

10238

Diagram No. 8202-3

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey ... Hydrographic

Field No. FA-10-1-87

Registry No. H-10238

LOCALITY

State Alaska

General Locality .. Icy Strait

Sublocality Swanson Harbor and Vicinity

1987

CHIEF OF PARTY

CAPT. J.W. Carpenter

LIBRARY & ARCHIVES

DATE June 1, 1988

☆U.S. GOV. PRINTING OFFICE: 1985-566-054

10238

Area 5
Cht
17316
17300

TO SIGN OFF, SEE
RECORD OF APPLICATION

HYDROGRAPHIC TITLE SHEET

H-10238

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

FIELD NO.

FA 10-1-87

State Alaska

General locality Icy Strait

Locality Swanson Harbor and Vicinity

Scale 1:10,000 Date of survey April 7, 1987 - May 16, 1987
(DN 97) (DN 136)

Instructions dated July 29, 1986 Project No. OPR-0186-MI-86

Vessel FAIRWEATHER (220), 2023, 2024, 2025, 2026, 2027, 2028, 2029

Chief of party Captain John W. Carpenter

Surveyed by LCDR Kenny, LT Moen, LTJG Ruiz, ENS Cone, ENS Lynch, ENS Bernard,
ENS Nodine, ENS Lemon, ENS Birk, CST Krick

Soundings taken by echo sounder, hand lead, pole DSF 6000N, pneumatic gauge and tape measure

Graphic record scaled by FAIRWEATHER Personnel

Graphic record checked by FAIRWEATHER Personnel

Verification by R.N. Mihailov Automated plot by PMC Xynetics Plotter
~~Produced by~~

Evaluation by C.R. Davies
~~Verified by~~

Soundings in fathoms ~~feet~~ at MLLW ~~MLLW~~

REMARKS: Marginal notes in black generated during office processing. All
separates are filed with the hydrographic data, as a result page
numbering may be interrupted or non-sequential.

AWOIS/SURE C.M.S.M 9/6/88

SC 3-25-97

3WW 1/31/94

58 30 00

MONTHLY PROGRESS SKETCH

OPR-0186-~~FA-87~~^{MI-86}

ICY STRAIT, ALASKA

NOAA SHIP FAIRWEATHER S-220

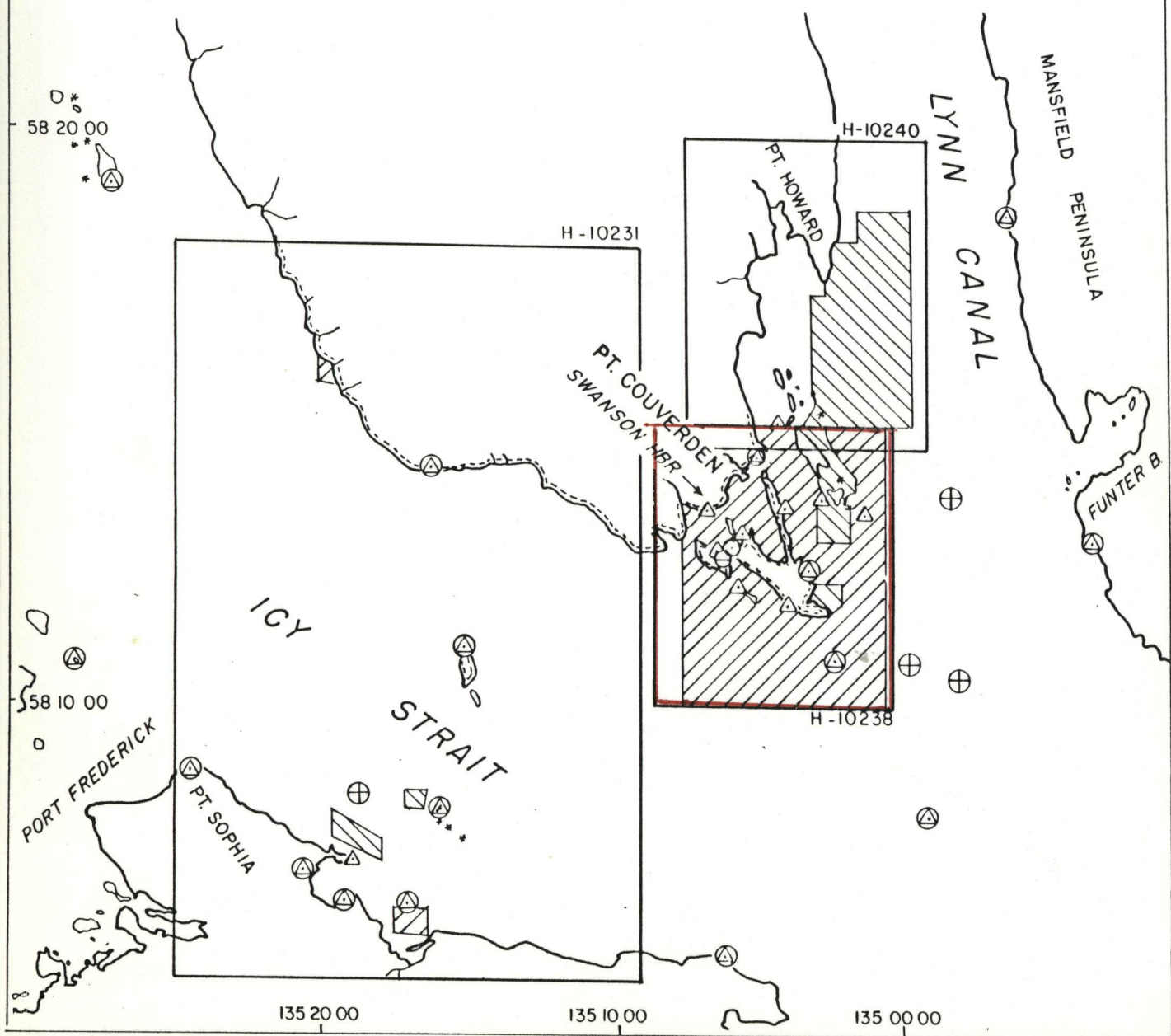
CAPT. JOHN CARPENTER, CMDG

SCALE FROM NQS CHART 17000

APRIL TO MAY 1987

	APRIL	MAY
SQ NM SOUNDING LINE	11	12
LMN SOUNDING LINE	266	231
BOTTOM SAMPLE	60	39
HYDRO CONTROL STATIONS	22	8
SV/D- NANSEN CAST	2	2
TIDE GAGE INSTALLATION	1	0
HYDROGRAPHY		

- ⊕ SV/D NANSEN CAST
- ⊗ STA RECOVERED
- ⊖ TIDE GAGE
- △ STA ESTABLISHED
- ~ S/L VERIFICATION



Descriptive Report
to Accompany Hydrographic Survey
H-10238 (Field No. FA 10-1-87, Scale 1:10,000)
NOAA Ship FAIRWEATHER S220
Captain John W. Carpenter, Commanding
1987

A. PROJECT:

Hydrographic survey H-10238 was conducted in accordance with Project Instructions OPR-0186-~~FA-87~~ dated July 2~~8~~⁹, 1986 and:
MI-86

- a. Change No. 1 dated August 4, 1986
- b. Change No. 2 dated December 24, 1986
- c. Change No. 3 dated February 2, 1987
- d. Change No. 5 dated April 13, 1987
- e. Change No. 6 dated April 29, 1987

PMC OORDER, the Hydrographic Manual (fourth edition) through Change No. 3, and the Hydrographic Survey Guidelines are also applicable. *See Eval Report section 1*

This is a basic survey for the purpose of providing contemporary hydrographic survey data for existing nautical charts covering this area.

This sheet is designated as "L" in the project instructions.

B. AREA SURVEYED

This survey covers the area within Swanson Harbor and its vicinity, Icy Strait, Alaska. The survey area is bounded to the north by latitude 58/15/00N and to the south by latitude 58/10/00N. The western most limit is bounded by longitude 135/08/15W and to the east bounded by longitude 135/00/28W, east of Couverden Rock.

The field work for this survey commenced on April 7, 1987 (DN 97) and was completed May 16, 1987 (DN 136). *And additional work Oct. 10, 1987*

C. SOUNDING VESSELS

Hydrographic data for this survey was collected with Jensen survey launches FA-3, FA-4, FA-5, and FA-6, designated vessel number's 2023, 2024, 2025, and 2026, respectively. Shoreline verification was completed using the launches, 17-foot MonArks [FA-7 (2027), FA-8 (2028)], and a 17-foot Boston Whaler [FA-9 (2029)]. The NOAA Ship FAIRWEATHER (vessel number 2020) was used for all sound velocity casts and to collect bottom samples in water depths greater than 55 fathoms. Bottom samples in depths less than 55 fathoms were collected by vessel 2025.

One unusual sounding vessel configuration was used during this survey. Positions were determined for skiffs performing shoreline verification by using an EDM and theodolite. FAIRWEATHER personnel hand-held prisms in skiffs while angles and distances were obtained.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Four of FAIRWEATHER's survey launches, each equipped with dual-beam Raytheon DSF-6000N echo sounders, were used to obtain soundings for this survey. See Table I for a list of equipment by vessel and day number. Three skiffs equipped with sounding poles were used for shoreline verification.

Table I
Sounding Equipment
RAYTHEON DSF-6000N SERIAL NUMBERS

<u>Date</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
97-122	A113N	A121N	B049	B048N
123-133	A113N	A104N	B049	B048N
134-136	A113N	A121N	B049	B048N

Echo-sounding equipment was monitored continuously while on line. All hydrographic data was scanned at least twice to insert peaks and deeps between soundings and to ensure proper depth digitization.

No mechanical problems that degraded data quality were encountered with the DSF-6000N echo sounders during this investigation. Bar checks at three fathoms were done daily to ensure that the Raytheon DSF-6000N echo sounders were operating properly. Sounding corrections determined for this survey apply to both the high- and low-frequency sounding data.

The high-frequency beam data was digitized except in the area north of latitude 58/12/50N and east of longitude 135/02/00W where the low-frequency beam data was digitized in depths greater than 100 fathoms. The low frequency was also used when the high frequency trace was lost due to the bottom steepness or suspended particles in the water column. Also, if side echoes were obtained over peaks and reduced line spacing was not needed because of depth (e.g., in 80 fathoms of water), the low-frequency side-echo depth was recorded. This is noted on the raw computer printout with the annotation "low-frequency trace" or "LFT".

Some diver's least depths were obtained using a pneumatic depth gauge manufactured by 3-D Instrument, Inc. (s/n 8302079 N). System calibration data can be found in the separate Corrections to Echo Soundings Data package.

All of FAIRWEATHER's survey launches were tested for settlement and squat on May 22, 1987 (DN 142) in Womens Bay, Kodiak, Alaska. The test results were used to plot settlement and squat curves for each launch. Measurements were conducted in accordance with Section 4.9.4.2 of the Hydrographic Manual. It was determined that there were no applicable

settlement and squat corrections for any launch at speeds run while surveying in fathoms. Refer to the Corrections to Echo Soundings Data package for details concerning settlement and squat determinations.

An accurate determination of launch transducer depths was obtained through physical measurement. An oversized carpenter's square was constructed of angle iron, with foot and tenth markings noted on the rise. Divers held the foot of the carpenter's square flush against the transducer while the rise was leveled by personnel on the pier using a circular bubble level. On March 27, 1987 a transducer draft of 0.3 fathoms was recorded for all launches. All launch soundings on the ~~final field~~ ^{smooth} sheet were plotted using this TRA value.

Velocity correctors were determined from three SV/D casts in accordance with section 4.9.5.2 of the Hydrographic Manual. Table II shows the date and locations of the casts. Program VELTAB was used to compute tables from cast data. The results of the first two SV/D casts performed were similar enough to average and combine into one table (Table I). Table III shows velocity tables determined from cast data. Velocity corrections using a preliminary velocity table (see Appendix IV for a listing) were applied to all echo sounder depths plotted on the final field sheets.

Table II
Velocity Casts

<u>Cast No.</u>	<u>Date (DN)</u>	<u>Latitude</u>	<u>Longitude</u>
1	095	58/11.9 N	134/59.5 W
2	123	58/10.7 N	135/00.0 W
3	136	58/13.8 N	134/58.6 W

Table III
Velocity Tables

<u>Table No.</u>	<u>Based on Casts</u>	<u>Dates</u>
1	1,2	DN 95-128
2	3	DN 131-136

The SV/D casts were performed using a Plessy Model 9040 Environmental Profiling System (s/n 5647). This instrument was calibrated at the Northwest Regional Calibration Center (NRCC) on March 9, 1987 for the 1987 field season. XBT's and surface temperatures were taken during the SV/D casts as a check on the Plessy System.

TC/TI tapes were made in accordance with the PMC OPORDER. Printouts of TC/TI tapes are included in the separates following the text of this report.

Predicted tide correctors were applied to the soundings plotted on the final field sheets for this survey. The tide correctors used were from the 1987 West Coast of North and South America Tide Tables. Tide correctors use Juneau, Alaska as the reference station using a height correction range ratio of "x 0.92", and no time correction. For further information, refer to Appendix II, Field Tide Note. *Attached to this report*

✓
see Eval
Report
section 1

E. HYDROGRAPHIC SHEETS

The final field sheets were plotted aboard FAIRWEATHER using a PDP/8e computer (s/n 06406) and complot plotter (s/n 5848-17). This survey consists of four final field sheets (two each east and west), two 1:10,000 scale overlays and two development sheets (Development "A", scale 1:1,000 and Development "B", scale 1:2,500).

✓

Final field sheet requirements were modified for H-10238. Given the complexity of the shoreline in the survey area, the final field sheet was divided into two parts. One sheet has sounding lines, least depths from dive investigations and developments, and depth curves. The second sheet has shoreline, along-shore features, descriptive notes, detached positions not on the first sheet, and bottom samples. Copies of correspondence giving permission for this format can be found in Appendix XI, Supplemental Information. *Attached to this report*

✓

All hydrographic data for the survey will be forwarded to the Pacific Marine Center in Seattle, Washington for ~~verification~~ *office processing* and smooth plotting.

✓

F. CONTROL STATIONS

All horizontal control stations used on this survey were recovered and/or established by FAIRWEATHER personnel. All geodetic positions are based on the North American Datum of 1927. Conventional traverse methods were used throughout this survey. No anomalies in control, adjustment or closures were encountered. All positions meet or exceed Third Order, Class I specifications. For additional information refer to the Horizontal Control Report, H-10238.

✓

G. HYDROGRAPHIC POSITION CONTROL

Hydrographic position control was accomplished using the Motorola Mini-Ranger III system. The control configuration consisted of range/range and range/azimuth for all positioning. Table III contains a list of console and R/T units by day number for each sounding vessel.

✓

Table IV

Mini-Ranger Equipment by Vessel

<u>Vessel Number</u>	<u>DN</u>	<u>Console/RT Number</u>
2020	123 136	716/1108 B0323/1875
2023	97-136	703/B1398
2024	97-136	506042/E2716
2025	97-136	716/1108
2026	97-136	B0323/1875

Mini-Ranger base line calibrations (BLC's) were conducted in accordance with the PMC OORDER.

Beginning BLC's were performed on DN's 75-79 along a distance of 990.2 meters between two recoverable marks (Naval Reserve Pier to PMC Pier A) across Lake Union in Seattle, Washington. Ending BLC's were performed on DN's 142 and 146 along a distance of 855.4 meters, between two recoverable points in Womens Bay, Kodiak, Alaska. All combinations of codes and consoles were calibrated before commencing and after completing H-10238.

Because the differences between beginning and ending BLC's were five meters or less, the beginning and ending calibrations were not averaged. The beginning correctors were used as the final correctors. Final baseline correctors and minimum signal strengths can be found in the Electronic Control Data package submitted for H-10238.

Hydrographic positioning equipment was critically system checked at least once per week unless adverse weather prohibited it (at which point it was accomplished as soon as weather allowed). Non-critical system checks were conducted once per day. All hydrographic positioning equipment was found to be accurate within the limits set forth by the PMC OORDER. Critical system checks were accomplished using the theodolite cut method, or by placing the launches at the point of intersection of two known visual ranges, or by theodolite and EDM. Theodolites onboard the FAIRWEATHER are as follows: Wild T-1 theodolites with serial numbers 13008, 12932; Wild T-2 theodolites with serial numbers 26336, 85652, 257219, 276503; and Lietz TM1A theodolite with serial number 2151. The EDM used was a Hewlett-Packard HP 3808A with serial number 1723A00172.

In all cases, the launch R/T units were located directly over the transducers, eliminating the need for ANDIST correctors.

H. SHORELINE

The shoreline for this survey was taken from TP-01312, a 1:10,000 scale, Class III, registered shoreline manuscript, and from TP-01311, a 1:20,000 scale, Class III, registered shoreline manuscript, manually enlarged to 1:10,000 scale. All verified features from the shoreline manuscript are in black ink on the final field sheet with changes in red ink. New features (i.e., new rocks, foul limits) are shown in black ink. ✓

There were no conflicts between hydrography and the manuscript Mean High Water Line (MHWL). Offshore of the MHWL the manuscript shows an extremely complex area with over 500 rocks identified (the majority of which are within 100 meters of the high water line). At low tide it became obvious that many of the manuscript boulder-strewn beaches were actually ledges with some boulders on top. Many of these ledges are not attached to the high water line, but have gravel, pebble, or stone beaches shoreward of them. This type of beach configuration is displayed as ledge on the final field sheet. Rock symbols have been retained on ledges only if they are prominent high points. ✓

In many other areas the boulder-strewn beaches were found to be dangerous and, at the lower tides, unapproachable from sea. These areas are delineated as foul with supporting detached positions where required. Heights were not obtained for some manuscript rocks within foul areas; however, these rocks were retained to better show the foul nature of the area. ✓

Hydrography was run inside the foul limits in some areas. These lines were run at higher tides when the foul nature of the area was not visible. Foul limits should be kept as shown on the final field sheet. *chart as shown on smooth sheet* ✓

See the final field sheet for new ledges, foul areas, and manuscript ledge changes (ledge limits were determined from lines of hydrography in most cases). These types of changes are too numerous to discuss separately in the descriptive report and are clearly shown on the final field sheets. *See Eval Report Section 2* ✓

Two areas in the vicinity of latitude 58/14/12, longitude 135/05/55, and latitude 58/14/19, longitude 135/05/36, were found to be boulder and stone beaches. The manuscript rock symbols shown on these beaches are not prominent points; no prominent features were found. It appears that in some cases light colored boulders were chosen by the compiler to be shown on the manuscript. It is recommended that these rock symbols be retained as they better display that there are boulders in these areas. The *Final smooth* field sheets show these rocks with no height information. ✓

In some areas height information on manuscript rocks was not obtained as the rocks were dry. These rocks are shown on the final field sheet with "(dry)" noted. *The rocks are portrayed on the smooth sheet as rocks with no elevation* ✓

A manuscript rock at latitude 58/13/^{47.81}48N, longitude 135/06/^{06.61}07W, was found to be the northwest end of a 100-meter long islet (position numbers 5119-5120) not appearing on the manuscript. It is recommended that an islet be charted at the above position. *Islet depicted with approximate HNL due to lack of position data* ✓ *CONCUR*

Many of the offshore manuscript rocks were found to be reefs, parts of detached foul areas, or parts of ledges. These changes are shown on the final field sheet in red with supporting positional information. In addition, the following new reefs were found and were reported as dangers to navigation: *chart as shown on the smooth sheet*

LATITUDE	LONGITUDE	POSITION NUMBERS
58/12/12	135/07/21	5377-5379
58/13/42	135/06/42	5025-5026

^{FIVE} Eight rocks from manuscript TP-01312 were not found. A visual search (10-15 minutes) with leadline probing was made over each location. On all occasions kelp was found at each site and, in a few instances when the kelp was not thick, the bottom was visible. There were no indications that rocks exist in these areas nor were there any signs of breaking water over rocks. In addition, divers investigated two manuscript rock locations; rocks were not found (position numbers 9031 and 9032). It is recommended that the eight rocks not be charted. The ~~rocks~~ ^{soundings} are as follows:

LATITUDE	LONGITUDE	DEPTH (fm)	POSITION
58/11/23.0 ^{2.94}	135/05/26.8 ¹⁷	2.6 ⁸	2513
* 58/11/24.5 ⁰⁹	135/05/28.5 ⁸⁸	2.0 ³	2514 Excessed ^{to} Pos. #1777 1.1 RK at $\phi=58/11/24.65$ $\lambda=135/05/28.97$
58/13/14.7 ³⁶	135/01/57.5 ¹¹	1-9 2.0	8510
58/13/13.5 ³⁸	135/01/58.5 ⁰⁶	2.0	8511
* 58/13/24.0	135/02/39.8	4.3	Rejected 8620 Pos 1913, RK UNCOVERS 3ft at MLLW
* 58/13/50.5 ³⁶	135/02/51.53	1.7	8663 $\phi=58/13/23.84$ $\lambda=135/02/40.77$
58/13/50.5	135/03/06.0	2.5	9031 (dive)
58/13/47.0	135/03/08.5	2.3	9032 (dive)

* Do not concur, confirms rocks at the above pos. \rightarrow Pos. 8660, 0.6 RK at $\phi=58/13/49.57$
 $\lambda=135/02/51.49$
At the northwest end of Ansley Island, latitude 58/12/50N, longitude 135/07/50W, a group of approximately 100 piles was located (position numbers 910-913). These piles appear to be the remains of a pier. It is recommended "piles" be charted in this area. *Piles cover & uncover*

A deadhead was found at latitude 58/11/41N, longitude 135/03/22W (position number 7712). The deadhead is attached to the bottom and could not be pulled free by a Jensen launch. *Recommend chart a deadhead uncovering 3ft above MLLW.*

The obstruction shown on the manuscript at latitude 58/12/45N, longitude 135/06/30W, was found to be a floating pier (see position numbers 934-936). This feature should be charted at the location and orientation shown on the final field sheet. *smooth*

An apparent man-made small-boat channel was found in the vicinity of latitude 58/13/50N, longitude 135/07/00W. This channel connects Swanson Harbor with the cove northwest of Couverden Island and can only be transited at higher tides. The channel (approximately 10-meters wide in most areas) is marked by a series of piles (position numbers 901-908) and is foul with rocks on either side. One line of soundings was obtained by launch while transiting the channel; the channel was not wide enough to warrant further data collection. *channel navigable at high water only*

I. CROSSLINES

All crosslines were run at a minimum of 45 degrees with respect to the mainscheme lines. Crosslines account for 10% of the total coverage. ✓

In areas with depths less than 20 fathoms, crossline agreement is generally within 0.4 fathoms. In those areas where the difference exceeded 0.4 fathoms it can be attributed to irregular and rapidly changing bottom contours. There is no systematic problem that would account for differences in these areas. *CONCUR* ✓

In areas where the depth exceeds 20 fathoms, crossline agreement is excellent, except over some irregular and steep bottom terrain where mainscheme and crosslines vary by more than the 3% given in Section 4.6.1 of the Hydrographic Manual. Again, there is no systematic problem that would account for differences in these areas. *CONCUR* ✓

In cases where different vessels were used for crosslines and mainscheme hydrography, good agreement was obtained at the crossings except as described above. ✓

J. JUNCTIONS *see Eval Report section 5*

Survey H-10238 junctions to the south and west with contemporary survey H-10227, 1986, scale 1:20,000. Soundings agree within 0.4 fathoms in depths less than 20 fathoms. In depths greater than 20 fathoms the soundings agree within 1 fathom. ✓

K. COMPARISONS WITH PRIOR SURVEYS

As per project instructions, comparisons with the following prior surveys were made with H-10238:

1. Registry No.	H-2062
Scale	1:10,000
Year	1890

Comparison with survey H-2062 was difficult; overlaying the old survey with the present survey and correlating latitudes and longitudes was not practical as neither the shoreline nor the soundings matched well. Therefore, the two surveys were compared by overlying the shorelines. Overall agreement is good with the present survey depths generally 1-2 fathoms shallower than those of prior survey H-2062. ✓

In the vicinity of latitude 58/12/20N, longitude 135/07/45W, southwest of Ansley Island, considerable shoaling has occurred since the 1890 survey. The prior survey displays uniform depths ranging between 14 to 15 feet. ✓

versus the 4 to 10 foot (0.7 to 1.6 fathoms) soundings of H-10238. Hydrography was run over this area using 45-meter line spacing. It is recommended that survey H-10238 depths supersede the prior survey depths. *CONCUR*

- 2. Registry No. H-2562
- Scale 1:40,000
- Year 1901

Comparison between H-10238 and prior survey H-2562 indicates that the present survey depths are consistently 1-2 fathoms shallower than the prior survey soundings. Given the different survey methods used in the late 1800's and early 1900's, and the change in bottom topography in nearly 100 years, this comparison is considered very good. ✓

- 3. Registry No. H-2055
- Scale 1:80,000
- Year 1890

Comparison of the two surveys indicates that H-10238 depths are consistently shallower (1 to 3 fathoms) for depths less than 20 fathoms. For offshore areas the majority of the soundings agreed within 3% or better. Exceptions are noted below. ✓

Over a shoal area in the vicinity of latitude 58/13/28N, longitude 135/06/07W, the prior survey indicates depths of 3-1/2 fathoms. Contemporary hydrography, using 45-meter line spacing, indicates survey depths ranging from 5 to 9 fathoms. Further observation indicates that the present 3-fathom curve is found 200 meters northwest from this position. It is recommended that the present survey depths supersede those from survey H-2055. *CONCUR* ✓

In the area near latitude 58/11/53N, longitude 135/08/04W, survey H-2055 indicates a shoal area with a depth of 3-1/2 fathoms. Development over this area using 45-meter line spacing indicates depths of 35 fathoms with the 3-fathom curve located 450 meters north of this location. It is recommended that the present survey depths be charted. *CONCUR* ✓

In the vicinity of latitude 58/13/10N, longitude 135/03/05W, the prior survey indicates a depth of 29 fathoms. Hydrography accomplished over this area (90-meter line spacing) revealed depths of 39 fathoms. Indications of shallower depths were found 100 meters northeast of this location. It is recommended that the prior survey depth be superseded by depths from survey H-10238. *CONCUR* ✓

At latitude 58/13/49N, longitude 135/04/36W, the prior survey displays a depth of 82 fathoms. Hydrography over this area (90-meter line spacing) indicates depths ranging from 56 to 70 fathoms. It is recommended that the prior survey depth be superseded by depths from survey H-10238. *CONCUR* ✓

The prior survey indicates a depth of 56 fathoms near latitude 58/13/42N, longitude 135/04/00W. Hydrography accomplished over this area using 90-meter line spacing indicated depths ranging between 85 to 95 fathoms. *CONCUR* ✓

92 100

fathoms. Depths of 56 fathoms are located 250 meters northeast from this position. It is recommended that survey H-10238 depths supersede the 56-fathom depth. *CONCUR*

A depth of 15 fathoms is indicated by the prior survey at latitude 58/14/48N, longitude 135/03/35W. The present survey indicates depths from 28 to 33 fathoms with 15-fathom depths 150 meters to the southwest. This area was developed using 45-meter line spacing. It is recommended that the prior survey depths be superseded by soundings from H-10238. *CONCUR*

4. Registry No.	H-3564
Scale	1:20,000
Year	1913

Comparison between the two surveys indicates that the present survey is shallower than H-3564 with an overall depth agreement between 1 to 2 fathoms for depths less than 20 fathoms and 3 to 5 fathoms at depths greater than 20 fathoms. *CONCUR*

Because of the improved hydrographic survey methods used during this survey compared to methods/equipment used in the past and the changes in bottom topography that appear to have occurred over 100 years, it is recommended that survey H-10238 supersede soundings from H-2062, H-2055, H-2562, and H-3564. *CONCUR*

L. COMPARISON WITH THE CHART

Comparisons were made between H-10238 and a 1:10,000 scale enlargement of Chart 17316 (October 30, 1982, 14th Edition, 1:80,000) updated by Local Notice to Mariners. Comparison with charted soundings that were derived from prior surveys H-2062, 1890, H-2055, 1890, and H-2562, 1901 and discussed in Section K of this report will not be repeated here. *see Eval Report section 7*

A charted depth of 15 fathoms was investigated in the vicinity of latitude 58/14/0¹N and longitude 135/02/31²W. Development over this area (22-meter line spacing) indicated the presence of a shoal with depths ranging from 1 to 15 fathoms. A divers' least depth of 7.3 fathoms (position number 9024) was obtained. This depth was reported as a danger to navigation. It is recommended that this shoal be charted using depths shown on H-10238. *CONCUR*

A 10-fathom depth charted at latitude 58/13/51¹²N, longitude 135/02/06³⁰W was developed using 45-meter line spacing. Diver's investigation over this area indicated a shoal with a least depth of 7.2 fathoms (position number 9028). This depth was reported as a danger to navigation. It is recommended that the 7.2-fathom depth be charted. *CONCUR*

A 1:2,500 development was completed over an uncharted shoal in Swanson Harbor Channel. Main scheme hydrography in this area detected a 9.9-fathom sounding at latitude 58/12/10³⁶N, longitude 135/05/55⁶⁰W. Ten-meter line *Pos. 7359 + 02*

spacing was run in the vicinity with no depths shallower than ^{10.0}~~9.9~~ meters found (see Development "B"). This shoal depth was reported as a danger to navigation.

A charted pile (Chart Mark-Up source T-3419, scale 1:20,000, 1913) at latitude 58/12/03N, longitude 135/06/45W, was investigated during shoreline verification (see position number 1790). The search for this feature was made during low tide. A thorough reconnaissance over this location during dry periods found no indication of this pile nor any remains of it. It is recommended that this feature be deleted from the chart. ✓
concur

A second charted pile ^{from T-3419, 1913} was investigated at latitude 58/11/54N, longitude 135/06/46W, south of Ansley Island. Because of the mismatch between the chart and survey H-10238 shorelines, two separate areas were searched. One position investigated was the charted position. The second position investigated (58/11/53N, 135/06/50W) was determined by matching the shorelines between the chart and the present survey. In both locations divers performed 30-meter circle searches (position numbers 9019-9020). No indications or remains from this pile were found in either location. It is recommended that this feature be removed from the chart. ✓
concur

A charted rock at latitude 58/13/12N, longitude 135/05/53W, was investigated (see DEVELOPMENT "A", 1:1,000 scale) by a full echo-sounder search (6-meter line spacing) over a 50-meter radius. No evidence of a rock was found; depths in the area ranged from 4 to 7 fathoms with fairly regular bottom topography. It is recommended that the charted rock be deleted and depths in the area be charted as found in H-10238. ✓
concur

A new submerged reef (covered 2 feet) is located at latitude 58/12/52N²², longitude 135/06/50W^A (position numbers 7546-7547). This rock was reported as a danger to navigation. *Pos. 7547 rock uncovers 2 ft. at MLLW chart as shown in smooth sheet*

In addition, several other shoals, rocks, and reefs deemed to be dangers to navigation were noted during this survey. A list of these dangers (including description, latitude and longitude, and position numbers) can be found in the two letters addressed to the Commander (OAN) of the Seventeenth Coast Guard District dated April 23, 1987 and June 3, 1987. Copies of these letters are included in Appendix X, Dangers to Navigation. *Attached to this report* ✓

Diver's determined least depths for many of the shoals by pneumatic gauge or by tape measure. Dive investigations are assigned position numbers from 9000 to 9033.

The following AWOIS item was investigated: ✓

AWOIS ITEM#	DESCRIPTION
51071	Possible submerged reef Latitude 58/11/27N Longitude 135/05/15W

The AWOIS item was investigated by echo-sounder search (22-meter line spacing) with least depth determination by divers. Hydrography was run over a 150-meter radius to outline the extension of the submerged reef's limits. Least depths of ^{4.4 fms} 8 feet were obtained by divers over two locations (58/11/24⁰⁵N, 135/05/05^{4.61}W and 58/11/26³⁶N, 135/05/05^{8.71}W, position numbers 9009-9010). This item was reported as a danger to navigation. *See Eval Report section 7* ✓

M. ADEQUACY

This survey is complete and fully adequate to supersede all prior surveys in their common areas. Additional field work is recommended by FAIRWEATHER (see Section Q, Recommendations). This work could be completed in the fall, 1987, and forwarded as an addendum for merging with survey H-10238. *This additional work was accomplished and is added to H-10238, see addendum to H-10238* ✓

N. AIDS TO NAVIGATION

Two aids to navigations were found within the limits of this survey: Rocky Island Light 13 (Light List number 24125) and Swanson Harbor Entrance Light 2 (Light List number 24130). ✓

Rocky Island Light 13 was located by NOAA Ship MT. MITCHELL during the 1986 field season; therefore, it will not be discussed in this report. The light was recovered as described. ✓

Swanson Harbor Entrance Light 2 was located to Third Order, Class 1 specifications. The light is located at latitude 58/11/36.07N, longitude 135/04/36.93W. This position was compared with the charted position (Chart 17316, October 30, 1982, 14th Edition, scale 1:80,000). There was good agreement; no change is recommended. *CONCUR* ✓

The position given for Swanson Harbor Entrance Light 2 in the Light List is latitude 58/11.6 N, longitude 135/04.6 W. No change to the position given in the Light List is required. *CONCUR* ✓

The physical description and operational characteristics described by the Light List for Swanson Harbor Entrance Light 2 were found to be correct. ✓

O. Statistics

<u>Vessel</u>	<u>2020</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>Total</u>
Positions	11	1514	1189	449	1665	4817
Nautical Miles	-	137	92	19	163	411
Square Miles	-	-	-	-	-	24
Bottom Samples	11	3	-	83	-	97
Velocity Casts	3	-	-	-	-	3
Tide Stations	1	-	-	-	-	1
Days of Production (Hydro Only)						27

P. MISCELLANEOUS

Bottom samples were collected and forwarded to the Smithsonian Institution, Washington D.C. ✓

Strong currents (including during periods of expected slack water) were encountered by divers west of Rocky Island and south of Point Couverden. Several dive investigations in this area were aborted after divers encountered an estimated current ranging from 1.5 to 2.0 knots. A successful dive was finally accomplished during a brief slack period (0.5 knots), after which the current increased rapidly. ✓

South of Entrance Island, divers encountered maximum currents of approximately 0.5 knots within 300 meters of shore. In the vicinity of latitude 58/13/55N, longitude 145/03/15W (between two unnamed islands) a dive was made in approximately 1 knot of current. This dive was also planned during periods when the current was likely to be minimal (slack water). ✓

Q. RECOMMENDATIONS

At latitude 58/10/57N, longitude 135/03/44W, a side echo of 13 fathoms in 21 fathoms of water was picked up by both the high- and low-frequency beams (position number 3262+5 1/2). There were no indications of the peak on lines run at a distance of 45 meters to either side. Large spurious returns that were detached from the bottom, thought to be schools of fish, did occur on other sounding lines run in that vicinity on the same day; however, only the high-frequency trace followed in those cases. *No trace of the 13-fathom peak was found during the additional work* ✓

It is felt that it has not been determined whether the 13-fathom side echo is a return from fish or debris, or is actually a peak. As FAIRWEATHER will be working in the area in the fall, 1987, it is recommended that FAIRWEATHER prove or disprove the existence of the peak at that time and, if required, develop the area for least depth. This data would be forwarded as an addendum to survey H-10238. *see attached addendum to H-10238* ✓

R. AUTOMATED DATA PROCESSING

The following programs were used for data acquisition or processing.

Number	Program Name	Version Date
RK 112	Range-Range Real Time Plot	04/23/84
RK 116	Range-Azimuth Real Time Plot	03/01/86
RK 201	Grid, Signal and Lattice Plot	04/18/75
RK 221	Range-Range Non-Real Time Plot	07/25/86
RK 226	Range-Azimuth Non-Real Time Plot	07/25/86
RK 300	Utility Computations	10/21/80
RK 330	Reformat and Data Checker	05/04/76
PM 360	Electronic Corrector Abstract	02/02/76
RA 362	RK 330/602 Combined	08/20/84
AM 500	Predicted Tide Generator	11/10/72
RK 407	Geodetic Inverse/Direct Computation	09/25/78
AM 602	Elinore	12/08/82
RK 562	Theodolite Calibration	09/05/84
	VELTAB	02/01/85

S. REFERRAL TO REPORTS

The following reports will be submitted separately:

<u>Report</u>	<u>Date</u>
Horizontal Control Report	8/87
Coast Pilot Report	6/87
Electronic Control Data Package	8/87
Corrections to Echo Soundings	
Data Package	8/87

OPR-0186-FA-87
Addendum to Hydrographic Survey H-10238
Field Number FA-10-1-87, Scale 1:10,000
NOAA Ship FAIRWEATHER S220
Captain Glen R. Schaefer
1987

On survey H-10238 at latitude 58/10/57N, longitude 135/03/44W, a side echo of 15 fathoms in 21 fathoms of water was picked up by both the high- and low-frequency beams during sounding operations (position number 3262+ 5). There were no indications of the peak on lines run at a distance of 45 meters to either side. On October 10, 1987 (DN 283) FAIRWEATHER performed an echo-sounder development over the position to disprove or verify the existence of the peak. ✓

INVESTIGATION

Jensen survey launch FA-3 (vessel number 2023), equipped with a dual-beam Raytheon DSF-6000N echo sounder (serial number A104N), ran 15-meter line spacing in a north-south direction in a 45-meter radius around the position. In addition, three lines were run at 10-meter spacing in an east-west direction centered about the 13-fathom sounding in question. ✓

Hydrographic position control was accomplished using the Motorola Mini-Ranger III system (Console/RT 703/B1398 and transponder codes 5 and 7) in a range-range configuration off stations FUNTER 2 1922 and PEACH 2 1922. The equipment was critically system checked using the theodolite cut method (Wild T-2 theodolite, serial number 276503) and EDM comparison (Hewlett-Packard HP 3808A, serial number 1723A00172). A non-critical system check also was performed for code 7. All hydrographic positioning equipment was found to be accurate within the limits set forth by the PMC OORDER. No ANDIST correction is needed. ✓

All data are plotted on a 1:2,500-scale development sheet (Development "C"). Velocity correctors were not applied. A launch transducer draft of 0.3 fathoms and predicted tide correctors were applied to the soundings. The tide correctors used were from the 1987 West Coast of North and South America Tide Tables. Tide correctors use Juneau, Alaska, as the reference station using a height correction range ratio of "x 0.96" and no time correction. ✓

RESULTS

There were no indications of a 13-fathom peak in the area. The least depth found during this investigation was ^{18.3}15.2 fathoms. It is recommended that the 13-fathom depth be removed from survey H-10238 at latitude 58/10/57^{6.75}N, longitude 135/03/44^{6.1}W. ✓ *concur*

For specific information on equipment and velocity corrections, see the following reports:

Electronic Control Data Package (October to November 1987)
Corrections to Echo Soundings Data Package (October to November 1987)

Submitted by:

Maureen R. Kenny
Maureen R. Kenny
Lieutenant Commander, NOAA
Field Operations Officer

Approved by:

Glen R. Schaefer
Glen R. Schaefer
Captain, NOAA
Commanding Officer

Swanson Harbor, Alaska
Field Tide Note
April - May, 1987

The tide gage located in Juneau, Alaska (945-2210) served as the reference station for the predicted tides used for correctors on surveys H-10238, H-10240, H-10227 (addendum) and H-10231 (addendum) as specified by Project Instructions OPR-0186-FA-87.

Predicted tide correctors were interpolated aboard the FAIRWEATHER using data from the 1987 West Coast Tide Tables and PDP-8 program AM 500, dated November 10, 1972. All correctors calculated were based on zone correctors supplied by the project instructions and tabulated below.

<u>Time Correction</u>		<u>Height Correction</u>
<u>High Water</u>	<u>Low Water</u>	<u>Range Ratio</u>
0	0	X .92

All times of predicted and reported tides are expressed in Universal Coordinated Time. Predicted tides were acceptable for hydrography with no discrepancies in the raw data attributable to tidal errors.

A Bristol Bubble, Model 15 analog tide gage (range 0-30 feet) was installed in support of the above mentioned hydrographic surveys. Location and period of operation are as follows:

<u>Site</u>	<u>Location</u>	<u>Period</u>
Swanson Harbor, Icy Strait, AK 945-2368	58/12/18N 135/06/30W	4/5/87 - 5/17/87

SWANSON HARBOR

Tide gage (SN # 63A2920) was installed in Swanson Harbor on the southeast side of Ansley Island, Icy Strait, Alaska on April 5, 1987 (DN 95). A three-hour observation on April 6 confirmed that the gage was operating with consistent gage to staff differences. The gage was removed at the finish of hydrographic operations on May 16, 1987 (DN 136).

The orifice at the Swanson Harbor tide gage was secured to a 150-lbs cement block with an angle iron placed vertically to support the orifice which was secured with hose clamps. Tubing was placed between the orifice and gage (approximately 200 feet) and was secured with boulders along its length. A 14-foot fiberglass staff was erected at the site by securing its base within a fracture at the base of a large outcrop. The staff was then shored with an 8-foot 2X4. Guy wires and cables were secured to the staff at the 6-foot and 14-foot marks. Cables which connected to the top of the

staff were anchored to the outcrop by means of eye bolts and turnbuckles which were tightened to give the staff rigidity.

The gage itself ran perfectly throughout the project, although the clock consistently ran fast requiring the marigram to be advanced 24 hours on four separate occasions. The zero mark on the tide staff corresponded to 6.6 feet on the gage.

LEVELING

The comparison of opening and closing level runs suggests that there was no significant staff movement. The staff apparently settled 0.003 meters during the course of the survey. No differences in elevation were recorded between level runs to suggest that the benchmarks had been disturbed.

ZONING RECOMENDATIONS

None.

SIGNAL TAPE LISTING
 OPR-0186-FA87
 FA 10-1-87
 H-10238

FIRST 2 1922

100 0 58 05 27523 135 06 53300 250 0004 000000

PEACH 2 1922

104 0 58 10 40185 135 03 00801 250 0011 000000

TC-18

116 0 58 11 56699 135 03 38368 254 0000 000000

TC-05

118 0 58 13 27059 135 03 30625 254 0009 000000

TC-16

122 0 58 14 16833 135 05 39867 254 0000 000000

TC-17

124 0 58 12 53302 135 06 02071 254 0000 000000

ACT 2 1922

130 0 58 18 39430 134 57 17170 250 0003 000000

FUNTER 2 1922

180 0 58 12 55089 134 54 41435 250 0005 000000

HANUS REEF LT, 1986

190 0 58 07 51563 134 59 53276 250 0008 000000

TF-2

254 0 58 12 41586 135 06 35556 254 0000 000000

SWANSON, 1987

280 0 58 12 22673 135 06 39148 250 0000 000000

PAPAYA, 1987

282 0 58 13 18639 135 07 10124 250 0000 000000

APPLE, 1987

284 0 58 11 57508 135 06 19293 250 0000 000000

CLIMB, 1987

286 0 58 14 50193 135 04 56874 250 0009 000000

MARYANN, 1987

288 0 58 13 22840 135 04 45414 250 0002 000000

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

NONFLOATING AIDS ~~OR~~ AND MARKS FOR CHARTS

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

ORIGINATING ACTIVITY

- HYDROGRAPHIC PARTY
- GEODETIC PARTY
- PHOTO FIELD PARTY
- COMPILATION ACTIVITY
- FINAL REVIEWER
- QUALITY CONTROL & REVIEW GRP.
- COAST PILOT BRANCH

(See reverse for responsible personnel)

DATE
6-25-87

LOCALITY
Icy Strait

STATE
Alaska

REPORTING UNIT
(If Isig Party, Ship or Office)
NOAA Ship FAIRWEATHER

The following objects HAVE ~~XX~~ BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.

OPR PROJECT NO. 0186-FA-87

JOB NUMBER

SURVEY NUMBER
H-10238

DATUM
NAD 27

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	LATITUDE		LONGITUDE		METHOD AND DATE OF LOCATION (See instructions on reverse side)		AFFECTED CHARTS
		° /	//	° /	//	OFFICE	FIELD	
		D.M. Meters	D.P. Meters	D.M. Meters	D.P. Meters			
L.L. 23970	Naked Island Light	58 15	21.662	134 56	37.334		F-2-6-L 5-05-87	17316 17300
L.L. 24105	Point Augusta Light (<i>off sheet limits</i>)	58 02	23.619	134 57	01.946		F-2-6-L 4-08-87	17300
L.L. 24130	Swanson Harbor Entrance Light 2	58 11	36.074	135 04	36.922		F-2-6-L 4-08-87	17316 17300
			1116.13		603.22			

RESPONSIBLE PERSONNEL

TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	John W. Carpenter, CAPT NOAA	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	John W. Carpenter, CAPT NOAA	FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		OFFICE ACTIVITY REPRESENTATIVE <input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' (Consult Photogrammetric Instructions No. 64,		
<p>OFFICE</p> <p>1. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the subject. EXAMPLE: 75E(C)6042 8-12-75</p> <p>FIELD</p> <p>I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection</p> <p>A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75</p> <p>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	<p>FIELD (Cont'd)</p> <p>B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982</p> <p>III. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75</p> <p>IV. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75</p> <p>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>	



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL OCEAN SERVICE

NOAA Ship FAIRWEATHER
 1801 Fairview Ave. East
 Seattle, Washington 98102

June 3, 1987

1703-01.05

Commander (OAN)
 Seventeenth Coast Guard District
 P.O. Box 3-5000
 Juneau, Alaska 99802

Dear Sir:

This letter confirms my radio message, P 021755Z JUN 87.

The following items were noted by the NOAA Ship FAIRWEATHER during survey operations in the vicinity of Swanson Harbor, Icy Strait, Alaska (hydrographic survey H-10238) and are considered dangers to navigation. Questions concerning this survey may be directed to Chief, Nautical Chart Branch, telephone (206) 526-6835.

The following statements are recommended for inclusion in the Local Notice to Mariners:

"The following shoal areas in the vicinity of Swanson Harbor, Icy Strait, should be added to Chart 17316. (All depths are reduced to MLLW based on predicted tides.)

DEPTHS	LATITUDE	LONGITUDE	FROM SWANSON HARBOR ENTRANCE LIGHT 2 (LIGHT LIST NO. 24130)		POSITION Number
			BEARING	DISTANCE (nm)	
A. Rock covered ^{0.7 fm} 3 feet	58/14/54N ^{.24}	135/04/04W ^{3.90}	004°T	3.3	9025
B. Shoal ^{Rock} covered 1.2 ³ fm	58/14/01N ^{0.91}	135/02/31W ^{3.9}	024°T	2.5	9024
C. Shoal ^{Rock} covered 7.2 fm	58/13/51N ^{1.2}	135/02/06W ^{3.0}	030°T	2.6	9028
D. Shoal ^{Rock} covered 5.5 ⁶ fm	58/13/54N ^{1.4}	135/03/44W ^{3.9}	011°T	2.33	9023
E. Shoal ^{Rock} covered 2.0 fm	58/14/22N ^{1.94}	135/05/10W ^{3.0}	353°T	2.78	9029 4019/1
F. Rock covered 0.9 ^{1.9} fm	58/13/29N ^{1.74}	135/06/19W ^{1.4}	333°T	2.1	9002
G. Shoal ^{Rock} covered 1.5 ⁷ fm	58/13/38N ^{7.49}	135/06/03W ^{0.9}	339°T	2.18	9001
H. Depth 1.8 ⁹ fm	58/11/58N ^{3.6}	135/06/25W ^{1.92}	292°T	1.04	3884/2
I. Shoal covered 0.9 ^{10.0} fm	58/12/10N ^{4.05}	135/05/59W ^{1.60}	307°T	0.92	7359/2
J. Shoal ^{Rock} covered 1.3 ⁴ fm	58/11/25N ^{1.7}	135/05/05W ^{1.61}	238°T	0.33	9009, 9010
K. Shoal ^{Rock} covered 4.3 ⁴ fm	58/11/54N ^{1.7}	135/07/23W ^{1.62}	281°T	1.5	9033
L. Shoal ^{Rock} covered 3 feet	58/12/04N ^{3.92}	135/07/29W ^{1.67}	286°T	1.62	9018
M. Reef bars ^{knobs} 4 feet	58/12/12N ^{1.33}	135/07/21W ^{1.91}	292°T	1.58	5377 5379
N. Rock bars ^{covered 0.7 fm} 4 feet	58/13/07N ^{1.91}	135/07/16W ^{1.93}	316°T	2.07	914

Note that danger M. is a reef approximately 70 meters in diameter and danger N. is located at the southern entrance to the privately marked channel leading north from Swanson Harbor."

Sincerely,

John W. Carpenter
 John W. Carpenter
 Captain, NOAA
 Commanding Officer



Attachment: Copy of P 021755Z JUN 87

cc: N/CG222 - Chart Information Section, with chartlet
N/MOP21 - Nautical Chart Branch, with chartlet

93
CO
XO
OPS

JW

PTTUZYUW RUHPTEB0137 1531755-UUUU--RUHP8UU.
ZNR UUUUU
P 021755Z JUN 87
FM NOAA5 FAIRWEATHER
TO CCB05EVENTEEN JUNEAU AK
INFO NOAAADP SEATTLE WA
DMAHTC WASHINGTON DC//NVS//
ACCT CM-VCAA

TOD
NOJ 0223/07 Jun 87
RAH 4.3320 MHz Rty

BT
UNCLAS
DANGERS TO NAVIGATION
A. MY P221800Z APR 87

1. THE FOLLOWING ITEMS WERE NOTED BY NOAA SHIP FAIRWEATHER DURING SURVEY OPERATIONS IN THE VICINITY OF SWANSON HARBOR, ICT STRAIT, ALASKA (SURVEY H-10238) AND ARE CONSIDERED DANGERS TO NAVIGATION. THEY ARE IN ADDITION TO THOSE LISTED IN REF A.

	DEPTHS	LATITUDE	LONGITUDE	BEARING	DIST(NM)
A.	ROCK COVERED 3 FEET	58/14/54N	135/04/04W	004	3.30
B.	SHOAL COVERED 1.2 FM	58/14/01N	135/02/31W	024	2.50
C.	SHOAL COVERED 7.2 FM	58/13/51N	135/02/06W	030	2.60
D.	SHOAL COVERED 5.5 FM	58/13/54N	135/03/44W	011	2.33
E.	SHOAL COVERED 2.0 FM	58/14/22N	135/05/10W	353	2.78
F.	ROCK COVERED 0.8 FM	58/13/29N	135/06/19W	333	2.10
G.	SHOAL COVERED 1.5 FM	58/13/38N	135/06/03W	339	2.18
H.	DEPTH 1.8 FM	58/11/58N	135/06/25W	292	1.04
I.	SHOAL COVERED 9.9 FM	58/12/10N	135/05/59W	307	0.92
J.	SHOAL COVERED 1.3 FM	58/11/25N	135/05/05W	238	0.33
K.	SHOAL COVERED 4.3 FM	58/11/54N	135/07/23W	281	1.50
L.	SHOAL COVERED 3 FEET	58/12/04N	135/07/29W	286	1.62
M.	REEF BARES 4 FEET	58/12/12N	135/07/21W	292	1.58
N.	ROCK BARES 4 FEET	58/13/07N	135/07/16W	316	2.07

2. FOR DANGERS A. THROUGH N., BEARINGS (DEGREES TRUE) AND DISTANCES ARE FROM SWANSON HARBOR ENTRANCE LIGHT 2 (LIGHT LIST NUMBER 24130). ALL ITEMS REFER TO CHART 17316. DEPTHS ARE REFERENCED TO MLLW BASED ON PREDICTED TIDES.

3. NOTE: DANGER M. IS A REEF APPROXIMATELY 70 METERS IN DIAMETER.

4. NOTE: DANGER N. IS LOCATED AT THE SOUTHERN ENTRANCE TO THE PRIVATELY MARKED CHANNEL LEADING NORTH FROM SWANSON HARBOR.

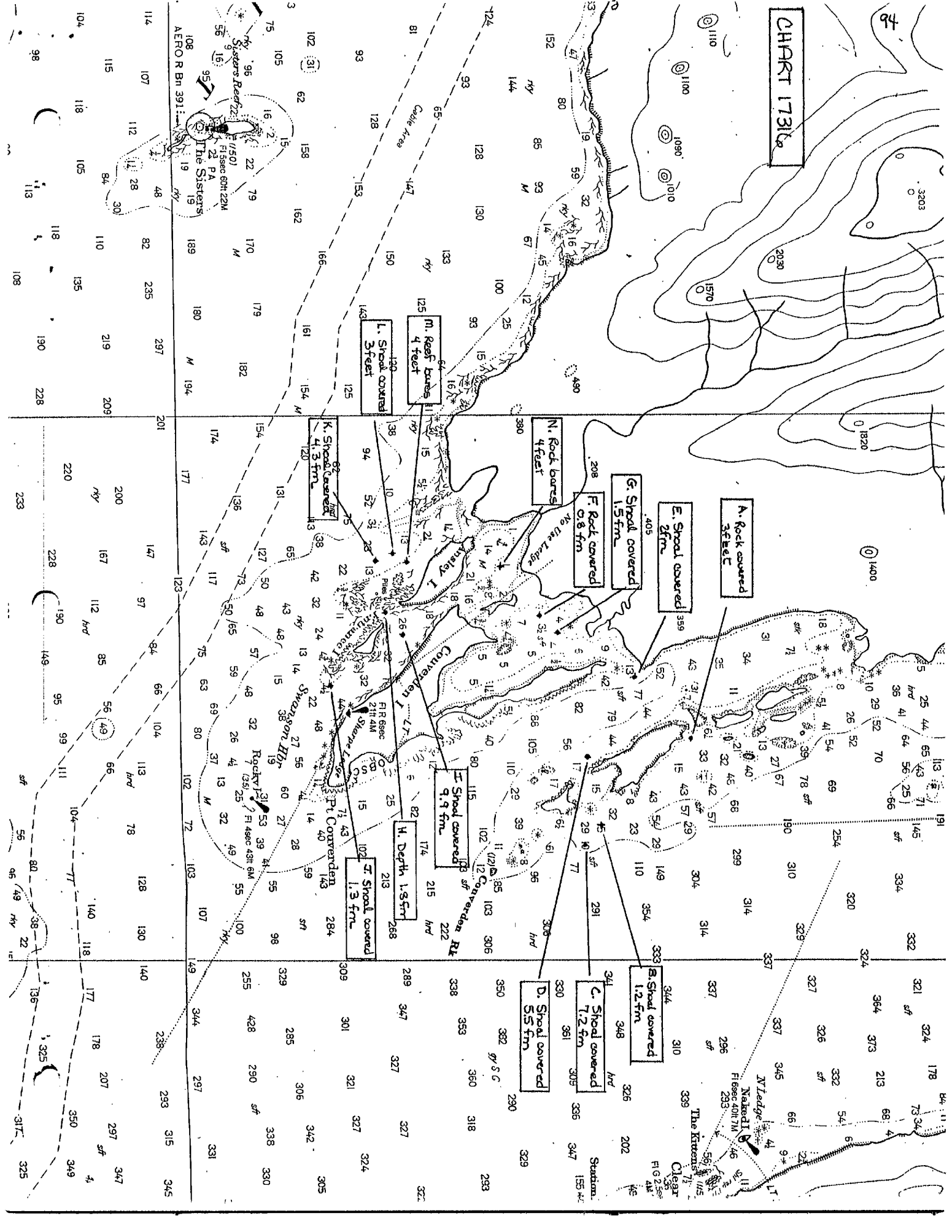
5. CONFIRMATION LETTER CONTAINING SAME INFORMATION WILL BE SENT.

BT
#0137

see confirming letter, dated June 3, 1987 for revisions

NNNN

CHART 1731c





1995
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL OCEAN SERVICE

NOAA Ship FAIRWEATHER
 1801 Fairview Ave. East
 Seattle, Washington 98102

April 23, 1987 1703-01.05

Commander (OAN)
 Seventeenth Coast Guard District
 P.O. Box 3-5000
 Juneau, Alaska 99802

Dear Sir:

This letter confirms my radio message, P 221800Z APR 87.

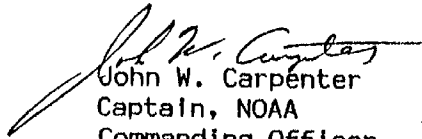
The following items were noted by the NOAA Ship FAIRWEATHER during survey operations in the vicinity of Swanson Harbor, Icy Strait, Alaska (hydrographic survey H-10238) and are considered dangers to navigation. Questions concerning this survey may be directed to Chief, Nautical Chart Branch, telephone (206) 526-6835.

The following statement is recommended for inclusion in the Local Notice to Mariners:

"The following shoal areas in the vicinity of Swanson Harbor, Icy Strait, should be added to Chart 17316. (All depths are reduced to MLLW based on predicted tides.)

DEPTHS	LATITUDE	LONGITUDE	FROM SWANSON HARBOR ENTRANCE LIGHT 2 (LIGHT LIST NO. 24130)		POSITION NUMBER
			BEARING	DISTANCE(nm)	
1) Rock uncovered ⁵ / ₆ feet	58/13/24 ^{3.53} N	135/06/08 ^{6.58} W	335°T	2.0	5027-5028
2) Rock uncovered 1 foot	58/13/42 ^{3.2} N	135/05/42 ^{6.1} W	343°T	2.18	5025-5026
3) Rock awash	58/13/02 ⁹⁶ N	135/06/11 ^{2.16} W	330°T	1.66	5031-5032
4) Rock covered ^{0.5 fms} / ₃ feet	58/12/07 ^{6.94} N	135/03/15 ^{5.29} W	055°T	0.81	745 8090
5) Rock ^{4/2} / _{covered} 2 feet	58/12/52 ²² N	135/06/50 ⁷⁴ W	316°T	1.71"	7546-7547

Sincerely,


 John W. Carpenter
 Captain, NOAA
 Commanding Officer

Attachment: Copy of P 221800Z APR 87

cc: N/CG222 - Chart Information Section, with chartlet
 N/MOP21 - Nautical Chart Branch, with chartlet



96

CHART
17316

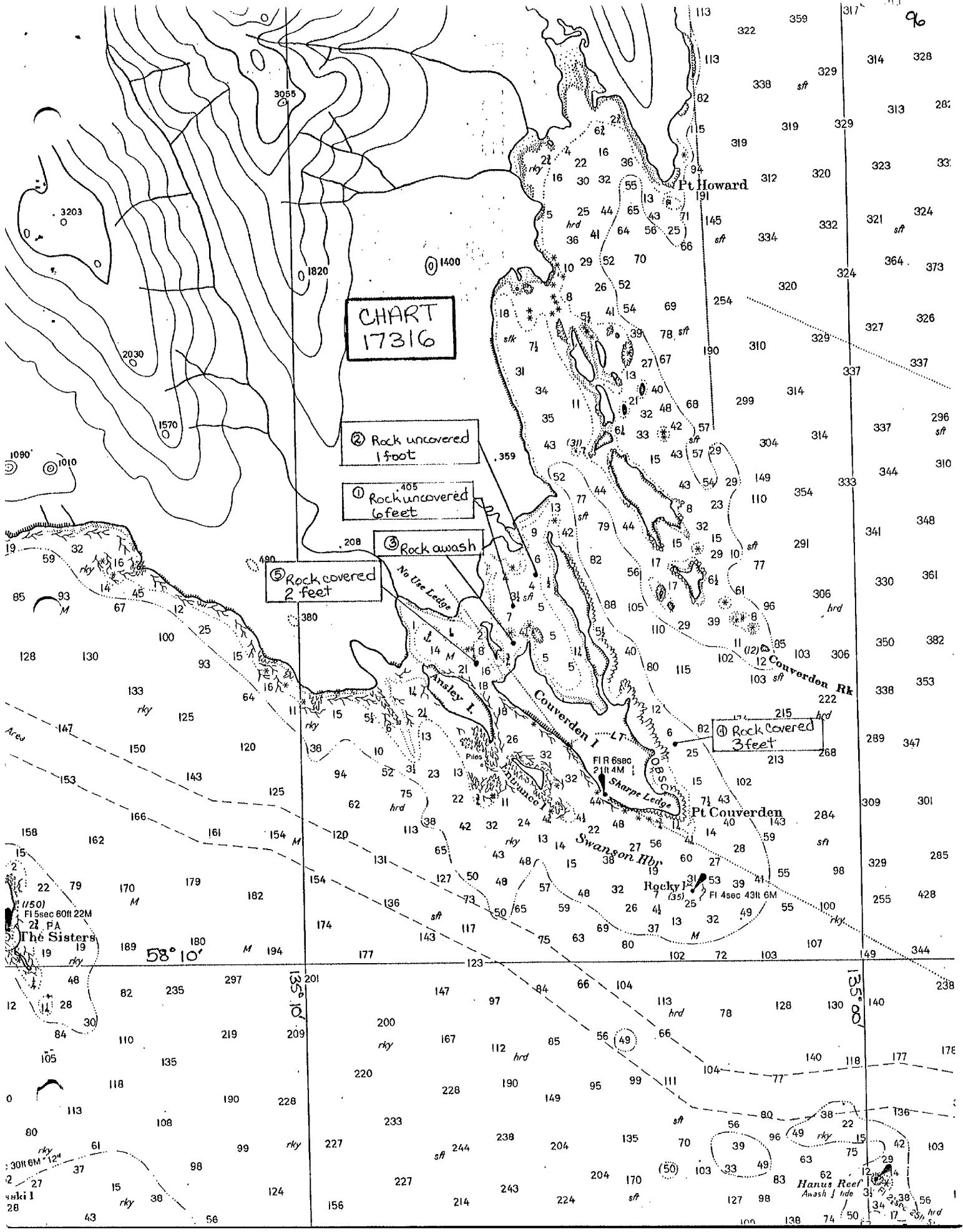
② Rock uncovered
1 foot

① Rock uncovered
6 feet

③ Rock awash

⑤ Rock covered
2 feet

④ Rock Covered
3 feet



(150)
Fl 5sec 80ft 22M
22 PA
The Sisters
19

58° 10'

U
S
C
O

U
S
C
O

(30ft 6M) 12ft
Anaki I

Hanus Reef
Awash l hde
31
34
35
38
56
57

PITUZYUW RUHPTEB0037 1121800-UUUU-RUHPSUU.
ZNR UUUUU

P 221800Z APR 87
FM NOAA'S FAIRWEATHER
TO CCGDSEVENTEEN JUNEAU AK
INFO NOAA/MOP SEATTLE WA
DMAHTC WASHINGTON DC//NYS//
ACCT CM-VCAA

TOD
NOJ | 221846 Z APR 87
RAH | 6.4230 MHz RCH

CC
X S
OP.
CP

BT

UNCLAS

DANGERS TO NAVIGATION

1. ROCK UNCOVERED 6 FEET AT LATITUDE 58/13/24N, LONGITUDE 135/06/08W, BEARING 335 DEGREES TRUE AT A DISTANCE OF 2.0 NAUTICAL MILES FROM SWANSON HARBOR ENTRANCE LIGHT 2 (LIGHT LIST NUMBER 24130).
2. ROCK UNCOVERED 1 FOOT AT LATITUDE 58/13/42N, LONGITUDE 135/05/42W, BEARING 343 DEGREES TRUE AT A DISTANCE OF 2.18 NAUTICAL MILES FROM SWANSON HARBOR ENTRANCE LIGHT 2 (LIGHT LIST NUMBER 24130).
3. ROCK AWASH AT LATITUDE 58/13/02N, LONGITUDE 135/06/11W, BEARING 330 DEGREES TRUE AT A DISTANCE OF 1.66 NAUTICAL MILES FROM SWANSON HARBOR ENTRANCE LIGHT 2 (LIGHT LIST NUMBER 24130).
4. ROCK COVERED 3 FEET AT LATITUDE 58/12/07N, LONGITUDE 135/03/15W, BEARING 055 DEGREES TRUE AT A DISTANCE OF 0.8 NAUTICAL MILES FROM SWANSON HARBOR ENTRANCE LIGHT 2 (LIGHT LIST 24130).
5. ROCK COVERED 2 FEET AT LATITUDE 58/12/52N, LONGITUDE 135/06/50W, BEARING 316 DEGREES TRUE AT A DISTANCE OF 1.7 NAUTICAL MILES FROM SWANSON HARBOR ENTRANCE LIGHT 2 (LIGHT LIST 24130).
6. THE DANGERS LISTED IN PARAGRAPHS 1 THROUGH 5 WERE NOTED DURING SURVEY OPERATIONS IN THE VICINITY OF SWANSON HARBOR, ICY STRAIT, ALASKA (SURVEY H-10238). ALL ITEMS REFER TO CHART 17316. DEPTHS ARE REFERENCED TO MLLW BASED ON PREDICTED TIDES.
7. CONFIRMATION LETTER CONTAINING SAME INFORMATION WILL BE SENT.

BT

#0037

see confirming letter, dated April 23, 1987 for revisions.

NNNN



**U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

National Ocean Service
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

4/25188

N/MOP211C/JSG

Commander (OAN)
Seventeenth Coast Guard District
P.O. Box 3-5000
Juneau, Alaska 99802

Dear Sir:

During office review of hydrographic survey H-10238, Swanson Harbor and Vicinity, Icy Strait, Alaska, the following changes affecting chart 17316 were noted. Questions concerning the survey may be directed to Cdr. Thomas W. Richards, Chief, Nautical Chart Branch, telephone (206) 526-6835.

The following statement is recommended for inclusion in the Local Notice to Mariners:

"The following rocks and shoal in the vicinity of Swanson Harbor, Icy Strait, should be added to chart 17316. (Depths are reduced to MLLW and the positions are on NAD 1927.)

<u>FEATURE</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>BEARING</u>	<u>DIST</u>
rock covered 4.1 fathoms	58°10'30.71"N	135°03'39.69"W	245°T	0.37NM*
rock covered 5.1 fathoms	58°10'36.17"N	135°03'42.08"W	263°T	0.38NM*
rock covered 0.8 fathoms	58°11'33.85"N	135°06'01.23"W	265°T	0.8NM**
rock covered 0.9 fathoms	58°11'36.14"N	135°06'06.12"W	270°T	0.8NM**
rock covered 1.6 fathoms	58°11'39.03"N	135°06'15.37"W	272°T	0.9NM**
rock covered 5.2 fathoms	58°12'06.49"N	135°07'42.40"W	286°T	1.75NM**
rock uncovered 2.0 ft. (previously reported as covered 2.0 ft.)	58°12'52.22"N	135°06'50.74"W	315°T	1.74NM**



1.3 fathom shoal
sounding

58°11'45.06"N

135°06'25.32"W

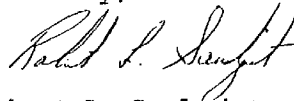
301°T

2.10NM*

* from Rocky Island Light 13

** from Swanson Harbor Light 2

Sincerely,



Robert L. Sandquist
Rear Admiral, NOAA
Director, Pacific Marine Center

Jr

RTTUZYUW RUHPTB0046 1132110-UUUU-RUHPSUU.

ZNR UUUUU

R 232110Z APR 87
FM NOAA'S FAIRWEATHER
TO NOAA MOP SEATTLE WA
ACCT CM-VCAA

TOD
NOT 24 APR 87
RAV 6.423 PM 2 Rly

BT

UNCLAS

FA-FMC-032-020

PASS TO: MOP2

SUBJ: PROPOSAL OF REVISED FINAL FIELD SHEET REQUIREMENTS.

1. AS DISCUSSED WITH CDR MILLS, MOP2X1 ON 23 APR 87 AT 1700Z, THE FOLLOWING IS A PROPOSAL TO MODIFY THE FINAL FIELD SHEET REQUIREMENTS FOR H-10238, SWANSON HARBOR, ICY STRAIT, ALASKA.
2. GIVEN THE COMPLEXITY OF THE SHORELINE IN THE SURVEY AREA (REQUIRING NUMEROUS DETACHED POSITIONS AND DESCRIPTIVE NOTES), IT IS FELT THIS SURVEY WOULD BE A GOOD TEST FOR A MODIFIED FORMAT.
3. IT IS PROPOSED THAT TWO FINAL FIELD SHEETS BE SUBMITTED IN LIEU OF ONE.

A. FIRST SHEET WOULD HAVE SOUNDING LINES, LEAST DEPTHS FROM DIVE INVESTIGATIONS AND DEVELOPMENTS, AND DEPTH CURVES.

B. SECOND SHEET WOULD HAVE SHORELINE, ALONGSHORE FEATURES, DESCRIPTIVE NOTES, DETACHED POSITIONS NOT FOUND ON FIRST SHEET, AND BOTTOM SAMPLES.

4. COMPARISONS OF BOTH SHEETS WOULD BE MADE ON BOARD AND DISCREPANCIES RESOLVED BEFORE SUBMITTAL.

5. MOP21 WILL BE CONTACTED BY FAIRWEATHER ON 24 APR DURING JUNEAU INFORT FOR FURTHER DISCUSSION AND A DECISION, IF POSSIBLE.

BT

#0046

NNNN

CO
~~OPS~~
CST

R 271949Z APR 87
FM NAAMOP SEATTLE WA
TO NDAAS FAIRWEATHER
BT

TOR
NOJ 281750Z Apr 87
RAN 6.4230 MHz RTH

UNCLAS
FA030-03B//MOP2X1

A. YOUR 232110Z APR 87
YOUR PROPOSAL FOR SUBMISSION OF TWO FINAL FIELD SHEETS (VICE ONE) FOR
H-10238 PER REF A IS APPROVED.
E

REC'D FEB 20 1987
OPERATIONS SECTION
HYDROGRAPHIC SURVEYS BRANCH

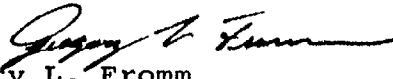


N/CG24/101
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

February 19, 1987

N/CG2321:GLF

MEMORANDUM FOR THE RECORD

FROM: N/CG2321 - Gregory L. Fromm 

SUBJECT: Aerotriangulation Control Densification, Job CM-8405,
Icy Strait, Alaska

Project requirements included establishing supplemental ground control using analytical aerotriangulation methods to support hydrographic operations (OPR-0186). Nine ground points were selected and premarked (paneled) during the field operations conducted in support of project photography to meet this requirement.

Aerotriangulated positions have been determined for six of the paneled image points which represent the ground stations. Positions and recovery information for each is attached. Aerotriangulated positions could not be established for ground points TC-15, TC-17, and TC-21 because the photographic imagery quality of these ground points was not adequate and/or the density and placement of geodetic control in the immediate area was determined to be inadequate.

Factors relating to and/or affecting the accuracy of the aerotriangulated positions are indicated below.

1. The requirement for the relative horizontal accuracy of photogrammetrically determined control used to support hydrography is ± 5 meters.
2. The accuracy of aerotriangulated positions may be less than Third-Order because all the criteria described under Section 3.6 of the Standards and Specifications for Geodetic Control Networks, dated September 1984, were not met.
3. The predicted relative horizontal error of the aerotriangulated position derived for each panel image will be within ± 3 meters. This estimate of accuracy is based on the evaluation of RMS values of photogrammetric measurements and the overall aerotriangulation fit to geodetic control. However, there is a possibility that



the aerotriangulated positions may not be representative of the actual ground stations. This is because field personnel did not revisit the ground points after photography was acquired to ensure the target panels were not disturbed. This normal quality assurance measure was waived because the remote nature of the area would have magnified the cost factors when weighted against effort. It was felt that any subsequent users of aerotriangulated control could be cautioned and/or required to performed field checks to ensure adequacy before using.

Attachments (9)

cc: N/CG232 - Raborn
N/CG241 - Armstrong ✓

CM-8405

PHOTOGRAMMETRIC POSITIONS OF HYDRO POINTS

BRIDGE NO.	TARGET NO.	LONG.	LAT.	ALASKA STATE PLANE (ZONE 1)	
				X	Y
933718	TC-18	135 03 38.368	58 11 56.699	2416715.656	2328046.453
934705	TC-05	135 03 30.625	58 13 27.059	2417318.338	2337207.427
934714	TC-14	135 04 58.058	58 15 59.674	2412960.120	2352791.078
934716	TC-16	135 05 39.867	58 14 16.833	2410505.084	2342401.897
934717	TC-17	135 06 02.071	58 12 53.302	2409137.863	2333950.527
936713	TC-13	135 04 56.572	58 17 57.272	2413288.238	2364723.005


THE ABOVE POSITIONS ARE BASED ON THE DATUM OF 1927

#14 Gene
SUBPOINT 135 28 39.560 58 27 02.896

#13 DAY
SUBPOINT 135 27 12.683 58 19 32.884

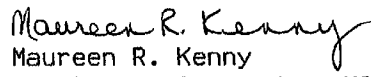
The final field sheets and the accompanying records have been reviewed for accuracy, completeness, compliance with the project instructions, and adherence to required standards and procedures. The data is forwarded for final review and processing.

Submitted by:

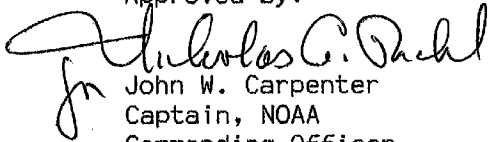


Paul J. Ruiz
Lieutenant, NOAA

Reviewed by:


Maureen R. Kenny
Lieutenant Commander, NOAA
Field Operations Officer

Approved by:


John W. Carpenter
Captain, NOAA
Commanding Officer

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SHEET

DATE: August 12, 1987

Marine Center: Pacific

OPR: 0186

Hydrographic Sheet: H-10238 = H-90238

Locality: Swanson Harbor and Vicinity, Ict Strait, Alaska

Time Period: April 7 - May 15, 1987 AND JD 283

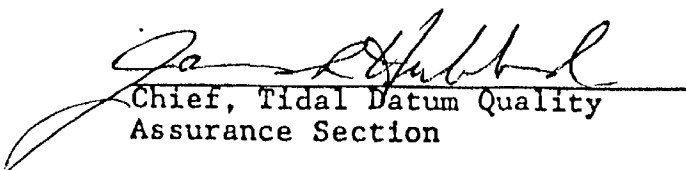
Tide Station Used: 945-2368 Swanson Harbor, AK (PREDICTED FOR JD 283)
(444-2368 PREDICTED)

Plane of Reference (Mean Lower Low Water): 3.14 ft.

Height of Mean High Water Above Plane of Reference: 14.0 ft.

Remarks: Recommended Zoning:

1. Zone Direct


Chief, Tidal Datum Quality
Assurance Section

GEOGRAPHIC NAMES

Name on Survey	Source of Name											
	A	B	C	D	E	F	G	H	K			
ALASKA (title)												1
ANSLEY ISLAND												2
COUVERDEN ISLAND												3
COUVERDEN, POINT												4
COUVERDEN ROCK												5
ENTRANCE ISLAND												6
ICY STRAIT												7
LYNN CANAL												8
NO USE LEDGE												9
ROCKY ISLAND												10
SHARP LEDGE												11
SWANSON HARBOR												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

Approved:

Charles E. Harrington
Chief Photographer - N/CG 2x5

DEC 7 1987



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

October 26, 1987 N/MOP21x2/MM

TO: Commanding Officer
NOAA Ship FAIRWEATHER

Robert L. Sandquist

FROM: N/MOP - Robert L. Sandquist

SUBJECT: Preprocessing Examination of H-10238, Alaska,
Icy Strait, Swanson Harbor and Vicinity

Hydrographic survey H-10238 has been reviewed in accordance with Hydrographic Survey Guideline No. 15, and the Preprocessing Examination Critique for this survey is attached. Hydrographic survey H-10238 is accepted for Pacific Marine Center processing.

The Preprocessing Examination Critique is designed to provide information which will be useful to the Command for maintaining the quality of future hydrographic surveys. I encourage you to use this information constructively. Your comments on specific critique items are welcome.

Attachment

cc: N/MOP2x1
N/MOP21x2
N/MOP211
N/CG2





UNITED STATES DEPARTMENT OF COMMERCE
 National Oceanic and Atmospheric Administration
 NATIONAL OCEAN SERVICE
 Pacific Marine Center
 Nautical Chart Branch
 7600 Sand Point Way NE
 Seattle, Washington 98115-0070

October 23, 1987

N/MOP21x2/MM

TO: N/MOP - Robert L. Sandquist

FROM: N/MOP 21 - *Thomas W. Richards*
 Thomas W. Richards

SUBJECT: Preprocessing Examination for H-10238

I. SURVEY INFORMATION

A. Field No.	FA-10-1-87	Registry No.	H-10238
B. State:		Alaska	
General Locality:		Icy Strait	
Sublocality:		Swanson Harbor and Vicinity	
C. Project Instructions:		OPR-0186-FA-87	
Original dated:		July 29, 1987	
Change #1 dated:		August 4, 1986	
#2 dated:		December 24, 1986	
#3 dated:		February 2, 1987	
#4 dated:		March 17, 1987	
#5 dated:		April 13, 1987	
#6 dated:		April 29, 1987	
#7 dated:		July 28, 1987	
D. Dates:			
Field Work Commenced:		April 7, 1987	
Field Work Completed:		May 16, 1987	
plus 6 weeks:		June 27, 1987	
Data received at Marine Center:		* August 21, 1987	
plus 1 month:		September 21, 1987	
Examination critique transmitted to field		October 26, 1987	
Target date for completion of Marine Center processing		April 26, 1988	

* Permission to delay forwarding of survey was requested and granted.



II. PREPROCESSING EXAMINATION CRITIQUE

Hydrographic survey H-10238 was performed by personnel of the NOAA Ship FAIRWEATHER, Captain John W. Carpenter, Commanding Officer. The following personnel supervised portions of the data acquisition: Lt. Cdr. Kenny, Lt. Moen, Lt. (JG) Ruiz, Ensigns Cone, Lynch, Bernard, Nodine, Lemon, Birk and Chief Survey Technician Krick.

In accordance with the Preprocessing Examination System set forth in Hydrographic Survey Guideline (HSG) No. 15, Section III, the following items are brought to your attention:

A. Danger to Navigation Report:

FAIRWEATHER reported 19 dangers to navigation (8 rocks, 9 shoals, 1 reef and 1 least depth) within the limits of H-10238.

No additional dangers to navigation were identified during the preprocessing examination.

B. Compliance with Instructions:

Hydrographic survey H-10238 complies with applicable instructions. One AWOIS item (#51071) was investigated by the hydrographer and was reported as a danger to navigation.

C. Final Field Sheet:

The hydrographer requested and received permission to use overlays in order to clearly portray the shoreline features and associated notes. The use of overlays in this complex area will ease the processing of the survey data.

The location of one detached position (#9015, dive) plotted on an overlay coincides with detached position (#9022, dive) on the final field sheet. Examination of the raw data shows that the final field sheet accurately portrays the dive investigations and that detached position #9015 is incorrectly labelled on the overlay.

D. Descriptive Report:

Most sections of the Descriptive Report were very well written.

The hydrographer states in Section L (Comparison with the Chart) the procedures for the AWOIS item investigation. However, the discussion includes neither a recommendation for the disposition of the item nor a charting recommendation as required in HSG 21 (Section B.3).

E. Echograms:

The echograms reviewed during this examination were well-annotated and contained all applicable stamp information.

F. Sounding Volumes and Raw Data Printouts:

Some raw data printouts contain "development" notations but do not state what feature is being developed. Additional raw data printout notations stating the type of development (shoal, deep, etc.) would aid in processing the survey data [HM 4.8.3.10].

J. Position Control:

Poor position intersection angles were found for 6nm of hydrography which constitutes 1.5% of total mileage run for the survey (1.5nm in the southeast corner of the survey and for 4.5nm in the vicinity of 58/13/00N, 135/02/30W; see Attachments A and B). The angle of intersection for any position should be between 30 degrees and 150 degrees [HM 4.4.3.2.2].

The cartographic code listing was briefly reviewed during this examination. No cartographic codes were found for the detached positions on rocks originating from dive investigations [HSG 35].

K. Special and/or Ancillary Reports:

The Corrections to Echo Soundings Report was briefly reviewed. No measurement units were assigned to the settlement and squat tables or graphs.

There appear to be no problems with the Electronic Control Report forwarded with this survey.

L. Automated Data Check:

The day records ("short words") within two master data tapes for VESNO 2025 contained incorrect codes as described below:

a. Data acquired on DN 125 were originally collected as range/range data with theodolite directions also being noted on the printouts. It appears that the master tape was recut using the theodolite directions, transforming the data into a range/azimuth format. During the change, the "042" code denoting range/range data within one of the day records of the master tape was not changed to the "110" code (denoting range/azimuth data).

b. Data acquired on DN 127 (pos #9026, dive) also contain the "042" range/range code within the day record but the one position on this master tape is in the range/azimuth format.

M. General Comments:

There is a discrepancy within the memorandum of aerotriangulated control points dated February 19, 1987. The memorandum states that positions could not be established for ground points TC-15, TC-17 and TC-21. However, a photogrammetric position is given for TC-17 within the listing of photogrammetric positions of aerotriangulated control stations (listing is an attachment to the memorandum). Station TC-17 was used for seven days of hydrographic data acquisition. N/CG2321 was notified of the discrepancy on 16 October 1987. The memorandum contains a typographical error; the position for TC-17 is good.

N. Survey Acceptance:

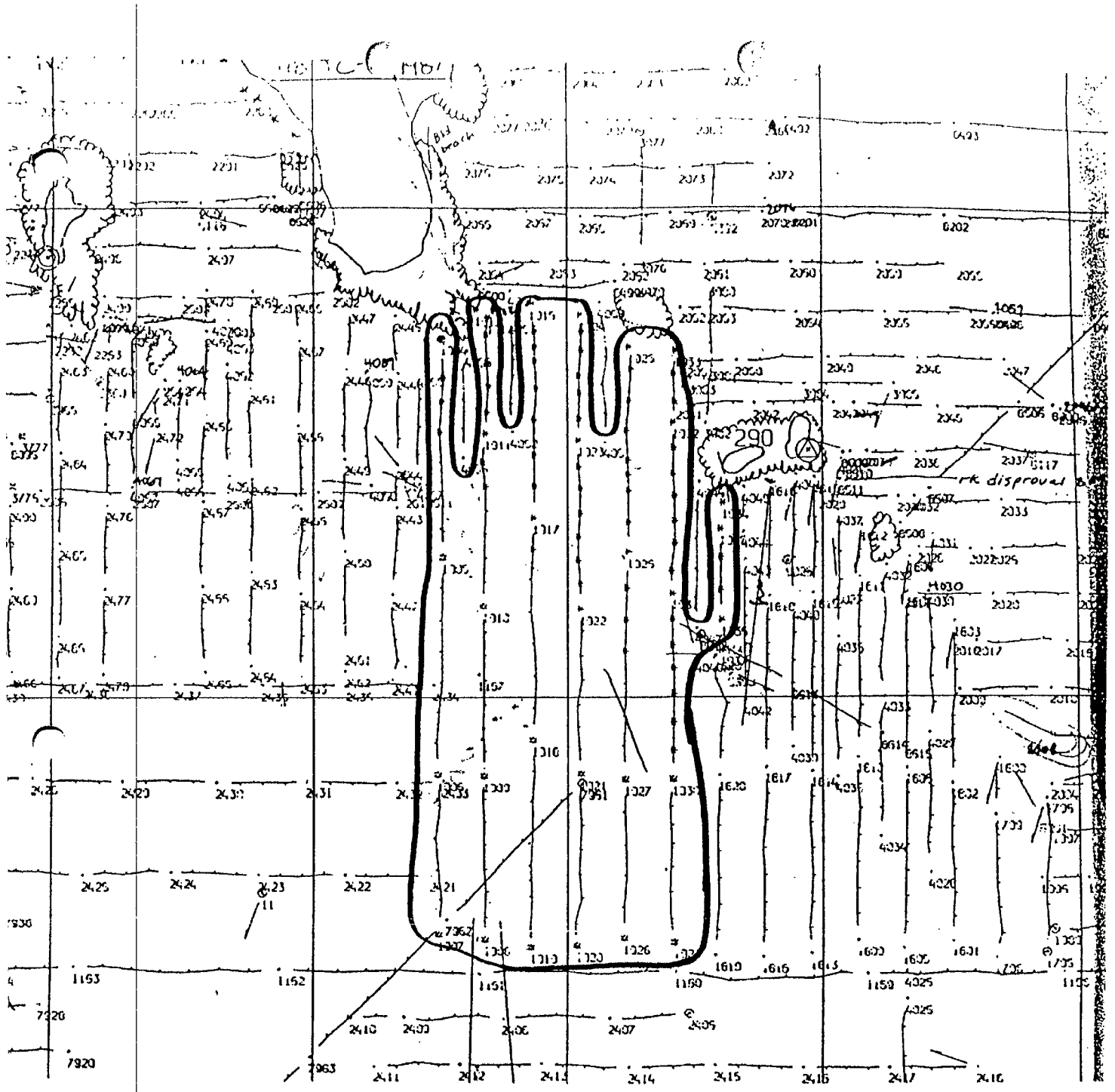
The preprocessing examination of H-10238 was conducted under the time constraints of HSG 15. Therefore, all comments contained herein are based on a spot check of the data. It is possible that some problem areas have not been addressed.

Hydrographic survey H-10238 is in general compliance with all applicable instructions. I recommend that H-10238 be accepted for Nautical Chart Branch processing.

Prepared by:

Marlene Mozgala

Marlene Mozgala



ATTACHMENT A

The sounding lines circled were positioned with poor intersection angles.

(VESNO 2023 DN123 Pos #1904-1912)

(VESNO 2023 DN124 Pos #1916-1636)

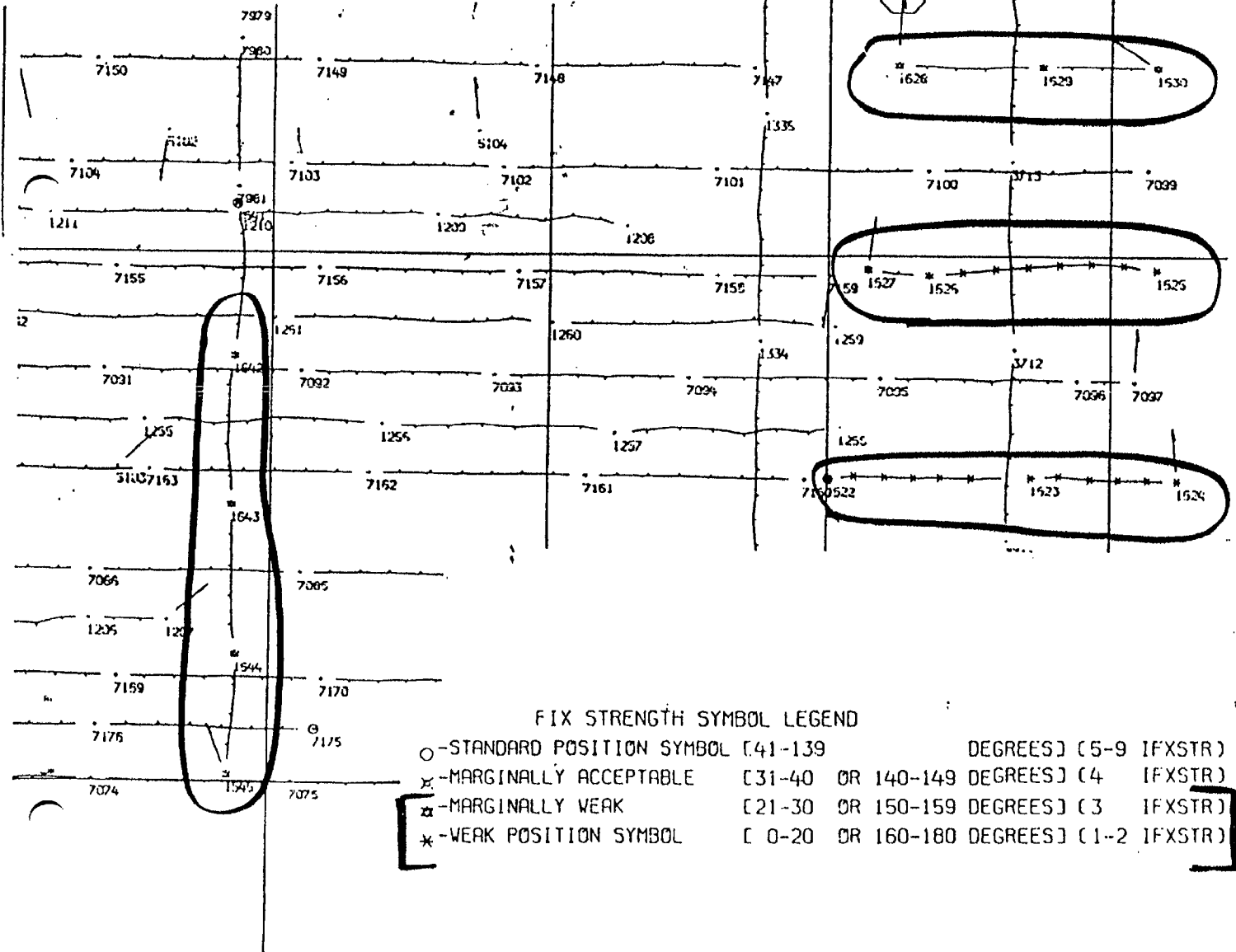
FIX STRENGTH SYMBOL LEGEND

- -STANDARD POSITION SYMBOL [41-139 DEGREES] (5-9 IFXSTR)
- ✕ -MARGINALLY ACCEPTABLE [31-40 OR 140-149 DEGREES] (4 IFXSTR)
- ✖ -MARGINALLY WEAK [21-30 OR 150-159 DEGREES] (3 IFXSTR)
- ✱ -WEAK POSITION SYMBOL [0-20 OR 160-180 DEGREES] (1-2 IFXSTR)

ATTACHMENT B

The sounding lines circled were positioned with poor intersection angles.

(VESNO 2023 DN119 Pos #1622-1645)



FIX STRENGTH SYMBOL LEGEND

- - STANDARD POSITION SYMBOL [41-139 DEGREES] (5-9 IFXSTR)
- ⊗ - MARGINALLY ACCEPTABLE [31-40 OR 140-149 DEGREES] (4 IFXSTR)
- ⊙ - MARGINALLY WEAK [21-30 OR 150-159 DEGREES] (3 IFXSTR)
- * - WEAK POSITION SYMBOL [0-20 OR 160-180 DEGREES] (1-2 IFXSTR)

NOAA FORM 77-27(H) (9-83)		U.S. DEPARTMENT OF COMMERCE		REGISTRY NUMBER	
HYDROGRAPHIC SURVEY STATISTICS				H-10238	
RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.					
RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION	
SMOOTH SHEET		1		SMOOTH OVERLAYS: POS., ARC, EXCESS	
DESCRIPTIVE REPORT		1		FIELD SHEETS AND OTHER OVERLAYS	
DESCRIP- TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR- GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS
ACCORDION FILES	4				
ENVELOPES					
VOLUMES	5				
CAHIERS					
BOXES					
SHORELINE DATA					
SHORELINE MAPS (List):		TP-01312			
PHOTOBATHYMETRIC MAPS (List):					
NOTES TO THE HYDROGRAPHER (List):		Chart 17316 enlargement			
SPECIAL REPORTS (List):					
NAUTICAL CHARTS (List):					
OFFICE PROCESSING ACTIVITIES					
<i>The following statistics will be submitted with the cartographer's report on the survey</i>					
PROCESSING ACTIVITY			AMOUNTS		
			VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET					4817
POSITIONS REVISED					
SOUNDINGS REVISED					
CONTROL STATIONS REVISED					
			TIME-HOURS		
			VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION					
VERIFICATION OF CONTROL					
VERIFICATION OF POSITIONS			161.5		161.5
VERIFICATION OF SOUNDINGS			303		303
VERIFICATION OF JUNCTIONS					
APPLICATION OF PHOTOBATHYMETRY					
SHORELINE APPLICATION/VERIFICATION					
COMPILATION OF SMOOTH SHEET			117		117
COMPARISON WITH PRIOR SURVEYS AND CHARTS				11	11
EVALUATION OF SIDE SCAN SONAR RECORDS					
EVALUATION OF WIRE DRAGS AND SWEEPS					
EVALUATION REPORT				59	
GEOGRAPHIC NAMES					
OTHER: Digitizing					
*USE OTHER SIDE OF FORM FOR REMARKS			TOTALS	581.5	70
					592.5
Pre-processing Examination by LT M. Mozgala			Beginning Date 8/21/87	Ending Date 10/26/87	
Verification of Field Data by R.N. Mihailov			Time (Hours) 581.5	Ending Date 02/02/88	
Verification Check by S. Otsubo, B. Olmstead			Time (Hours) 945	Ending Date 02/01/88	
Evaluation and Analysis by C.R. Davies			Time (Hours) 70	Ending Date 03/24/88	
Inspection by D. Hill			Time (Hours) 4	Ending Date 5-4-88	

PACIFIC MARINE CENTER
EVALUATION REPORT
H-10238

1. INTRODUCTION

H-10238 is a basic hydrographic survey accomplished by the NOAA Ship FAIRWEATHER under the following Project Instructions.

OPR O186-MI-86, dated July 29, 1986
CHANGE NO. 1, dated August 4, 1986
CHANGE NO. 2, dated December 24, 1986
CHANGE NO. 3, dated February 2, 1987
CHANGE NO. 4, dated March 17, 1987
CHANGE NO. 5, dated April 13, 1987
CHANGE NO. 6, dated April 29, 1987
CHANGE NO. 7, dated July 28, 1987
CHANGE NO. 8, dated October 5, 1987

This survey is in Alaska and covers Swanson Harbor and vicinity at the junction of Lynn Canal and Icy Strait. The surveyed area extends from latitude 58°15'00"N southward to 0.6 nautical miles south of Rocky Island, latitude 58°10'00"N, and from 0.6 nautical miles east of Couverden Rock, longitude 135°00'28"W, westward to longitude 135°08'15"W. The shoreline of the islands and mainland is characterized by ledges, reefs and isolated off-lying rocks with stretches of gravel, stone and boulder beaches. Bottom materials are sand, mud and pebbles. Depths range from zero fathoms to 346 fathoms in Lynn Canal.

Additional field work was done to investigate a side echo, found in the survey records during shipboard processing, of 13 fathoms in 21 fathoms of water at latitude 58°10'56.75"N, longitude 135°03'43.61"W; see attached Addendum to Hydrographic Survey H-10238. These data were added to the H-10238 records.

Predicted tides for Juneau were used for the reduction of soundings during field processing. Approved hourly heights zoned from the Swanson Harbor gage (gage no. 945-2368) were used during office processing.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The TRA, sound velocity and electronic control correctors are adequate. An accompanying computer printout contains the revised data.

A digital file, generated for this survey, includes categories of information required to comply with N/CG2 Hydrographic Survey Guidelines No. 23, Completion of Digital Hydrographic Surveys, September 7, 1983. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Sections F and G of the hydrographer's report and the Horizontal and Electronic Control Reports for OPR-0186-FA-87 contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are published, aerotriangulated and 1987 field values based on NAD 27. These values were used during office processing for the computation of positions. The smooth sheet and accompanying overlays are annotated with NAD 83 adjustment ticks based on values determined by N/CG121. Geographic positions based on NAD 83 may be plotted on the smooth sheet utilizing the NAD 27 projection by applying the following corrections:

Latitude: 1.216 seconds (37.6 meters)
 Longitude: -6.332 seconds (-106.0 meters)

The year of establishment of control stations shown on the smooth sheet originates with the hydrographer's signal list and is subject to change pending certification of the data by NGS.

There are 217 weak fixes (angles of intersection less than 30 degrees or more than 150 degrees) noted on this survey. However, there are no significant plotting differences between the soundings located by these fixes and those in adjacent areas. Also, none of these fixes are used to position dangers to navigation. These fixes are considered acceptable.

The following shoreline maps apply to this survey.

	<u>Photo Date</u>	<u>Class</u>
TP-01311	May, June and July, 1985	III
TP-01312	May and June, 1985	III

Ledge limit changes were observed in the field and drawn in red on the final field sheet. Many of these changes were transferred to the smooth sheet from the final field sheet without supporting positional information. Although these ledge revisions are portrayed without supporting positional information, they are considered adequate to supersede the common photogrammetrically delineated ledges.

3. HYDROGRAPHY

Hydrography is adequate to:

- a. delineate the bottom configuration, determine least depths and draw the standard depth curves except as noted in section 5;
- b. reveal there are no significant discrepancies or anomalies requiring further investigation; and
- c. show the survey had been properly controlled and soundings are plotted correctly.

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No.3, the Hydrographic Survey Guidelines, and the PMC OORDER, except as noted in the attached copy of the Preprocessing Examination Report, dated October 23, 1987.

5. JUNCTIONS

Survey H-10238 junctions with the following surveys.

Survey	Year	Scale	Area
H-10227	1986	1:20,000	South and west
H-10240	1987	1:10,000	North

Soundings have been transferred from survey H-10227 to justify depth curves and to portray shoaler information. The junction with survey H-10227 has been formally completed.

The junction with survey H-10240 could not be completed because it is in preliminary office processing; however, a comparison with the final field sheet and raw records was accomplished and the following discrepancy was noted. A difference of up to 60 fathoms was noted between the two surveys at latitude 58°14'57"N and between longitudes 135°01'30"W and 135°02'07"W. This discrepancy is attributed to the loss of the high frequency echogram trace on a steep slope and a poor low frequency trace from which survey H-10238 soundings were selected. As instructed by N/CG241, the depths from H-10240, high frequency echogram trace, were substituted for survey H-10238 low frequency echogram trace data. A total of eight soundings were substituted. These revisions were made only when the H-10238 high frequency echogram trace was not interpretable. Soundings were not identified by color or notes. A copy of the H-10240 echogram and printout, positions 8757 to 8760, were inserted into H-10238 accordion file at the appropriate positions, 8258 to 8260. With the substitution of these soundings from survey H-10240, the junction in this area can be readily accomplished; however, is not formally complete. H-10240 depth curves will need to be brought into coincidence with H-10238 curves after H-10240 smooth sheet is compiled.

There are no contemporary surveys to the east; however, a comparison with charted depths reveals good agreement with the present survey.

6. COMPARISON WITH PRIOR SURVEYS

H-2055 (1890) 1:80,000
 H-2062 (1890) 1:10,000
 H-2562 (1901) 1:40,000

The prior surveys listed above cover the entire area of the present survey. Taking into consideration the differences in the methods of surveying,

natural shoreline changes and datum adjustments, comparison with these prior surveys is satisfactory. Some discrepancies between the surveys were noted and are adequately discussed in section K of the hydrographer's report.

H-3564 (1913) 1:20,000

The prior survey covers the area of Swanson Harbor and its entrance and with one exception compares favorably with the present survey. A 4.1-fathom depth discovered during the present survey at latitude 58°10'30.71"N, longitude 135°03'39.69"W, is located in an area described as having been dragged to a 28-foot effective depth during the prior survey. The 4.1-fathom depth is considered to be an accurate depth and adequate to supersede the effective depth in this localized area.

There are no AWOIS items originating from the prior surveys applicable to the present survey.

H-10238 is adequate to supersede the prior surveys within the common area.

7. COMPARISON WITH CHART

Chart 17316, 14th Edition, dated October 30, 1982; scale 1:80,000

a. Hydrography Charted information originates with the prior surveys discussed in section 6 and from miscellaneous sources and requires no further discussion. For more details see section L of the hydrographer's report.

Couverden Rock, latitude 58°12'58"N, longitude 135°01'39"W, is charted as a small island with a height of 12 feet above MHW. TP-01312 depicts Couverden Rock as a reef, and the field sheet for this survey shows the reef as verified; however, elevation data was not provided. N/CG241 advised that the 12 foot height was on the first edition of this chart (1908). N/MOA221, Photogrammetry Section, stated that the photography was good and confirms their depiction of this feature as a reef. Therefore, Couverden Rock should be charted according to this survey (shown as a reef) and the 12 foot MHW height presently charted deleted.

H-10238 is adequate to supersede charted hydrography within the common area.

b. AWOIS The AWOIS item originating from a miscellaneous source is adequately discussed in section L of the hydrographer's report, supplemented as follows.

AWOIS Item 51071, shoal reported in 1983 at latitude 58°11'27"N, longitude 135°05'15"W, was investigated and resolved by the hydrographer. A submerged rock, with a diver-determined least depth of 1.4 fathoms, was found at latitude 58°11'24.05"N, longitude 135°05'04.61"W. It is recommended that this rock and significant shoal soundings be charted according to this survey.

*charted
17316*

c. Controlling Depths There are no charted channels with controlling depths within the area of this survey.

d. Aids to Navigation There are no floating aids; however, there are two fixed aids located within the area of the survey and their charted positions and descriptions have been verified (see attached 76-40 form). The aids adequately serve their intended purpose.

e. Geographic Names Names appearing on the smooth sheet and in the survey title have been approved by the Chief Geographer.

f. Dangers to Navigation The hydrographer reported several shoals and rocks to the USCG by radio messages dated April 22, 1987 and June 2, 1987. Copies of these reports, previously forwarded to N/CG222, are attached.

Eight additional dangers to navigation, consisting of rocks and a shoal sounding, were found during office processing and reported to the Seventeenth Coast Guard District (see attached letter) and DMA via their Automated Notice to Mariners system.

8. COMPLIANCE WITH INSTRUCTIONS

H-10238 adequately complies with the project instructions mentioned in section 1 of the report.

9. ADDITIONAL FIELD WORK

This is a very good basic hydrographic survey. No additional field work is recommended.

for f & g
Charles R. Davies
Cartographer

This survey has been examined and it meets Charting and Geodetic Services' standards and requirements for use in nautical charting. Approval is recommended.

Dennis Hill
Dennis Hill
Chief, Hydrographic Section

APPROVALS

I have reviewed the smooth sheet, accompanying data, and reports associated with hydrographic survey H-10238. This survey meets or exceeds Charting and Geodetic Services' standards for products in support of nautical charting.

Thomas W. Roberts 5-9-58
Chief, Nautical Chart Branch (Date)

CLEARANCE:

N/MOP2:LWMordock

SIGNATURE AND DATE:

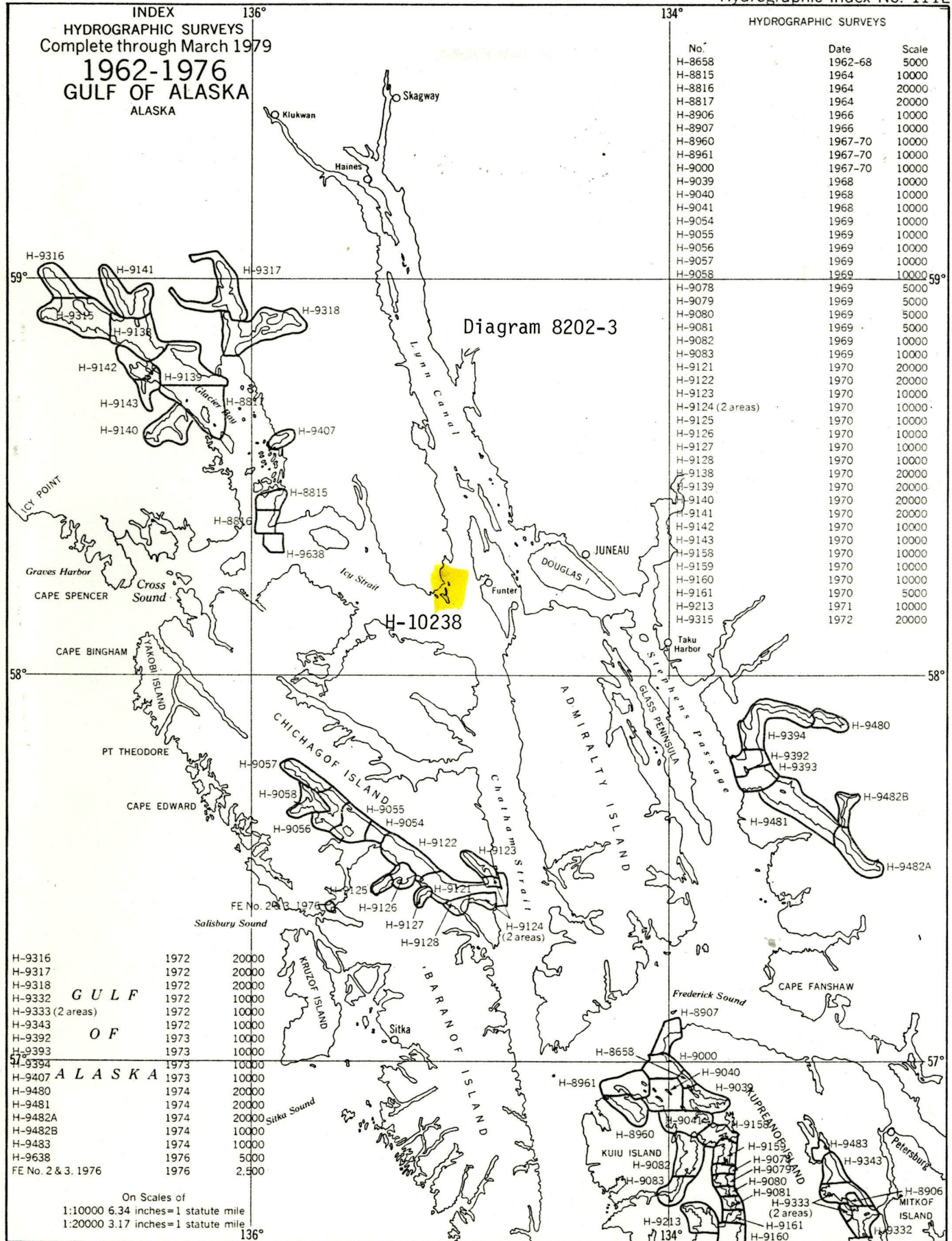
Robert L. Slaughter 5-9-58

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards.

Robert L. Slaughter 5-9-58
Director, Pacific Marine Center (Date)

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Washington, D.C.

Hydrographic Index No. 111E



No.	Date	Scale
H-8658	1962-68	5000
H-8815	1964	10000
H-8816	1964	20000
H-8817	1964	20000
H-8906	1966	10000
H-8907	1966	10000
H-8960	1967-70	10000
H-8961	1967-70	10000
H-9000	1967-70	10000
H-9039	1968	10000
H-9040	1968	10000
H-9041	1968	10000
H-9054	1969	10000
H-9055	1969	10000
H-9056	1969	10000
H-9057	1969	10000
H-9058	1969	10000
H-9078	1969	5000
H-9079	1969	5000
H-9080	1969	5000
H-9081	1969	5000
H-9082	1969	10000
H-9083	1969	10000
H-9121	1970	20000
H-9122	1970	20000
H-9123	1970	10000
H-9124 (2 areas)	1970	10000
H-9125	1970	10000
H-9126	1970	10000
H-9127	1970	10000
H-9128	1970	10000
H-9138	1970	20000
H-9139	1970	20000
H-9140	1970	20000
H-9141	1970	20000
H-9142	1970	10000
H-9143	1970	10000
H-9158	1970	10000
H-9159	1970	10000
H-9160	1970	10000
H-9161	1970	5000
H-9213	1971	10000
H-9315	1972	20000

H-9316	1972	20000
H-9317	1972	20000
H-9318	1972	20000
H-9332	1972	10000
H-9333 (2 areas)	1972	10000
H-9343	1972	10000
H-9392	1973	10000
H-9393	1973	10000
H-9394	1973	10000
H-9407	1973	10000
H-9480	1974	20000
H-9481	1974	20000
H-9482A	1974	20000
H-9482B	1974	10000
H-9483	1974	10000
H-9638	1976	5000
FE No. 2 & 3, 1976	1976	2,500

On Scales of
1:10000 6.34 inches=1 statute mile
1:20000 3.17 inches=1 statute mile

(see also No. 110)

A-5324

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10238

INSTRUCTIONS

- A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
 2. In "Remarks" column cross out words that do not apply.
 3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
17316	6/12/89	ALMACEN	Full Part Before After Marine Center Approval Signed Via <i>full application of</i> Drawing No. <i>soundings from SS.</i>
17300	10/30/89	ALMACEN	Full Part Before After Marine Center Approval Signed Via <i>full application of</i> Drawing No. <i>sndgs. from SS thru 17316.</i>
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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appd to STDs 6-6-88