8235

Diag Cht..No. 8863-3

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. EX-4355 *Office No.* H-8235

LOCALITY

State Alaska - Aluetian Islands

General locality Andreanof Group

Locality South of Kagalaska Island

194/ 55

CHIEF OF PARTY

S. B. Grenell

LIBRARY & ARCHIVES

DATE October 27, 1955

B-1870-1 (1)

8235

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-8235

Field No. HX-4355

State Alaska, Aleutian Islands

General locality ~~Aleutian Islands,~~ Andreanof Group
South of Kagalaska Island

Locality ~~Offshore - Boot Bay to Asgmis Cove~~

Scale 1:40,000 Date of survey 24 July to 18 August 1955.

Instructions dated 16 December and 20 January 1955

Vessel Ship EXPLORER

Chief of party S. B. Grenell

Surveyed by S.B. Grenell, J. Bowie, K. B. Jeffers, and E. F. Hicks

Soundings taken by ~~fathometer~~, graphic recorder, ~~handlead~~, wire

Fathograms scaled by Fathometer readers

Fathograms checked by G. E. Haraden and V. J. Franze

Protracted by K. B. Jeffers and E. F. Hicks

Soundings penciled by F. X. Popper

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW and are based on a velocity of sound of 800 fms. per sec.

REMARKS: This is a combination boat sheet and smooth sheet.

U. S. GOVERNMENT PRINTING OFFICE 693019

Descriptive Report

to accompany

Hydrographic Survey No. H-8235
South of Kagalaska Island
~~Offshore - Boot Bay to Azamis Cove~~

Aleutian Islands, Alaska

Project 1218, Season 1955

Scale 1:40,000

Surveyed by: S. B. Grenell, J. Bowie, K. B. Jeffers and E. F. Hicks.

A. PROJECT

This survey was executed in accordance with the following instructions for Project 1218 (CS-218).

1. Revised Instructions - Project CS-218, dated 16 December 1954.

B. SURVEY LIMITS AND DATES

This survey includes the offshore area from Boot Bay to Azamis Cove and extends south to Latitude 51° 22'N. To the extent that this survey covers much of the same areas as previous Navy surveys but does not extend as far to the eastward it could be said that this survey joins prior survey H-6899 a 1:60,000 U. S. Navy survey made in 1934.

Junctions were made with contemporary surveys as follows:

H-8239 (1:20,000) inshore south coast of Adak Island from Boot Bay to Quail Bay.

H-8240 (1:25,000) inshore from Quail Bay to Cape Chisak and includes Little Tanaga Strait.

H-8234 (1:40,000) offshore area from Cape Yakak, eastward to Longitude 176° 32'W south to about Latitude 51° 15'N.

C. VESSEL AND EQUIPMENT

All hydrography on this survey was accomplished by the Ship EXPLORER.

Turning radius of the ship (from 1952 descriptive report):

Full right rudder - 360 meters.

Full left rudder - 275 meters.

Soundings were scaled from continuous profiles recorded on 808 fathometer No. 136 SP or 113 S in depths up to approximately 100 fathoms and Edo fathometer No. 4 in greater depths.

D. TIDE AND CURRENT STATIONS

A portable automatic tide gage was in operation at Elf Island during the period of this survey.

No current stations were occupied within the limits of this survey.

E. SMOOTH SHEET

On this survey a combination boat sheet and smooth sheet was used under authority contained in the Director's letter 22/MEK, S-2-EX, dated26 April 1954 and Hydrographic Instruction 2, sec. 4.14 dated 30 November 1954.

The smooth sheet projection was made on the projection machine in the Washington Office. Shoran station positions and arcs were plotted on the sheet as soon as the positions of the shoran stations were actually determined. By this time, however, some distortion had occurred. As YAKA was far off the sheet, points were computed for the arcs. When dividing the distances between these points into two-mile increments it was found that the factor 1.0015 as used on H-8234 applied. A number of measurements were made before the arcs were swung from ELF and the factor as determined from these measurements was so close to 1.0015, the factor used on H-8234 and in dividing the distances from YAKA on this sheet, that it was decided to use the 1.0015 factor on the ELF distances.

An overlay of tracing cloth was made on which hydrography was plotted as it was accomplished. Sounding lines were drawn on the smooth sheet and positions were inked at the end of each day. Uncorrected soundings were plotted on the overlay. Corrected soundings were plotted on the smooth sheet after they were reduced.

See paragraph I (Control of Hydrography) of this report for a discussion of methods used.

In order to delineate a submarine valley on the western edge of the sheet the 600, 700, 800 and 900 fathom curves were drawn. see Review Par. 3

F. CONTROL STATIONS

DAK 1943, U.S.E. I p. 124
FANG 1955, S. B. Grenell

GONEF 1953, K. G. Crosby
GUL 1934, U.S.N. V p.818
HID 1943, C. D. Meaney
YAKA 1954, S. B. Grenell
SHARP 1953, K. G. Crosby
ELF, A hydrographic control station located by a sextant angle and a taped distance from DAK.

YAKA, FANK and ELF were used in visual fixes for calibration of the pair of stations YAKA and ELF which were used as sites for the shoran antennas.

SHARP, GONEF and GUL were used for calibration of the pair of stations GUL and ELF. GUL also was used as the site for a shoran antenna.

G. SHORELINE AND TOPOGRAPHY

No shoreline or topography is shown on this sheet. The nearby shoreline is shown on large scale sheets completed in the current year by this party. See Review Par. 1

H. SOUNDINGS

The soundings were all taken by echo sounding with an Edo fathometer, and/or 808 fathometer mounted on the ship EXPLORER. A considerable number of comparisons were made between soundings taken with the Edo fathometer and the 808 fathometer on different phases or scales to make sure that there would be as few discrepancies as possible. The 808 type fathometers are old and worn, expecially the phasing heads. Observations indicate that the phase corrections for any 808 fathometer are not constant. The phase corrections used are such that simultaneous Edo and 808 soundings seldom disagree by more than one (1) fathom. See "Special Report on Fathometer Corrections" which will be submitted at a later date for further discussion of this problem.

I. CONTROL OF HYDROGRAPHY

The horizontal control for all hydrographic fixes on this sheet for A, B, and C days were shoran distances read from the shoran stations YAKA and ELF. Horizontal control for hydrographic fixes for the remainder of the sheet were shoran distances read from the shoran stations GUL and ELF. Final corrections for this sheet were determined and applied to the readings before plotting in the field. The plotting was done directly on the smooth sheets.

The corrections for the shoran distances from the pair of shoran stations YAKA and ELF were determined as follows; the three boat sheets for H-8239 were checked and one was found to have negligible distortion. Simultaneous visual and shoran fixes were taken while laying to. These fixes were assigned a position number and recorded in the sounding volumes, the shoran distances being recorded in the

remarks column. The positions were then plotted on H-8239 (1:20,000) from the visual fixes and "true" distances read from the distance circles. The observed shoran distance was then subtracted from the "true" distance and the correction determined.

The corrections for the shoran distances from the pair of shoran stations GUL and ELF were determined in substantially the same way except that one of the boat sheets of H-8240 was used and the arcs were drawn on in pencil strictly for purposes of calibration.

Approximately hourly ZERO checks were taken on the ship to guard against any drift in the ship equipment. The variation so determined was not plottable at the scale of the sheet and was not taken into account.

For convenience in plotting the plotter kept an independent record of the horizontal control data on a shoran plotting abstract (form M-2527-1). The corrections for the shoran distances were entered at the head of the column for distance readings. The corrected shoran distance was computed and entered in colored pencil directly above the distance reading on the shoran abstract. The corrected distances were then plotted to obtain the final smooth sheet positions. These plotting abstracts are submitted with this report. Neither the correction, nor the corrected shoran distances appear in the sounding volume.

Calibration fixes for A, B and C days were taken on 23 July 1955 while working on sheet H-8234. A, B, and C days were 24, 25 and 26 July respectively. D, E, and F days were controlled by the pair of stations ELF and GUL. Calibration fixes were taken on 12 August and this calibration sufficed for D, E, and F days, the 13th., 17th. and 18th. of August respectively.

Had this sheet been processed in the usual manner with final corrections computed and applied before plotting the smooth sheet, the procedure would have differed only to the extent that a correction would have been applied for the wandering of the zero check, an error of the order of about 0.010 statute mile at the greatest and an unplottable one (as far as soundings are concerned) on the scale of this sheet.

J. ADEQUACY OF SURVEY

The survey of the area is complete and is adequate to supersede prior surveys. The survey complies with the project instructions.

A comparison of the junctions with H-8239 (1:20,000, 1955) and H-8240 (1:25,000), 1955 inshore surveys for the current season will not be made until those smooth sheets are plotted. A discussion of those junctions will be made in the reports for those two sheets.

K. CROSSLINES

Crosslines represent approximately fourteen (14) per cent of the hydrography. The discrepancies at crossings are small (one or two fathoms or less) in all cases.

L. COMPARISON WITH PRIOR SURVEYS

Practically the entire area of this survey was previously surveyed by the U. S. Navy in 1934, H-6899 and H-6898 on a 1:60,000 scale, and H-6893, 1:15,000 scale. The Navy survey was in the nature of a reconnaissance survey. In general in depths of less than 100 fathoms the old and the new surveys agree within ten fathoms; there are several twenty to thirty fathom exceptions to the above statement. In depths from 100 to about 600 fathoms some of the depths of the old survey agree, some are up to 50 fathoms deeper and some 50 fathoms shoaler. There is no general displacement of depth curves, merely a ragged disagreement. This survey is more complete and should supersede the old survey. There are no dangers to navigation in the area of either survey.

M. COMPARISON WITH CHART

The charted soundings are derived from Survey No. H-6899, H-6898 and H-6893. See Chart No. 9193, 2nd. edition print 54-7/5. The new survey should supersede H-6899, H-6898 and H-6893 for the reasons cited in paragraph "L" above.

N. DANGERS AND SHOALS

There are no dangers to navigation or shoals within the limits of this survey.

O. COAST PILOT INFORMATION

See "Coast Pilot Notes, U. S. Coast Pilot -9-1954, Cape Spencer to Arctic Ocean, Ship EXPLORER, 1955" which will be submitted at a later date.

There are no anchorages in the area of this survey.

During the period of the survey there was an apparent westerly setting oceanic current of approximately one-half knot to a knot within the area of this survey. Reported to Coast Pilot Section

P. AIDS TO NAVIGATION

There are no aids to navigation within the area of this survey.

No bridges, submarine or overhead cables, or ferry routes exist.

Q. LANDMARKS FOR CHARTS

There are no landmarks for charts within the area of this survey.

R. GEOGRAPHIC NAMES

See "Special Report on Geographic Names, Adak, Kagalaska, Little Tanaga and Great Sitkin Islands, USC&GSS EXPLORER, Season 1955" which will be submitted at a later date. Received 11-1-55. 854. L. H.

Z. TABULATION OF APPLICABLE DATA

1. Forwarded with this report:
   (a) Combination Boat Sheet and Smooth Sheet H-8235.
   (b) Tracing used as overlay boat sheet.
   (c) 4 volumes of sounding records.
   (d) 1 envelope of fathograms.
   (e) 1 cahier of shoran abstracts.

2. Data forwarded separately:
   (a) Special Report on Geographic Names, Adak, Kagalaska, Little Tanaga and Great Sitkin Islands, USC&GSS EXPLORER, 1955.
   (b) Special Report on Fathometer Corrections, 1955, (*84) EXPLORER, Project CS-218.
   (c) Coast Pilot Notes, U. S. Coast Pilot, Part 11, Yakutat Bay to Arctic Ocean, EXPLORER, 1955.
   (d) Tide Observations at Elf Island.
   (e) Seasons Report, Ship EXPLORER, Project 1218.

Respectfully submitted

Francis X. Popper

Francis X. Popper
Lcdr., C&GS

TIDAL NOTE

To accompany Hydrographic Sheet EX-4355 Reg. No. H-8235

Tide reducers for the whole sheet were taken from the records of the Elf Island gage with no correction for distance from the gage. Tide reducers were not applied in depths greater than 150 fathoms.

Position of the gage: Latitude 51° 42' 48"N.
Longitude 176° 31' 46"W.

Staff reading of MLLW was 2.2 feet.

STATISTICS

Hydrographic Survey H-8235

Field No. EX-4355

Ship EXPLORER

Project 1218

Vol. No.	Day Ltr.	Date	No. Pos.	Wire Sdgs.	Sdg. Line Sta. Miles
1	A	7-24-55	115	0	107.0
1 & 2	B	7-25-55	198	0	152.1
3	C	7-26-55	61	9	33.9
3	D	8-13-55	103	0	82.2
3 & 4	E	8-17-55	124	0	98.4
4	F	8-18-55	62	8	35.3
		TOTALS	663	17	508.9

Area surveyed: 436.0 Sq. Stat. Miles

APPROVAL SHEET

H-8235 (EX-4355)

All hydrography on this survey was accomplished under my direct supervision. The method of smooth plotting conforms with Hydrographic Instruction 2, sec. 4.14 dated 30 November 1954.

The records and smooth sheet have been examined and are approved.

S. B. Grenell
Capt. C&GS
Commanding Ship EXPLORER

RH C

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. Apr. 1950

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coast and Surveys~~: 18 November 1955

Division of Charts: R. H. Carstens

Plane of reference approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 8235

Locality Adak Island, Aleutian Islands

Chief of Party: S. B. Grenell in 1955
Plane of reference is mean lower low water, reading
2.2 ft. on tide staff at Elf Island
6.4 ft. below B. M. 1 (1955)

Height of mean high water above plane of reference is 3.6 feet.

Condition of records satisfactory except as noted below:

Act'g Chief, ~~Division of~~ Tides ~~and Currents~~ Branch.

U. S. GOVERNMENT PRINTING OFFICE 877933

GEOGRAPHIC NAMES

Survey No. H-8235

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
Aleutian Islands } for title										2
Andreanof Islands }										3
										4
Boot Bay										5
Elf Island			(tide station: now name)							6
Adak Island									BGN	7
Kagalaska Island									"	8
Azamis Cove			(for title; north of limits of sheet)						"	9
										10
										11
				Names approved						12
				11-16-55. L. Heck						13
										14
										15
										16
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										25
										26
										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8235....

Records accompanying survey:

Boat sheets .....; sounding vols. ..4..; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 1-Env.;

special reports, etc. 1-Descriptive report, 1-Cahier, 1-Smooth sheet,

and 1-Cloth overlay tracing (to serve as the boat sheet).

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet		663
Number of positions checked		171
Number of positions revised		-
Number of soundings revised (refers to depth only)		-
Number of soundings erroneously spaced		2
Number of signals erroneously plotted or transferred		-
Topographic details	Time	10
Junctions	Time	-
Verification of soundings from graphic record	Time	4.5

Verification by Paul F. Harrison (Preliminary) Total time 16 Date 7/18/56

Reviewed by H. E. Evans Jr. Time 34 Date 3/15/56

Addendum by John W Knoop Time 13 Date 3/16/56

Inspect. [illegible] Time 74 Date 4-19-63

Time 17 Date 5-30-63

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

Review of Hydrographic Survey

REGISTRY NO . H-8235 FIELD NO . EX-4355

Alaska, Aleutian Islands, Andreanof Group, South of Kagalaska Island

Project No. 1218 (C.S. 218)

Surveyed - July, August, 1955 Scale 1:40,000

Soundings: Control:

808 Fathometer
EDO Fathometer

Shoran

Chief of Party - S. B. Grenell
Surveyed by - S. B. Grenell, J. Bowie, K. B. Jeffers and E. F. Hicks
Protracted by - K. B. Jeffers and E. F. Hicks
Soundings plotted by - F. X. Popper
Preliminary verification by - L. V. Evans III
Verified and inked by - P. E. Harrison
Reviewed by - L. V. Evans 16 March 1956
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with the unreviewed manuscripts of air-photographic surveys T-11326 through 11328 and T-11331 through T-11333, all done in 1953-55. Shoreline eastward from Cape Chisak is currently available only as a preliminary sheet compiled before field identification of control and field inspection, therefore it has not been applied to this survey.

The origin of the control is fully discussed in the Descriptive Report.

2. Sounding Line Crossings

The depths are in adequate agreement at all crossings.

3. Depth Curves and Bottom Configuration

In addition to the usual depth curves, which are adequately defined, the 600-fm. curve will be inked to depict a submarine valley.

The bottom generally is a smooth slope which becomes progressively steeper as it drops into deeper water toward the Aleutian Trench. This insular slope is indented by a rather prominent submarine valley which trends north-south along approximate long. 176°28' in the southwest corner of the survey. The valley breaks from the general slope at about 250 fms. and is well defined to the 600-fm. curve, where the spacing between sounding lines was increased. Beyond that depth the valley probably lies between sounding lines since there is an indication of its continuity to 1300-fm. depths at the survey limit.

4. Junctions with Contemporary Surveys

This survey makes an adequate junction with H-8234 (1955) on the west. The transfer of soundings at that junction is deferred pending complete verification. Considered in the Review Addendum

H-8239 (1955) and H-8240 (1955) to the north have not as yet been received in this office. Considered in Review Addendum

There are no contemporary surveys on the east or south. Charted hydrography on the east is in general harmony with this survey in depths less than 100 fms. Farther offshore the charted depth curves are displaced as much as 2 miles relative to the present survey. However, the charted hydrography involved is reconnaissance and therefore, close harmony with this well-controlled survey would not be expected. The meager charted hydrography to the south is in reasonable harmony with depths on this survey.

5. Comparison with Prior Surveys

H-6893 (1934), 1:15,000
H-6898 (1934), 1:60,000
H-6899 (1934), 1:60,000

The prior surveys listed were made by the Navy and cover all of the area of the present survey, except for the southern edge. Within the common areas these prior surveys are considered reconnaissance in comparison with the present well-controlled survey, and differences are presumed to arise from the nature of the surveys rather than from changes in the bottom. Differences with present depths range from 10 to 20 fms. in depths less than 100 fms., as for example in lat. 51° 41.1', long. 176°16.3', where a prior sounding of 66 fms. falls in present depths of 84 - 85 fms. In greater depths farther offshore prior soundings are out of position as much as 2 miles from comparable depths on the present survey. There is no

general error in position of depth curves but rather an erratic, accidental scattering of differences which reflects the weaker control of the 1934 work. Considering the nature of the prior surveys a more detailed discussion would be of no value.

The present survey supersedes the prior surveys within their common areas.

6. Comparison with Chart 9140 (latest print date 2/25/52)
Chart 9141 (latest print date 9/29/52)
Chart 9193 (latest print date 7/5/54)
Chart 8863 (latest print date 1/14/52)

A. Hydrography

The charted hydrography originates with the prior surveys previously discussed, supplemented by a few Navy trackline soundings in the area farthest offshore.

The present survey supersedes the charted hydrography within the area covered.

B. Aids to Navigation

There are no aids to navigation within the area of this survey.

7. Condition of Survey

(a) Since this survey has been given only a preliminary verification the final discussion of records and plotting is deferred pending complete verification. From the preliminary verification it appears that the plotting was accurately done. The field records are complete, except that the stamp recording the plotting and checking of control data was not completed on the smooth sheet.

(b) The Descriptive Report is complete and comprehensive.

8. Compliance with Project Instructions

This survey adequately complies with the Project Instructions.

9. Additional Field Work

This is a basic survey except in the vicinity of the submarine valley in lat. 51°22' to 51°28', long. 176°28', where additional lines required for extending the delineation of the valley to the 1000-fm. curve would be desirable.

Examined and Approved:

H. R. Edmonston
Chief, Nautical Chart Branch

E. R. McCarthy
Chief, Chart Division

J. C. Bull
Chief, Hydrography Branch

Earl O. Heaton
Chief, Division of Coastal Surveys

Addendum to Review

H-8235 (1955)

Verified and inked by - P. E. Harrison
Review Addendum by - John W. Knoop 4/19/63
Inspected by - I. M. Zeskind

The verification of this survey has been completed. Soundings and depth curves have been completely inked and the junctions have been completed.

Junctions with Contemporary Surveys

Adequate junctions were effected with H-8309(1956) on the east, with H-8234(1955) on the west, with H-8239(1955) on the northwest, and with H-8240(1955) and H-8307(1956) on the north.

Comparison with Chart 9140 (print date 4/23/62)
Chart 9141 (print date 6/19/61)
Chart 8863 (print date 5/4/59)
Chart 9193 (print date 2/18/63)
Chart 9102 (print date 7/17/61)

The present survey was partially applied subsequent to preliminary verification and review to charts 9140, 9141, and 9193. A comparison between the depths charted on charts 9140, 9141, and 9193 and the present survey depths shows discrepancies of as much as 100 fathoms in depths greater than 200 fathoms.

The present survey has been completely applied after preliminary verification and review to charts 8863 and 9102. A comparison between these charts and the present survey shows agreement between the charted and present survey depths.

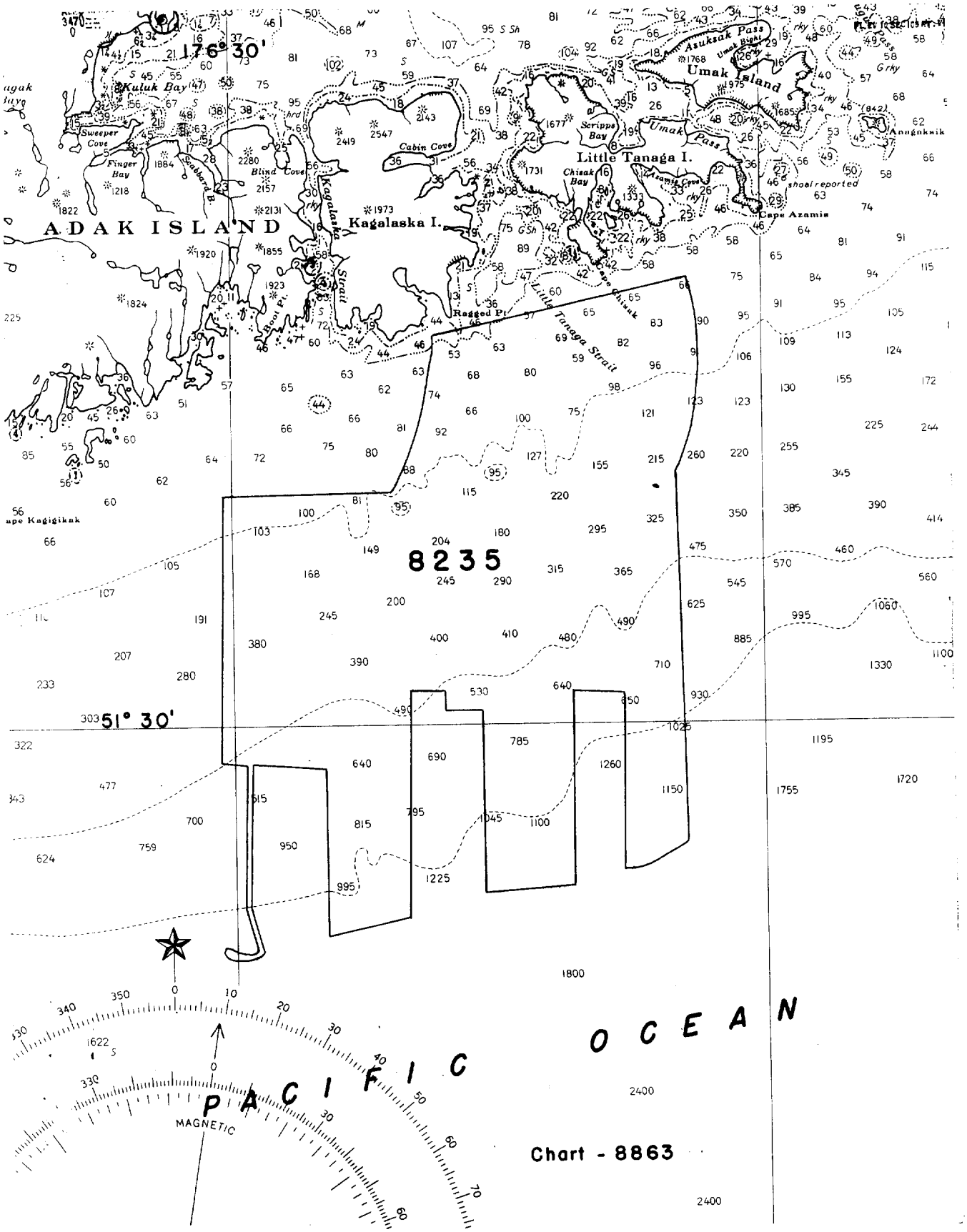
Condition of Survey

(a) Completion of the verification reveals that the smooth plotting was well done.

(b) The Descriptive Report is complete and comprehensive.

Approved:

Marvin T. Paulson
Chief, Nautical Chart
Division


176° 30'
51° 30'
ADAK ISLAND
Kagalaska I.
Little Tanaga I.
Umak Island
Kuluk Bay
Sweeper Cove
Finger Bay
Cabin Cove
Blind Cove
Scabbard B.
Kagalaska Strait
Ragged Pt.
Little Tanaga Strait
Asuksak Pass
Umak Pass
Scripps Bay
Chisak Bay
Cape Azamis
Anagnuk
Cape Kagigikak
8235
PACIFIC OCEAN
MAGNETIC
Chart - 8863

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8235

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
1/23/56	8863	G.F. Stegman	Before Verification and Review Partially applied Curves added from penciled sheet - soundings to supplement charted ones.
1/7/57	9193	Moran	After Verification and Review Partially applied filled in blank areas. Consider as fully applied until chart is reconstructed. JMA
May 1957	9102	Wittmann	After preliminary Verification and Review JMA
7-23-58	8863	Wittmann	After Prelim. Verification and Prelim. Review.
8-1-58	9141	R.K. DeSanden	[illegible]
5/25/60	9141	J.J. Evans III	After preliminary Verification and Review examined - no further application necessary until chart is reconstructed JMA
5-23-61	9140	R.E. Elkins	After Prelim. Verification and Review Partly applied thru chart 9141 dwg 7 and H-8235.
2/21/66	9193	John P. Wei	After Verification and Review Part Applied in area of Ch. 9140.
			Before After Verification and Review
			Before After Verification and Review

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.