

8629 8630

8631

Diag. Cht. No. 9302

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey TOPOGRAPHIC

T-8629

Field No. Project No. Office No. T-8630

PH-43 (49) T-8631

LOCALITY

State ALASKA

General locality BEFING SEA

Locality ST. MATTHEW ISLAND

194 8

CHIEF OF PARTY

T. B. Reed

LIBRARY & ARCHIVES . . .

DATE April 12 - 1951

8630
8631

DATA RECORD

T - 8629, T-8630, & T-8631

Project No. (II): Ph-43(49)

Quadrangle Name (IV):

Field Office (II):

Chief of Party:

Photogrammetric Office (III): Baltimore, Md.

Officer-in-Charge: Thos. B. Reed

Instructions dated (II) (III): 14 March 1949

Copy filed in Division of
Photogrammetry (IV)
Office Files

Method of Compilation (III): Multiplex

Manuscript Scale (III): 1:20,000

Stereoscopic Plotting Instrument Scale (III): 1:10,000

Scale Factor (III): 1.0

Date received in Washington Office (IV):

Date reported to Nautical Chart Branch (IV):

Applied to Chart No. 8851

Date: Nov. 30, 1949 Date registered (IV): 2-7-51

Publication Scale (IV):

Publication date (IV):

Geographic Datum (III): *St. Matthew 1944*

Vertical Datum (III): Sea Level at time

Mean sea level except as follows: of photography
Elevations shown as (25) refer to mean high water
Elevations shown as (2) refer to sounding datum
i.e., mean low water or mean lower low water

Reference Station (III): *See G-6176 (Alaska No. 79)*

Lat.:

Long.:

~~Adjusted~~
Unadjusted

Plane Coordinates (IV):

State:

Zone:

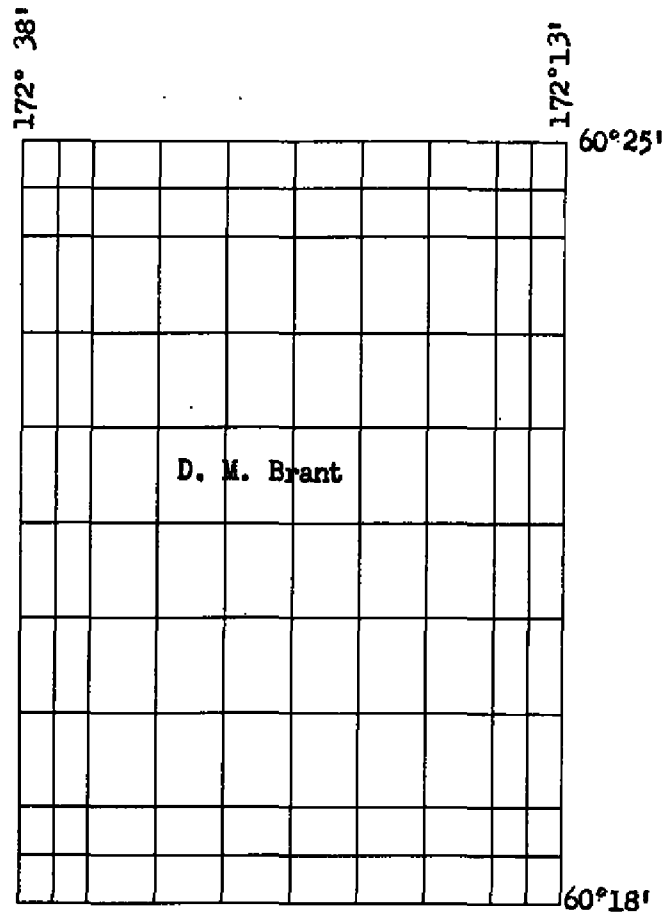
Y=

X=

Roman numerals indicate whether the item is to be entered by (II) Field Party, (III) Photogrammetric Office, or (IV) Washington Office.

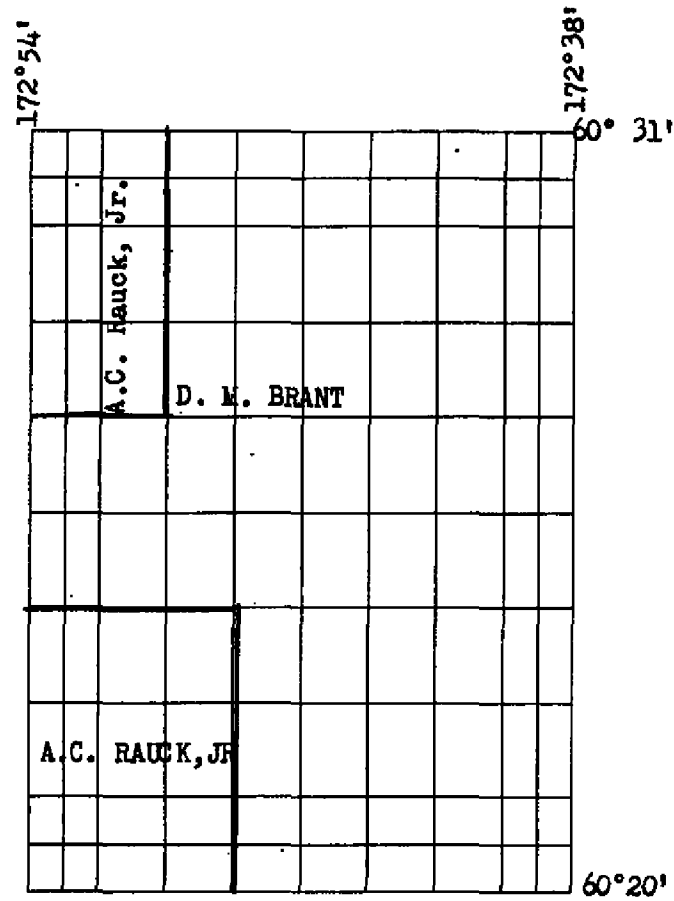
When entering names of personnel on this record give the surname and initials, not initials only.

T - 8629



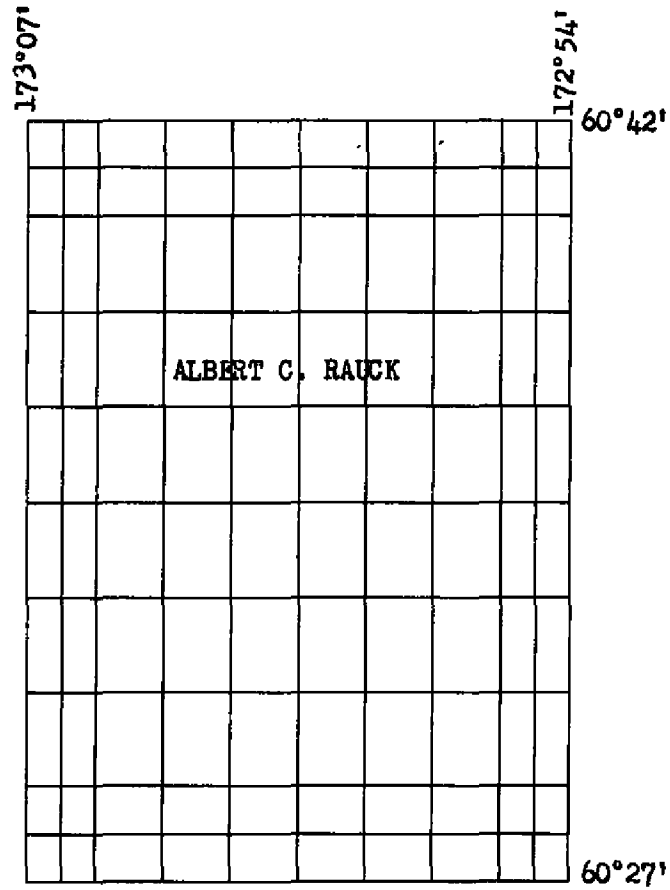
Area contoured by various personnel
(Show name within area)
(II) (III)

T - 8630



Areas contoured by various personnel
(Show name within area)
(II) (III)

T - 8631



Area 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):

Stereoscopic examination of photographs and drawn with multiplex.

Projection and Grids ruled by (IV): *W.E.W.*

Date: *1949*

Projection and Grids checked by (IV): *W.E.W.*

Date: *1949*

Control plotted by (III): *Washington Office*

Date: *Feb, 1949*

Control checked by (III): *Washington Office*

Date: *Feb. 1949*

Radial Plot ~~by (III):~~

Control extension by (III): *Charles Hanavich*

Date: *Feb. 1949*

Stereoscopic Instrument compilation (III): *Planimetry and Contours* *Albert C. Rauck, Jr. and Donald M. Brant*

Date: *Sept. Oct. 1949.*

Vertical Control Bridged by: *Albert K. Heywood*

Date: *Sept. 1949*

Manuscript delineated by (III):

T-8629 - B. A. Dew

T-8630 - B. A. Dew

T-8631 - C. A. Lipscomb

Photogrammetric Office Review by (III):

Al K. Heywood

Date: *Oct. 1949*

Date: *Oct. 1949*

Elevations on Manuscript

checked by (II) (III): *S. W. Trow*

Date: *Oct. 1949*

Camera (kind or source) (III): Navy, Metrogon 151.70 MM lens

Number

Date
7-16-48

PHOTOGRAPHS (III)
Time

Scale
1:20,000

Stage of Tide
Unknown

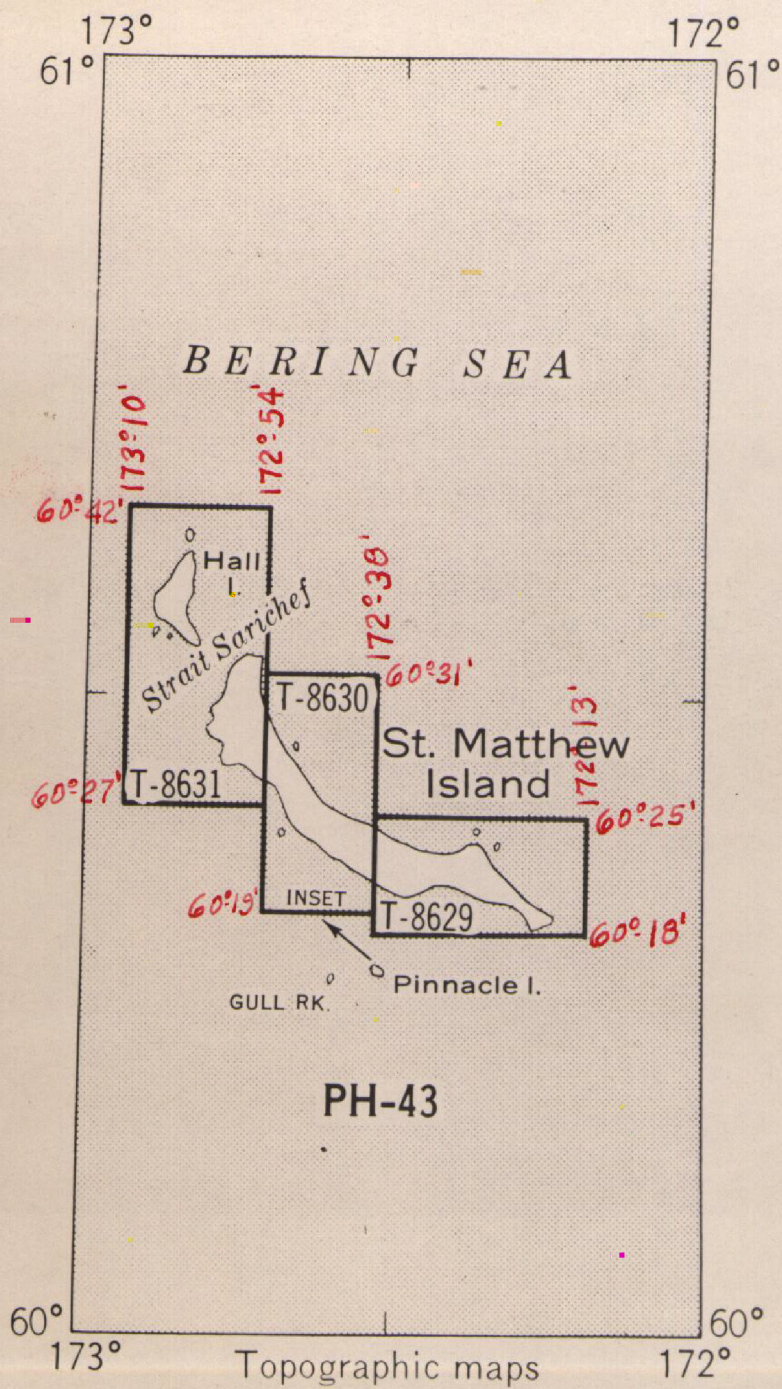
Tide (III)



63°
172°

171°

5. 170



Summary to Accompany

T-8629

T-8630

Topographic Maps T-8629, T-8630 and T-8631 cover the area of St. Matthew Island, Hall Island and Pinnacle Island, Bering Sea, Alaska, as shown on the accompanying index.

These topographic maps were radial plotted and the planimetry and contours delineated without benefit of field inspection of any kind.

Data pertaining to T-8629, T-8630 and T-8631 is filed as follows:

A. Division of Photogrammetry General Files

1. Acetate manuscripts
2. Duplicate of the ^{combined} descriptive report

B. Bureau Archives

1. A cloth backed lithographic print of the reviewed maps at the ^{combined} compilation scale
2. Registered original ^{combined} descriptive report

Radial Plot Report

(St. Matthew, Hall, and Pinnacle Islands)

27. Radial Plot:

One main radial plot was laid for St. Matthew and Hall Islands. A total of 112 transparent templates (acetate) were used. Another minor radial plot, covering Pinnacle Island, consisted of 3 transparent templates. The templates were prepared from single lens photographs (U. S. Navy), which were at a scale of 1:20,000, and dated 16 July 1948.

In the main plot the area is found between latitudes $60^{\circ}18'$ and $60^{\circ}42'$, and longitudes $172^{\circ}13'$ and $173^{\circ}07'$, and is comprised of three map manuscripts (numbered T-8629, T-8630, and T-8631). The small plot for Pinnacle Island lies between latitudes $60^{\circ}11'$ and $60^{\circ}13'$, and longitudes $172^{\circ}44'$ and $172^{\circ}48'$; this area is attached as an insert on map manuscript T-8629. Photographic coverage for both areas is adequate.

Except for the area of the smaller radial plot, the density of control is too inadequate to lay an accurate radial plot for all of St. Matthew Island, and no control was available on Hall Island. The control stations - a total of 11 stations - on St. Matthew Island are centralized at about the mid-way section of the Island.

Since no field identification of the control stations had been made, an attempt was made (with poor success) to identify these stations on the photographs from their descriptions and some sketches, which were found in the field notebooks (Observations of Horizontal Angles). Of the 11 control stations on St. Matthew Island, it was possible to identify only 3 stations with a reasonable degree of accuracy; they were: Warol, 1944; St. Matthew's Loran Antenna, 1944; and Rock A, 1944. These were the only 3 stations that could be held in the main plot.

A tabulation of the remaining 8 control stations on St. Matthew Island follows:

1. Intersection station Hill A, 1944: Point identified as the probable location of station falls about 120 meters east of the station. The identified point is the photograph center of photograph 152. The identified point and the station are on line along the ridge top of a hill where the station is located.

2. Intersection station Hill B, 1944: Point identified as the probable location of station falls about 30 meters south of the station. The identified point and the station are on line along a ridge top of a hill where the station is located.
3. Intersection station Hill D, 1944: Point identified as likely site of station is about 15 meters north of the station. The identified point and the station appear to be on line with edge of a high ridge where the station is located.
4. Intersection station Sugar Loaf Mtn., 1944: Identified point is top of mountain and falls about 12 meters south-southeast of the plotted station.
5. Triangulation station Mathev's Astro., 1944: Point identified as likely site of station is 50 meters northwest of plotted station. Identified point and station are on line along a vegetation line along which the station is located.
6. Triangulation station Middle, 1944: Point identified as possible location of station is about 22 meters west of the station. The identified point and station are on line along the edge of a small and narrow ridge where the station is located.
7. Base A, 1944, according to the description, is an unmarked intersection station. The description for this station was too indefinite.
8. Intersection station Mathev's Astro. Azimuth, 1944: The description for this station was too indefinite to attempt to identify the location of it.

To bridge Sarichef Strait between photographs 32 and 34 (photo. 33 - all water area), that is from St. Mathev's Island to Hall Island, a mean value of the 3 distances between photograph centers 30-31, 31-32, and 34-35 was determined; this mean value was doubled and the resultant value used as the controlling distance between photograph centers 32 and 34. To control the azimuth, a

straightedge was used to align photograph centers 31, 32, 34, and 35 (azimuth from 34 to 35 held as fixed) along a medium straight line on the assumption that a straight course in line of flight had been maintained.

The accuracy of this plot is questionable under the conditions noted above, and in view of the fact that the plot is a graphic extension east and northwest of the control area in which directional orientation was held by azimuths and cross azimuths, and its horizontal position fixed by pass points. Incidentally, at station Narol, 1944, an angle was available from intersection station Rock A, 1944, to the north end of Gull Rock; it was used to check the azimuth of the plot. Gull Rock is found about 400 meters north of the center of photograph 39.

A small radial plot was laid for Pinnacle Island in which 4 control stations were available and held to. By using a stereoscope, these stations were identified in the office from their descriptions; they are:

1. Intersection station Gull Rock, 1944.
2. " " Rock B, 1944.
3. " " Pinnacle Island, 1944.
4. " " Pin, 1944.

The closure and adjustment of the plot is believed to be satisfactory.

Approved by:

Submitted by:

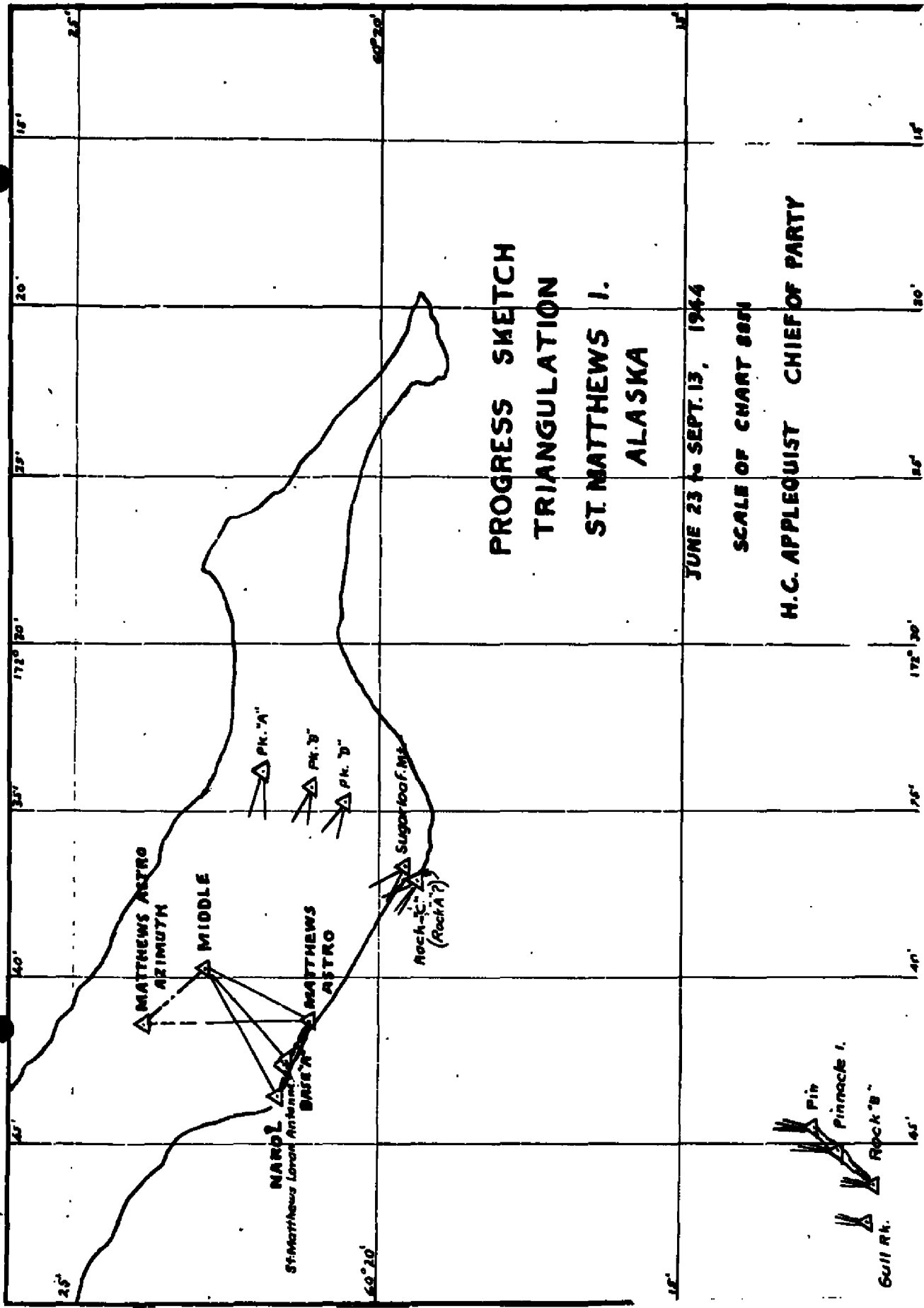
L. C. Lande
L. C. Lande

Charles Hanzvich
Charles Hanzvich
28 February 1949

67

TRM-STM-V-2-66

53



ST. MATTHEW ISLAND
T-8629, T-8630 & T-8631

<u>Station</u>	Geodetic Elev. M	Geodetic Elev. Ft.	Multiplex Elev. Ft.	Shown on Manuscript Ft.
MATTHEWS ASTRO, 1944	7.62	25	-	25
MATTHEWS " Azimuth, 1944	60.61	199	200	200
MIDDLE, 1944	219.02	719	700	720
NAROL, 1944	102.04	335	300	335
PINNACLE ISLAND, 1944	373.78	1223	1250	1250
HILL A, 1944	358.33	1176	1000	-
SUGARLOAF MOUNTAIN, 1944	408.84	1341	1380	1380

Summary of Discrepancies between Δ Descriptions & Surrounding Detail

	<u>DESC</u>	<u>Detail</u>
HILL A, 1944	Top of hill	Falls east of top 175 meters
HILL B, 1944	Top of hill	Falls 70m. NE of top
HILL D, 1944	High Pt. N of Notch	Falls S of the top
PINNACLE ID, 1944	High Point	Falls 20m NW of Top
PIN, 1944	Small, flat topped pinnacle	Falls 15 m. SE of Top

COMPILATION REPORT

T - 8629

T - 8630

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31. DELINEATION

All details including the shoreline were delineated by the multiplex plotting instrument in accordance with Project Instructions dated 14 March 1949. Small gaps appear in the manuscripts where bluffs in shadow obscure detail.

32. CONTROL

(a) Horizontal control.

The Baltimore Office was furnished by the Washington Office 1:20,000 base sheets with radial plot positions. These base sheets were enlarged photographically to a 1:10,000 multiplex plotting scale. Radial plot positions were then pricked through to the multiplex work sheets.

(b) Vertical control.

Vertical control was bridged by multiplex using the "BZ" curve. Four strips were bridged. The strips were chosen so that each initial model contained sufficient water area to use for leveling. Enough models were set in each flight so that the last model in the strip contained at least one water surface elevation as a check in the accuracy of the "BZ" curve. Each successive model in the flight was then carefully "tacked" to scale. The height of the projector above the table was plotted against the distance away from the first projector. Through these plotted points a smooth "BZ" curve was drawn. Six elevations in each model were read during this orientation and to each of them a proportional BZ correction applied from the curve. Where flights ran parallel or normal to each other common elevations with corrections applied from different curves tied within $\pm$ three feet.

The strips bridged by multiplex are as follows:

STM 2 - STM 8
" 73 - STM 83
" 58 - " 68
" 155 - " 159

A few vertical control points were furnished, some noted to be of doubtful accuracy. Listed below are the elevations given and the multiplex readings:

STATION	ELEVATION	MULTIPLY ELEV.
Matthews Astro.	25	25
Astro. Azimuth	199	Could not identify
Middle	719	720
Pinnacle I.	1223	1250 in
Narol	335	Located gap area
Sugarloaf Mt.	1341	1380
<u>Points of doubtful accuracy:</u>		
Peak A	1176	Could not identify
" B	897	" " "
" C	967	1065

32. CONTROL

(b) Vertical control (continued)

The stage of tide at the time of photography was used as a datum in the bridging of vertical control.

33. SUPPLEMENTAL DATA

None.

34. CONTOURS AND DRAINAGE

The quality of both photographs and diapositives was excellent.

Contours were drawn at one hundred foot intervals. Where better relief expression could be shown with intermediate contours fifty-foot intervals are shown.

Three small gaps appear. It was not possible to draw contours in these areas due to high bluffs in shadow.

35. SHORELINE AND ALONGSHORE DETAILS

No field inspection of the MHW line furnished. The MHW line was drawn by multiplex aided by stereoscopic examination of the 1:20,000 contact prints. Small gaps or dashed lines are shown where the shoreline was obscured by shadows or its delineation uncertain.

No low water line is shown.

36. OFFSHORE DETAILS

*Numerous rocks offshore were plotted by multiplex.

37. LANDMARKS AND AIDS

None.

(*Elevations for many small rocks (could not be determined with accuracy by stereophotogrammetric methods because of their pinnacle shapes or their being partially covered by surf. Many of the larger

(provided by stereophotogrammetric methods because the compilation office was not instructed to observe them.

39. JUNCTIONS

Junctions have been made between the three maps.

40. HORIZONTAL AND VERTICAL ACCURACY

Contours are believed to be within one-half contour interval of their true elevation. The areas which contained bluffs in shadow are believed to be $\pm$ one full interval.

The density of horizontal control was inadequate to lay an accurate radial plot.

Due to the inadequacy of both horizontal and vertical control these maps do not comply with the National Standards of Map Accuracy.

46. COMPARISON WITH EXISTING MAPS

None

47. COMPARISON WITH NAUTICAL CHARTS

Visual comparison was made with Chart No. 8851. The comparison was poor. This survey should supersede the existing chart.

48. GEOGRAPHIC NAME LIST

Geographic names were taken from U.S.C. & G.S. Chart No. 8851, 8th. edition, published March 1947. *List of approved names attached.*

Respectfully submitted
12 October 1949


Albert K. Heywood *swt.*
Cartographic Draftsman
Descriptive Report and Review

Approved and forwarded
18 October 1949


Thos. B. Reed
Officer in Charge
Baltimore Photogrammetric
Office

PHOTOGRAMMETRIC OFFICE REVIEW

T-8629

1. Projection and grids N.E.W. 2. Title AKA 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 _____ 9. Plotting of sextant fixes _____ 10. Photogrammetric plot report AKA 11. Detail points _____

ALONGSHORE AREAS

(Nautical Chart Data)

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

PHYSICAL FEATURES

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

CULTURAL FEATURES

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

BOUNDARIES

31. Boundary lines _____ 32. Public land lines _____

MISCELLANEOUS

33. Geographic names AKA 34. Junctions AKA 35. Legibility of the manuscript SWT 36. Discrepancy overlay _____ 37. Descriptive Report AKA 38. Field inspection photographs _____ 39. Forms _____ 40. A.K. H. Sigwood SWT
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.

Complier

Supervisor

43. Remarks:

PHOTOGRAMMETRIC OFFICE REVIEW

T-8630

1. Projection and grids W.S.W. 2. Title AKH 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 _____ 9. Plotting of sextant fixes _____ 10. Photogrammetric plot report _____ 11. Detail points _____

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(Nautical Chart Data)

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33. Geographic names AKH 34. Junctions AKH 35. Legibility of the manuscript AKH 36. Discrepancy overlay _____ 37. Descriptive Report AKH 38. Field inspection photographs _____ 39. Forms _____
40. AKH H. Sympson Henry P. Eichen
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:

PHOTOGRAMMETRIC OFFICE REVIEW

T. 8631

1. Projection and grids NEW 2. Title AKH 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 _____ 9. Plotting of sextant fixes _____ 10. Photogrammetric plot report _____ 11. Detail points _____

ALONGSHORE AREAS

(Nautical Chart Data)

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

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

CULTURAL FEATURES

27. Roads _____ 28. Buildings AKH 29. Railroads _____ 30. Other cultural features _____

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31. Boundary lines _____ 32. Public land lines _____

MISCELLANEOUS

33. Geographic names AKH 34. Junctions AKH 35. Legibility of the manuscript AKH 36. Discrepancy overlay _____ 37. Descriptive Report AKH 38. Field inspection photographs _____ 39. Forms _____ 40. Albert C. Heywood Henry P. Fisher
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:

GEOGRAPHIC NAMES

Survey No.

T 8631

Name on Survey

	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	
A	B	C	D	E	F	G	H	K	
Bering Sea *									1
St. Matthew I. *	✓								2
Sarichef Strait.	✓								3
Hall I. .	✓								4
Cape Hall.	✓								5
Arre Rocks.	✓								6
Elephant Rock.	✓								7
Glory of Russia Cape.	✓								8
Bull Seal Pt. .									9
Alaska.									10
									11
									12
									13
									14
									15
									16
									17
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									20
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									22
									23
									24
									25
									26
									27

* = Decis. BGN

. = Approved Name

1-31-56

A. J. W.

GEOGRAPHIC NAMES

Survey No.

T8629

Name on Survey

	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	
A	B	C	D	E	F	G	H	K	
Bering Sea *									1
St. Matthew I. *									2
Sugarloaf Mt. *									3
Cape Upright *									4
Alaska.									5
									6
									7
									8
									9
									10
									11
									12
									13
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									24
									25
									26
									27

x = Decis. BGN

• = Approved Name

1-31-50

a.f.w.

Review Report T-8629, T-8630 & T-8631
Topographic Maps
March 1, 1950

62. Comparison with Registered Topographic Surveys: None
63. Comparison with Maps of Other Agencies: None
64. Comparison with Contemporary Hydrographic Surveys: None
65. Comparison with Nautical Charts.-Chart No. 8851 - A landmark waterfall is shown on the south side of St. Matthew Island, T-8629, and on the west side of Hall Island, T-8631. Streams in these areas appear to be dry at the time of the photography, so it is suggested that these waterfalls are seasonal.

The Arre Rocks, southwest of Hall Island, T-8631, are shown as three rocks. Only two rocks are visible on the photographs, and only two rocks are shown on the manuscript.

66. Adequacy of Results and Future Surveys.-These are
- 

68. Delineation.-Form lines were added from stereoscopic examination of the photographs in the area of deep shadow on the north side of St. Matthew Island on T-8630 between Longitude 172°-47' and 172°-50', where the detail could not be seen in the multiplex models.

All photogrammetric elevations were rounded-off to the nearest five feet, which is believed to be more consistent with the probable accuracy of the multiplex readings.

All photogrammetric elevations are printed in vertical type on these manuscripts, instead of slant type as specified in the instructions.

Reviewed by:

Gordon B. Willey
Gordon B. Willey

Approved by:

L. V. Griffith
Chief, Review Section *L. V. Griffith*
Division of Photogrammetry

H. Edmonston
Chief, Nautical Chart Branch
Division of Charts

O. S. Reading
Chief, Div. of Photogrammetry *K*

W. M. Sciffe
Chief, Div. Coastal Surveys *B.H.*

NAUTICAL CHARTS BRANCH

SURVEY NO. T.8629-30-31.

Record of Application to Charts

[illegible]

M-216B-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.