10240

Diagram 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-10-2-87

Registery No. ... H-10240

LOCALITY

State ... Alaska

General Locality ... Lynn Canal

Sublocality ... Point Howard and Vicinity

19 87

CHIEF OF PARTY
CAPT J.W. Carpenter, CAPT G.R. Schaefer

LIBRARY & ARCHIVES

DATE ... January 31, 1989

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

10240

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NOAA FORM 77-28 (11-72) | U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC TITLE SHEET

REGISTER NO. H-10240

FIELD NO. FA 10-2-87

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

State Alaska

General locality Lynn Canal

Locality Point Howard and Vicinity

Scale 1:10,000 Date of survey (DN 133) 13 May 87 to (DN 302) 29 Oct 87

Instructions dated 29 July 1986 Project No. OPR-0186-FA-87

Vessel FAIRWEATHER S220 (2020), FA-3 (2023), FA-4 (2024), FA-5 (2025), FA-6 (2026), FA-7 (2027), FA-8 (2028), FA-10 (2030)

Chief of party CAPT J.W. Carpenter, CAPT G.R. Schaefer

Surveyed by LCDR Kenny, LCDR Mason, LT Ruiz, LTJG Lynch, ENS Bernard, ENS Nodine, ENS Lemon, ENS Birk-Risheim, ENS Neander, ENS Cone, CST Krick

Soundings taken by echo sounder, ~~hand lead, pole~~ Raytheon DSF 6000N

Graphic record scaled by FAIRWEATHER PERSONNEL

Graphic record checked by FAIRWEATHER PERSONNEL

Evaluation by: ~~Protracted by~~ A. Luceno Automated plot by PMC Xynetics Plotter

Verification by J. Shofner

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

REMARKS: All times UTC. Revisions and marginal notes in black generated during office processing. Separates are filed with the hydrographic data.

AWOIS/SURF m SM 2/24/89

SC 3-25-97

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-665-010-1174

MONTHLY PROGRESS SKETCH

OPR-0186-FA-87

ICY STRAIT, ALASKA

NOAA SHIP FAIRWEATHER S-220

CAPT. GLEN R. SCHAEFER, CMDG

SCALE FROM NOS CHART 17300

MAY TO NOVEMBER 1987

	May	Oct	Nov
SQ NM SOUNDING LINE	5	15	11
LNM SOUNDING LINE	71	411	77
BOTTOM SAMPLES	0	86	29
HYDRO CONTROL STATIONS	2	16	9
SV/D NANSEN CAST	1	5	2
TIDE GAGE INSTALLATION	0	3	0
HYDROGRAPHY			

⊕ SV/D NANSEN CAST
⊖ TIDE GAGE
S/L VERIFICATION

△ STA. ESTABLISHED
◬ STA. RECOVERED
⊙ PHOTO STA. RECOVERED

H-10258

Excursion Inlet

H-10257

ICY PASSAGE

PLEASANT IS.

Porpoise Is.

LYNN CANAL

PT. HOWARD

H-10240

ICY STRAIT

Eagle Pt.

Scraggy Is.

58 20 00

58 10 00

135 40 00

135 20 00

135 00 00

A. Project

This survey was conducted during the 1987 field season in accordance with Project Instructions OPR-0186-FA-87, Icy Strait, Alaska, 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. 5 dated April 13, 1987; Change No. 6 dated April 29, 1987; and Change No. 7 dated July 28, 1987. PMC OPORDER, the Hydrographic Manual (fourth edition), and the Hydrographic Survey Guidelines are also applicable. ✓ See sect. I of Eval. Report

This 1:10,000-scale survey sheet is designated as sheet "Q" in the project instructions. The purpose of this survey is to provide contemporary hydrographic data for the existing charts of Lynn Canal. ✓

B. Area Surveyed

This survey covers Lynn Canal in the vicinity of Point Howard, west of longitude 135/00/00W. It is bounded to the west by the shoreline, to the south by latitude 58/14/48N and the shoreline, and to the north by latitude 58/20/00N and the shoreline. ✓

This survey commenced on May 13, 1987, (DN 133) and was temporarily suspended for Alaska Peninsula operations on May 16, 1987 (DN 136). Survey operations resumed on October 4, 1987, (DN 278) and were completed on October 29, 1987 (DN 302). ✓

C. Sounding Vessels

Jensen survey launches FA-3 (2023), FA-4 (2024), and FA-6 (2026) were used to acquire hydrographic and shoreline verification data. Jensen survey launch FA-5 (2025) was used to acquire hydrographic data and collect bottom samples. FAIRWEATHER (2020) conducted all sound velocity casts and collected bottom samples. Shoreline verification was completed by FA-7 (2027), FA-8 (2028), and FA-10 (2030). ✓

On October 29, 1987, (DN 302) 3 islets were located by using a theodolite and an EDMI to delineate their limits. These range/azimuth positions, 9200 to 9208, are plotted in red on the final ~~field~~ smooth sheet at 58/15/02, 135/03/24; 58/15/43, 135/04/03; 58/15/56, 135/04/11 ✓

D. Sounding Equipment and Corrections to Echo Soundings

FAIRWEATHER's four survey launches, 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 (vessel numbers 2027, 2028, and 2030) equipped with sounding poles were used for shoreline verification. ✓

Table I
Sounding Equipment

RAYTHEON DSF-6000N SERIAL NUMBERS

	LAUNCHES			
Date	2023	2024	2025	2026
133	A113N	A104N	B049	B048N
134-136	A113N	A121N	B049	B048N
278-279	A104N	A113N	B049	B048N
279-299	A104N	A113N	B049	A121N
300-302	A104N	A113N	B049	B048N

Echo-sounding equipment was monitored continuously while on line. All hydrographic data were scanned 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 3 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 were digitized except in a limited number of cases. The low-frequency beam data were used when the high-frequency trace was lost due to the steepness of the bottom 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."

Divers' 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. (Filed with the hydrographic data)

Settlement and squat corrections were determined for all of FAIRWEATHER's survey launches on May 22, 1987, (DN 142) in Womens Bay, Kodiak, Alaska. The 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.
(Filed with the hydrographic data.)

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 plumbed using a circular bubble level. On March 27, 1987, a static transducer draft of 0.3 fathoms was recorded for all launches. All launch soundings on the final field sheet were plotted using this TRA value.

Velocity correctors were determined from four SV/D casts in accordance with section 4.9.5.2 of the Hydrographic Manual. Table II shows the dates and locations of the casts. Program VELTAB was used to compute tables from cast data. The results of the last three SV/D casts (17, 18, and 21) were similar enough to average and combine into one table (Velocity Table 2). Table III shows velocity tables determined from cast data. Velocity corrections using a preliminary velocity table (see ~~Appendix IV~~) were applied to all echo-sounder depths plotted on the final field sheets.
(filed with the hydrographic data.)

Table II
Velocity Casts

Cast No.	Date (DN)	Latitude	Longitude
3	136	58/13.8 N	134/58.6 W
17	277	58/16.4 N	135/01.0 W
18	287	58/16.1 N	135/00.0 W
21	302	58/17.6 N	135/04.2 W

Table III
Velocity Tables

Table No.	Based on Casts	Dates
1	3	DN 131-136
2	17,18,21	DN 278-302

SV/D cast numbers 3 and 17 were performed using a Plessy Model 9040 Environmental Profiling System (EPS) (s/n 5647). This instrument was calibrated at the Northwest Regional Calibration Center (NRCC) on March 9, 1987. The remaining casts, 18 and 21, were performed using a Plessy Model 9040 EPS (s/n 5653). This instrument was calibrated at NRCC on September 22, 1987. XBTs and/or surface temperatures were taken during the SV/D casts as a check on the Plessy Systems.

TC/TI tapes were made in accordance with PMC OPORDER, Section 3.5.1. Printouts of TC/TI tapes are included in the ~~appendix of this report~~.
sounding listing folder.

Predicted tide correctors were applied to the soundings plotted on the final field sheets for this survey. The tide correctors used were from the Tide Tables 1987, West Coast of North and South America. Tide correctors use Juneau, Alaska, as the reference station using a height correction range ratio of "x0.96" and no time correction. For further information, refer to ~~Appendix H~~, Field Tide Note. (Filed with the hydrographic data)

E. Hydrographic Sheets

This survey is comprised of four final field sheets (two each, east and west) that are plotted on mylar. In addition, a mylar overlay sheet was constructed. This sheet facilitated the delineation of depth contours and was used to display development lines. The final field sheets were plotted aboard the FAIRWEATHER using a DEC PDP8/e computer and complot plotter.

The final field sheet requirements were modified for survey H-10240. Given the complexity of the shoreline in the survey area, the final field sheet was divided into two parts, plotted on separate sheets. 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.

All field records ~~will be sent~~ have been transmitted to the NOAA Pacific Marine Center, N/MOP21, for verification and smooth plotting.

F. Control Stations

All horizontal control stations used in this survey were recovered or established by FAIRWEATHER personnel. All geodetic positions were based on the North American Datum of 1927. New stations were located by conventional traverse methods. No anomalies in control, adjustment or closures were encountered. All positions meet or exceed Third-order, Class I specifications. In addition, two aerotriangulation stations were used for this survey. Positions were verified by observing check angles to and from the stations.

Stations used in support of this survey are listed in ~~Appendix V~~, the List of Stations. For additional information, refer to the Horizontal Control Reports, OPR-0186-FA-87, dated April to May and October to November. (station list attached)

G. Hydrographic Position Control

Hydrographic position control was accomplished using the Motorola Mini-Ranger III system except as noted under Section C, Sounding Vessels. The control configuration consisted of range/range and range/azimuth for positioning. Table IV contains a list of console and R/T units for each sounding vessel. Mini-Ranger base-line calibrations (BLCs) were conducted in accordance with PMC OPORDER, Section 3.3.1.1.

Table IV
Mini-Ranger Equipment by Vessel

Vessel Number	Console/RT Number
2020	716/C1875
2023	703/B1108
2024	506042/E2716
2025	716/C1875
2026	B0323/B1398

Beginning BLCs were performed for data collected during the month of May on DNs 75 to 77 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 BLCs were performed on DNs 142 and 146 along a distance of 855.4 meters between two recoverable marks in Womens Bay, Kodiak, Alaska.

Beginning BLCs were performed for data collected during the month of October on DNs 257 to 260 along a distance of 990.2 meters between two recoverable marks (Naval Reserve Pier to PMC Pier A) across Lake Union. Ending BLCs were performed on DNs 321 and 322 at the same location.

Because the differences between beginning and ending BLCs were 5 meters or less, the beginning and ending calibrations were not averaged. The beginning correctors were used as the final correctors. Final base-line correctors and minimum signal strengths can be found in the two Electronic Control Data packages (dated April to May and October to November) submitted for project OPR-0186-FA-87.

Hydrographic positioning equipment was critically system checked at least once per week. Non-critical system checks were conducted once per day unless equipment malfunction prohibited it. All hydrographic positioning equipment was found to be accurate within the limits set forth by PMC OPORDER, Section 3.1.1.2. Critical system checks were accomplished using the theodolite cut method. 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.

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

H. Shoreline

Shoreline details for this survey are from a 1:10,000-scale mylar enlargement of TP-01311, 1:20,000-scale, and a mylar copy of TP-01312, 1:10,000-scale, Class III, registered shoreline maps. All verified features from the shoreline map are in black ink on the final ~~field~~ smooth sheet; changes are recorded in red ink. New features are displayed in black ink.

~~No~~ Conflicts were found to exist between the shoreline map high water line (HWL) and hydrography. The shoreline map HWL should supersede charted shoreline. changes to the delineation of the HWL on the shoreline map are shown in red on the smooth sheet.

In the course of this survey, many minor changes to shoreline map ledges were noted, several new foul areas were delineated, and many shoreline map rocks were found to be high points (both prominent and non-prominent) on new ledges and reefs. These changes appear to be required as a result of photography for the shoreline maps having been flown at some stage of the tide significantly above mean lower low water (MLLW). These features are adequately delineated on the final field sheet and will not be discussed separately here.

A shoreline map rock at latitude 58/17/16N, longitude 135/03/12W was disproved (see position 3689). A fifteen-minute visual and echo-sounder search was conducted, but failed to uncover any indication of the rock's existence. Water visibility at the time was approximately 5 to 6 feet (the bottom was not visible), and some kelp was found in the area. An echo-sounder depth of 0.9 fathoms was obtained in the rock's reported position. It is recommended that the rock not be charted. concur

A shoreline map rock at latitude 58/17/12N, longitude 135/03/06W was disproved (see position 3534). A fifteen-minute visual and echo-sounder search was conducted, but failed to uncover any indication of the rock's existence. Water visibility at the time was approximately 5 feet (the bottom was not visible). No kelp was found in the area. A lead-line depth of 1.4 fathoms was obtained in the rock's reported position. It is recommended that the rock not be charted. concur

A shoreline map rock at latitude 58/17/20N, longitude 135/03/01W was found after reconnaissance hydrography (5-meter line spacing) was run over the area. The rock, however, was never seen and a lead-line depth was not possible. Surrounding depths ranged from 2.1 to 5.4 fathoms and the echo-sounder least depth of 1.7 fathoms obtained represents a significant feature rising off the bottom. It is recommended that the rock be charted as shown on the final ~~field~~ smooth sheet (see position 6497 04) shown as rky on the smooth sheet.

A shoreline map rock at latitude 58/15/29N, longitude 135/04/44W (reference number 607) was found in an area of boulders, and another rock at latitude 58/17/19N, longitude 135/05/45W (reference number 056) was found on a boulder beach. Both areas were observed at low water. Neither rock is prominent. It is recommended that they not be charted. Do not concur Rocks transferred to the smooth sheet from shoreline map TP-01311. Chart areas as shown on the smooth sheet.

Two shoreline map rocks, located in an area found to be foul with rocks (centered at latitude 58/17/55N, longitude 135/04/05W), were positioned by this survey approximately 15 to 20 meters northwest of their shoreline map positions (see positions 3339 and 3341). The rocks are displayed in red on the final field sheet and should be charted at the new locations. chart as shown on the smooth sheet.

Do not concur

Three shoreline map reefs were found to contain significant islets located at latitude 58/15/56N, longitude 135/04/11W; latitude 58/15/43N, longitude 135/04/04W; and latitude 58/15/02N, longitude 135/03/24W (positions 9200 to 9208). It is recommended that they be charted as located by this survey. They are shown in red on the final field sheet.

concur

The shoreline map reef located at latitude 58/17/08N, longitude 135/03/03W was found to be two separate features. The northern half of the shoreline map reef is a reef (positions 3345 and 3346) while the southern half is a submerged reef which was investigated by divers to obtain limits and least depths (positions 9007 and 9008). Hydrography and divers' visual observations show the two features to be separated by deeper water. Chart as shown on the final ~~field~~ smooth sheet. feature shown as reefs with the lower half as submerged.

Concur

I. Crosslines

A total of 32 nautical miles of crosslines were run on this survey comprising 21 percent of the main-scheme hydrography. Agreement between crossline and main-scheme soundings is within 0.3 fathoms to the 50-fathom depth curve, and within 3 percent at greater depths, except in areas of steep bottom relief. Any disagreement is attributable to irregular or steep bottom contour. There is no systematic problem that would account for differences in these areas.

In some cases, a different vessel was used for crosslines than was used for main scheme. In these instances, equally good agreement was obtained at the crossings, except over irregular or steep bottom contours.

J. Junctions

This survey junctions to the south with survey H-10238 (scale 1:10,000; 1987). No contemporary surveys junction to the north, east, or west with this survey. Agreement between soundings at junctions is good; depths agree within 1 fathom to the 100-fathom depth curve, except in areas of steep relief.

At the southeast corner of the survey, at depths from 100 to 300 fathoms, some junction soundings could not be reconciled by direct comparison. Difficulty in maintaining a high-frequency trace in this area while conducting survey H-10238 resulted in the use of the low-frequency values as the digitized depths. Depths from survey H-10240 used high-frequency values, prohibiting direct comparison by survey sheet overlap. Instead, low-frequency values were manually picked off echogram records in

this area on survey H-10240 and compared to those obtained for survey H-10238. Upon comparison of these low-frequency values, the junction soundings in this area were found to be satisfactory. There is no other systematic problem that would account for difference in this area. The hydrographer recommends a butt junction be considered for this area of the survey. In depths greater than 300 fathoms soundings agree within 1 fathom.

see Sect. 5 of Eval. Report

K. Comparison with Prior Surveys

The following prior surveys are applicable to the area covered by this survey:

Survey	Year	Scale
H-2055	1890	1:40,000 and 1:80,000
H-4228 (wire drag)	1922	1:40,000
T-3987	1922	1:20,000

see Sect. 6 of Eval. Report

Shoreline map T-3987 was not provided to the hydrographer and therefore will only be discussed as far as it contributed to non-sounding features on the chart in Section L, Comparison with the Chart. No prior survey was identified or supplied to the ship that contains the charted soundings east of Point Howard and north of latitude 58/16/45N or that contains a 70-fathom sounding at latitude 58/16/41N, longitude 135/03/43W. These charted soundings also will be discussed in Section L.

These soundings are from survey H-2056

Comparison of depths obtained by this survey with those of survey H-2055 was accomplished by matching shoreline features, as correlating latitudes and longitudes resulted in poor agreement between both shoreline features and prior survey soundings.

Most depths from prior survey H-2055 may be found within approximately 50 meters of comparable depths obtained by this survey, and generally no more than 150 meters away. Given the date, scale and nature of this survey, agreement is generally good. There are some exceptions.

The prior survey indicates a depth of 13 fathoms at latitude 58/17/17N, longitude 135/03/30W. Hydrography over this area (45-meter line spacing) indicates depths ranging from 40 to 50 fathoms. It is recommended that survey H-10240 depths supersede the 13-fathom depth.

Concur

Depths of 71 fathoms at latitude 58/17/06N, longitude 135/02/25W and 124 fathoms at latitude 58/17/05N, longitude 135/02/35W are indicated on the prior survey. The present survey found depths of 8 to 13 fathoms (45-meter line spacing) and 30 to 70 fathoms (45- to 90-meter line spacing), respectively, at these locations. A steep bottom contour exists in this vicinity; therefore, any error in the positioning of prior survey soundings would result in a drastically different comparison. It is recommended that these prior survey depths be superseded by the present survey.

concur

A depth of 25 fathoms from survey H-2055 is indicated at latitude 58/17/08N, longitude 135/04/44W. Hydrography (90-meter line spacing) revealed 35-fathom depths with the nearest comparable depth approximately 350 meters to the west. The hydrographer can offer no explaination for the discrepancy consistant with the apparent accuracy of other nearby prior survey depths. Given that the regular nature of the bottom in the area gives no indication of a 25-fathom peak, it is recommended that present survey depths supersede the 25-fathom depth.

concur

A depth of 254 fathoms from survey H-2055 at latitude 58/16/17N, longitude 135/02/15W was disproved using 180-meter line spacing. Hydrography revealed 166 fathoms in the area with the nearest comparible depth approximately 250 meters to the east. A steep bottom contour exists in the area, and could account for the discrepancy.

As a result of the denser line spacing accomplished for this survey, numerous point features not shown on the prior survey were found. Least depths (determined by divers or lead line) or elevations, descriptions, and positions for these features can be found in ~~Appendix IX~~, Dangers to Navigation (Report, copy to the Coast Guard attached).

No significant shoaling trends were observed by the hydrographer. It should be noted that soundings on the prior survey are sparse; H-10240 should supersede the prior survey in all common areas.

concur

Features from prior surveys were compared by the same method described above for comparison of prior survey soundings.

A reef from survey H-2055 at latitude 58/16/01N, longitude 135/04/15W was disproved using 45- and 90-meter line spacing. No reef was found and depths in the area ranged from 24 to 36 fathoms. It is recommended that this feature be deleted from the chart.

concur

A reef south of Point Howard from survey H-2055 at latitude 58/17/14N, longitude 135/03/06W was not found at the prior survey location. At low water, no reef was visible. Depths in the area ranged from 2 to 8 fathoms. An uncharted reef uncovered 7 feet at MLLW and a submerged reef in close proximity in the vicinity of latitude 58/17/08N, longitude 135/03/03W were located approximately 200 meters south of the reef from survey H-2055 . It is recommended that the charted reef be moved to the position obtained by this survey. The new location of the reef was reported as a danger to navigation to the Seventeenth Coast Guard District ~~(see Appendix IX)~~.

concur

(copy of report attached)

Two rocks from survey H-4228 (wire drag) charted in the vicinity of latitude 58/17/39N, longitude 135/02/51W were found to be an extension of a ledge running east at approximately right angles to the shoreline. This ledge was adequately displayed on the shoreline map, and can be seen on the final field sheet. ✓

L. Comparison with the Chart

This survey was compared to a 1:10,000-scale enlargement of Chart 17316, 14th Edition, October 1982, 1:80,000.

Comparison of survey H-10240 with the chart was made by matching shoreline features; matching of latitude and longitude scales resulted in generally poor agreement between shoreline and sounding features. The soundings from the chart discussed include only those east of Point Howard and north of latitude 58/16/45N, and the 70-fathom sounding at latitude 58/16/41N, longitude 135/03/43W. All other charted soundings originate from prior surveys previously discussed in Section K, Comparison with Prior Surveys. ✓

Charted depths, with the exception of one, may be found within one-hundred meters of comparable depths obtained by this survey. Given the scale of the chart and the generally deep depths being compared, agreement is good. ✓

The one discrepancy noted above concerns a 357-fathom depth reported at latitude 58/20/00N, longitude 135/00/13W. Survey soundings indicate a depth of 257 fathoms in this location. This discrepancy could not be reconciled with certainty by the hydrographer since no prior survey was available for direct comparison. One possible explaination is that a 257-fathom sounding was transferred incorrectly as a 357-fathom sounding to the chart; a possibility given credence by indications on the chart markup that a 359-fathom sounding charted at latitude 58/18/59N, longitude 135/00/44W should read 319 fathoms (a depth which agrees well with soundings from this survey). Present survey depths should supersede the 357-fathom sounding on the chart. ✓ concur

Two charted rocks in the vicinity of latitude 58/16/38N, longitude 135/05/13W and latitude 58/16/41N, longitude 135/05/17W from survey T-3987 were found to be two reefs with an intervening area foul with rocks. It is recommended that the area be charted as shown on the final ~~field~~ smooth sheet (positions 6059 to 6067). ✓ concur

A group of three charted rocks in the vicinity of latitude 58/16/00N, longitude 135/04/43W from survey T-3987 was found to be an extensive area of ledge, with one small islet near its southern end. It is recommended that these rocks be removed from the chart, and a ledge and islet be added as shown on the final ~~field~~ smooth sheet. ✓ concur

Two charted rocks in the vicinity of latitude 58/15/00N, longitude 135/03/23W from survey T-3987 were found to be ledge around an islet (positions 9200 to 9202). Station LIST 2, 1922 (station number 102) is located on this islet. It is recommended that the rocks be changed to an islet and ledge as shown on the final ~~field~~ smooth sheet. ✓ concur

A charted ledge at latitude 58/16/32N, longitude 135/05/21W was not found, nor was any indication of its existence given on the shoreline map. During shoreline verification, an area foul with rocks (positions 5013 to 5015) was found at the charted ledge's southern limit and a small area of ledge (positions 1434 and 1435) was found near its northern limit. Both new features' limits are delineated on the final ~~field~~ smooth sheet. It is recommended that the ledge be deleted from the chart. concur

Three uncharted ledges were found adjacent to the mouth of the river northwest of Point Howard. These ledges were reported as dangers to navigation. See the final ~~field~~ smooth sheet for delineation.

Numerous charted offshore rocks in the vicinity of latitude 58/16/15N, longitude 135/05/15W were found by this survey to be reefs. Limits were determined by detached positions and lines of hydrography (see final ~~field~~ smooth sheet).

Except for those features discussed above in this section and under Section K, Comparison with Prior Surveys, all other charted features were found. Many features were found to be more extensive than indicated on the chart and are shown on the final ~~field~~ smooth sheet.

Thirteen dangers to navigation were noted during this survey. Lists of these dangers including description, latitude and longitude, and position number, may be found in the letters addressed to the Commander (oan) of the Seventeenth Coast Guard District. A copy of each letter ~~included in Appendix IX~~, Dangers to Navigation, is attached.

Divers' least depths over shoal areas discovered during the course of the survey were determined using a pneumatic gauge.

M. Adequacy of Survey

This survey is sufficiently complete and adequate to supersede the prior surveys in their common area. No additional field work is necessary. concur

N. Aids to Navigation

There are no aids to navigation or landmarks located within the limits of this survey.

O. Statistics

Vessel	2020	2023	2024	2025	2026	2030	Total
Positions	10	778	931	69	975	9	2436 ~~2772~~
Nautical Miles	-	61	99	-	72	-	232
Square Miles	-	-	-	-	-	-	13
Bottom Samples	10	-	-	35	-	-	45
Velocity Casts	4	-	-	-	-	-	4
Tide Stations	1	-	-	-	-	-	1
Days of Production (Hydrography only)	-	-	-	-	-	-	13

No magnetic or current stations were established during this survey.

P. Miscellaneous

No unusual submarine features or anomalous tidal conditions were observed during this survey. No current observations were made.

Kelp was found fringing the shoreline in Lynn Canal north of Point Howard (see final field sheet).

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

Q. Recommendations

None.

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
RA 362	330/602 Combined	08/20/84
AM 500	Predicted Tide Generator	11/10/72
AM 602	Elinore	12/08/82
	VELTAB	02/01/85

5. Referral to Reports

The following reports will be submitted separately:

Report	Date
Horizontal Control Report	01/88
Electronic Control Data	12/87
Corrections to Echo Soundings Data	12/87
Coast Pilot Report	12/87

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

May 29, 1987 N/MOP21/TWR

TO: N/CG2x5 - Charles E. Harrington

FROM: N/MOP21 - Thomas W. Richards

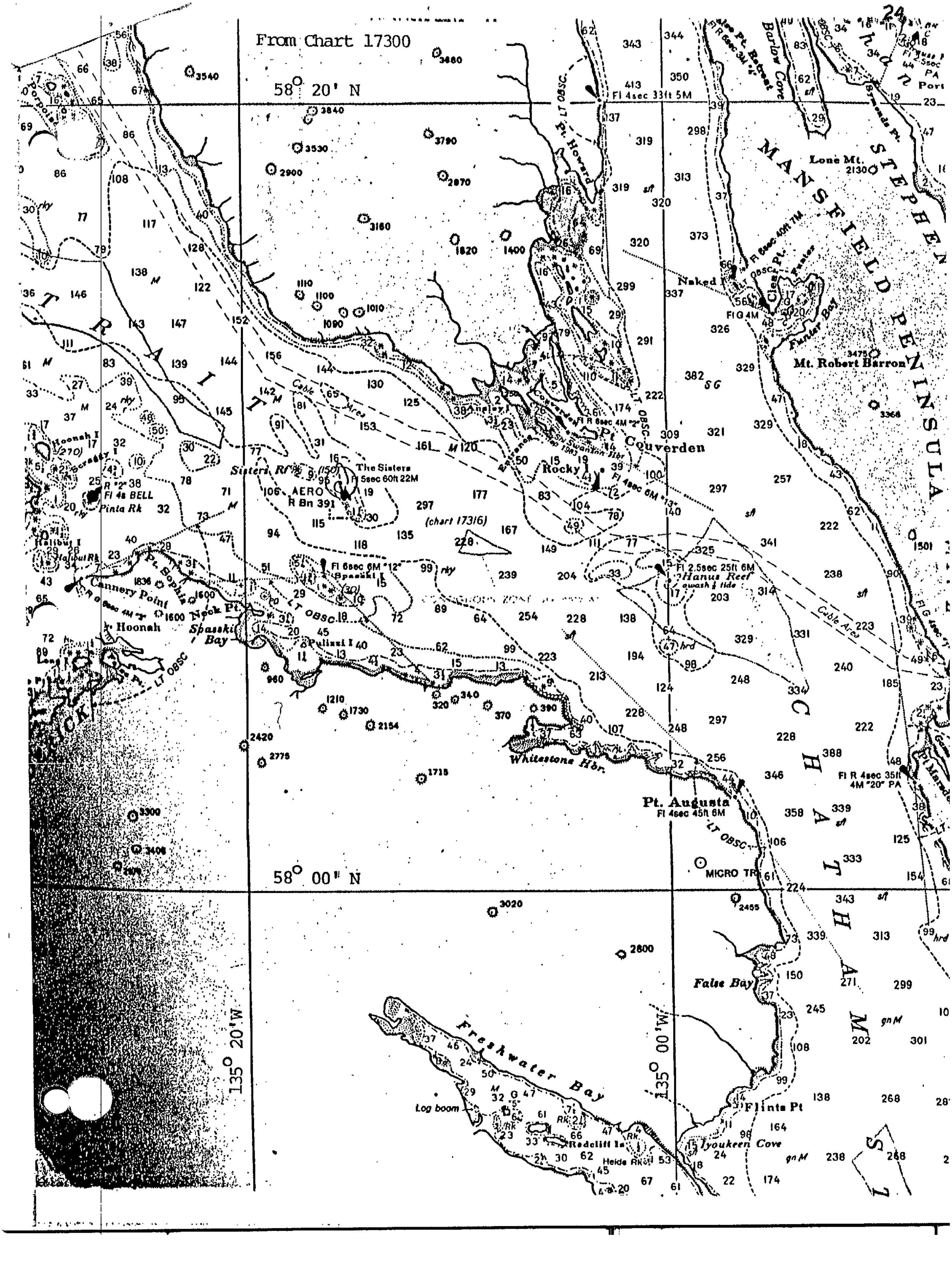
SUBJECT: Geographic Name, Howard Bay

I was recently visited by Capt. E.W. Richards (NOAA retired). He is presently operating a salmon hatchery in Skagway, Alaska. For approximately the past 5 to 10 years he has been obtaining salmon eggs for his hatchery in a bay immediately south and west of Howard Point in Lynn Canal, Alaska. The approximate position of this bay is latitude 58°18'N and longitude 135°04'W (see Attachment "A"). He indicated to me that this bay is known to local fishermen and pleasure boaters as Howard Bay.

When I was in Skagway last fall, I also heard this bay referred to as Howard Bay by a number of local fishermen. I recommend that Board of Geographic Names consider naming this bay, Howard Bay.

Attachment

cc: C.O., FAIRWEATHER
Capt. Richards


From Chart 17300
58° 20' N
58° 00' N
135° 20' W
135° 00' W
MANSFIELD PENINSULA
STEPHENS
CHATHAM
STRAIT
Pt. Couverden
Rocky I
Lone Mt.
Mt. Robert Barron
Naked
Funter Bay
The Sisters
Sisters Rf
AERO R Bn 391
Spasski I
Hanus Reef
Cannery Point
Pt. Sophia
Neck Pt.
Spasski Bay
Pulizzi I
Hoonah
Hoonah I
Pinta Rk
Halibut I
Whitestone Hbr.
Pt. Augusta
Fl 4sec 45ft 6M
False Bay
Freshwater Bay
Log boom
Redcliff Is
Flints Pt
Iyoukeen Cove
MICRO TR
Pt. Howard
Barlow Cove
Cable Area
(chart 17316)
Fl 4sec 33ft 5M
Fl 6sec 6M "12"
Fl 2.5sec 25ft 6M
Fl 5sec 60ft 22M
Fl G 4M
Fl R 4sec 35ft 4M "20" PA
LT OBSC

SIGNAL LISTING
OPR-0186-FA-87
FA-10-2-87
H-10240

```
LIST 2 1922                                          1026 581342
102 0  58 15 02186 135 03 23592  250 0005 000000
TC-14                          AEROTRIANGULATION CM-8405
120 0  58 15 59674 135 04 58058  254 0000 000000
TC-13                          AEROTRIANGULATION CM-8405
126 0  58 17 57272 135 04 56572  254 0000 000000
ACT 2 1922                                           1001 581343
130 0  58 18 39430 134 57 17170  250 0003 000000
AID 2 1922                                           1003 581343
170 0  58 22 13094 134 58 05438  250 0006 000000
FUNTER 2 1922                                        1041 581343
180 0  58 12 55089 134 54 41435  250 0005 000000
CLIMB, 1987                                          FAIRWEATHER
286 0  58 14 50193 135 04 56874  250 0000 000000
NEST, 1987                                           FAIRWEATHER
296 0  58 16 27146 135 05 27329  250 0003 000000
```

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

NOAA Ship FAIRWEATHER
1801 Fairview Avenue East
Seattle, WA 98102-3767

November 9, 1987

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

Dear Sir:

This letter confirms my radio message P 081830 NOV 87 (copy enclosed).

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

The following uncharted dangers to navigation were found by NOAA Ship FAIRWEATHER during hydrographic survey operations (survey H-10240) in the vicinity of Point Howard, Lynn Canal, Alaska. All items are on chart 17316. Depths are referenced to mean lower low water (MLLW) based on predicted tides. Positions are based on the North American Datum of 1927 (NAD 27). Bearings are degrees true and distances are in nautical miles from Swanson Harbor Entrance Light 2 (LLNR 24130).

	DEPTH	LATITUDE	LONGITUDE	BEARING	DISTANCE	POSITION
A.	Rock covered 3.2 fm	58/17/52N	135/02/54W	008	6.30	9000
B.	Reef uncovers 7 ft	58/17/08N	135/03/05W	008	5.60	3345
C.	Rock covered 2.5 fm	58/15/26N	135/04/03W	004	3.85	9009
D.	Rock covered 5.5 fm	58/15/10N	135/04/53W	357	3.55	9001
E.	Rock covered 6.5 fm	58/15/33N	135/05/03W	356	4.00	9003
F.	Rock covered 4.5 fm	58/15/53N	135/05/33W	353	4.30	9002
G.	Rock uncovers 5 ft	58/17/25N	135/05/31W	355	5.85	1142
H.	Rocks uncover 2 ft	58/17/53N	135/04/06W	002	6.30	3338

Questions concerning this survey may be directed to the Chief, Nautical Chart Branch, telephone (206) 526-6835.

Sincerely,

Glen R. Schaefer
Captain, NOAA
Commanding Officer

Enclosure

bcc: N/CG222 w/chartlet
N/MOP21 w/chartlet

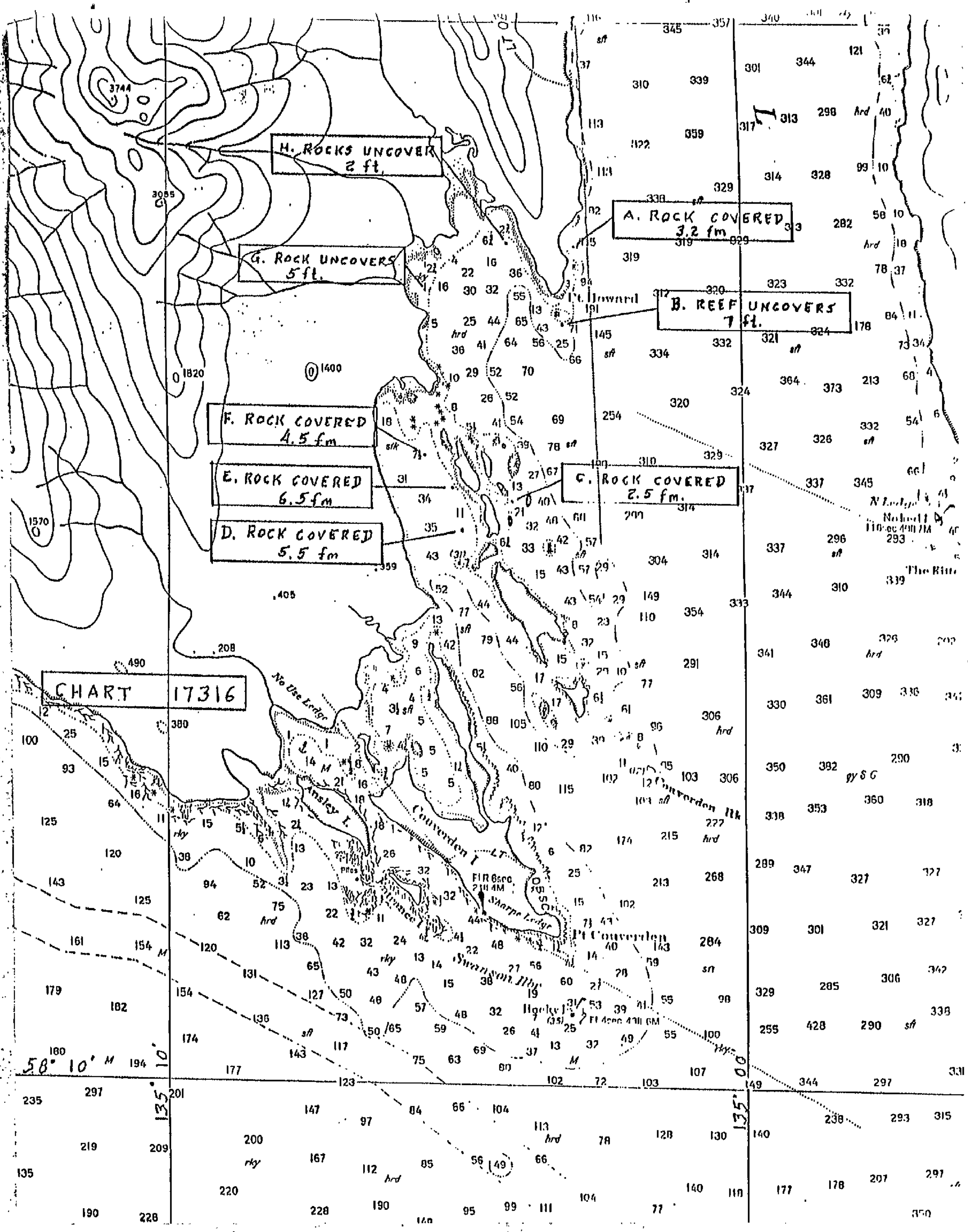
TOD
NOS / 081923Z NOV87
EOA / 8,4554 MHZ RTTY

PTTUZYUW RUHPTEB0398 3121830-UUUU--RUHPSUU.
ZNR UUUUU
P 081830Z NOV 87
FM NOAAS FAIRWEATHER
TO CCGDSEVENTEEN JUNEAU AK
INFO NOAAMOP SEATTLE WA
DMAHTC WASHINGTON DC//NVS//
ACCT CM-VCAA
BT
UNCLAS
SUBJ: DANGERS TO NAVIGATION
1. THE FOLLOWING UNCHARTED DANGERS TO NAVIGATION WERE FOUND BY NOAA SHIP FAIRWEATHER DURING SURVEY OPERATIONS (SURVEY H-10240) IN THE VICINITY OF POINT HOWARD, LYNN CANAL, ALASKA.

	DEPTH	LATITUDE	LONGITUDE	BEARING	DISTANCE
A.	ROCK COVERED 3.2 FATHOMS	58/17/52N	135/02/54W	008	6.30
B.	REEF UNCOVERS 7 FEET	58/17/08N	135/03/05W	008	5.60
C.	ROCK COVERED 2.5 FATHOMS	58/15/26N	135/04/03W	004	3.85
D.	ROCK COVERED 5.5 FATHOMS	58/15/10N	135/04/53W	357	3.55
E.	ROCK COVERED 6.5 FATHOMS	58/15/33N	135/05/03W	356	4.00
F.	ROCK COVERED 4.5 FATHOMS	58/15/53N	135/05/33W	353	4.30
G.	ROCK UNCOVERS 5 FEET	58/17/25N	135/05/31W	355	5.85
H.	ROCKS UNCOVER 2 FEET	58/17/53N	135/04/06W	002	6.30

2. ALL ITEMS ON CHART 17316. DEPTHS REFERENCED TO MLLW BASED ON PREDICTED TIDES. POSITIONS BASED ON NAD 27. BEARINGS ARE DEGREES TRUE AND DISTANCES ARE NAUTICAL MILES FROM SWANSON HARBOR ENTRANCE LIGHT 2 (LLNR 24130).
3. CONFIRMATION LETTER CONTAINING SAME INFORMATION WILL BE MAILED NEXT INPORT.
BT
#0398

NNNN


H. ROCKS UNCOVER 2 ft.
A. ROCK COVERED 3.2 fm
G. ROCK UNCOVERS 5 ft.
B. REEF UNCOVERS 7 ft.
F. ROCK COVERED 4.5 fm
E. ROCK COVERED 6.5 fm
C. ROCK COVERED 2.5 fm.
D. ROCK COVERED 5.5 fm
CHART 17316
Pt Howard
No Use Ledge
Couverden I
Sharpe Ledge
Pt Couverden
Swanson Hr
Couverden Rk
Ansley I
Rocky I
The Rim
58° 10'
135° 10'
135° 00'

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
NOAA Ship FAIRWEATHER
1801 Fairview Avenue East
Seattle, WA 98102-3767

January 15, 1988

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

Dear Sir:

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

The following uncharted dangers to navigation were found by NOAA Ship FAIRWEATHER during survey operations (hydrographic survey H-10240) in the vicinity of Point Howard, Lynn Canal, Alaska. All items are on Chart 17316. Depths are referenced to Mean Lower Low Water based on predicted tides. Positions are based on the North American Datum of 1927.

			FROM SWANSON HARBOR ENTRANCE LIGHT 2 (LIGHT LIST NO. 24130)		
DEPTHS	LATITUDE	LONGITUDE	BEARING	DISTANCE(nm)	POSITION NUMBERS
A. 10.5 fathoms	58/17/41N	135/04/15W	002°T	6.2	6571 + 2⅓
B. 11.4 fathoms	58/17/20N	135/04/13W	002°T	5.8	6557

An uncharted ledge (width of approximately 100 yards) trends SSE (150°T) for 0.15 nautical miles from a charted islet at latitude 58/17/48N, longitude 135/05/15W. 1143-1149

An uncharted ledge (width of 100 to 200 yards) trends S by E (170°T) for 0.17 nautical miles from shore at latitude 58/18/10N, longitude 135/04/28W. 1135, 1137, 1138

An uncharted ledge, which encompasses a point of land at latitude 58/17/58N, longitude 135/04/55W, extends 0.09 nautical miles to the east and 0.08 nautical miles to the south. 1150-1156

Questions concerning this survey may be directed to Chief, Nautical Chart Branch, telephone (206) 526-6835.

Sincerely,

Glen R. Schaefer

Glen R. Schaefer
Captain, NOAA
Commanding Officer

bcc: N/CG222 w/chartlet
N/MOP21 w/chartlet
DMAHTC, Code NVS, Washington, D.C. 20315

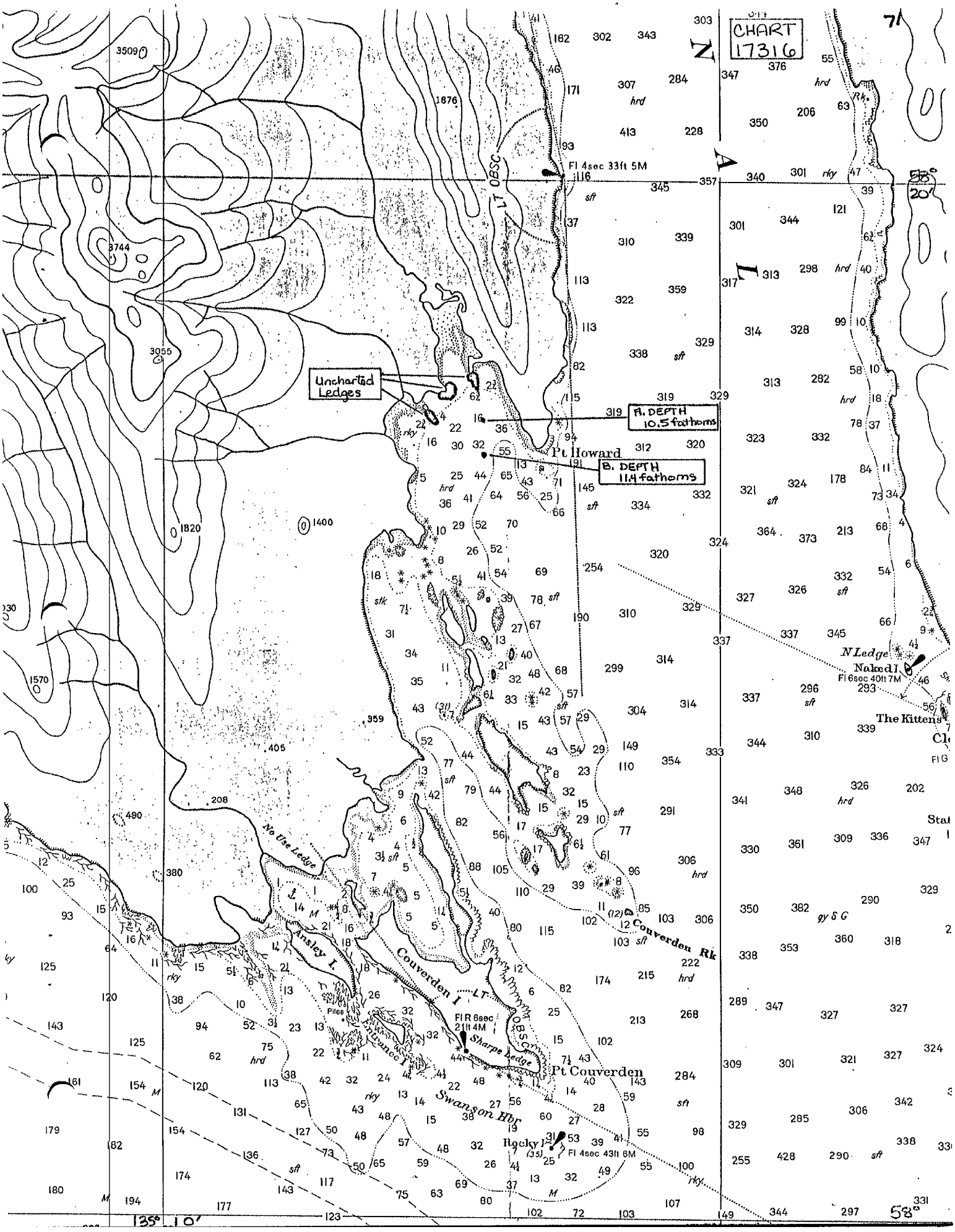


CHART
17316
Unchartéd
Ledges
A. DEPTH
10.5 fathoms
B. DEPTH
11.4 fathoms
Pt Howard
Pt Couverden
Sharpe Ledge
Couverden I
Ansley I.
No Use Ledge
Swanson Hbr
Rocky I
Couverden Rk
N Ledge
Naked I.
The Kittens
Fl 4sec 33ft 5M
Fl R 6sec 21ft 4M
Fl 4sec 43ft 6M
Fl 6sec 40ft 7M
LT OBSC
135° 10'
58°

Approval Sheet

This descriptive report and the accompanying records have been reviewed for accuracy, completeness, compliance with project instructions, and adherence to required standards and procedures. The data are forwarded for final review and processing.

Submitted by:

Michael P. Lynch
Lieutenant (Junior Grade), NOAA

Reviewed by:

Maureen R. Kenny
Lieutenant Commander, NOAA
Field Operations Officer

Approved by:

Glen R. Schaefer
Captain, NOAA
Commanding Officer
25 Jan 88

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: March 1, 1988

MARINE CENTER: Pacific

OPR: 0186

HYDROGRAPHIC SHEET: H-10240

LOCALITY: Point Howard and vicinity, Lynn Canal, Alaska

TIME PERIOD: May 13 - October 29, 1987

TIDE STATION(S) USED: 945-2368 Swanson Harbor, AK

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 5/13-5/16/87 = 3.14 ft.
10/6-10/29/87 = 3.42 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:
5/13-5/16/87 = 14.0 ft.
10/6-10/29/87 = 14.3 ft.

REMARKS: RECOMMENDED ZONING

1. Zone Direct

James E. Hubbard

CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10240

Name on Survey	A ON CHART NO. 17300 & 17316	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ALASKA (TITLE)	X									1
HOWARD BAY [Using prior to BGN approval (assuming no problem with name)]										2
LYNN CANAL (TITLE)	X							CH		3
POINT HOWARD (TITLE)	X									4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
				Approved:						17
										18
				Charles L. Harrington						19
				Chief Geographer-N/CG2x3						20
				JUN 1 1988						21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H) (9-83) | U.S. DEPARTMENT OF COMMERCE | REGISTRY NUMBER

HYDROGRAPHIC SURVEY STATISTICS

H-10240

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	5 (2 Mylar, 3 Paper)
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	5

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	2					
ENVELOPES						
VOLUMES	5					
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List): TP-01311 (1985), TP-01312 (1985)

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List): Chart 17316 (14th Ed.), Chart 17300 (4th Ed.)

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	*EVALUATION*	*TOTALS*
POSITIONS ON SHEET			2436
POSITIONS REVISED			48
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			96
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	65.0		65.0
VERIFICATION OF SOUNDINGS	132.0		132.0
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	155.0		155.0
COMPARISON WITH PRIOR SURVEYS AND CHARTS		24.0	24.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		61.0	61.0
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	352.0	85.0	437.0

Pre-processing Examination by D. Hill	*Beginning Date*	*Ending Date* 3/18/88
Verification of Field Data by L. Deodato, S. Otsubo	*Time (Hours)* 352	*Ending Date* 9/26/88
Verification Check by S. Otsubo, B. Olmstead	*Time (Hours)* 51	*Ending Date* 9/26/88
Evaluation and Analysis by A. Luceno	*Time (Hours)* 85	*Ending Date* 12/12/88
Inspection by D. Hill	*Time (Hours)* 4	*Ending Date* 12/14/88

☆ U.S. GOVT. PRINTING OFFICE 1983: 764-006/6061

PACIFIC MARINE CENTER
Evaluation Report
H-10240

1. INTRODUCTION

Survey H-10240 is a basic hydrographic survey accomplished by the NOAA Ship FAIRWEATHER under the following Project Instructions.

OPR-0186-FA-87, 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

This survey occurred in Alaska on the west side of Lynn Canal in the vicinity of Howard Bay and Point Howard. The surveyed area extends from latitude 58°14'48"N to latitude 58°20'00"N and from longitude 135°00'00"W to longitude 135°06'21"W. The bottom consists extensively of mud and some pebbles, stone, gravel and sand. Depths range from 0 to 360 fathoms.

Predicted tides for Juneau, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned from Swanson Harbor, gage 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. TRA, velocity correctors and electronic control correctors are adequate and required no revision. Settlement and squat correctors were properly determined and no corrections were required for any sounding vessel. An accompanying computer printout contains the parameters and the correctors.

A digital file, generated for this survey, includes categories of information required to comply with N/CG2 Hydrographic Survey Guideline No. 23, Completion of Digital Hydrographic Surveys, September 7, 1983. Certain descriptive information, however, may not be in the digital record because of the restrictions of the 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 1922 published values and a 1987 field value 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 using the NAD 27 projection by applying the following corrections:

latitude: +1.211 seconds (37.5 meters)
longitude: -6.489 seconds (-105.7 meters)

The year of establishment of control stations shown on the smooth sheet originates with published information and the 1987 field data. The 1987 field positions are subject to change pending certification of the data by NGS.

There are 18 weak fixes (angles of intersection less than 30 degrees or more than 150 degrees) noted in 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. Two nearshore rocks at latitude 58°16'27.41"N, longitude 135°05'17.53"W and at latitude 58°15'46.94"N, longitude 135°04'44.95"W were among these positions. These fixes are considered acceptable.

The following shoreline maps apply to this survey.

	Photo Date	Class
TP-01311	May, June, July 1985	III
TP-01312	May, June 1985	III

Changes to the high water line depicted on the shoreline maps, centered at the positions listed below, are shown in red on the smooth sheet.

Latitude (N)	Longitude (W)
58°15'56"	135°04'11"
58°15'43"	135°04'03"
58°15'38"	135°04'28"
58°15'02"	135°03'23"

Many nearshore rocks shown as awash on shoreline map TP-01311 north of Point Howard are not high points of extensive ledges. These rocks, which are part of the ledges, are not shown on the smooth sheet. Other rocks and features shown on the shoreline maps that were verified were transferred to the smooth sheet. Elevations of some rocks were determined during this survey and are shown on the smooth sheet.

A rock shown as awash on shoreline map TP-01311 at latitude 58°14'54"N, longitude 135°05'49"W was found to be an islet 3 feet above MHW. Two additional rocks, also shown as awash on shoreline map TP-01312 at latitude 58°15'56"N, longitude 135°04'35"W and at latitude 58°15'58"N, longitude 135°04'34"N were found to be islets, both 6 feet above MHW.

3. HYDROGRAPHY

Hydrography is adequate to:

a. delineate the bottom configuration, determine least depths, and draw the standard depth curves;

b. reveal there are no significant discrepancies or anomalies requiring further investigation; and

c. show the survey was properly controlled and soundings are correctly plotted.

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, Fourth Edition, revised through CHANGE NO. 3; the Hydrographic Survey Guidelines; and the PMC OPORDER.

5. JUNCTIONS

Survey H-10240 junctions with the following survey.

Survey	Year	Scale	Area
H-10238	1987	1:10,000	South

The junction with survey H-10238 has not been formally completed since that survey was previously processed and forwarded for charting. The junction comparison was made using a copy. The discrepancies noted by the hydrographers in section J of surveys H-10240 and H-10238 Descriptive Reports were resolved during the processing of survey H-10238. Soundings and depth curves are in good agreement. Two soundings to better portray the bottom and ledge delineations have been transferred to the present survey.

6. COMPARISON WITH PRIOR SURVEYS

H-2055 (1890) 1:40,000 and 1:80,000
H-2056 (1890) 1:40,000

Taking into consideration the differences in the scales of the surveys, the methods of surveying and the datum adjustments, comparison with prior surveys H-2055 and H-2056 is satisfactory.

Survey H-10240 is adequate to supersede these prior surveys within the common area.

H-4228 WD (1922) 1:40,000

Wire drag survey H-4228 covers most of the eastern portion of the survey area, an area of deeper depths. The comparison indicates no conflicts with contemporary data.

T-3987 (1922) 1:20,000

This prior survey is not listed in the Project Instructions for comparison, however, several charted rocks originate from this survey necessitating a comparison to effect an appropriate supersession. The comparison indicates that all features are supported by contemporary data from survey H-10240 and accordingly are superseded.

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

7. COMPARISON WITH CHART

Chart 17316, 14th Edition, dated October 30, 1982; scale 1:80,000
Chart 17316, 15th Edition, dated August 29, 1987; scale 1:80,000
Chart 17300, 4th Edition, dated June 15, 1985; scale 1:209,978

a. Hydrography

All charted information originates with surveys H-2055 and H-2056 and miscellaneous sources. Survey H-10240 is adequate to supersede charted hydrography within the common area.

b. AWOIS

There are no AWOIS items originating from miscellaneous sources applicable to this survey.

c. Controlling Depths

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

d. Aids to Navigation

There are no fixed or floating aids located within the area of this survey.

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 uncharted rocks, reefs and ledges to the USCG in two separate letters. Copies of the reports are attached.

No dangers were reported during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10240 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

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

Arsenio A. Luceno
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
Chief, Hydrographic Section

APPROVALS

I have reviewed the smooth sheet, accompanying data, and reports associated with hydrographic survey H-10240. This survey meets or exceeds Charting and Geodetic Services' standards for products in support of nautical charting.

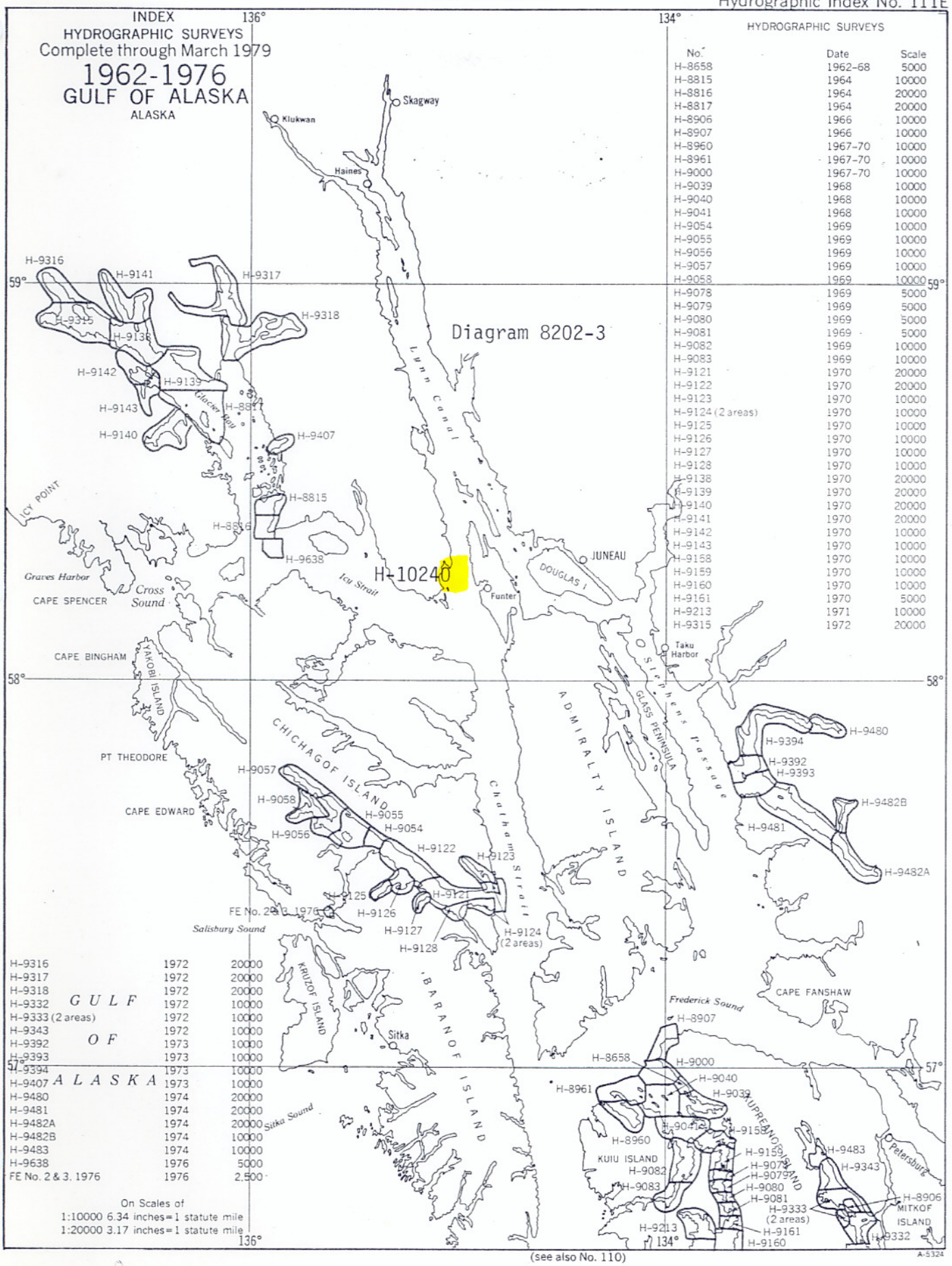
Chief, Nautical Chart Branch (Date)

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

Sigmund R. Petersen 12/19/88
Director, Pacific Marine Center (Date)

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

Hydrographic Index No. 111E



HYDROGRAPHIC SURVEYS

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

GULF OF ALASKA

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

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10240

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	8/18/89	Almacen	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via full application of
			Drawing No. soundings from SS.
17300	10/27/89	ALMACEN	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via full application of
			Drawing No. sndgs. from SS thru 17316.
			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
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			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED