8143

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-2354 Office No. H-8143

LOCALITY

State Alaska - Aleutian Islands

General locality Andreanof Group

Locality Kanaga Island, Adak Strait

194 ...54

CHIEF OF PARTY

S. B. Grenell

LIBRARY & ARCHIVES

DATE February 2, 1956

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-8143

Field No. EX-2354

State Alaska - Aleutian Isla	ands
General locality Aleutian Islands	Andreanof Group
Locality Kanaga Island, Adak S	trait
Scale 1:20,000	Date of survey 8 July to 11 Aug. 54
Instructions dated 19 Mar 52, 20	Feb 53, 23 Dec 53, 6 Apr 53
Vessel <u>C&GS EXPLORER</u>	
Chief of party S. B. GRENELL	
Surveyed by S.B. Grenell, K.B.	Jeffers, M.E. Wennermark, J.C. Tison Jr., D. M. Whipp
Soundings taken by fathometer, graph	nc recorder, hand lead, wife
Fathograms scaled by Fathometer	operators
Fathograms checked by KBB. Jeffer	s, D.M. Whipp, A.C. Hagland, C.D. Upham
A	
Soundings penciled by C.A.J. Pa	uw
Soundings in fathoms A feet a	at MLW MLLW and are based on a velocity of sound of 800 fms. per sec.
Remarks:	

1.18

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SHEET H-8143

(FIELD NO. EX-2354)

NORTH END OF KANAGA ISLAND, AND EAST SIDE OF 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.

D. M. WHIPP

A. PROJECT

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

1. Original Instructions dated 19 March 1952.

2. Supplemental Instructions dated 20 February 1953.

3. Supplemental Instructions dated 23 December 1953.

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

B. SURVEY LIMITS AND DATES

The survey involves inshore hydrography along the northern tip of Kanaga Island from the vicinity of Cape Miga eastward and along east side of Kanaga Island on western shore of Adak Strait. The areas covered lie between the shore and off shore hydrography accomplished on Sheet H-8139.

Date of beginning survey - 8 July 1954
Date of completing survey - 11 August 1954

Junctions with prior surveys:

H-6881 - Adak Strait (northern part)
H-6882 - Adak Strait (southern part)
(1933)

See Review, Prs 4 & 5

C. VESSEL AND EQUIPMENT

Hydrography on this sheet was accomplished by the Ship EXPLORER and by EXPLORER Launches #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. 50 was in operation for all hydrography accomplished by Launch #2. The only handlead soundings taken were for the purpose of determining least depths on shoals or to obtain bottom samples. 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 handlead soundings taken were for the purpose of determining least depths on shoals or to obtain bottom samples. The leadline required corrections for length as noted in paragraph H.

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

Both launches were equipped with shoran and most of the launch hydrography was shoran controlled. "See special report on Shoran Corrections, 234July to 12 September 1954.) All ship hydrography was controlled by sextant fixes.

D. TIDE AND CURRENT STATIONS

Shoq /
A portable automatic tide gage was maintained at Sharp Point, Kanaga
Island while the hydrography was in progress, except for the work accomplished on "A" day, 8 July 1954. On that date the Sharp Point tide gage was
not yet in operation, and the records from the gage at Barabara Island were
used. No range or time corrections were applied to the reducers. (See
tidal note attached to this report.)

Current Station #6 was occupied with the Roberts Radio Current Meter at Lat 51° 47'06"N, Long 177°05'25"W (East of Naga Point) in accordance with instructions.

E. SMOOTH SHEET

The smooth sheet projection was made by hand in the Seattle Processing Office. No appreciable distortion was noted.

Shoran arcs were drawn in the Seattle Processing Office and checked by EXPLORER officers.

Triangulation stations were plotted by the Seattle Processing Office. Shoreline and topographic stations located by photogrammatric methods were transferred to the smooth sheet by the Seattle Processing Office.

There are no hydrographic signals on the sheet.

The transfer of shoreline and topographic details has been verified by EXPLORER officers.

F. CONTROL STATIONS

Triangulation stations were established by S. B. Grenell in 1954, C. D. Meaney in 1943, G. C. Mattison in 1943 and USN in 1933.

The positions of shoran stations KEEN and GULL were computed from fourth-order theodelite directions and short distances measured by steel tape. Station GULL does not fall within the limits of the sheet. (See computations for positions of shoran stations KEEN and GULL included in descriptive report for Hydrographic Sheet H-8139.)

(reviewed)
All topographic stations appearing on the sheet are photo-hydro stations from Shoreline Manuscripts numbers T-9926, T-9925, T-9934, and were located by photogrammatric methods from 1953 and 1954 field inspection data. (See Field Inspection Report for Maps T-9925, T-9926, T-9932, thru T-9934, T-9960 and T-9941.)

G. SHORELINE AND TOPOGRAPHY

Shoreline and topography for Kanaga Island are from Shoreline Manuscripts T-9926, T-9925, T-9934 and T-9941, compiled from 1953 and 1954 field inspection data. (See ref para F.)

All offshore signals are on rocks.

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

Kelp and foul areas are defined by the hydrography and in most cases were sketched on the boat sheet by the hydrographer during the progress of the survey.

Discrepancies between the topographic and hydrographic surveys are noted in section U of this report. Where offshore topographic features from the manuscripts were verified by the hydrographer, it is to be noted that distances from the hydrographic launch to the feature as recorded in the sounding volumes are always estimated unless otherwise indicated.

H. SOUNDINGS

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

The leadline soundings taken by Launch #3 were corrected in accordance with the following:

Mark (fms)	True length (fms)	Correction (fms)
3	3.0	plus 0.1
4	4.1	# 0.1
All intermediate	marks	" O.1
23	23.1	^H 0.1
24	24.2	# 0.2
All intermediate	marks	# 0.2
27	27 .2	" 0.2

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

See also "Special Report on Tathometer Corrections - Ship EXPLORER - Season 1954."

I. CONTROL OF HYDROGRAPHY

Hydrography was controlled by sextant fixes on shore signals and by shoran using stations KEEN and GUILL.

See "Special Report on Shoran Corrections", Project CS-218, 23 July to 12 September 1954 for description of shoran stations and derivation of corrections applied to shoran distances.

J. ADEQUACY OF SURVEY

The survey is considered complete and adequate for charting and complies with the Project Instructions and practices noted in the Hydrographic Manual. There are no holidays in the sounding lines.

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

K. CROSSLINES

Crosslines represent about 9% 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 that Review, of the U.S. Navy Aleutian Islands Survey Expedition of 1933. Reg. No. H-6881 and H-6882. These surveys are of a reconnaissance nature and this survey supersedes all such surveys.

M. COMPARISON WITH CHART

This is an original basic survey and supersedes all presently ~ Review, PG charted information.

N. DANGERS AND SHOALS

Shoal
The entire shoreline is fringed with offlying rocks and kelp, and off Sharp Point, Kanaga Island, a large reef and shoal area, marked by kelp and rocks awash, was delineated.

Two new shoals were found as follows:

POS. NO.	LAT. (N)	LONG. (W)	LEAST DEPTH(fathometer)
150d \$5(1ch 2) 61c + 2(1ch 2)	51-47.07 51-49.30 -	177-05.6\$ 177-07.15	62 fathoms 4 1 fathoms changed to
		3	4 for RHC

Changed to 4 for Ret C 1/29/56

The 12 fathom shoal was developed with two splits, and no handlead soundings were obtained. A total of about ten minutes was spent running these splits.

The 62 fathom shoal was discovered on one of the regular sounding lines. No development was accomplished and no handlead soundings were obtained. The line spacing used in this area is sufficient and no further development is recommended.

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. The ship made frequent use of the anchorage area between tharp Point and Round Head, Kanaga Island.

During the survey the launches anchored at various locations in and behind kelp beds, and behind rocks. In good weather launches were able to the up to kelp nearby anywhere along the shoreline, or find temporary anchorage behind offshore rocks. None of these locations are specifically recommended, and are not listed.

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, peaks, or hills.

See Special Report on Landmarks for Charts - Ship EXPLORER - Season 1954.

C.L. 995 (1954)

R. GEOGRAPHIC NAMES

See special report on Geographic Names - Bobrof, Kanaga and Adak Islands - USC&GSS EXPLORER - 1954.

U. MISCELLANEOUS

(To be added later on extra sheet).

Z. TABULATION OF APPLICABLE DATA

Data forwarded with this report:

- 1. Smooth Sheet (H8143).
- 2. Two Boat Sheets H-8143 (EX-2354a, EX-2354b).
- 3. Seven Sounding Volumes 1 thru 7.

4. Fathograms for EXPLORER, Launch 2, and Launch 3

Data forwarded separately:

- (a) "Field Inspection Report for Maps T-9925, T-9926, T-9932 thru T-9934, T-9940, and T-9941 Project CS-218, Ph-34, Kanaga Island, Alaska, Ship EXPLORER 1954.
- (b) Tide data for Barabara Island tide station forwarded 8 September 1954.
- (c) Tide data for Shard Point tide station forwarded 11 October 1954.
- (d) Special Report on Shoran Corrections, 234 July to 12 September 1954 Ship EXPLORER, forwarded 11 March 1955. Grenell, Sp.Rp.#141(1954)
- (e) Special Report on Fathometer Corrections Ship EXPLORER Season 1954 forwarded 25 February 1955. Granel, Sp. Rp. #142 (1954)
- (f) Special Report on Geographic Names BOBROF, KANAGA, and ADAK ISLANDS 1954, forwarded 18 November 1954.
- (g) Coast Pilot Notes Ship EXPLORER, 1954 forwarded 20 December 1954.
- (h) Data for Current Station Observations on Station No. 6 forwarded 14 September 1954.
- (i) Second and Third order triangulation. Adak Strait Ship EXPLORER 1954.
- (j) Computations for positions of Shoran Stations KEEN and GULL included in Descriptive Report for Hydrographic Survey H-\$139.
- (k) Special Report on Non-floating Aids and Landmarks for Charts Ship EXPLORER 1954 Season. C.L. 995 (1954)
- (1) Season's Report Ship EXPLORER, Project CS-218-1954, forwarded 30 November 1954. Sp. Rp.#104(1954) Grene!

Respectfully submitted

allan C. Haghina

ALLAN C. HAGLUND Ensign USC&GS

STATISTICS

HYDROGRAPHY SURVEY H-8143 (1954) FIELD NO. EX-2354 SHIP EXPLORER PROJECT CS-218

VOL. NO.	DAY LTR	•	BOTT. R WIRE	SAMPLE SDGS	No. Pos.	STATUTE MI. SDG_LINES
1 (ship) 2 (Lch 2) 2 " 2 & 3 " 3 " 3 & 4 " 5 (Lch #3) 5 6 6 & 7 "	A a b c d e a b c d e f	7/8/54 7/23/54 7/24/54 7/29/54 8/3/54 7/23/54 7/29/54 8/3/54 8/1/54	91-		46 9 141 155 171 161 136 134 140 131 97	19.6 4.2 40.3 41.1 48.5 33.4 40.2 31.7 41.4 37.0 25.1 15.8
	TOT	ALS	18		1376	378.3

AREA - 275. square statute miles

TIDAL NOTE

8143

To Accompany Hydrographic Sheet EX-2354, Reg. H-8053

Nearly all tide reducers were taken from the records of a tide gage maintained at Sharp Point, Lat. 51-52.2

(see name Long. 177-04.1

The staff reading of MLLW was 2.7 ft.

When the ship worked on "A" day there was no gage at Sharp Point, so the records at Barabara Island were used. The position is:

Lat. 51-48.55 Long. 177-44.52

The staff reading of MLLW was 2.8 ft.

Due to the small difference in time and height of the tide over the whole area no corrections for distance from the gage were made.

<u>k_</u>

APPROVAL SHEET H-8143 EX-2354

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

U. COMMENTS ADDED BY SMOOTH PLOTTER:

a. Smooth Sheet:

The shoran arcs were measured directly for station KEEN and found to be short by an average of seven meters. The seven mile arc was found to be short by about 14 meters at the scale of the sheet. The GULL arcs were found to be correct. No allowance was made for the KEEN arcs.

In tensidered critical to positioning of hydrography

b. Shoreline and topography:

major No_Adiscrepancies were found between the hydrography and the photomanuscripts.

c. Control of Hydrography:

The soundings SE'ly from KEEN were controlled by one sextant angle and usually both shoran arcs. In this area the angle and the arc which was being "run"/were held in the smooth plotting. Tide rips are noted off charp Point and the spacing of fixes seems erratic at times. The boat sheet was used as a guide in plotting these positions, however the fixes in this area are considered weaker than the remainder of the survey and may well shift somewhat when the soundings are penciled.

Kelp symbols are not shown and elevations of offshore rocks are left in pencil to be completed later. See P. Office notes

Metald E. Haraden Gerard E. Haraden Lt(jg) C&G Survey

PROCESSING OFFICE NOTES H-8143

A. SMOOTH SHEET

As noted in the report by the field party the smooth sheet was prepared in the Seattle Processing Office.

J. ADEQUACY OF SURVEY

Junction with H-8142 was compared and found to agree.

Depth curves can be adequately drawn except those close inshore.

K. CROSSLINES

Crosslines appear to be in agreement.

N. DANGERS AND SHOALS

No list of limiting dangers was made. Shoal soundings on the sheet are darkened so as to stand out. The only area that would consitute a real danger is south of signal "Rig" at Lat. 51° 51'.2 Long. 177° 03'.2. In this vicinity are several shoal soundings, the shoalest of which is 2.6 fathoms, pos. 53-54e, launch #3. Shootest sounding is 4.5 fms. from preliminary examination by Canten section.

U. MISCELLANEOUS

In reference to comment "a" under item "U" by the smooth plotter, apparently no allowance for shrinkage of the sheet was made. A thorough check was made and it was found that the projection itself had shrunk about 0.6 mm over 10' of Lat. The tabular distance is 0.92721 m and the scaled distance is 0.92660 m. Applying this scale difference, as a factor, the Shoran distances, from station KEEN, were found to agree. Inasmuch as the shrinkage is nearly as much in the East and West direction as it is in the North and South, it is difficult to understand how the distances from station GULL, which is off the sheet, could be checked as correct. (probably because of method of plotting arcs)

Under comment "c" item "U", the soundings in the area southeasterly from KEEN appear to agree with little adjustment. (adjusted during verification)

The rock elevations have been inked and kelp symbols added to the sheet.

Respectfully submitted,

William M. Martin

Cartographer-in-charge, SPO

William M. Mar

Approved and forwarded:

L. S. Hubbard, Captain, C&GS

Seattle District Officer

	GEOGRAPHIC NAMES Survey No. #-\$143			do do ou	S. Model	\$ /s .s.	Moos	O Gride of R	MOO METOLINE	Allos Lis	. / .
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	Kanaga Island									BON	5
	Adam Strait									Ì	6
	Naga Point			·						BAY	7
-	Shoal Point	*(not	Sha	rpp	T Pe	-B&	4			8
	Round Head					.g.e	C1210.	7		1,	9
	North Cape									-1	1.0
											11
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					•						14
	Tide Stations.										15
	Barabara Isla	ind.	,			121	1				16
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Hydrographic Surveys (Chart Division)

Records accompanying survey:	
Boat sheets 2; sounding vols7; w	ire drag vols;
bomb vols; graphic recorder rolls	3-Envelopes
special reports, etc. 1-Descriptive report, an	d 1-Smooth sheet.
•••••••••••••••	••••••
The following statistics will be submitted wirepher's report on the sheet:	th the cartog-
Number of positions on sheet	1376
Number of positions checked	. <i>58</i>
Number of positions revised	. 28
Number of soundings revised (refers to depth only)	81. Il stys.
Number of soundings erroneously spaced	• • • •
Number of signals erroneously plotted or transferred	• • • • •
Topographic details	Time 10 hrs
Junctions	Time Shrs
Verification of soundings from graphic record	Time 8 hrs.
Verification by ment Shomes Total time	6 hrs. 129. hrs. Date 3-17-58
Reviewed by Time	32 Dete 9 April 1958

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8143

FIELD NO. EX-2354

Aleutian Islands, Andreanof Islands, Kanaga Island, Adak Strait

Surveyed July - August 1954

Scale 1:20,000

Project No. CS-218

Soundings:

Control:

Edo Echo Sounder 808 Depth Recorder Hand lead

Shoran
Sextant fixes on shore
signals

Chief of Party - S. B. Grenell
Surveyed by-S. B. Grenell, K. B. Jeffers, M. E. Wennermark,
J. C. Tison, Jr., & D. M. Whipp
Protracted by - G. E. Haraden
Soundings plotted by - C. A. J. Pauw
Verified and inked by - E. Thomas
Reviewed by - T. A. Dinsmore
Inspected by - R. H. Carstens

1. Shoreline and Control

The origin of the shoreline and control is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

Depth curves of 10 fms. and deeper are completely delineated; in depths less than 10 fms., the steep, rocky foreshore or extensive foul areas along shore allowed only fragmentary development of the inshore curves.

The area of this inshore survey lies within the limits of the island shelf. The bottom is rugged and irregular, with many shoals and pinnacles rising sharply from the uneven slope of the shelf. A foul area extends about $\frac{1}{2}$ mile offshore from Shoal Point.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-8057 (1953-54) and H-8142 (1954) on the extreme northwest and with H-8144 (1954-55) on the south.

The junction with H=8139 (1954) on the north and east will be considered in the review of that survey.

5. Comparison with Prior Surveys

H-6881 and H-6882 (1933) 1:40,000

The present survey falls within the area covered by these prior reconnaissance surveys by the U. S. Navy. A comparison of the prior and present surveys reveals no appreciable changes in bottom. However, the widely spaced old sounding lines failed to reveal much critical information disclosed by the closer development on the present survey.

With the retention of several bottom characteristics, the present survey is adequate to <u>lentirely</u> supersede these prior reconnaissance by surveys within the common area.

6. Comparison with Chart 9193 (Latest print date 6/3/57)

A. Hydrography

Charted hydrography originates with the previously discussed surveys supplemented by application of the present survey prior to verification and review. From the latter, several shoal soundings so charted were subsequently interpreted to be kelp traces on the fathograms and accordingly revised on the smooth sheet. The following are some important examples of such revisions:

Charted(unverified)	Latitude	Longitude	Verified Smooth Sheet
4 3/4 fms. 3 1/2 " 6 3/4 " 3 "	51°55.63°	177°04.3'	8.9 fms.
	50.8°	05.68'	6.1 "
	50.48°	05.68'	10.1 "
	44.02°	06.72'	8.4 "

н-8143 (1954) -3

The present survey is adequate to supersede the charted hydrography within the survey limits.

B. Aids to Navigation

No aids to navigation are charted within the limits of the present survey.

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was satisfactory.
- c. Numerous soundings originally scanned on the top of kelp traces were revised in the Washington Office.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work

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

Examined and approved:

Max G. Ricketts

Chief, Nautical Chart Branch

Karl B. Jefffers
Chief, Hydrography Branch

Chief, Division of Coastal Surveys

Ernest B. Lewey

Chief, Division of Chark

TIDE NOTE FOR HYDROGRAPHIC SHEET

Division xof CoastelxSurveys:

14 March 1956

Division of Charts:

R. H. Carstens

Plane of reference approved in 7 volumes of sounding records for

HYDROGRAPHIC SHEET

8143

Locality

Kanaga Island, Adak Strait

Chief of Party: S. B. Grenell in 1954
Plane of reference is mean lower low water, reading
2.9 ft. on tide staff at Tanaga Island (Vic. of Barabara I.)
7.1 ft. below B. M. 1 (1953)

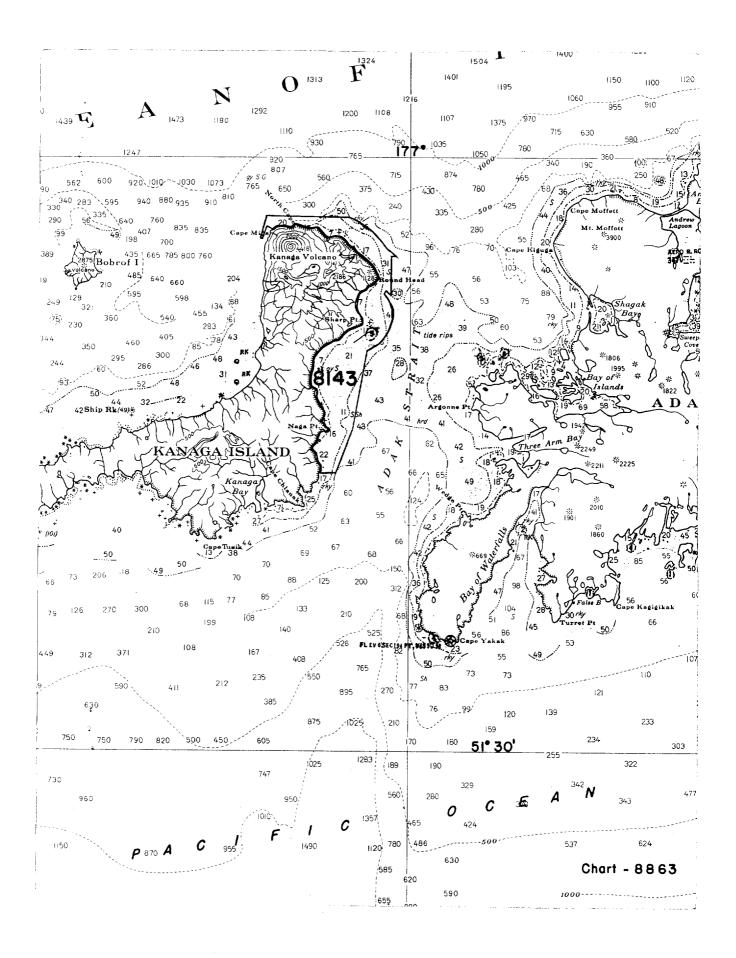
2.7 ft. on tide staff at Sharp Point, Kanaga Island
10.5 ft. below B.M. 1 (1954)

Height of mean high water above plane of reference is 3.2 feet.

Condition of records satisfactory except as noted below:

Chief, Miximionx of Tides and Churentes

U. S. SOVERNMENT PRINTING OFFICE 877933



NAUTICAL CHARTS BRANCH

SURVEY NO. H-\$143

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
F/2/56	8863	H.F.Stegman	Before Verification and Review Partially applied.
8/1/56	78863n	Enthras	critical some surp rocks only
Nov. 156	9193	text thraw	Before After Verification and Review
1 0 -	44.		
6-20-58	8863	OR. Willman	Before After Verification and Review
5/8/59	9/93	Alser	Betwee After Verification and Review Bernelly Spaces
12/30/92	16467	Juseph Robinson	Before After Verification and Review
			Before After Verification and Review
-			Before After Verification and Review
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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.