U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. EX-2154 Office No. H-8141

LOCALITY

State Alaska - Aleutian Islands

General locality Andreanof Islands

Locality North of Kanaga Island

194 ...54

CHIEF OF PARTY

S. B. Grenell

LIBRARY & ARCHIVES

February 2, 1956 DATE

B-1870-1 (1)

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-8141

Field No. **EX-2154**

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Descriptive Report to accompany Hydrographic Sheet H-8141 (Field No. EX-2154)

Bobfof Island; Cape Sudak, Tanaga Island; and North side Kanaga Island, Alaska

Project CS-218, Season 1954

Scale 1:20,000

USC&GSS EXPLORER S. B. Grenell, Comdg.

Surveyed by: S. B. Grenell, K. B. Jeffers, M. E. Wennermark, J. C. Tison, Jr., H. G. Conerly, C. W. Clark and D. M. Whipp.

A. PROJECT

This survey was executed in accordance with the following instructions for Project CS-218:

Original Instructions dated 19 March 1952.

Supplemental Instructions dated 20 February 1953.

Letter 22/MEK, S-1-EX, dated 6 April 1953, subject: "Clarification of Instructions."

Supplemental Instructions dated 23 December 1953.

B. SURVEY LIMITS AND DATES

The survey involves inshore hydrography along the shores of Bobrof Island, in vicinity of Cape Sudak, Tanaga Island, and along the north coast of Kanaga Island from Northwest Point eastward to Longitude 177-25 W. The areas covered lie between the shore and offshore hydrography accomplished on Sheet H-8057.

Date of beginning survey - 15 May 1954
Date of completing survey - 16 July 1954

Junctions with prior surveys:

H-8054 (1953) - Falls Point to Cape Sudak, Tanaga Island

H-8053 (1953) - Kanaga Pass 👂 🖼 k

Junctions with contemporary surveys:

H-8057 (1953-1954) - North Side Tanaga, and Kanaga Islands & Folk.

H-8142 (Field No. EX-2254) - North Coast Kanaga Island

C. VESSEL AND EQUIPMENT

Hydrography on this sheet was accomplished by the Ship EXPLORER and by EXPLORER Launches #1, #2, and #3.

EDO fathometer No. 4 and 808 fathometer No. 113-S were in operation for the hydrography accomplished by the ship.

808 fathometer No. 49 was in operation for all hydrography accomplished by Launch #1. No hand lead soundings were taken from this launch.

808 fathometer No. 50 was in operation for all hydrography accomplished by Launch #2. The only hand lead soundings taken were for the purpose of determining least depths on shoals. The leadline required no correction for length for any of these soundings.

808 fathometer No. 60 was in operation for all hydrography accomplished by Launch #3. The only hand lead soundings taken were for the purpose of determining least depths on shoals or to obtain bottom samples.

Bottom samples were obtained from the launches using the hand lead equipped with snapper type sampling device or with tallow. No bottom samples were obtained from the Ship EXPLORER.

All launches were equipped with shoran and the greater part of the launch hydrography was so controlled. (See Special Reportyon Shoran Corrections, 15 May to 12 July 1954). All ship hydrography was controlled by sextant fixes.

D. TIDE AND CURRENT STATIONS

A portable automatic tide gage was maintained at Barabara Island (same location as the 1953 tide station) while the hydrography was in progress, except for the work accomplished on 16 July 1954. On that date the Barabara Island station was not in operation, and tide reducers were derived from the standard tide station at Sweeper Cove, Adak Island, applying a time and range correction. All other tide reducers derive from the Barabara Island station, with no time or range correction applied. (See tidal note attached to this report).

Current Station #4 was occupied with the Roberts Radio Current Meter at Lat. 51-51-30 N., Long. 177-33-18 W. (East of Cape Sudak).

E. SMOOTH SHEET

The smooth sheet projection was made by machine in the Washington office and shipped by mail to Seattle. Very little distortion was noted after it remained flat for several days in the plotting room of the EXPLORER.

Shoran arcs were drawn by hand by EXPLORER officers. -

Triangulation stations, and topographic stations for which computed geographic positions were available, were plotted by EXPLORER officers. The remaining topographic stations were transferred directly to the smooth sheet by pricking through shoreline manuscripts compiled by photogrammetric methods. T-9731, T-9734, T-9938, T-9939 and T-9924

There are no hydrographic stations on the sheet.

F. CONTROL STATIONS

Triangulations stations were established by G. C. Mattison in 1943 and by S. B. Grenell in 1953.

Geographic positions for topographic stations BOBO, MAT and SPAR were computed from fourth-order theodolite observations. BOBO and SPAR are recoverable, and were described but not marked. MAT is not recoverable and was not marked.

The position of shoran station SHIP was computed from a fourth-order theodolite direction and a short distance measured by steel tape. The station does not fall within the limits of this sheet, and shoran arcs from station SHIP were drawn from computed points. The shoran arcs from BOBO were also drawn from computed points.

The remaining topographic stations appearing on the sheet are photo-hydro stations from Shoreline Manuscripts T-9924 and T-9931 and were located by photogrammetric methods from 1953 and 1954 field inspection data.

G. SHORELINE AND TOPOGRAPHY

Shoreline and topography for Tanaga Island are from Shoreline Manuscript T-9931, as compiled by photogrammetric methods from 1953 field inspection data. For Bobrof Island the shoreline and topography are from Shoreline Manuscript T-9924, as compiled by photogrammetric methods from 1954 field inspection data, and for Kanaga Island the shoreline and topography are from Shoreline Manuscripts T-9938, T-9939 and T-9932, compiled by photogrammetric methods from 1953 and 1954 field inspection data.

7-9932 field inspected (1953-1954) (Photos 1952) - T-9938-9939-field inspected All offshore signals are on rocks. 1953; 1952 photographs.

The low water line was not defined by soundings. In some areas it coincides with the ledge or reef line and is defined on manuscripts. The fringe of kelp along rocky shoreline, the breakers on beaches, and the steep foreshore of ledges prevented sounding into the low-water line.

Kelp and foul areas are defined by the hydrography and, in many instances, were sketched on the boat sheet by the hydrographer as sounding progressed.

No discrepancies were noted between the topographic and hydrographic surveys except on Manuscript T-9938, off Pincer Point, immediately to northeast of triangulation station TOM, 1943. The offshore rocks shown in this locality on the manuscript have been revised as to number on the smooth sheet, and the detail as inked on the smooth sheet should govern in this instance. This revision was accomplished by the hydro-

John John

grapher by inspection from the hydrographic launch. Where offshore topographic features from the manuscripts were verified by the hydrographer, the distances from the hydrographic launch to the feature as recorded in sounding volumes are always estimated distances unless otherwise indicated and often place the feature in a slightly different position.

The rocks shows on the Smeoth Sheet at Place R. Agree with T. 9938, Field in spectromass.

Topographic features located by hydrography and not on manuscripts are:

<u>Feature</u>	Latitude	Longitude P	os. No.	Launch No.
Group of rocks awash	51-51.5 N.	177-36.0 W. 1	c thru 12c	3 .
- MLIW (9)%(3)			-	
Rock awash MLLW	51-45.32 N.	177-25.95 W.	53●	2 1
Rock awash MLLW	51-45.49 N.	177-26.96 W.	92•	2 1
Sunken rock	51-45.76 N.	177-27.83 W.	105 •	2 /
Rock awash MLLW	51-43.79 N.	177-36.08 W.	74d plus 2 sounding	-
Rock awash MLLW	51-44.99'N.	177-35.72 W.	_	3 W E

H. SOUNDINGS

All soundings on sounding lines were obtained with echo sounding equipment listed in paragraph C, above.

Hand lead soundings were obtained on shoals or at detached positions while obtaining bottom samples.

See "Special Report on Fathometer Corrections - Ship EXPLORER - Season 1954." (Library)

I. CONTROL OF HYDROGRAPHY

Hydrography was controlled by visual sextant fixes on shore signals and by shoran, using stations BOBO and SHIP.

See "Special Report on Shoran Corrections", Project CS-218, 15 May to 12 July 1954, for description of shoran stations and derivation of corrections applied to shoran distances. (Library)

J. ADEQUACY OF SURVEY

The survey is considered simplete and adequate for charting, and it complies with the Project Instructions and the Hydrographic Manual.

2 107 (7)547

There are no holidays.

See Appendix I for discussion of junctions with adjoining surveys and comment reference depth curves.

K. CROSSLINES

Crosslines represent about 8% of the regular system of sounding lines.

See appendix I for discussion reference discrepancies at crosslines.

L. COMPARISON WITH PRIOR SURVEYS

There are no prior surveys within the area of this survey except of a reconnaissance nature. It supersedes all such surveys.

M. COMPARISON WITH CHART

This is an original basic survey which supersedes all presently charted information.

N. DANGERS AND SHOALS

The entire shoreline is fringed with offlying rocks and kelp, and off Cape Sudak, Tanaga Island, a large shoal area, marked by kelp and rocks awash was delineated.

See Appendix I for a list of limiting dangers covered.

O. COAST PILOT INFORMATION

See "Coast Pilot Notes - U. S. Coast Pilot - Alaska, Part II, Yakutat Bay to Arctic Ocean - Ship EXPLORER - 1954" for Coast Pilot information and recommended anchorages.

During the survey the launches anchored at various locations in and behind kelp beds, or behind rocks. None of these are specifically recommended and are therefore not listed. In good weather a launch may tie up to kelp practically anywhere along the shoreline, or find a temporary anchorage among or behind offshore rocks.

P. AIDS TO NAVIGATION

There are no aids to navigation within the area of this survey, and no bridges, overhead or submerged cables, or ferry routes exist.

Q. LANDMARKS FOR CHARTS

The only landmarks are natural objects such as rocks and peaks or hills.

Those recommended specifically for charting are Hive Rock (Triangulation Station HIVE, 1943) and Coolie Hat (Triangulation Station PLUTO, 1953).

The double pinnacled rocks at triangulation station END, 1943 is also a useful landmark for entering and leaving Kanaga Pass and should continue to be charted as a 60 ft. elevation.

R. GEOGRAPHIC NAMES

See "Special Report on Geographic Names - Tanaga and Kanaga Islands, USC&GSS EXPLORER - Season 1953" and "Special Report on Geographic Names - Bobrof, Kanaga and Adak Islands - USC&GSS EXPLORER - Season 1954".

Z. TABULATION OF APPLICABLE DATA

Data forwarded with this report: Smooth Sheet H-8141

Boat Sheet H-8141 (EX-2154)

- 9 Sounding Volumes 1 thru 9.
- 2 envelopes of fathograms
- 2 bromides easterly portion of survey sheet H-8057 (1:60,000) enlarged to 1:20,000 scale.

Data forwarded separately:

- "Field Inspection Report Maps T-9921 thru T-9923, T-9927 thru T-9931, T-9935 thru T-9937, and T-9942, Tanaga Island, Alaska, Ship EXPLORER 1953", forwarded to Washington Office 25 September 1953.
- "Field Inspection Report T-9932 and T-9937 (part) thru T-9939 Kanaga Island, Alaska, Ship EXPLORER 1953", forwarded to Washington Office 23 November 1953.
- "Field Inspection Report Map T-9924, Bobrof Island, Alaska, Ship EXPLORER 1954", forwarded to Washington Office 14 August 1954.
- Tide Data for Barabara Island tide station forwarded 15 September 1954.

 1/4/ (1954, 5.8. Grene//)
- Special Report, on Shoran Corrections 15 May to 12 July 1954, Ship EXPLORER, forwarded 25 February 1955.
- Special Report on Fathometer Corrections, Ship EXPLORER 1954, forwarded 25 February 1955.
- Special Report on Geographic Names, Bobrof, Kanaga and Adak Islands 1954, forwarded 18 November 1954.

Coast Pilot Notes - Ship EXPLORER, 1954, forwarded 20 December 1954. Data for Current Station No. 4 forwarded 16 June 1954.

Season's Report - Ship EXPLORER, Project CS-218 - 1954, forwarded 30 November 1954. #10 4(1954) 5.0. Secape

Letter dated 12 april 1955 - Fathometer Conections for 1954

Respectfully submitted .

James C. Tison, Jr.
Commander, USC&GS

Statistics
Hydrographic Survey H-8141 (1954)
Field No. EX-2154
Ship EXPLORER
Project CS-218

Vol. No.	Day Ltr.	Date	HL or Wire Sdgs.	No. Pos.	Stat. Mi. Sdg. Lines
1 (Ship)	A	5/19/54	-	122	55.7
2 (Lch. 1)	а	5/15/54		43	11.7
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2 "	С	6/6/54		41	10.6
3 (Lch. 2)	a	5/15/54		76	16.9
3 "	ъ	5/20/54		134	24.7
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	f	6/29/54		121	31.3
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7 (Lch. 3)	a	6/26/54		67	22.2
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7 "	c	6/28/54	5	102	20.7
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9 "	g	7/16/54	***	54	11.7
		TOTALS	15	1861	486.5

TIDAL NOTE

To Accompany Hydrographic Sheet EX-2154, Reg. No. H-8141

For tide reducers on the whole sheet, a portable gage was maintained at Barabara Island.

Latitude: 51-48.55 Longitude: 177-44.52

With the exception of July 16, 1954, all reducers were taken from the records with no correction for distance from the station.

On July 16 the curve from Adak was used and adjusted for time and height.

The staff reading of MLLW on the Barabara gage was 2.8 ft.

Approval Sheet H-8141, EX-2154

A portion of this survey was done by the EXPLORER under my direct supervision. The remainder was accomplished by the EXPLORER's launches. The boat sheets and fathograms were inspected as the work progressed. The survey is complete and adequate. No additional field work is recommended.

The positions were smooth plotted by this command and the records transferred to the Processing Office for plotting of soundings.

The descriptive report, records and smooth sheet have been examined and are approved.

S. B. Grenell

Captain, C&GS

Comdg. Ship EXPLORER

PROCESSING OFFICE NOTES H-8141

E. SMOOTH SHEET

The smooth sheet projection was machine ruled in Washington. All control was plotted and all topographic detail was transfered by the EXPLORER'S officers.

G. SHORELINE AND TOPOGRAPHY

17 Lat 51°4470', 1009, 177° 30,55'

Three rocks shown on T-9938 y just north of Pincer Point were omitted on the smooth sheet. See boat sheet EX-2154b.

H. SOUNDINGS

177 Review A correction to soundings taken with 808 fathometer No.113S, has been made in accordance with Captain Grenell's letter of 12 April 1955.

Reducers were conclud however reduced nounder and smooth sheet soundings were not corrected until neufration.

AD ADEQUACY OF SURVEY

(1954) (1953-54) Junctions with H-8057 and H-8142 have been compared and appear to be in agreement. Depth curves can be adequately drawn.

K. CROSSLINES

The crossings appear to be satisfactory except in some areas of steep and irregular bottom. These differences resolve themselves on rescanning the fathograms.

N. DANGERS AND SHOALS

Several rocks, in an area of kelp East of Cape Sudak, were by hydro. also have cross ranges from the hydrographic launch. Lint the same laked. located by cross ranges from the hydrographic launch. Linthe same area there are several rocks located from the air-photos. Both groups are shown on the smmoth sheet, the photo locations in ink and the hydrographic in pencil.

Other shoal areas and rocks are labeled on the smooth sheet.

Respectfully submitted

-111.11And

William MarMartin Cartographer, C&GS

Approved and Forwarded

GEOGRAPHIC NAMES ON H-8141

BARNES POINT

BERING SEA

BOBROF ISLAND

CABIN POINT

GARE REDAN Point

CAPE SUDAK

COOLIE HAT

HIVE ROCK

KANAGA ISLAND

KANAGA SOUND

NORTHWEST POINT

PENDANT POINT

PINCER POINT

TANAGA ISLAND

THE SIGNALS

	GEOGRAPHIC NAMES			To Ou	S. Wood S.			Circle of Mr.	No Medalin	1105	
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Hydrographic Surveys (Chart Division)

Records accompanying survey:				
Roat sheets 2; sounding vols; w	ire drag	vols	;	
bomb vols; graphic recorder rolls 5	-Envelope	s		
special reports, etc. 1-Descriptive report. 1-	Smooth sh	eet.	• • • •	
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TIDE NOTE FOR HYDROGRAPHIC SHEET

NDWANTONX nfxGoastalx Surveysxx

27 February 1956

Division of Charts:

R. H. Carstens

Plane of reference approved in 9 volumes of sounding records for

HYDROGRAPHIC SHEET

8141

Locality

Aleutian Islands, Alaska

Chief of Party: S. B. Grenell in 1954 Plane of reference is mean lower low water 2.8 ft. on tide staff at Barabara Island 7.2 ft. below B. M. 1 (1953)

3.0 ft. on tide staff at Sweeper Cove 19.6 ft. below B.M. 16 (1951)

Height of mean high water above plane of reference is:

Barabara Island - 3.2 ft. Sweeper Cove - 3.7 ft.

Condition of records satisfactory except as noted below:

Branch Chief, Branch Tides and Xurrentsx

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U. S. GOVERNMENT PRINTING OFFICE 877988

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8141

FIELD NO. EX-2154

Alaska, Aleutian Islands, Andreanof Islands, North of Kanaga Island

Project No. CS-218

Surveyed - May-July, 1954

Scale 1:20,000

Soundings:

Control:

Hand lead 808 Fathometer Edo Fathometer

Shoran
Sextant fixes on shore signals

Chief of Party - S. B. Grenell
Surveyed by - S. B. Grenell, M. E. Wennermark, C. W. Clark,
D. M. Whipp, H. G. Conerly, J. C. Tison Jr.,
and K. B. Jeffers

Protracted by - C. D. Upham and G. E. Haraden
Soundings plotted by - C. R. Lehman
Verified and inked by - D. J. Kennon and J. E. Gearhart
Reviewed by - I. M. Zeskind 11-2-56
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with reviewed air-photographic surveys T-9924 (1943-54), T-9931 (1953), T-9932 (1952-54) T-9938 (1952-54) and T-9939 (1952-54).

The source of the control is given in the Descriptive Report.

2. Sounding Line Crossings

The sounding line crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated, except close inshore where the foul areas and inshore dangers prevented development to the low-water line. Several supplementary curves between depths of 50 and 65 fms. were drawn to better delineate the ridge extending north of Redan Point, Bobrof Island.

This survey covers the following 3 areas:

- a. The island shelf and a portion of the island slope which surrounds Bobrof Island.
- b. The island shelf in the vicinity of Cape Sudak, Tanaga Island.
- c. The island shelf extending from the north shore of the west portion of Kanaga Island.

The bottom in area "a" is generally very irregular in depths less than 100 fms. and fairly irregular in greater depths. Ledges and shoals contribute to the bottom irregularity.

The bottom in area "b" is generally very irregular. Ledges, reefs, pinnacles, shoals and offlying rocks contribute to the bottom irregularity.

The bottom in area"c" is very irregular in depths less than 10 fms, and fairly smooth in greater depths. Ledges, reefs, pinnacles and offlying rocks contribute to the bottom irregularity in the inshore area.

4. Junctions with Contemporary Surveys

At Bobrof Island an adequate junction was effected with H-8057 (1954) which surrounds the present survey.

At Cape Sudak adequate junctions were effected with H-8057 (1954) on the northeast and southeast, with H-8054 (1954) on the northwest and H-8053 (1953) on the southwest.

On the north side of Kanaga Island, adequate junctions were effected with H-8053 (1953) on the west, with H-8057 (1953-54) on the north, and with H-8142 (1954) on the east.

5. Comparison with Prior Surveys

H-6778 (1943), 1:120,000 H-6909 (1933), (USN), 1:40,000

Survey H-6778: This small-scale reconnaissance survey covers the periphery of the present survey which surrounds Bobrof Island. Several soundings on the prior survey also fall on the present survey in the vicinity of Northwest Pt., Kanaga Island. A comparison between the prior and present survey shows no important differences in depths, considering the irregularity of the bottom, the steep gradients, and the small-scale of the prior survey.

Survey H-6909: Only a single line of soundings falls within the area of the present survey east and northeast of Cape Sudak, Tanaga Island. A comparison between the prior and present surveys reveals differences in depths of as much as 200 fms. These discrepancies in depths are attributed to poor horizontal control as evidenced by the disagreement noted in the position of the shoreline and the distances from one island to another on the prior and present surveys.

The present survey is adequate to supersede the prior surveys within the common areas.

6. Comparison with Chart 9145 (Latest print date 6-11-56)

A. Hydrography

The charted hydrography originates with the boat sheet of the present survey prior to verification and review. Only minor differences of 1-ft. to 2 fms. are noted between the charted and present depths except for the 1-fm. sounding charted in lat. 51°55.22', long. 177°27.6' which is a reduced sounding of 8.5 fms. in the sounding volumes.

The present survey is adequate to supersede the charted hydrography.

B. Aids to Navigation

There are no aids to navigation within the area covered by the present survey.

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive, except that the Seattle Processing Office failed to make revisions of phase corrections to about 150 soundings which were furnished by the field party.
- b. Much of the inshore rock detail was redrafted because of illegibility, congestion and poor drafting. Elevation numerals originally applied, were as small as position numbers and had been unnecessarily applied to numerous inshore bare rocks. Some elevations transferred from the topographic sheets had been inked in black instead of red as required on a hydrographic sheet.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

Additional Field Work Recommended

The survey is considered basic and no additional field work is recommended.

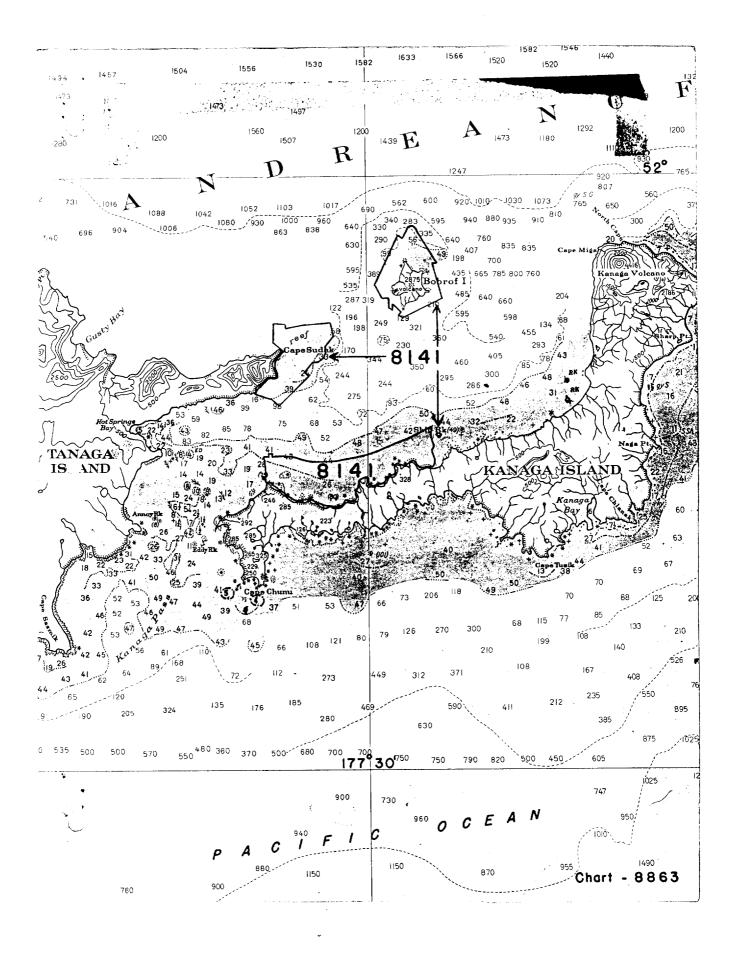
Examined and Approved:

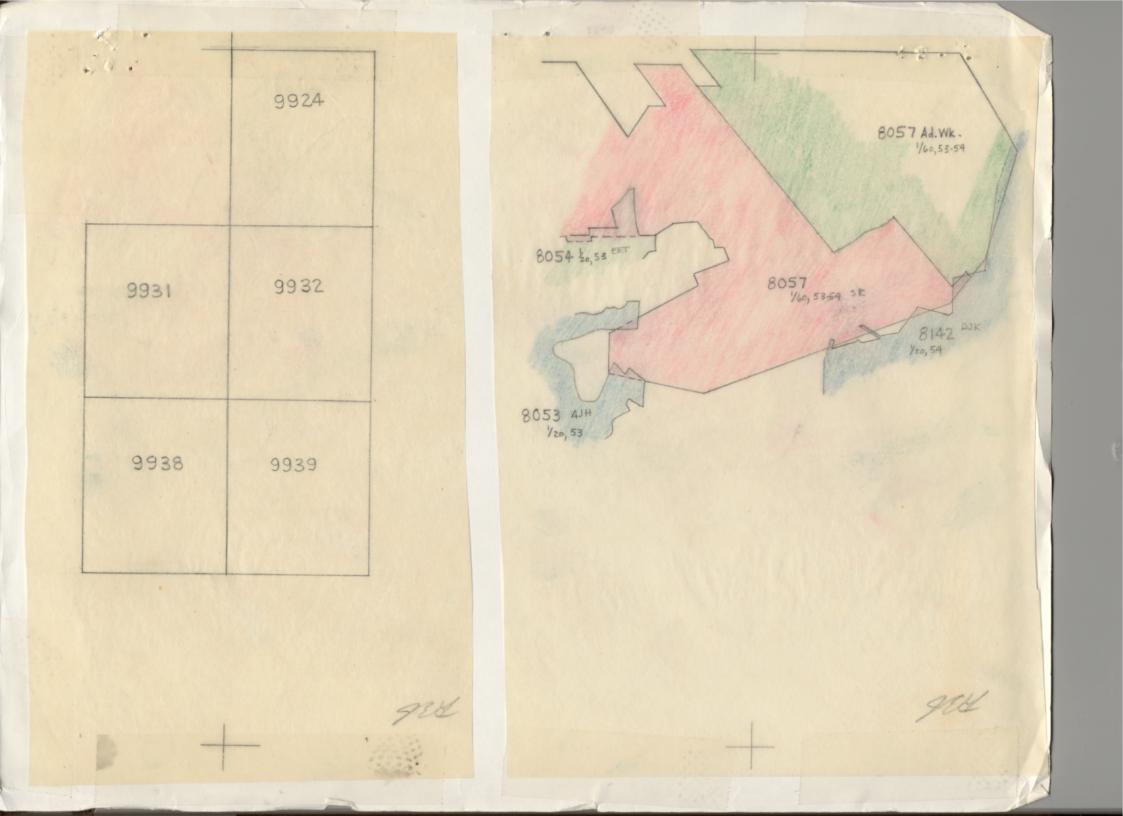
Max G. Ricketts Chief, Nautical Chart Branch

Charles A. Schanck Chief, Division of Charts

Karl B. Jeffers Chief, Hydrography Branch

Chief, Division of Coastal Surveys





NAUTICAL CHARTS BRANCH

SURVEY NO. <u>#-8/4/</u>

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
2/17/5%	9145	C.R. Witten	Before After Verification and Review
8/1/38	863	C.R. Witter	Ortical sourching tradsoul,
6-10-58	8863	CR. Willman	Before After Verification and Review
	, , ,		
10-17-58	9145	R.K. De Lander	Before After Verification and Review. Consider as fully
		• 11 6.	Before After Verification and Review. Consider as fully applied even though some edge still differ a sightly in por and dipth from the amount obest.
12/20/92	He467	Joseph Robert	Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

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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.