

8053

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-2353 Office No. H-8053

LOCALITY

State Alaska - Aleutian Islands

General locality Andreanof Islands

Locality Kanaga Pass

194/53

CHIEF OF PARTY

S. B. Grenell

LIBRARY & ARCHIVES

DATE MAY 28, 1954

8-1870-1 (1)

8053

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-8053

Field No. EX-2353

State Alaska - Aleutian Islands

General locality Andreanof
~~Aleutian~~ Islands

Locality Kanaga Pass

Scale 1:20,000 Date of survey 8/12/53 to 9/11/53

Instructions dated 19 March 1952, 20 February 1953, 6 April 1953.

Vessel USC&GSS EXPLORER

Chief of party S. B. Grenell
J. J. Dermody, J. N. Chopy

Surveyed by S. B. Grenell, J. C. Tison, D. M. Whipp, R. F. Lanier.

Soundings taken by ~~USC&GSS~~, graphic recorder, hand lead, wire

Fathograms scaled by Fathometer operators.
J.J. Dermody, E.R. Stone, F.J. Tucker.

Fathograms checked by H.G. Conerly, R.F. Lanier, J.N. Chopy, V. Engustian.

Protracted by R. F. Lanier

Soundings penciled by R. F. Lanier and W. F. Glover

Soundings in fathoms ~~EX~~ at ~~MLLW~~ and are based on a velocity
of sound of 800 fms./sec.

REMARKS:

788

*Verified scanning
on penacoles
foot*

DESCRIPTIVE REPORT
To Accompany
Hydrographic Sheet H-8053

- Verfuz Problem*
1. Shore
2. Poor scanning
3. Poor Fathogram

Field Number EX-2353

Kanaga Pass, Alaska

1953

Scale 1:20,000

USC&GSS EXPLORER

S. B. Grenell, Commanding

Surveyed by: S. B. Grenell, J. C. Tison, Jr., D. M. Whipp, J. N. Chapy, R. F. Lanier and J. J. Dermody.

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.
- Director's letter No. 22/MEK, S-1-EX, dated 6 April 1953.
- Subject: Clarification of Instructions.

B. SURVEY LIMITS AND DATES

This survey comprises hydrography in Kanaga Pass east of Long. 177°-51' not previously surveyed on H-6931(1943) and H-7081(1945) and includes a resurvey of the narrow part of the pass previously surveyed on H-6931(1943).

Date survey began: 12 August 1953.
Date completed: 11 September 1953.

Junctions with prior surveys:

- ✓ H-6879(1943), scale 1:5000, Hot Springs Bay.
- ✓ H-6931(1943), scale 1:20,000, Kanaga Pass.
- ✓ H-7081(1945), scale 1:20,000, Southeast corner of sheet.

Junctions with contemporary surveys:

- ✓ EX-2153(H-8051) - East of Twin Bays.
- ✓ EX-2553(H-8055) - South of Cape Chunu.
- ✓ EX-6153(H-8056) - South edge of sheet.
- ✓ EX-6253(H-8057) - South of Barnes Point and North of Station END, 1943.
- ✓ EX-2154b (H 8141) - South of Cape Sudak. (Smooth plotting not complete, 5/4/55)
East of Northwest Pt.

C. VESSEL AND EQUIPMENT

Hydrography was done by the Ship EXPLORER and by launches operating from the ship. ✓

The EXPLORER was used in the southern part of the area and on one line through the pass. Launches were used in the pass proper and inshore areas. ✓

Turning radius of EXPLORER (from 1952 descriptive report):

Full right rudder - 360 meters. ✓

Full left rudder - 275 meters.

808 and EDO fathometers were used for all hydrography except for a few hand lead and wire soundings obtained at detached positions while obtaining bottom samples or on shoals. The EDO fathometer was used by the ship for two short periods on A Day only. ✓

Fathometers used:

Ship		808 fathometer No.	113S,	EDO fathometer No.	4
Launch No. 1	"	"	"	"	49.
" ?" 2	"	"	"	"	50.
" " 3	"	"	"	"	60.

Sounding machine No. H-117 was used for wire soundings as bottom samples were obtained by the ship. ✓

D. TIDE AND CURRENT STATIONS

Portable tide gages were maintained at Barabara Island and Cape Chumu. ✓

The line separating the areas in which each tide station was used begins at Δ FOWL, 1943 and extends northeast to Lat. 51-43.0, Long. 177-46.0, thence southeast to Δ GOOSE, 1943, thence northeast to Lat. 51-42.6, Long. 177-43.0, thence southeast to the shoreline of Kanaga Island at Lat. 51-42.3, Long. 177-42.3. It is shown in pencil on Boat Sheet "C".

Tide reducers were obtained from data at Barabara Island tide station for all hydrography north of this line and at Cape Chumu tide station for all hydrography south of this line. ✓

No time or range corrections were applied. ✓

(See tide note and list of tide reducers attached to this report).

There are no current stations within the area of this survey. Two current stations to be observed in 1954 in accordance with Supplemental Instructions - Project CS-218, dated 23 December 1953 are in mid-channel west of Annoy Rock and about 1.5 miles southeast of Trunk Point.

E. SMOOTH SHEET

The smooth sheet projection and shoran arcs were made by hand by the Seattle Processing Office.

Triangulation stations were plotted by the Seattle Processing Office.

Topographic stations for which geographic positions were computed were plotted from the geographic positions by the Seattle Processing Office. See par. F. - CONTROL STATIONS.

Topographic stations SIP, VEX AND HER were transferred directly to the smooth sheet by pricking through graphic control manuscripts T-9930 and T-9931.

Shoreline and topographic details were transferred directly to the smooth sheet from bromoil prints of topographic manuscripts T-9930, T-9931, T-9936, T-9937 and T-9938 (1953).

Shoreline and topographic details were verified in accordance with subject 757 of the Hydrographic Manual.

F. CONTROL STATIONS

Triangulation was executed by G. C. Mattison and U. S. Navy (U.S.S. HYDROGRAPHER) in 1943 and by this party in 1953.

Shoran station DEN was located by distance and direction from DENEK, 1953. See H-8056 (1953).

Shoran station BARA (BARABARA) was located by less than third order theodolite observations. See topographic manuscript T-9930(1953).

Other topographic stations are photo-hydro stations located by photogrammetric methods on manuscripts T-9930 and T-9931 from 1953 field inspection data.

Marked topographic stations established are:
BARABARA and NEK (1943) (not plotted on sheet).

G. SHORELINE AND TOPOGRAPHY

Shoreline and topographic details are from photogrammetric compilation of manuscripts T-9930, T-9931, T-9936 thru T-9938 from 1953 field inspection data.

The shoreline of Hot Springs Bay was previously surveyed on T-6933b (1943). Shoreline on the smooth sheet is from T-9930.

Some references to rocks and other topographic features in sounding records apparently refer to rocks on topographic manuscripts although they place the feature in a slightly different position. Rocks were not plotted from sounding records if they plotted near to a rock on the manuscripts. See also Par. J, Adequacy of Survey.

Topographic features verified by hydrography are:

<u>No.</u>	<u>Lat.</u>	<u>Long.</u>	<u>Feature</u>
1.	51-42.2	177-43.25	Breakers ✓
2.	51-42.2	177-48.37	Rock awash. ⁽³⁾ This is considered the same feature as a breaker on T-9937 at a slightly different position. The location of this breaker on photographs was estimated. ✓
3.	51-42.7	177-48.9	Rock awash - point of reef. ✓
4.	51-42.95	177-48.95	Group of rocks. ✓
5.	51-45.8 ⁷⁷	177-46.0	Group of rocks awash. There are several rocks in this group but only two were visible at time of photograph inspection. ✓ Eider Reef
6.	51-39.9	177-41.75	Two rocks awash. ⁽³⁾ See also theodolite cuts from CHU, 1943 in 1943 and SIDE, 1943 and GOOSE, 1943 in 1953. Heights do not agree with manuscript. ✓
7.	51-40.2	177-41.25	Rock awash. ⁽⁴⁾ See also theodolite cuts as in No. 6. ✓
8.	51-42.1	177-43.45	Rock. ✓ (10)
9.	51-41.4	177-41.5	Rock. ✓
10.	51-41.8	177-49.15	Rock. ✓ (9)
11.	51-41.55	177-49.55	Rock. ✓ (9)
12.	51-41.2	177-50.2	Rock. ✓ (6)
13.	51-42.2	177-49.7	Rock. ✓ (4)
14.	51-39.1	177-39.28	Rock awash. ✓ (2)
15.	51-44.6	177-49.55	Reef. ✓
16.	51-43.65	177-50.22	Reef. ✓

No.	Lat.	Long.	Feature
17.	51-45.38	177-48.5	Reef. <i>agreement with sq. records</i>
18.	51-49.9	177-48.33	Reef. <i>plots on shore.</i>
19.	51-41.23	177-50.39	Rock awash. <i>(4)</i>
20.	51-51.45	177-50.2	Reef. <i>North of present survey limits.</i>

Rocks located by hydrography and not on manuscripts. (not a complete listing)

No.	Lat.	Long.	Feature	Pos. No.	Launch No.
1.	51-42.15	177-48.6	Rock awash. <i>(2)</i>	112b	2
2.	51-43.6	177-50.05	Rock awash. <i>(4) islet</i>	68e	2
				19 - 20e	2
3.	51-42.65	177-48.8 ⁷⁷	Rock awash. ✓	64e ✓	2
4.	51-39.55	177-39.58 ⁵	Rock awash. ✓	7a	1
5.	51-39.27	177-40.9	Reef. ✓	48a e	2
6.	51-42.9 ⁷	177-49.68*	Rock awash. ✓	39d	2
7.	51-44.45	177-49.85	Reef. <i>boulders T-9937</i>	40e	2
8.	51-43.82	177-50.28	Reef. <i>rocky beach</i>	44e	2
9.	51-44.28	177-50.02	Reef. ✓	47e	2
10.	51-43.54	177-50.16	Reef. ✓	54e	2
11.	51-41.74	177-49.28	Reef extending further than shown on manuscript T-9937	167j, 175j	2
12.	51-42.2	177-49.8	Reef. ✓	231c	2
13.	51-41.7	177-49.52	Rock awash. <i>(2)</i>	28k, 30k	2
14.	51-42.2	177-48.38	Rock awash. ✓	111h, 129h	2
15.	51-41.21	177-50.78	Rock awash. <i>(2)</i>	109k	2
16.	51-41.22	177-50.7	Rock awash. <i>(3)</i>	110k	2
17.	51-41.2	177-50.5	Rock awash. <i>(2)</i>	117k	2
18.	51-41.37	177-50.27	Rock awash. ✓	138k	2
19.	51-42.22	177-49.75	Reef. ✓	23k	2

21 T-9937 shows reef
2 T-9937 shows reef
2 T-9937 shows breakers
2 Reef takes in rock
2 Rk awash and islet on smooth sheet

The low-water line was not defined by soundings. A fringe of kelp along rocky shoreline, breakers on beaches and steep foreshore of ledges prevented sounding into the low-water line. On ledges, the low-water line is usually at the outer edge of the ledge and was indicated on photographs.

Shoreline on the boat sheets was transferred from bromoil prints of preliminary manuscripts RS-426 and RS-444.

H. SOUNDINGS

All soundings on sounding lines were measured with echo sounding equipment listed in par. C. See "Special Report on Fathometer Corrections - Ship EXPLORER - 1953". (Filed in Library)

The Hand lead and wire were used for a few shoal soundings, bottom samples, and other isolated soundings.

I. CONTROL OF HYDROGRAPHY

All hydrography was controlled by shoran except a small area south of BARA (on or near the BARA-DEN base line) controlled by

visual sextant fixes on shore stations. Several triangulation stations were used for ranges for location of rocks. ✓

J. ADEQUACY OF SURVEY

The entire survey is considered complete and adequate, to supersede prior surveys, for charting and complies with the project instructions and the Hydrographic Manual. ✓

A complete new survey was made of the shoaler area in the narrowest part of Kanaga Pass and a junction was made with H-6931 (1943) in approximate latitude 51°44'. Inshore hydrography west, north and southeast of H-6931 was completed and a satisfactory junction was made with that survey.

Satisfactory junctions were made with H-6879(1943) - Hot Springs Bay, H-7081(1945) - Kanaga Pass, H-8055(1953), H-8056(1953) and H-8057(1953) and depth curves can be adequately drawn except as noted below. A comparison of the junction with H-8051(1953) will be made on that sheet. (Junction satisfactory)

Review TP 4

There are no holidays. Inshore hydrography east of Barnes Point will be completed on an adjoining sheet in 1954. (H-8141, 1954)

There is some evidence that corrections to shoran distances from DEN are excessive and that distances from DEN are too long. Enough evidence isn't available to evaluate this error, if any, or to indicate that it is consistent. Hydrography close inshore controlled by DEN does not plot correctly relative to topographic features and some displacement of soundings on steep slopes is indicated, causing a displacement of depth curves. The former condition exists at several places close to shore along the shoreline of Tanaga Island. The latter condition is noticeable in the vicinity of Lat. 51-46.5 Long. 177-44.0 where the 30, 40 and 50 fathom depth curves on a steep slope are not in agreement with H-6931(1943) and to a lesser extent along the steep slopes along the northern edge of the sheet. Soundings that plotted on or very close to topographic features were omitted. See H-8051(1953).

Shoran distances from DEN on b day, 17 Aug 1955, shortened by 0.06 sta miles to bring depths in line with agreement.

See P 7 of Review.

At Lat. 51-48.5 Long. 177-40.0 at the northeast corner of H-6931 (1943) soundings on that survey appear to be plotted too far south. 39 and 47 fathom soundings will have to be shifted north about 350 meters to be in agreement with this survey. Other soundings should be shifted north a lesser amount to be in agreement. This condition is apparently caused by weak or inadequate control on H-6931.

500s from Recon. Survey H-6778 (1943-45)

At 51-36.3, 177-41.1 there is slight disagreement between this survey and H-8056(1953). Small horizontal displacement of some soundings would result in better agreement.

Displacement of 500s attributed to scale difference.

In areas other than those mentioned above depth curves at junctions can be adequately drawn.

K. CROSSLINES

Crosslines were run to the extent of about 10% of the regular system of sounding lines.

Crossings are generally in good agreement but there are several 1 to 2 fathom discrepancies. There are no large differences in depths that will displace depth curves appreciably.

depth discrepancies resolved.

L. COMPARISON WITH PRIOR SURVEYS

This is essentially a new survey of previously unsurveyed areas but includes a resurvey of the narrowest part of Kanaga Pass previously surveyed on H-6931(1943), scale 1:20,000, additional development in other areas on H-6931 and H-7081(1945), scale 1:20,000, and investigation of items listed on Preliminary Review of Chart 8863.

The following item numbers refer to the Chart Divisions Preliminary Review of Chart 8863:

4 Item 11 - A 47 fm. sounding at Lat. 51-37.24 Long. 177-49.1, on Navy Survey H-6908 (Chart 9145). One line was run across this sounding with a least depth of 54 fms.

disproved in this position - see H-7081

Item 19 - 44 and 46 fm. shoals on H-7081(1945) were further developed. The 44 fm. sounding was verified and depth curves in the vicinity were revised somewhat. *The 46 fm. sounding at 51-38.0, 177-49.1 was not verified but probably exists. The least depth on this survey is 49 fathoms. + 46 fm sdg from H-7081 carried forward to present survey.

Item 20 - The 29 fm. sounding at 51-39.8, 177-50.0 on H-7081(1945) is in agreement with this survey.

Item 21 - The shoal area of Kanaga Pass was completely resurveyed. In even bottoms and on several of the shoals the two surveys are in close agreement. Some shoal soundings on H-6931 were not verified and others on this survey are shoaler than H-6931.

*sec TP 5 of Review
Numerous sdgs on H-6931 read on top of kelp and are in error.*

At the following locations depths on this survey are shoaler than on H-6931:

<u>Latitude</u>	<u>Longitude</u>	<u>Depth on this survey, fathoms</u>
51-44.2	177-44.8	6.64
51-44.3	177-44.4	7.6
51-44.1	177-44.0	9.2
51-42.9	177-43.6	4.8 6.3 (6 2/6 on H-6931)
51-43.2	177-45.5	4.68
51-43.1	177-44.8	6.5

At 51-43.2, 177-45.6 a large area less than 10 fms. was enlarged somewhat. Shoalest soundings in area are shoaler than H-6931.

At 51-43.1, 177-44.9 a large area less than 10 fms. was verified.

At 51-41.9, 177-44.75 a 4-5/6 fm. sounding verified with a depth of 4.5 fm. *Revised to 6.3 during verification.

+ 4 5/6 erroneous - revised to 3 3/6

At the following locations shoalest soundings on H-6931 were not verified:

<u>Latitude</u>	<u>Longitude</u>
51-43.1	177-44.4
51-42.8	177-44.2
51-42.8	177-44.5
51-42.6	177-44.4
51-42.4	177-44.6
51-42.0	177-43.9

see PS Review

At 51-44.1, 177-43.2 there is evidence of shoaling in vicinity of 8-1/2 and 9-3/4 fm. soundings on H-6931.

see PS Review

At 51-41.3, 177-44.2 there is no evidence of a 4/6 fm. sounding.

At 51-42.4, 177-45.7 there is no evidence of 1-4/6 fm. soundings. There is a shoal with depths less than 1/2 fm. about 300 meters northwest of this position. **revised to 9 1/2*

Sunken rocks at 51-42.65, 177-45.85 are in a large area of soundings less than 2 fm.

Item 22 - There is no indication of the 11 fm. sounding at 51-41.2, 177-44.5 on Navy Survey H-6908. General depths in the vicinity are 24 to 25 fms..

Item 23 - There is no indication of a 4 fm. (ED) sounding at 51-45.7, 177-44.5 on Navy Survey H-6908 (Chart 9145). Depths in the vicinity are 17 to 19 fms. The nearest shoal soundings are 1/2 mile northwest of the charted position.

Item 24 - The 8 fm. sounding at 51-46.1, 177-45.1 on H-6931 (1943) was developed. The least depth found in the vicinity is 4.8 fms. at 51-46.05, 177-45.25, pos. 50 to 51 g day, launch No. 2. This shoal sounding is near the northeast end of an extensive shoal area (Eider Reef).

The 43 fm. sounding at 51-47.3, 177-44.8 on H-6931(1943) was further developed. The least depth found was 42 fms. at 51-47.3, 177-44.9, pos. 52 to 53d, launch No. 1.

Item 25 was not investigated.

The 30 fm. area on H-6931(1943) along the axis of Hot Springs Bay extending eastward from H-6879(1943) was further developed. The least depth found in the vicinity is 21 fms. at 51-47.2, 177-46.60' pos. 59n, launch No. 2.

In the vicinity of 51-44, 177-43 to 51-45, 177-40 closer spaced lines were extended out to the 20 fm. curve with good agreement in soundings and depth curves between H-6931(1943) and this survey.

Regular line spacing shows no indication of 43 fm. sounding at 51-39.3, 177-47.3 on H-7081(1943). The 43 fm. sounding is not disproved. **Carried forward to present survey.*

A detailed comparison with H-6778(1943) was not made. Soundings are generally in agreement with this survey. It is recommended that all soundings on H-6778 be superseded by this survey in the common area.

see PS of Review

A single north-south line on H-7023(1943) agrees favorably with this survey. This area was completely resurveyed.

A print of Navy Survey H-6908 is not available for comparison. The area of H-6908 not included in previous Coast Survey surveys was completely resurveyed. It is recommended that this survey supersede all soundings on Navy survey H-6908 in the common area.

see PS of Review.

M. COMPARISON WITH CHART

*A comparison was made with Chart 9145, print date 8/13/51.

Many soundings on Chart 9145 in the area of this survey are apparently from Navy Survey H-6908 referred to in par. "L" above. It is recommended that such soundings be deleted.

All soundings on Chart 9145 were not compared. Those with which a comparison was made are:

1. 25 fm. soundings at 51-40.1, 177-46.1 and 51-39.5, 177-45.6 are in depths 10 to 15 fathoms deeper on this survey. ✓
2. 43 fm. soundings at 51-36.9, 177-41.3 and 51-36.4, 177-42.1 are in depths 10 to 20 fms. deeper on this survey. ✓
3. 40 fm. sounding at 51-38.1, 177-45.7 is in depths 10 fms. deeper on this survey. ✓
4. 82 fm. sounding at 51-37.6, 177-40.9 is in depths 40 fms. shoaler on this survey. ✓
5. 68 fm. sounding at 51-37.5, 177-39.9 is in depths 30 fms. shoaler on this survey. ✓
6. A line of soundings along Lat. 51-36 appears to be charted too far north. ✓

* See Review #6. Area of present survey recompiled on Chart 9145, dated 10-17-55. from present survey and one sounding from H-6931.

7. Charted soundings inside the 30 fm. curve north of 51-40 and west of 177-46 are from 0 to 12fms. shoaler than this survey. In the same vicinity charted soundings deeper than 40 fms. are generally deeper than this survey.

8. Charted soundings south of 51-40 and east of 177-47 vary from 20 fms. shoaler to 50 fms. deeper than this survey.

9. Charted soundings north of H-6931(1943) are from 20 fms. shoaler to 14 fms. deeper than this survey.

It is recommended that this survey supersede all charted soundings in the common area not from prior Coast Survey surveys.

Shoreline and topographic details are essentially correct as charted but with some error in detail, shape and posting and are completely revised by photogrammetric compilation of shoreline from 1953 field inspection data.

The charted reef extending northwest from Annoy Rock has been disproved. There is a least depth of ⁵¹ λ fms. at the approximate northwest end of this feature with deep water between it and Annoy Rock. (In lat $51^{\circ}43.02'$, long. $177^{\circ}47.32'$)

The sunken rocks and foul area north and east of Annoy Rock have been verified and developed in more detail.

The ~~Rat~~ rocks awash and foul area southeast of Trunk Point have been verified and developed in more detail.

Rocks awash at 51-40.0, 177-42.0 have been verified but are moved slightly southeast.

Offshore reefs north and south of Hazard Point have been verified and surveyed in more detail.

Goose Rocks, Annoy Rock and Eddy Rock were verified.

N. DANGERS AND SHOALS

The origin of some charted dangers, and incomplete prior surveys of dangers and shoals make some of them doubtful and all important dangers and shoals covered by this survey are listed.

<u>No.</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Depth fms.</u>	<u>Position No.</u>	<u>Launch No.</u>
1.	51-48.545	177-42.5	6.4 ✓	106-107b	1
2.	51-47.3	177-44.9	42.0 ✓	52-53d	1
3.	51-47.2	177-46.6	21.0 ✓	59n	2
4.	51-45.8	177-47.2	Rock awash ✓	T-9930	
5.	51-45.9	177-45.9	Rock awash ✓	T-9930	
6.	51-46.05	177-45.2	4.87 ✓	50-51g	2
7.	51-45.55	177-45.9	2.6 ✓	76-77a	2
8.	51-45.15	177-46.1	6.29 ✓	169-170h	2
9.	51-44.9	177-46.89	9.0 ✓	8-9a 73-74a	2

See Review
P 6

See P 1
of Review.

<u>No.</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Depth fms.</u>	<u>Position No.</u>	<u>Launch No.</u>
10.	51-44.6	177-44.05	8.0	136-137c	3
11.	51-44.3	177-44.4	7.6	49-50f	3
12.	51-44.2	177-44.8	6.6	53-54f	3
13.	51-44.2	177-46.9	9.8 10.1	77-78b	2
14.	51-44.1	177-44.0	9.2	39-40f	3
15.	51-43.7	177-47.5	9.8	50-51b	2
16.	51-43.2	177-45.9	6.8	146-147h	3 (6.2 fms. from northward)
17.	51-43.5	177-50.05	Rocks awash	T-9936	
18.	51-43.2	177-45.5	4.8	40-41h	3
19.	51-43.15	177-46.85	1.8 kelp trace	35-36j	2
20.	51-43.05	177-44.8	6.5	145-146g	3
21.	51-42.94	177-48.95	Bare rock, (6) rocks awash (4)	T-9937	
22.	51-42.85	177-47.9	15.0	107h	2 (least depth on this shoal 5.7 fms in Lat 51°42.02; Long 177°47.32)
23.	51-42.95	177-47.4	3.1 kelp trace	38-39h	2
24.	51-42.95	177-46.8	0.8	20-21j	3
25.	51-42.2	177-48.4	Breaker (*) (3)	T9937	→ rk awash 111-112 h.
26.	51-42.3	177-46.1	5.4	52-53j	3
27.	51-42.5	177-45.95	0.2 kelp trace	29-30j	3 (least depth on shoal 1.3 fms)
28.	51-42.6	177-45.8	0.8 kelp trace	43j	2 items 27 & 28 same shoal
29.	51-42.4	177-44.6	8.7	83-84h	3
30.	51-42.9	177-43.6	4.8-7.5	83f	3
31.	51-42.38	177-43.0	0.3	49-50f	1 (part of reef around)
32.	51-42.05	177-43.7	3.5-6.0	133-134g	3 (at S. of Goose Rks.)
33.	51-42.15	177-43.25	Breaker	T-9937	(Located by Hydro. party)
34.	51-42.7	177-42.4	Rock awash	T-9937	
35.	51-41.8	177-49.15	Rock awash	T-9937	
36.	51-41.55	177-49.6	Bare rocks	T-9937	
37.	51-41.2	177-50.2	Bare rock	T-9937	
38.	51-41.2	177-46.4	19.0	133j	2
39.	51-41.9	177-44.8	4.5-6.9	185-186h	3
40.	51-42.7	177-43.6	2.9	6-7h	3
41.	51-41.6	177-43.35	4.8	132-133g	3
42.	51-41.15	177-43.95	0.9-1.1	21-22k	3
43.	51-41.26	177-41.865	4.8	57-58e	1
44.	51-41.1	177-40.95	Rock awash	T-9937	
45.	51-41.0	177-40.4	Rocks awash	T-9937	3 in a group
46.	51-40.8	177-50.9	5.7	78-79k	2 (least depth on shoal 1.9 fms.)
47.	51-40.95	177-50.2	2.7-3.8	60k	2
48.	51-40.97	177-49.95	6.1-5.3	301	2
49.	51-40.6	177-40.7	Rock awash	T-9937	
50.	51-40.2	177-41.25	Rock awash	T-9937	
51.	51-39.9	177-41.75	2 rocks awash	T-9937	
52.	51-39.6	177-41.45	7.8	138f	1
53.	51-38.3	177-49.7	44.0	20-21b	Ship
54.	51-38.2	177-40.1	6.4	36-37a	1
55.	51-38.95	177-41.35	4.7	18e	1
56.	51-39.0	177-39.95	2.7	42a	1
57.	51-38.95	177-39.4	2.5-8.1	5-6a	1
58.	51-38.7	177-39.2	3.9	10-11a	1
59.	51-36.75	177-39.7	37.0	22-23a	1

Tide rips in the following limits should be considered dangerous for small craft in southerly weather and larger ships during heavy southerly weather:

South of Lat. 51-44 and between Long. 177-42 and Long. 177-49 to the narrowest part of the pass, and the whole area south to approximately Lat. 51-39.

Village Reef at Lat. 51-47.0, Long. 177-47.75 is not in the area of this survey but was verified by field inspection of photographs. See T-9930.

Eider Reef is an extensive foul and shoal area with several rocks awash east and southeast of Trunk Point. See Items 5, 6 and 7 above.

There are extensive shoal areas with breakers often observed north and east of Annoy Rock. See Items 19, 27 and 28 above.

Alongshore area south of Hazard Point is generally foul. See Items 33, 34, 35, 36, 37, 46 and 47 above.

The area between Goose Rocks and Kanaga Island is mostly shoal and foul.

A relatively wide foul alongshore area extends from Northwest Point to Cape Chunu, Kanaga Island.

Goose Rocks - large rock 40 feet above MHW at Station GOOSE, 1943 and a small rock, 10 feet above MHW, 400 meters southeast. See T-9937.

Annoy Rock, 10 feet above MHW, and ^{Eddy} ~~Hot~~ Rock, 15 feet above MHW, were located by triangulation in 1943. See T-9937.

Item 54 above is the limiting danger south of Cape Chunu.

O. COAST PILOT INFORMATION

See Special Report on Coast Pilot Information.

The ship did not anchor within the area of this survey but anchored in Hot Springs Bay on numerous occasions. No change in the published Coast Pilot is recommended for this anchorage.

Eureka Bight probably affords a suitable anchorage in westerly weather but because of its close proximity to Hot Springs Bay it was not used and is not specifically recommended as an anchorage.

Launches anchored in various places in Eureka Bight and in

Monroe Bay. The small bay at Lat. 51-42.6, Long. 177-49.7 can be entered with a launch at high tide. Once inside, the bay affords a well protected anchorage in almost any weather.

Courses thru Kanaga Pass were recommended in Coast Pilot Revision Notes forwarded 9 September 1953. Through the critical part of the pass recommended courses follow ship sounding-line 1 to 20A, approximately.

Strong currents were noted in Kanaga Pass between Hazard Point and Goose Rocks. No current observations were made in 1953. Two current stations in the pass will be observed in 1954. See Par. D, TIDE AND CURRENT STATIONS.

Heavy tide rips were also noted in the narrow part of the pass and extending well south of this area. Heaviest rips appeared to be in the middle of the pass between Annoy Rock and Goose Rocks.

P. AIDS TO NAVIGATION

No aids to navigation, bridges, overhead or submerged cables or ferry routes exist within the area of this survey.

Q. LANDMARKS FOR CHARTS

Landmarks for charts are reported on Form 567.

The only landmarks recommended are charted landmarks in Hot Springs Bay:

Waterfall - FALL, 1943 See T-6933b(1943)
Cabin - DOOR, 1943 See T-6933b(1943)
Cabin - WIN, 1943 See T-6933b(1943)

Other objects such as rocks and peaks are suitable landmarks but will be charted by symbol and are not specifically recommended as landmarks. Annoy Rock and Eddy Rock are good landmarks.

R. GEOGRAPHIC NAMES

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

Z. TABULATION OF APPLICABLE DATA

Data forwarded with this report:

Smooth Sheet H-8053.
3 Boat sheets, EX-2353, EX-2353B, EX-2353C.
19 Sounding Volumes, Vols. 1 - 19, inc.
4 Envelopes fathograms - Ship, Launches 1, 2, and 3.
14 Sheets - Shoran Plotting Abstract.
4 Tracings of junction surveys H-6931(1943), H-8055(1953),
H-8056(1953), H-8057(1953).

Data forwarded separately:

1. 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, including data listed therein, forwarded to Washington Office 25 September 1953.

2. Field Inspection Report - Maps T-9932 and T-9937 (part) thru T-9939 - Kanaga Island, Alaska - Ship EXPLORER - 1953, including data listed therein, forwarded to Washington Office 23 November 1953.

3. Triangulation data - 1953 Season forwarded to Washington Office 7 December 1953.

4. Tide data forwarded to Washington Office 14 September 1953.

5. Special Report on Shoran - Ship EXPLORER - 1953.

6. Special Report on Fathometer Corrections, Ship EXPLORER - 1953.

*Special Reports
filed in library*

7. Special Report on Geographic Names - Tanaga and Kanaga Islands - 1953 forwarded to Washington Office 30 November 1953.

8. Coast Pilot Notes - U. S. Coast Pilot - Alaska Part II Yakutat Bay to Arctic Ocean - Ship EXPLORER - 1953 - (Kanaga Pass only) forwarded to Washington Office 9 September 1953.

9. Coast Pilot Notes - U. S. Coast Pilot - Alaska Part II Yakutat Bay to Arctic Ocean - Ship EXPLORER - 1953 forwarded to Washington Office 27 November 1953.

10. Form 567, Landmarks for Charts.

11. Tracing of junction with H-7081(1945) will be forwarded with H-8051.

Additional applicable data:

Topographic Manuscripts T-9930, T-9931, T-9936, T-9937 and T-9938 field inspection data.

Respectfully submitted:

Charles W. Clark

Charles W. Clark
Comdr., USC&GS

GEOGRAPHIC NAMES

Charted names

ANNOY ROCK
BARNES POINT
CAPE CHUNU
EDDY ROCK
GOOSE ROCKS
HOT SPRINGS BAY
KANAGA ISLAND
KANAGA PASS
MONROE BAY
PACIFIC OCEAN
TANAGA ISLAND
TRUNK POINT
WEST CHUNU POINT
WESTERN POINT

New names recommended in Special Report on Geographic Names:

BARABARA ISLAND
CASTLE ISLET
EIDER REEF
EUREKA BIGHT
EXPLORER PASSAGE
HAZARD POINT
KANAGA SOUND
NORTHWEST POINT
PENDANT POINT
THE DITCH
THE SIGNALS
VILLAGE REEF

STATISTICS
for Hydrographic Survey H-8053(1953)

USC&GSS EXPLORER

Project CS-218

<u>Vol. No.</u>	<u>Day Letter</u>	<u>Launch No.</u>	<u>Date</u>	<u>No. of H.L. or Wire Soundings</u>	<u>No. Pos.</u>	<u>Stat. Miles Sounding Lines</u>	
1	a	1	8/12/53	-	114	47.4	
2	a	2	8/17/53	-	93	24.2	
2	b	2	8/18/53	-	151	38.5	
3	b	1	8/17/53	-	157	31.1	
3 & 5	c	1	8/18/53	-	160	26.0	
4	c	2	8/23/53	-	89	23.7	
4	d	2	8/24/53	-	110	27.8	
4 & 8	e	2	8/25/53	-	81	19.6	
5	d	1	8/29/53	-	58	12.4	
5 & 13	e	1	8/31/53	-	181	37.0	
6	a	3	8/18/53	-	122	35.0	
6 & 7	b	3	8/23/53	-	153	42.2	
7	c	3	8/24/53	-	161	47.8	
7	d	3	8/25/53	8	25	2.9	
8	f	2	8/26/53	-	56	12.9	
8	g	2	8/29/53	-	166	41.4	
9	e	3	8/26/53	-	27	8.7	
9	f	3	8/29/53	-	131	42.3	
9 & 12	g	3	8/30/53	-	181	53.0	
10	j	2	8/31/53	-	214	50.6	
10 & 14	k	2	9/1/53	3	214	40.3	
11	h	2	8/30/53	-	249	62.7	
12 & 16	h	3	8/31/53	-	202	56.6	
13	f	1	9/1/53	9	152	33.8	
14	l	2	9/2/53	6	55	7.2	
14 & 15	m	2	9/3/53	8	69	12.4	
15	n	2	9/11/53	6	67	10.3	
16	j	3	9/1/53	-	99	24.5	
16 & 17	k	3	9/2/53	16	79	12.5	
18	A	Ship	8/29/53	-	106	55.2	
18 & 19	B	Ship	8/30/53	-	145	81.8	
19	C	Ship	8/31/53	18	18	- -	
19	D	Ship	9/2/53	-	75	55.0	
Total				19	74	3960	1076.8

Area: 62 square statute miles.

TIDAL NOTE

To Accompany

Hydrographic Sheet (Field No. EX-2353) Reg. H-8053

For tide reducers on the north section of the Sheet a tide gage was maintained at Barbara Island, Lat. 51-48.55, Long. 177-44.5247 and for reducers on the southern section a gage was maintained at Cape Chumu, Lat. 51-39.9, Long. 177-38.1.

The MLLW reading on Barabara Island staff was 2.0 feet and on the Cape Chunu staff it was 1.7 feet.

Boat Sheet EX-2353-B shows a pencil line passing over the shoal areas near the middle of the Pass. On the north side of this line reducers were taken from the Barabara Island gage and on the south side they were taken from the Cape Chunu gage.

Tide Reducers

For

Hydrographic Sheet (Field No. EX-2353) Reg. H-8053

<u>Date</u>	<u>Units Working</u>	<u>Barabara Id. Reducers</u>	<u>Cape Chunu Reducers</u>
Aug. 12	Launch #1		-0.2 fm 0630-0805 -0.1 " 0805-1100 -0.2 " 1100-1222 -0.3 " 1222-1324 -0.4 " 1324-1440 -0.5 " 1440-1926 -0.4 " 1926-2400
Aug. 17	Launches #1, #2	-0.2 fm 0700-0825 -0.3 " 0825-1020 -0.4 " 1020-1700 -0.5 " 1700-2230	
Aug. 18	Launches #1, #2, #3	-0.1 fm 0625-0800 -0.2 " 0800-0925 -0.3 " 0925-1100 -0.4 " 1100-1700 -0.5 " 1700-2300	-0.3 fm 0740-0900 -0.4 " 0900-1100 -0.5 " 1100-1400 -0.6 " 1400-1700 -0.7 " 1700-2050
Aug. 23	Launches #2, #3	+0.1 fm 0650-1000 0.0 " 1000-1050 -0.1 " 1050-1140 -0.2 " 1140-1230 -0.3 " 1230-1315 -0.4 " 1315-1415 -0.5 " 1415-2120	
<p>The curve at Barabara Id. for Aug. 23 was obtained from the Marigram until 1000. After that a curve was interpolated by comparison with curves from Barabara before and afterwards, and from the curve at Chunu. The Barabara curves for Aug. 24 and 25 were interpolated and compared with the curve at Cape Chunu.</p>			
Aug. 24	Launches #2, #3	0.0 fm 0800-1200 -0.1 " 1200-1305 -0.2 " 1305-1410 -0.3 " 1410-1540 -0.4 " 1540-1730	
Aug. 25	Launches #2, #3	-0.1 fm 0800-0920 0.0 " 0920-1110 -0.1 " 1110-1250 -0.2 " 1250-1355 -0.3 " 1355-1520 -0.4 " 1520- 1730 1930	0.0 fm 0700-1000 -0.1 " 1000-1050 -0.2 " 1050-1125 -0.3 " 1125-1205 -0.4 " 1205-1300 -0.5 " 1300-1415 -0.6 " 1415-1645 -0.5 " 1645-1825

<u>Date</u>	<u>Units Working</u>	<u>Barabara Id. Reducers</u>	<u>Cape Chumu Reducers</u>
Aug. 26	Launches #2, #3	-0.2 fm 0800-0925 -0.1 " 0925-1150 -0.2 " 1150-1320 -0.3 " 1320-1440 -0.4 " 1440-1630 -0.5 " 1630-1800	
Aug. 29	Ship, Launches #1, #2, #3	-0.4 fm 0800-1620 -0.5 " 1620-end	-0.4 fm 0800-1200 -0.5 " 1200-1330 -0.6 " 1330-1445 -0.7 " 1445-1915
Aug. 30	Ship, Launches #2, #3	-0.4 fm 0800-0920 -0.5 " 0920-1320 -0.4 " 1320-1600 -0.5 " 1600-1900	-0.5 fm 0800-13 ³⁰ 00 -0.6 " 13 ³⁰ 00 -1520 -0.7 " 1520-2005
Aug. 31	Ship, Launches #1, #2, #3	-0.2 fm 0740-0840 -0.3 " 0840-0950 -0.4 " 0950-1815	-0.4 fm 0719-0830 -0.5 " 0830-1300 -0.6 " 1300-1550 -0.7 " 1550-2020
Sept 1	Launches #1, #2, #3		-0.3 fm 0738-0823 -0.4 " 0823-0920 -0.5 " 0920-1130 -0.6 " 1130-1640 -0.7 " 1640-2116
Sept 2	Ship, Launches #2, #3	0.0 fm 0800-0900 -0.1 " 0900-1000 -0.2 " 1000-1100 -0.3 " 1100-1230 -0.4 " 1230-2100	-0.2 fm 0750-0840 -0.3 " 0840-0930 -0.4 " 0930-1030 -0.5 " 1030-1400 -0.6 " 1400-1900
Sept 3	Launch #2	+0.1 fm 0600-0835 0.0 " 0835-0940 -0.1 " 0940-1040 -0.2 " 1040-1145 -0.3 " 1145-1400 -0.4 " 1400-end	-0.1 fm 0800-0845 -0.2 " 0845-0935 -0.3 " 0935-1025 -0.4 " 1025-1130 -0.5 " 1130-1830
Sept 11	Launch #2	-0.3 fm 0600-1400 -0.4 " 1400-1950	

4/27/78

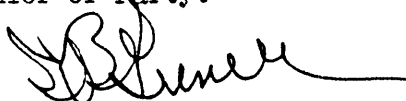
APPROVAL SHEET

HYDROGRAPHIC SURVEY No. H-8053

The smooth sheet, sounding volumes, fathograms and descriptive report have been examined and are approved.

This survey is complete and adequate and no additional field work is recommended except current observations. See Par. D, TIDE AND CURRENT STATIONS.

All hydrography done by the ship was under constant supervision of the Chief of Party and hydrography done by launches was under almost daily supervision of the Chief of Party.



S. E. Grenell
Commander, USC&GS
Commanding Ship EXPLORER

GEOGRAPHIC NAMES

Survey No. H-8053

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>			(for title)								1
<u>Aleutian Islands</u>			" "								2
<u>Kanaga Pass</u>											3
<u>Tanaga Island</u> ✓									BGN		4
<u>Kanaga Island</u> ✓									"		5
<u>Cape Chunu</u> ✓											6
<u>West Chunu Point</u> ✓											7
<u>Castle Island</u> ✓ (use abbreviation of I.)											8
<u>Goose Rocks</u> ✓											9
<u>Monroe Bay</u> ✓											10
<u>Western Point</u> ✓											11
<u>Northwest Point</u> ✓											12
<u>The Signals</u> ✓											13
<u>Cape Sudak</u> ✓											14
<u>Barnes Point</u> ✓											15
<u>Barabara Island</u> ✓											16
<u>Hot Springs Bay</u> ✓											17
<u>Village Reef</u> ✓											18
<u>Trunk Point</u> ✓											19
<u>The Ditch</u> ✓											20
<u>Eider Reef</u> ✓											21
<u>Eureka Bight</u> ✓											22
<u>Hazard Point</u> ✓											23
<u>Explorer Passage</u> ✓											24
<u>Pendant Pt.</u> ✓											25
											26
											27

Names approved 5-6-54. There are more than the usual number of names for a hydrographic sheet, but many of them are here applied for the first time.

L. Heck

WA 10-11-65

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. .H-8053..

Records accompanying survey:

Boat sheets ..3..; sounding vols. .19...; wire drag vols.;
 bomb vols.; graphic recorder rolls .5. Ery.
 special reports, etc. 1 Smooth Sheet; 1 Cahier-14 Sheets Shoran Plotting
 Abstracts; 1 Descriptive Report;

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

Number of positions on sheet	..3960
Number of positions checked	..200
Number of positions revised	* ..178
Number of soundings revised (refers to depth only)	..250 approximately
Number of soundings erroneously spaced	..50
Number of signals erroneously plotted or transferred	..
Topographic details	Time ..4
Junctions	Time ..50
Verification of soundings from graphic record	Time ..40

Verification by *A. J. Hoffman* Total time ^{**} 5.17 hrs Date 8/1/55

Reviewed by *Lu Jeskind* Time 80 Date 10-4-55

* This includes 157 positions of 'b' day Launch #1 which had an arbitrary shoran correction added during verification, for details see Verification Problem sheet attached to the Verifiers Report.

** Includes 28 hrs Preliminary Verification

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8053

FIELD NO. EX-2353

Alaska, Aleutian Islands, Andreanof Islands, Kanaga Pass

Project No. CS-218

Surveyed - August, Sept., 1953

Scale 1:20,000

Soundings:

Control:

808 Fathometer
Edo Fathometer
Hand lead

Shoran
Sextant fixes on
shore signals

Chief of Party - S. B. Grenell

Surveyed by - S. B. Grenell, J. C. Tison, D. M. Whipp, R. F. Lanier,
J. J. Dermody and J. N. Chopy

Protracted by - R. F. Lanier

Soundings plotted by - R. F. Lanier and W. F. Glover

Verified and inked by - A. J. Hoffman

Reviewed by - I. M. Zeskind 10-4-55

Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with unreviewed air-photographic surveys T-9930, T-9931, T-9936, T-9937, and T-9938 of 1953.

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

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated, except close inshore where the foul area and inshore dangers prevented development to the low-water line.

The bottom is very irregular in Kanaga Pass and in the inshore areas. In depths greater than 30 fms. the bottom is fairly smooth. Ledges, reefs, pinnacles, shoals and deeps contribute to the bottom irregularity.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-6931 (1943) north of Kanaga Island, with H-6879 (1943) in Hot Springs Bay and with H-7081 (1945) on the southwest. The junctions with H-8055 (1953) on the southeast, with H-8057 (1953-54) on the northeast and with H-8051 (1953) on the west will be considered in the reviews of those surveys. The junction with H-8056 (1953) on the west is deferred pending the completion of the inking of that survey. The project survey on the east, H-8141 (1954), which lies north and south of survey H-8057, has not as yet been received in the Washington Office.

5. Comparison with Prior Surveys

- A. H-6778 (1943), 1:120,000
H-6908 (1942), (U.S.N. Recon.), 1:20,000
H-7023 (1944), 1:40,000

These reconnaissance surveys fall within the area of the present survey. A comparison between the present survey and surveys H-6778 and H-7023 reveals only minor differences in depths. The U. S. Navy reconnaissance survey of the area H-6908, contains faulty soundings and weak control as evidenced by numerous discrepancies of as much as 6 fms. at crossings. Errors in the location of the basic control on H-6908 are indicated by differences in the position of common land features on the present and prior surveys. Depths on the prior survey differ with present depths by as much as 15 fms., as for example in lat. $51^{\circ}45.72'$, long. $177^{\circ}44.5'$, where a 4-fm. shoal falls in present depths of 18-19 fms.

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

- B. H-6931 (1943)

This survey overlaps the area of the present survey approximately south of lat. $51^{\circ}45'$. A comparison between the prior and present surveys reveals many discrepancies in depths. These discrepancies are attributed to the erroneous reading of the top of kelp traces on the fathograms of the prior survey. A number of soundings on the shoals of the prior survey have been revised to greater depths during the review of the present survey. These revised prior depths are now comparable to present depths on the shoals. One sounding from H-6931 was carried forward to the present survey.

With the addition of the afore-mentioned sounding, the present survey is adequate to supersede the prior survey approximately south of the 20-fm. surve as outlined on H-6931.

6. Comparison with Drawing of Chart 9145 (dated 10-17-55)A. Hydrography

The charted hydrography originates principally with the present survey before verification and review, supplemented by a few soundings from H-6931 (1943). A number of critical soundings were revised because the tops of the kelp traces on the fathograms of both the prior and present surveys were erroneously read as bottom depths, (see paragraphs 5B and 7d). Due to the shifting of fixes of sounding lines during the verification and review of the present survey in the area approximately north of lat. $51^{\circ}48'$, some of the charted soundings and depth curves here fall as much as 90 meters northwestward from their revised survey positions, (see paragraph 7d). These discrepancies have been noted on an overlay of chart drawing 9145 for correction by the compiler.

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

B. Aids to Navigation

There are no aids to navigation 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 accurately done, except as noted in paragraph (c) below.

(c) During the verification of the present survey in the area approximately north of lat. $51^{\circ}48'$, it was noted that shoran fixes obtained by launch No. 1 on b-day, August 17, 1953, were in error. The probable cause of the error could not be ascertained. However, by shortening the shoran distances of returns from signal DEN by 0.060 statute miles on b-day, depths on this day were brought into agreement with hydrography on other days, when either signal DEN or visual fixes were used to control the sounding lines. Depths on b-day were also brought into agreement with depths on adjoining surveys, when the aforementioned adjustment to returns from signal DEN were made. The erroneous fixes have been revised on the present survey.

(d) A number of soundings were revised during verification of the present survey because the field party erroneously read the kelp traces instead of the bottom traces on the fathograms. Because of the fathometer operating at too high gain on several days, difficulty was experienced in identifying kelp and bottom traces.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work Recommended

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

Examined and Approved:



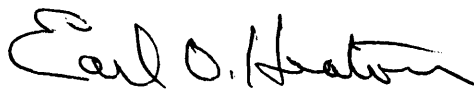
H. R. Edmonston
Chief, Nautical Chart Branch



E. R. McCarthy
Chief, Chart Division



J. C. Bull
Chief, Hydrography Branch



Earl O. Heaton
Chief, Division of Coastal Surveys

839

PAC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Survey~~

11 May 1954

Division of Charts: R. H. Carstens

Plane of reference approved in
19 volumes of sounding records for

HYDROGRAPHIC SHEET

8053

Locality Kanaga Pass, Aleutian Islands

Chief of Party: S. B. Grenell in 1953
Plane of reference is mean lower low water, reading
2.0 ft. on tide staff at Barabara Island
7.2 ft. below B. M. 1 (1953)
1.7 ft. on tide staff at Cape Chunu
7.8 ft. below B.M. 1 (1953)

Height of mean high water above plane of reference is as follows:

Barabara Island = 3.1 feet
Cape Chunu = 4.1 feet

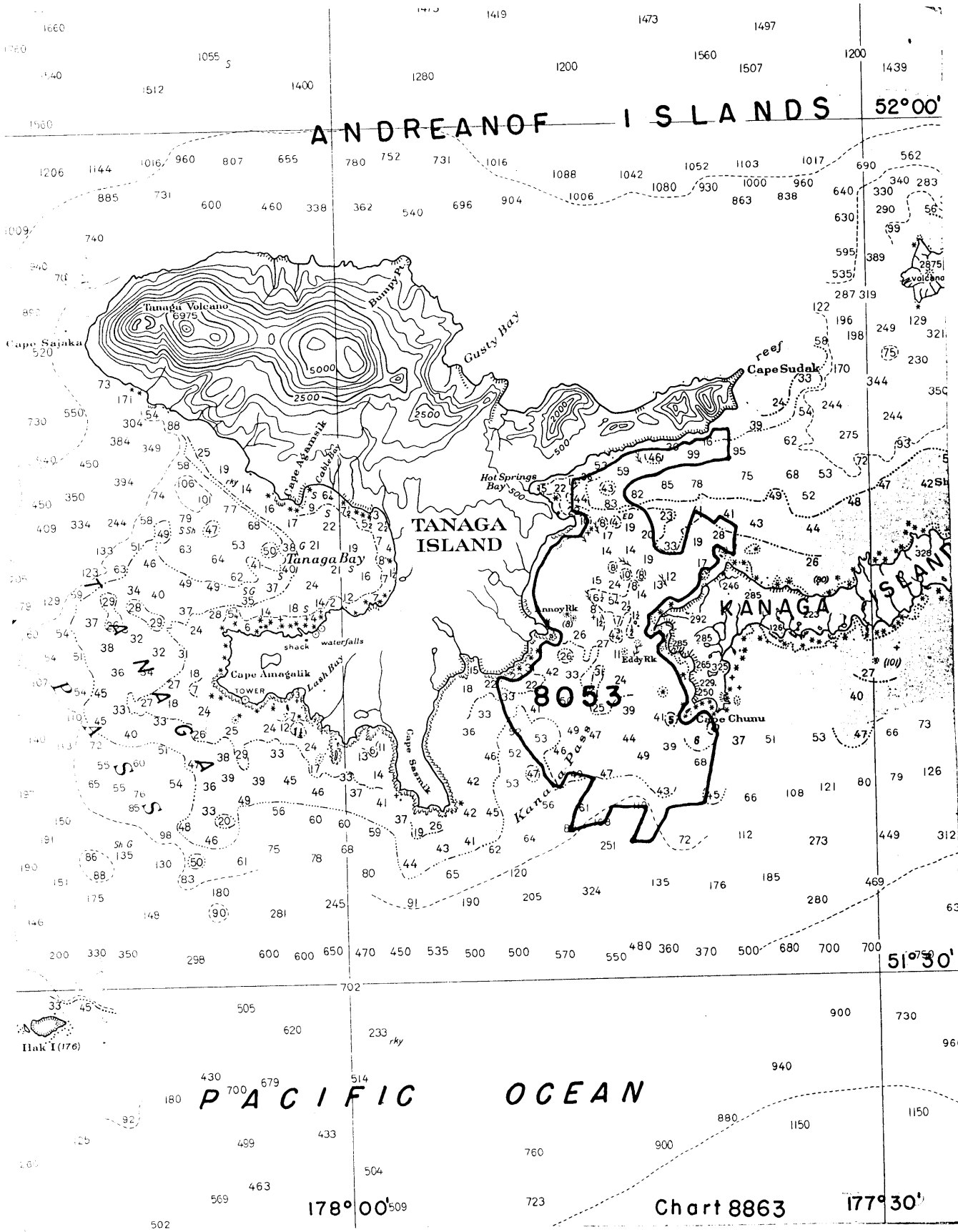
Condition of records satisfactory except as noted below:

E. C. McKay

Tides Branch

Chief, Division of Tides and Currents.

ANDREANOF ISLANDS



PACIFIC OCEAN

Chart 8863

178°00'

177°30'

Critical soundings SW of
Cape Chum to Tide Gaug.
8/1/56 L.S.S.