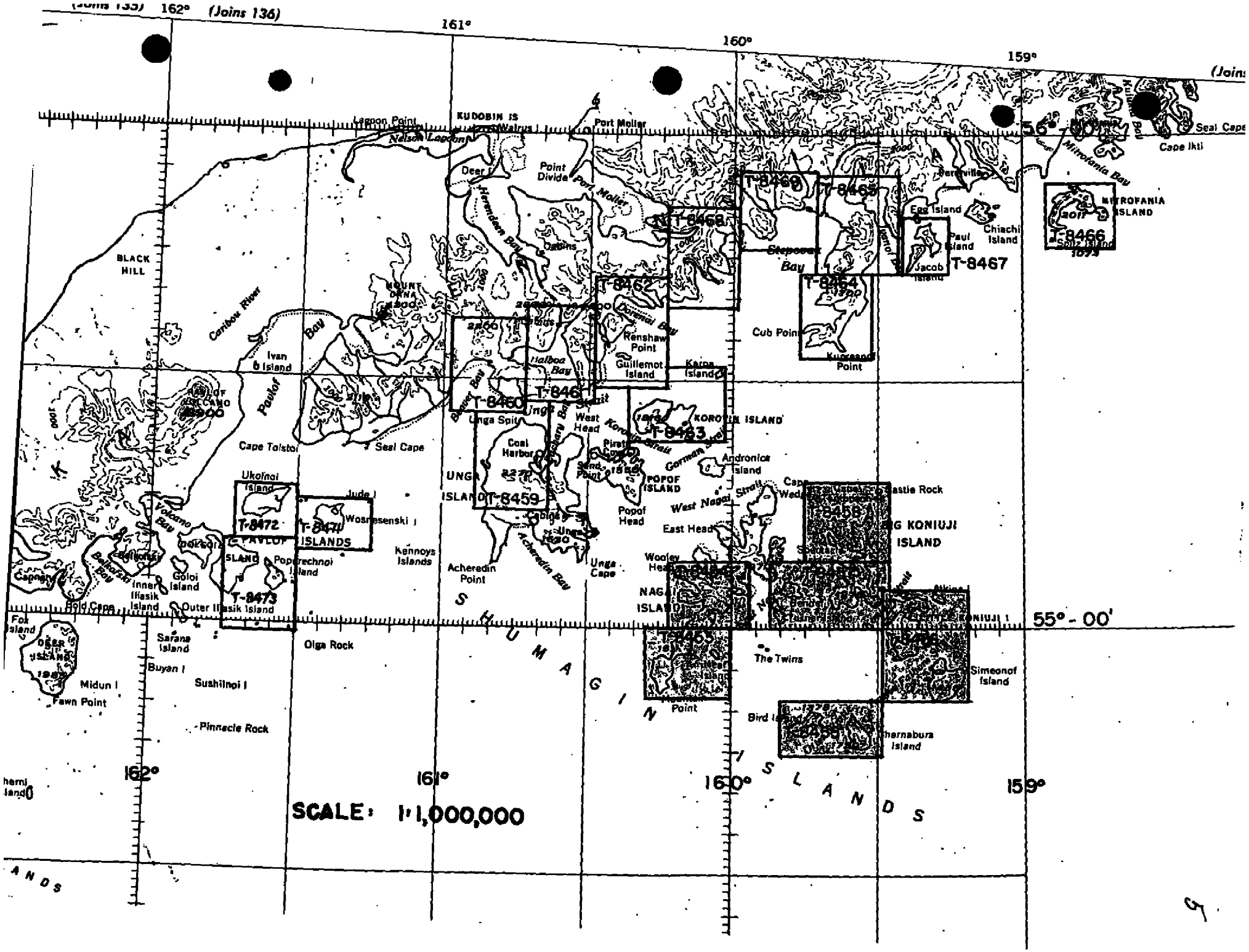
Drafting verified for reproduction by (IV): Date:

Proof Edit by (IV): Date:

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

Remarks: Underlined elevations of mountain peaks were taken from triangulation data, other elevations were obtained from photogrammetric measurements. — except on T 8458 where all elevations are from planetable survey ~~T8~~ T 3563 (1:20000) 1916.

M-2618-12(4)



(Joins 135)
162°
(Joins 136)
161°
160°
159°
(Joins
56°-00'
55°-00'
Lagoon Point
KUDOBIN IS
Walrus I
Port Moller
Nelson Lagoon
Deer I
Point Divide
Port Moller
Herendeen Bay
Cabins
BLACK HILL
Caribou River
Ivan Island
Pavlof Bay
PAVLOF VOLCANO
Cape Tolstoi
Seal Cape
Ukolnoi Island
Jude I
Wosnesenski I
Volcano Bay
Belkofski Bay
Inner Ilasik Island
Goloi Island
Outer Ilasik Island
Bold Cape
Fox Island
DEER ISLAND
Midun I
Fawn Point
Sarana Island
Buyan I
Sushilnoi I
Pinnacle Rock
Olga Rock
Kennoys Islands
Acheredin Point
Acheredin Bay
Unga Spit
Coal Harbor
UNGA ISLAND
Unga Cape
Renshaw Point
Guillemot Island
Halboa Bay
Dorenai Bay
Karpa Island
West Head
Pirate Cove
Sand Point
POPOF ISLAND
Popof Head
West Nagai Strait
East Head
Wooley Head
NAGAI ISLAND
Gorman Strait
Andronica Island
KOROTIN ISLAND
Cub Point
Kupreanof Point
Stepovak Bay
Egg Island
Paul Island
Jacob Island
Chiachi Island
Perryville
Mitrofania Bay
MITROFANIA ISLAND
Spitz Island
Seal Cape
Cape Ikti
Kuiukta Bay
Castle Rock
BIG KONIUJI ISLAND
KONIUJI I
The Twins
Simeonof Island
Bird Island
Chernabura Island
SHUMAGIN ISLANDS
T-8460
T-8461
T-8462
T-8463
T-8464
T-8465
T-8466
T-8467
T-8468
T-8469
T-8471
T-8472
T-8473
T-8458
T-8459
SCALE: 1:1,000,000

Descriptive Report and Review

~~Summary to Accompany~~ T-8453 thru T-8458

The preliminary shoreline maps shown on the attached index were radial plotted and the detail delineated in 1943 and 1944 without field inspection of any kind, to furnish detail for small scale nautical charts and shoreline for hydrographic surveys. The attached "Memorandum: Air Photographic Surveys - Shumagin Islands, Alaska" was written in 1943 or 1944, but the field work was not accomplished under these instructions.

Preliminary shoreline map T-8453 covers the south part of Nagai Island, Shumagin Islands, Alaska, from Latitude 54 -51' to 54 -59' and Longitude 160 -02' to 160 -16'; T-8454 covers the central part of Nagai Island, Shumagin Islands, Alaska, from Latitude 54 -59' to 55 -08' and Longitude 159 -56' to 160 -12'; T-8455 covers Bird and Chernabura Islands, Shumagin Islands, Alaska, from Latitude 54-45' to 54 -51' and Longitude 159 - 30' to 159 - 48'; T-8456 covers Simeonof and Little Koniuji Islands, Shumagin Islands, Alaska, from Latitude 54 -52' to 55 -04' and Longitude 159 -12' to 159 -28'; T-8457 covers the area from Turner Island to Big Koniuji Island, Shumagin Islands, Alaska, from Latitude 55 -00' to 55 -08' and Longitude 159 -28' to 159 -51'; and T-8458 covers the north part of Big Koniuji Island, Shumagin Islands, Alaska, from Latitude 55 -08' to 55 -17' and Longitude 159-26' to 159 -41'.

See also note at bottom of page 3 regarding elevations of peaks on these maps.

A continuous radial plot was laid for sheets T-8453 through T-8458. It is not recommended that these sheets be used for large scale mapping without the usual field inspection.

Data pertaining to T-8453, T-8454, T-8455, T-8456, T-8457 and T-8458 is filed as follows:

A. Division of Photogrammetry General Files:
   1. Acetate Manuscripts

B. Bureau Archives:
   1. A cloth backed lithographic print of the reviewed maps at compilation scale
   2. Registered original descriptive report

Reviewed by:

G. B. Willey 12/27

G. B. Willey, Dec. 23, 1949

Approved by:

S. V. Griffith

CHIEF, Review Section 2/7/50
Division of Photogrammetry

O S Reading

Chief, Div. of Photogrammetry

H C Edmonston

Chief, Nautical Chart Branch
Division of Charts

K. G. Crosby

Chief, Div. of Coastal Surveys

GEOGRAPHIC NAMES

Survey No.
T-8458

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	
• Alaska*										1
• Shumagin Is.*										2
• Big Koniuji I.										3
• Peninsula I.										4
• Flying Eagle Harbor										5
• Cape Thompson										6
Castle Rock										7
										8
										9
										10
					* - Decis BGN					11
					• -Approved name					12
						12-21-49 A.J.C.				13
										14
										15
										16
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										25
										26
										27

GEOGRAPHIC NAMES

Survey No.

T-8457

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
• Alaska*										1
• Shumagin Is.*										2
• Little Koniuji I.										3
• Koniuji Strait										4
• Hall I.										5
• Murre Rocks										6
• Big Koniuji I.										7
• Spectacle I.										8
• Bendel I.*										9
• Turner I.*										10
• East Nagai Strait										11
										12
										13
										14
										15
										16
					* - Decis BGN					17
					• - Approved name					18
										19
					12-21-49 A.J.W.					20
										21
										22
										23
										24
										25
										26
										27

GEOGRAPHIC NAMES

Survey No.

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
•Alaska*										1
•Shumagin Islands*										2
•Simeonof I.*										3
•Simeonof Harbor										4
•Twelve Fathom Strait										5
•Little Koniuji I.										6
•Northeast Harbor										7
•Sandy Cove										8
•Entrance Pt.										9
Shoal Bay										10
•Northwest Harbor										11
•Herendeen I.										12
•AtkinsI.										13
										14
										15
										16
					* - Decis BGN					17
					• - Approved name					18
						12-21-49				19
						A.J.W.				20
										21
										22
										23
										24
										25
										26
										27

GEOGRAPHIC NAMES

Survey No.

T-8455

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	
Alaska* •										1
Shumagin Islands* •										2
Chernabura I.* •										3
Bird I. •										4
Pt. Farewell •										5
Otter Strait •										6
Pt. Welcome •										7
										8
										9
										10
										11
					* - Decis BGN					12
					• - Approved name					13
						12-16-49				14
						A.J.W.				15
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GEOGRAPHIC NAMES

Survey No.

T-8454

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	
•Alaska*										1
•Shumagin Islands*										2
•Nagai Island*										3
•Larsen Bay										4
East Bight										5
•Falmouth Harbor										6
•Wooly Head										7
•Eagle Harbor										8
•Sanborn Harbor										9
										10
										11
										12
										13
										14
										15
					* - Decis BGN					16
					• - Approved name					17
										18
						12-16-49 A.J.W.				19
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										26
										27

GEOGRAPHIC NAMES

Survey No.
T-8453

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
• Nagai Island *										1
• Shumagin Islands*										2
• Alaska*										3
• Near I.										4
• John I.										5
• Mountain Pt.										6
• Saddlers Mistake										7
										8
										9
										10
										11
										12
										13
					* - Decis BGN • - Approved name					14
										15
						12-16-49 A.J.W.				16
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File as desc report T8453 & T8458.

February 18, 1943

MEMORANDUM: AIR PHOTOGRAPHIC SURVEYS - SHUMAGIN ISLANDS, ALASKA.

1. The attached index shows the layout of Air Photographic Surveys, Nos. T-8453 to T-8463 inclusive, which are now being compiled in the Washington Office from nine lens photographs taken in 1942.

2. Printed copies of these surveys, scale 1:20,000, will be furnished you for the next seasons work. One print of each survey will be furnished on tracing paper and one on boatsheet paper. If the layout is satisfactory, the printed sheets may be used directly as boatsheets for inshore hydrography, otherwise, you can make your own layouts and transfer the shoreline to your new projections by means of the tracing paper prints. The tracing paper prints will be made with the ink on the reversed side so that the shoreline can be transferred readily by registering in position on the projections, and burnishing.

3. The air photographic surveys will show the shoreline, hydrographic control points located by the photo plots, ridge lines, and the more prominent peaks with approximate elevations.

4. One set of nine lens field inspection photographs covering the area of sheets T-8453 to T-8463, together with an index, and a record of the date and time of the photography will be furnished. A few of these photographs will have been used in the office but all office notes and outlines may be ignored except for the descriptions of hydrographic control.

HYDROGRAPHIC CONTROL

5. It is understood that, in general, the offshore hydrography will use the mountain peaks as control. A number of these have been located by triangulation. Others have been located by the photographic plots and also should serve adequately as hydrographic signals. Elevations shown on the surveys which are underlined were determined by triangulation. The more numerous elevations which are not underlined on the survey sheets were determined from the photographs and are approximate. However, they will be useful in identifying the different peaks from offshore.

6. Objects along shore have been selected from stereoscopic examination in this office and located on the survey sheets to control the inshore hydrography. These control points are small offshore islands and rocks, high projections of rock on ledges, rock slides, stream

outlets, points at the tops of low bluffs, etc. In other words, any points distinguishable by stereoscopic examination which appear to be readily identifiable in the field. Their positions are indicated on the survey sheets by a fine dot, usually within a small circle. However, in some instances the circles have been omitted to avoid obscuring shoreline details.

7. The points selected for hydrographic control are marked by fine dots and are described on the field set of photographs. These photographs should always be used when attempting to identify the control points on the ground and to use them for hydrography. The photographs show more details than can be delineated on the survey sheets and their use will make it comparatively easy to identify the selected points on the ground.

8. In general, a greater number of hydrographic control points have been selected and located than will be needed. This has been done purposely in order to allow the field parties a greater choice of signals, and to allow for those which may not be identified with certainty.

9. Considerable care has been taken in tracing the shoreline details. Small islands, small points of rock and other characteristic shoreline features have been delineated in as much detail as practicable so that they may be readily recognized and used for ranges, or as points by which to fix the ends of inshore sounding lines. Hydrographic signals also may be spotted in position on these small shoreline features where the selected points discussed in paragraphs 6 to 8 are not adequately placed.

ROCKS AWASH AND SHORELINE DETAIL

10. The compilation and delineation of these surveys has been done without prior field inspection. In the case of low off-lying rocks and low ledges along the shore, it is not possible in the office to distinguish between features slightly below high water and those slightly above high water. For this reason the office interpretation of rocks awash and small islands and ledges may be in error in a number of cases. Usually the error in interpretation will be minor and of little importance. However, the inshore hydrographic parties should examine the shoreline where the hydrography runs close to the beach, or close to off-lying rocks and resketch all details in appreciable error. Where a considerable amount of revision is necessary it will probably be preferable to make clarifying notes and symbols directly

onto the field photographs rather than to do a considerable amount of resketching on the boatsheets.

SUPPLEMENTAL CONTROL

11. These surveys have been plotted without prior field inspection. The triangulation control available in the area is indicated on the index by red triangles. Those shown in solid red were identified and used to control the plots. In some cases the identification could be made precisely and in others it could be made only approximately.

261 A.

12. The photographic plots for these surveys consisted of a scheme of graphic triangulation (radial line plots) based on the existing triangulation (ground control) and extended over the entire area covered by the sheets. The relative accuracy of this work, i.e. the distances and directions between points of detail within any limited area, as on one sheet, should be good. However, where the plots were extended outward from the ground control as at Mountain Point on T-8453, Point Welcome and Point Farewell on T-8455, the southern end of Simeonof Island on T-8456, Atkins Island on T-8456, Cape Thompson, and Castle Rock on T-8458, errors in distance and azimuth may have accumulated. For this reason, the sheets may be used as compiled for the inshore hydrography but during the course of your surveys the over-all accuracy should be checked as stated in paragraph 13.

13. During the offshore hydrography, where a strong fix is observed to triangulation stations, cuts should be taken on peaks and tangents, particularly on features in the areas mentioned in paragraph 12, to check the accuracy of the photographic compilation.

14. Should cuts show such features to be grossly in error, additional triangulation should be executed in accordance with paragraph 3 of the project instructions. Errors, if found, will undoubtedly occur in the localities listed in paragraph 12, and to strengthen the plot one triangulation station should be established and identified on the photographs in each locality found in error. Such stations may be located by the three-point problem, if a fourth station can be observed as a check. Positions determined for this purpose shall be indicated on the index by green circles.

15. With further reference to paragraphs 11 to 15, the compilation of shoreline and hydrographic signals from photographs without prior field identification of control, is intended primarily to save the time of the field party ordinarily devoted to location of these features by planetable and thus to expedite the hydrography. An attempt will be made to do this even in areas where no ground control

is available for the original photographic plots. In all such cases it will be necessary for the field parties later to establish and identify a certain amount of ground control after which the radial line plots will be completely relaid in the office, if necessary, so as to provide topography of standard accuracy for the smooth sheets.

16. In this area sufficient control could be identified in the office to provide comparatively strong plots for sheets T-8453 to T-8458 and it is believed that none of these sheets will have to be replotted. The plots for sheets T-8460 to T-8464 are in progress at this time and a supplemental memorandum will be furnished later to outline the need for supplemental control similar to that called for in paragraph 14.

INCOMPLETE SHORELINE

17. In several instances short stretches of shoreline are shown on the survey sheets in dashed lines. These areas are marked in purple on the index. These are areas which were obscured on the photographs because of clouds or overhanging cliffs. The dashed line is in approximate position. If these stretches of shoreline are surveyed by planetable, it should be necessary only to traverse between the ends of the completed shoreline shown on the sheets. In other words, the planetable survey may start and end at identifiable features located on the photographs. The planetable details can then be transferred to the photogrammetric survey sheets by reference to the features at both ends of the gap as located from the photographs. It will not be necessary to make a projection, plot control and run traverses between triangulation. The two islands named "The Twins", east of Near Island, were not covered by photographs and have not been detailed.

IDENTIFICATION OF GROUND CONTROL POINTS ON THE FIELD PHOTOGRAPHS

18. Horizontal control stations may be identified by either of the two methods outlined on pages 30 to 31 of the pamphlet "Notes on the Compilation of Five Lens Aerial Photographs", a copy of which is attached:

> First method: Measure horizontal reference distances from the station mark to three or more points of definitely identifiable detail. The use of this method requires at least three suitably situated points of identifiable detail close by the station and in addition requires a scale measurement for use in determining the scale of the photographs in the vicinity of the control station. The reference measurements should not exceed 100 meters in length.

Second method: Measure the horizontal distance and direction from the station mark to one point of definitely identifiable detail and compute the latitude and longitude of the point of detail. The direction may be obtained by measuring the angle between a known direction and the direction of the point of detail. Another triangulation station, the azimuth mark or even a reference mark may be used for the initial. Where the distance to the point of detail is short the angle may be measured with a sextant since a location of the point of detail within 2 feet of correct position is sufficiently accurate. To be on the safe side, the distance from the station mark to the initial point should not be less than the distance to the point of detail and the latter distance should not be more than 300 meters.

19. A stereoscope shall be used for the selection of identifiable objects wherever practicable.

20. It is essential that data for the location of the control stations on the photographs be of the same accuracy as that used in plotting geographic positions, that is 0.1 to 0.2 mm. on the photograph.

FORM LINES AND ELEVATIONS

21. Form lines within the area of the photogrammetric surveys will be determined at a later date from the photographs by means of stereoscopic equipment now being built. In general, the vertical control for the form lines will be provided by the sea level datum or water line visible on most of the photographs. However, a few elevations on well-defined peaks determined by ground methods are needed. During the seasons work where instrument set ups are otherwise made with the theodolite or planetable or where triangulation stations are recovered and set ups can be readily made, vertical angles shall be measured and elevations determined on well-defined peaks. The desirable distribution of these elevations would be two or three well-determined elevations on each sheet. However, it is not intended to delay the hydrography for this work and the distribution of elevations will depend upon what stations are recovered or occupied as a part of the hydrographic surveys.

22. In areas where no elevations are determined by planetable or theodolite, as discussed in paragraph 21, a like number shall be determined by sextant during the progress of the offshore hydrography.

OBLIQUE PHOTOGRAPHY

23. In general, it is expected that, in the future, form lines will be plotted by stereoscopic equipment for all areas covered by the nine lens photographs. In future surveys in Alaska, when the surveys are made in areas not covered by nine lens photographs, it is anticipated that the usual planetable survey of form lines and verification, "form line" surveys by sextant-angles from ship can be superseded by plotting the form lines from oblique photographs taken by the field parties during the progress of the planetable signal location and the hydrography.

24. This idea is not new and the method has been used satisfactorily by other surveying organizations both in the United States and abroad. If adapted to our Alaska survey it will relieve the field parties of considerable time spent in obtaining elevations and sketching form lines.

25. A 4 x 5 inch K 20 Fairchild camera will be loaned temporarily to the ship by the officer in charge of the seaplane which is expected will operate in Alaska next season, for some experimental photography of this type.

26. It is desired that a small area within the limits of the present photogrammetric surveys be photographed with this camera for experimental use. The area photographed should be one in which hydrographic signals have been established as these will provide the control. The photographs are to be taken from the bridge of the ship or from a launch with the camera held in approximately a horizontal position.

27. The method is essentially the same as when surveying form lines from offshore with a sextant. Each oblique photograph is a record of horizontal and vertical angles from which horizontal positions and elevations can be determined.

28. In plotting form lines from the oblique photographs, the position of the camera station is first determined and the work then carried forward by scaling and plotting horizontal angles for the location of points by intersection and resection. Vertical angles are then scaled and elevations determined in the same manner as when the work is done with a sextant.

29. The photographs must be taken far enough offshore to include within the limits of each picture both the shoreline and the skyline, or at least the tops of all hills within the area to be form lined. Except for this limit the photographs should be fairly close inshore so as to show as much detail as possible. The camera should be approximately leveled by eye.

30. The following data shall be recorded at each camera station:

a. date and time
b. fix, with check angle
c. height of camera above water

31. If three properly positioned hydrographic signals are visible in the photographs, the position of the camera station can be determined in the office by the three point fix method, but much time is saved in work preliminary to detailing, and in many cases a stronger camera position will result, by the use of a sextant fix.

32. In general, a sufficient number of photographs should be taken from successive camera stations so that all features to be form lined will be visible in two or more separated photographs.

33. The camera stations need not be on line nor have any systematic relation to one another. Usually a round, i.e. a partial panorama should be taken from each camera station.

34. This method can be used to advantage in surveying short stretches of coast line where sheer bluffs or dangerous off-lying rocks makes it inaccessible to a plane table party.

35. Copies of articles on "Mapping With Oblique Photographs" are enclosed for the use of officers who may be interested in studying details of this method. These articles refer to aerial photographs whereas this memorandum refers to photographs taken from a ship or a launch. In the latter case, the elevation of the camera above sea level will be known and consequently the plotting will be much simpler.

REPORTS

36. At the end of the season you will submit a special report covering the use of the air photographic surveys for shoreline and hydrographic control. This report shall contain any pertinent information regarding the use of the present sheets and any recommendations you care to submit which will guide the office in planning future work of this type in Alaska.