

10175

Diagram No. 8201-4

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey ... Hydrographic
Field No. RA-20-1-85
Office No..... H-10175

LOCALITY

State Alaska
General Locality ... Seymour Canal
Locality Point Hugh and Vicinity

19 85

CHIEF OF PARTY
CAPT J. P. Vandermeulen

LIBRARY & ARCHIVES

DATE July 2, 1986

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10175

Area 5
CHTS

17362 }
17360 }

TO SIGN OFF REFER TO
"RECORD OF APPLICATION TO CHARTS, NOAA FM 75-96"

HYDROGRAPHIC TITLE SHEET

H-10175

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.

RA 20-1-85

State AlaskaGeneral locality Seymour CanalLocality Point Hugh and VicinityScale 1:20,000Date of survey April 18 - May 5, 1985Instructions dated March 14, 1985Project No. OPR-0179-RA-85Vessel RAINIER S221 (2120), Launches (2123), (2124), (2125), (2126)Chief of party CAPT. J. P. VandermeulenSurveyed by LTJG C. Wilson, ENS T. Porta and ENS M. BrownSoundings taken by echo sounder, hand lead, pole DSF 6000NGraphic record scaled by RAINIER PersonnelGraphic record checked by RAINIER PersonnelVerification by T. Jones, P. Niland, E. Domingo Automated plot by PMC Xynetics PlotterEvaluation by Isagani A. AlmacenSoundings in fathoms ~~feet~~ at MLLW ~~MLLW~~ and tenths of fathomsREMARKS: Marginal notes in black by Evaluator. Separates are filed with
the hydrographic data.AWD15/SURF ✓ 7/21/86 STJSC4-1-87

PROGRESS SKETCH

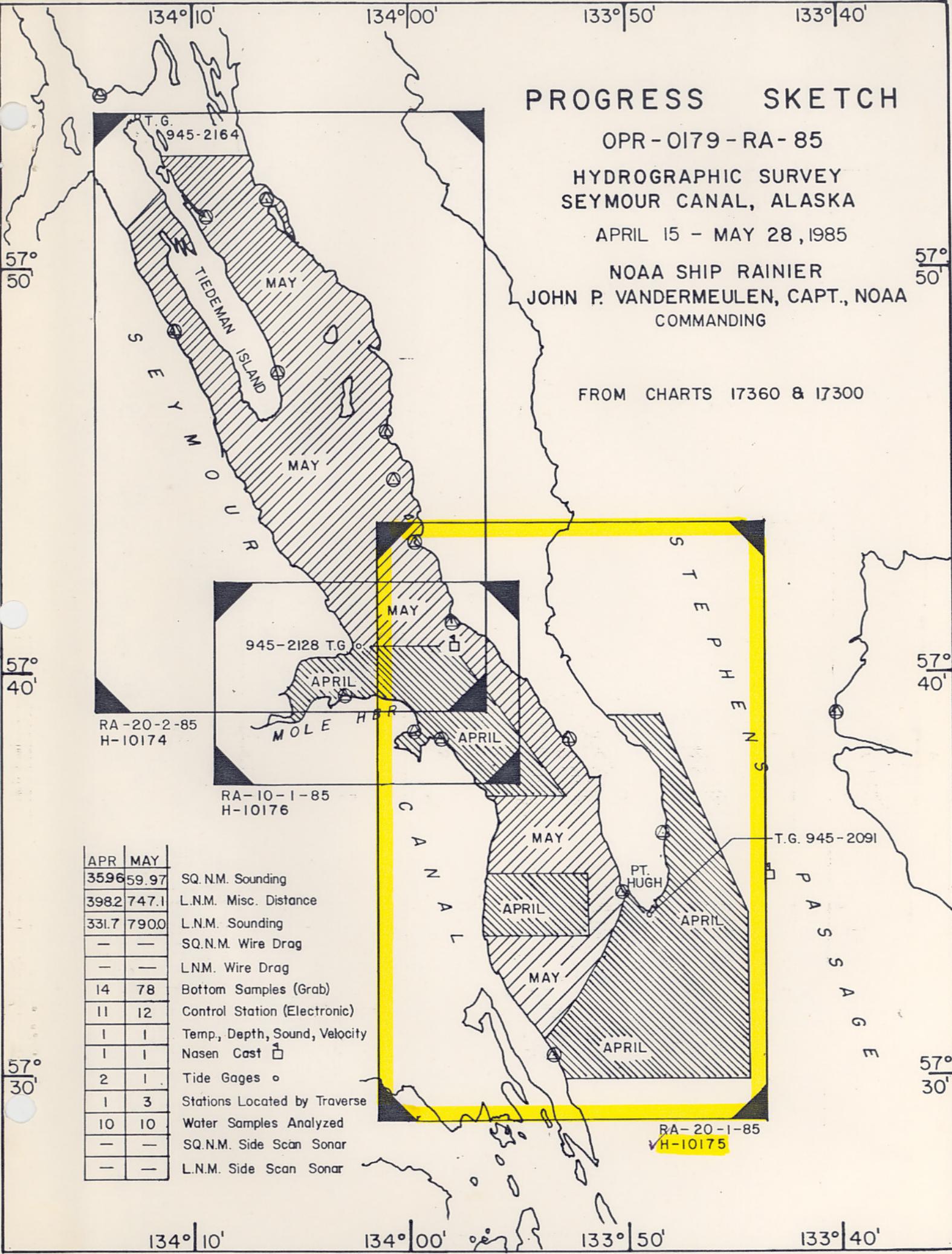
OPR-0179-RA-85

HYDROGRAPHIC SURVEY
SEYMOUR CANAL, ALASKA

APRIL 15 - MAY 28, 1985

NOAA SHIP RAINIER
JOHN P. VANDERMEULEN, CAPT., NOAA
COMMANDING

FROM CHARTS 17360 & 17300



RA-20-2-85
H-10174

RA-10-1-85
H-10176

RA-20-1-85
H-10175

APR	MAY	
3596	59.97	SQ.N.M. Sounding
3982	747.1	L.N.M. Misc. Distance
331.7	790.0	L.N.M. Sounding
—	—	SQ.N.M. Wire Drag
—	—	L.N.M. Wire Drag
14	78	Bottom Samples (Grab)
11	12	Control Station (Electronic)
1	1	Temp, Depth, Sound, Velocity
1	1	Nasen Cast □
2	1	Tide Gages ○
1	3	Stations Located by Traverse
10	10	Water Samples Analyzed
—	—	SQ.N.M. Side Scan Sonar
—	—	L.N.M. Side Scan Sonar

A. PROJECT

This basic hydrographic survey, sheet RA-20-1-85, registry number H-10175, was accomplished in accordance with Project Instructions OPR-0179-RA-85, Seymour Canal, Alaska dated 14 March 1985, and Change No. 1, dated 21 March 1985. ✓

B. AREA SURVEYED

The survey area is bounded by latitudes 57/41/30⁸N and 57/30/00 N, and longitudes 133/44/00 W and 133/57/00 W. This area, surveyed to a scale of 1:20,000, includes Point Hugh on Glass Peninsula and the entrance to Seymour Canal, southeast Alaska. Survey operations were conducted from 18 April (JD 108) to 5 May (JD 125), 1985.

C. SOUNDING VESSELS

Sounding data for this survey were obtained by vessels RA-3 (2123), RA-4 (2124), and RA-6 (2126). RA-5 (2125) was utilized for a dive investigation on JD 123. Bottom samples were obtained by RA-5 (2125) and the RAINIER (2120). No unusual sounding vessel configurations occurred during hydrographic data collection. The RAINIER was utilized for all sound velocity casts. ✓

D. CORRECTIONS TO ECHO SOUNDINGS

Survey launches were equipped with Raytheon DSF-6000N dual-beam echo sounders. Sounding equipment serial numbers for launches are as follows:

<u>VESSEL</u>	<u>SERIAL NO</u>
RAINIER (2120)	A117N
RA-3 (2123)	A115N
RA-4 (2124)	A119N
RA-6 (2126)	A123N

 ✓

Depths within this survey ranged from 0 fathoms to 192 fathoms.

The DSF-6000N echo sounders were operated primarily in the dual-beam high frequency digitized mode. The high and low frequency gain controls were operated manually because the

high frequency beam could not track the bottom when these controls were in the automatic mode. Approximately 2 percent of the time the high frequency trace could not track the bottom. When this occurred the depth values were scanned from the low frequency beam trace. There were no discrepancies at the junctions of the high and low frequency beams data as the two traces were in close agreement at the points of changeover. ✓

All soundings were taken from the launches under Mini-Ranger range-range control. Since the echo sounding transducers on the launches are directly below the the Mini-Ranger R/T units the ANDIST associated with these survey data is 0.0 meters. The final field sheets were plotted with this ANDIST value. ✓

Bar checks were conducted at least once daily for both beams of the DSF-6000N echo sounder as per the Provisional Operating and Processing Instructions for the DSF-6000N Echo Sounder. All bar checks were performed within the survey area. The bar checks were used to confirm proper system function, and bar check data were used to determine launch TRA correctors. The TRA for the wide and narrow beams were within 0.1 fathom of each other. These TRA calculations show a 0.3 fathom TRA for all launches* and the final field sheets were plotted with this value. * *except 2125 (used for bottom sampling and leadline survey only)*

Velocity corrections were derived from two Nansen casts and two Plessy 9040 SV/D profiling system casts taken during the survey as listed below. One table of velocity corrections was created averaging the four casts. The survey was plotted with a preliminary velocity correction table made from the first Nansen cast. Printouts of velocity tables are included in the separates following the text. ✓

The Nansen casts were checked with the Plessy 9040 SV/D profiling system. Velocity values were calculated from the frequency readout using the first order calibration parameters. The SVD could only be used to depths of 110 fms because the depth parameter malfunctioned at greater depths. A surface comparison was made in accordance with instructions from N/MOP dated 1 April 1983. The salinity of the water samples was determined by use of a Beckman model RS-7B salinometer (S/N 22670). ✓

The SV/D casts agreed very well with the Nansen casts. The largest variance in the velocity corrections was 0.1 fm at a depth of 110 fms. The surface comparisons agreed with the SV/D to within 1 m/s for the cast. ✓

The Plessy 9040 SV/D profiling system, (S/N 5632), and the Beckman model RS-7B salinometer (S/N 22670) were calibrated at the Northwest Regional Calibration Center (NRCC), Seattle, Washington in March 1985. The reversing

thermometers used for the Nansen cast were calibrated by NRCC in March and April 1985.

VELOCITY CASTS

<u>CAST NUMBER</u>	<u>DATE</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
1 (Nansen)	15 APRIL (105)	57/35/12N	133/43/36W
2 (SV/D/T)	15 APRIL (105)	57/35/12N	133/43/36W
3 (Nansen)	17 MAY (137)	57/40/36N	133/58/00W
4 (SV/D/T)	17 MAY (137)	57/40/36N	133/58/00W

Settlement and squat observations were made on May 22, 1985 (JD 142) and May 23, 1985 (JD 143) in Windfall Harbor. According to Section 4.4.9.2 of the Hydrographic Manual, settlement and squat correctors shall be determined to the nearest 0.2 foot and are not required if less than 0.2 foot. However, for surveys in fathoms Table 4-4 and Section 4.9.2 state that corrections need not be applied for correctors less than 0.1 fathom when surveying in fathoms. Therefore, these correctors were not applied as all soundings were in fathoms and all settlement and squat correctors were less than 0.1 fathom.

Predicted tides were used to plot the final field sheets.

TC/TI tapes were made in accordance with PMC OORDER, Appendix Q. Printouts of the TC/TI tapes are included in the separates following the text. For further information and details relating to corrections to echo soundings see Corrections to Echo Soundings Report, OPR-0179-RA-85.

E. HYDROGRAPHIC SHEETS

Two 1:20,000-scale field sheets designated RA-20-1N-85 and RA-20-1S-85 were prepared on the RAINIER using the PDP 8/e Hydroplot system which produces modified transverse Mercator projections. There are no larger scale expansion sheets in the project area, however, two overlays were prepared to show all shoreline verification features as observed by the hydrographers. The final field sheets were plotted by ST Yvette Barnes. A list of parameters used to define the field sheets are provided in the separates following the text.

All data and accompanying field records will be sent to the Pacific Marine Center in Seattle, Washington for verification.

F. CONTROL STATIONS

Geodetic control for survey H-10175 consisted of recovering existing Third order Class I or better stations and locating two stations. SUNSET 1920 RM1 (105) was located to Third order Class I standards by traverse due to the destruction of SUNSET 1920. POINT HUGH LIGHT (112), Light List No. 3203, was located by traverse to Third order, Class I standards as per Coast Guard request. The 1927 North American Datum was used for this survey. See the Horizontal Control Report, OPR-0179-RA-85 for details. ✓

The following historical stations, described in NGS files, were recovered:

SIGNAL

100	MIDWAY	1920 (used)
101	LOOKOUT	1920 (used)
103	CLIFF	1920
105	SUNSET RM1	1920
113	MID	1920
114	HUGH	1920

The following stations positioned by the NOAA Ship DAVIDSON were recovered and their unadjusted field positions used for control:

SIGNAL

115	FLAT	1983 (used)
117	DON	1983 (used)
118	HELEN	1983 (used)
119	TURNER	1983
120	MOLE	1983 (used)
121	RASP	1983 (used)
123	FINGER 2	1983 (used)
133	SIN	1983 (used)

The following stations were located by traverse to Third order, Class I standards by the NOAA ship RAINIER:

SIGNAL

112	POINT HUGH LIGHT	1985
500	CAL POLE	1985

 ✓

CAL POLE was a temporary station used for static calibrations only.

A copy of the master station list is included in the separates following the text.

G. HYDROGRAPHIC POSITION CONTROL

Range-range was the geometry used for hydrographic positioning. The Motorola Mini-Ranger III system was used for electronic ranging. Wild Theodolites were used for critical calibrations. Sextants were used as check angles for calibrations and detached positions. The following tables summarize the serial numbers and locations of all mobile and shore positioning equipment.

MINI-RANGER MOBILE EQUIPMENT

<u>VESSEL</u>	<u>CONSOLE</u>	<u>R/T S/N</u>	<u>JULIAN DAYS</u>
2123	720	B1405	108-125
2124	B0269	B1388	109,110
2125	711	C1712	123
2126	B0269	B1388	112-125

(Console B0269 and R/T B1388 was installed in vessel 2126 after vessel 2124 became disabled).

<u>JULIAN DAYS</u>	<u>STATIONS #</u>									
	123	133	115	117	101	105	113	118	120	121
108	1	B								
109			F	E	0	2				
110	1	B	F	E						
112					0		F			
113					0	D	F			
114				E	0	D				
121		B	F	E						
122		B	F	E		D				
123	1	B		E				0	3	
124			F	E		D		0		
125		B	F	E		D			3	0

WILD THEODOLITES S/N

T-2: 73226, 57259, 68648, 75599

TAMAYA MARINE SEXTANTS S/N

T2965, T2975, T2985, T3007, T3732

CALIBRATIONS AND PERFORMANCES

Mini-Ranger calibrations and system checks were performed in accordance with PMC OORDER, Appendices M and S. Initial baseline calibrations for this project were conducted on Lake Union, Seattle, Washington on March 11, March 12 and March 20, 1985; ending calibrations in Juneau, Alaska on May 24, 1985. ✓

Initial correctors were used to plot the final field sheet except for the data collected by vessel 2124 on JD 109 where a final baseline corrector was used (See the last paragraph in this section for details). The initial calibrations also determined the minimum signal strength cut-off values for each system. For more information regarding system checks and calibrations, refer to the Electronic Control Report, OPR-0179-RA-85. ✓

Daily system checks for each code were performed by theodolite intersection, static calibrations, three ranges and launch to launch comparisons. The static system checks were performed at Third Order stations along the water's edge. For ease of calibration, station CAL POLE (signal # 500) was located on a rocky reef near Beacon Rock. Static system checks were performed at station CAL POLE by pulling alongside at mid to high tide. Refer to Horizontal Control Report, OPR-0179-RA-85 for more details on station CAL POLE. ✓

Bottom samples obtained by the RAINIER on JD 119 and JD 120 were positioned via radar fixes. ✓

No major problems were encountered with the Mini-Ranger positioning system. There was one exception, a +9.6 m corrector was detected from a critical calibration of launch 2124, console B0269, R/T B1388, Code 2 before hydrography began on JD 109. Vessel 2124 and vessel 2123 performed a launch-to-launch calibration showing a +9.4 m discrepancy between the two vessels at the end of the day, substantiating the existence of a problem with the console, RT, code combination. On JD 116, (in Juneau, Alaska) console B0269, R/T B1388, Code 2 were recalibrated over a known baseline and a corrector of +9m was confirmed. ✓
Correctors were applied to the data resulting in accurate

position control for vessel 2124 on JD 109. Refer to Electronic Control Report OPR-0179-RA-85 for more details.

H. SHORELINE

The shoreline was composed of rock ledges with a few rocky beaches.

Shoreline was transferred to the final field sheet from 1:20,000-scale registered shoreline manuscripts TP-01165 and TP-01166. Field edit was not required by the project instructions. Shoreline details were verified by the hydrographer. Rocks, ledges, and new features located by the hydrographer are shown on the final field sheet, and are discussed in detail on the raw data printouts. Shoreline features which were not positioned by hydrographic methods were given reference numbers. All features verified by the hydrographers are shown on the overlays of the final field sheet.

<u>ITEM 1</u>	<u>FIX NO.</u>	<u>POSITION</u> ²⁶
	6718	57/41/13.07 N 133/58/03.80 W

A ledge, bearing 8 ft at MLLW and not depicted on the shoreline manuscript, extends for 100 meters south of the peninsula upon which station FINGER 1983 (#123) is located. See fix 6718, JD 125 for details.

Recommendation: The ledge should be charted to insure mariners use caution while navigating in this area. *chart according to this survey.*

<u>ITEM 2</u>	<u>FIX NO.</u>	<u>POSITION</u> ⁰
	6715	57/40/58.97 N 133/57/09.81 W

A ledge awash at MLLW extends to approximately 100 m offshore and is about 400 m long. The shoreline manuscript shows three rock symbols which define the seaward extent of the ledge. The position of the rock above is not on the manuscript.

Recommendation: Chart the extent of the ledge as shown on the final field sheet. *Chart according to this survey.*

<u>ITEM 3</u>	<u>FIX NO.</u>	<u>POSITION</u> ²⁰
	6713	57/40/34.01 N 133/56/44.66 W

An area of shoreline about 1.2 miles southeast of station FINGER 1920 (#123), represented by a single rock symbol on the chart is foul with rocks. The boundaries of the foul area are from fix 6497 to fix 6712 through fix 6713⁴. The

detached positions, on JD 123 and 125, represent the offshore limits of the foul area. This area extends up to 0.3 mile from the T-Sheet MHHW mark.

Recommendation: The region should be tinted on the chart, annotated with rock symbols from the shoreline manuscript, and labeled "foul with rocks". Chart according to this survey.

<u>ITEM 4</u>	<u>FIX NO.</u>	<u>POSITION</u>
	6515	⁸⁰ 57/39/27.91 N 133/58/03.80 W _{20.47}

A rock on the shoreline manuscript ^{uncovers} ~~bares~~ 9 ft at this position. The hydrographer observed a ledge extending out to the rock.

Recommendation: The seaward extent of this ledge should be charted along with its length of about 300 m. Chart according to this survey.

<u>ITEM 5</u>	<u>FIX NO.</u>	<u>POSITION</u>
	6602	⁵ 57/36/57.07 N 133/51/22.67 W

The hydrographer visually verified the shoreline manuscript rock. A ledge extending to the position of the rock was also observed.

Recommendation: The ledge be charted as shown on the overlay of the final field sheet. Chart according to this survey.

<u>ITEM 6</u>	<u>FIX NO.</u>	<u>POSITION</u>
	6515 3556	⁵ 57/39/27.91 N 57/34/23.49 N 133/58/03.80 W 133/48/09.92 W

The shoreline of the cove on the southwest ^{east} tip of Point Hugh is charted with two rocks and kelp. There are two prominent ledges extending SE north of the cove and two ledges with the same orientation on the southern limit of the cove. A reef in the center of the cove is surrounded by kelp. These details are on the shoreline manuscript, however new limits of the ledges and rocks were determined by detached positions.

Recommendation: The area from fix 3616 SW to fix 3573 be charted as "foul with rocks" on the chart. Chart according to this survey.

<u>ITEM 7</u>	<u>FIX NO.</u>	<u>POSITION</u>
	6095	⁰ 57/35/26.02 N 133/47/58.00 W

Recommendation: Extend the shoreline manuscript ledge to the position of the rock as shown on the final field sheet. Chart according to this survey.

I. CROSSLINES

A total of 29.95 nautical miles of crosslines were run during the survey, representing 11.9% of the mainscheme mileage. Agreement of soundings at crossings was good, within 1 to 2 fathoms throughout the entire survey area.

J. JUNCTIONS

This survey does not junction with any contemporary surveys to the south and the east of Point Hugh. Survey RA-10-1-85 (H-10176) and survey RA-20-2-85 (H-10174) junction to the north^{west} with this survey. Hydrography was run in a compatible east-west scheme between all three contemporary surveys. No irregularities existed in the contours where surveys joined.

K. COMPARISON WITH PRIOR SURVEYS

H-10175 was compared to the 1:80,000 scale surveys H-1996 (1889)⁹² and H-2001 (1889). With few exceptions, RAINIER survey soundings verified the leadline depths of these surveys to within 2 fathoms. However, due to the rugged nature of the bottom, prior survey depths inadequately represented sufficient detail in the survey area.

New features discovered during this survey that would logically not have been charted before are discussed in Section L-Comparison with the Chart. Discrepancies between current survey soundings and prior survey depths are discussed here.

ITEM 8

<u>PRIOR SURVEY DEPTH</u>	<u>CURRENT SURVEY SOUNDING</u>	<u>FIX + OUTS</u>	<u>POSITION</u>
H-2001 55	12.2	4192 + 3	57/37/43.7 ⁵ 133/57/15.7 ⁹⁶

This 12.2fm current survey sounding is in a gently sloping area about 250 meters offshore, and about 2 miles southeast of Pleasant Bay.

The area was sounded with 400 meter mainscheme lines, 200 meter splits, a 0 fathom curve shoreline, and a 200 meter "offshore" line.

There is disagreement between the 1889 survey and the present survey with respect to the 50 fm contour in this vicinity. The prior survey depth, causes the 50 fm contour to curve sharply inshore, but current survey soundings

indicate otherwise. The 200 m sounding lines indicate that the prior survey 55 fm depth is not positioned correctly. The 55 fm contour from the current survey is 550 m further offshore.

Recommendation: The current survey should supersede the prior survey.

concur

ITEM 9

<u>PRIOR SURVEY DEPTH</u>	<u>CURRENT SURVEY SOUNDING</u>	<u>FIX + OUTS</u>	<u>POSITION</u>
H-2001	58.4	4206	57/37/56.46 ⁹
34	56	+ 1	133/56/54.79 ⁹⁶

Near the prior survey 55 fm depth above, this current survey sounding is located about 700 meters offshore which caused the prior survey 50 fm contour to bend offshore sharply, then curve inshore for the above sounding.

Current survey sounding lines were 200 m apart in this area.

The current survey shows the contours here are not as indicated in the prior survey.

Recommendation: This prior survey depth be superseded by the present survey soundings and contours. Do not *concur*. See EVAL RPT. sect.6

ITEM 10

<u>PRIOR SURVEY DEPTH</u>	<u>CURRENT SURVEY SOUNDING</u>	<u>FIX + OUTS</u>	<u>POSITION</u>
H-2001	8	6767	57/40/48.22 ⁴²
29	0.5	+ 1	133/56/36.37 ⁹

Located approximately 200 m offshore, in the middle of the foul area described in detail in Item 3 of Section H Shoreline, about one mile southeast of station FINGER 2 1983 (#123) lies this current survey sounding.

The area was searched visually at low water when the bottom was clearly visible to the hydrographer. Development also included 200 m spaced lines and three shorelines, all at high tide to show limits of the rocky reefs here.

Recommendation: Delete the 29 fm depth and chart the 0.5 fm sounding. See Item 3 of Section H Shoreline.

concur

ITEM 11

<u>PRIOR SURVEY DEPTH</u>	<u>CURRENT SURVEY SOUNDING</u>	<u>FIX + OUTS</u>	<u>POSITION</u>
H-2001 20	⁷ 2.5 (excessed)	6780	57/40/59.8 ⁷ 133/57/10.7 ⁹ 80

The current survey sounding is 0.5 miles southeast of FINGER 2 1983 (#123) and approximately 100 m offshore. Like the previous sounding, it lies well within the foul area described in section H, Shoreline.

The area was searched visually at low water by the hydrographer. Development also included 200 m spaced lines and three shorelines, all at high tide to show limits of the rocky reefs.

Recomendation: The current survey supersede the prior survey.

concur

There were no AWOIS items in the survey area.

L. COMPARISON WITH THE CHART

H-10175 was compared to the following:

<u>Chart Number</u>	<u>Scale</u>	<u>Edition</u>	<u>Date</u>
17360	1:217,828	26th	18 August 1984
17362	1:40,000	8th	22 April 1978

Significant discrepancies are discussed below. The features investigated, the type of investigation and recommendations are included. All soundings are current survey soundings unless otherwise indicated. ✓

ITEM 12

<u>CHART NO. DEPTH</u>	<u>CURRENT SURVEY SOUNDING</u>	<u>FIX + OUTS</u>	<u>POSITION</u>
17360 34	49	6272 + 2	^{02.78} 57/38/05.34 N 133/57/07.02 W _{06.12}

This current survey sounding is on a small shelf approximately 200 meters wide in the middle of a steep slope.

The area was sounded with 400 meter lines, split once to 200 meters out to the 130 fathom curve.

Recommendation: Since the 34 fm depth of the chart enlargement was not specifically disproved, retain the charted depth from prior survey H-2001. Concur, See EVAL RPT. sect. 6

ITEM 13

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT</u> <u>SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360			57/38/15.52 N
35	-90 18.6	3358 + 5 6006 + 1	133/48/44.72 W 57/38/14.90 N 133/48/54.74 W

This current survey sounding is about 300 meters offshore in a very steep area. It is positioned at the intersection of a 200 meter split and a crossline.

see EVAL RPT.
sect. 7

Recommendation: Reposition the 35 fm depth inshore. If not possible, then retain as charted. Chart according to this survey.

ITEM 14

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT</u> <u>SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360			57/39/34.78 N
7	26	6469 + 2	133/54/33.99 W

The "7" on the prior survey, H-2001 is much lighter printing than other symbols in the area and is placed on the 50 fathom curve. It appears that a numeral could be missing. The area is on a moderately steep slope, about 200 meters off the MHHW mark. ** This is not the same as the charted 7-fathom depth. This "7" is located at Lat. 57° 38' 36" N, Long. 133° 53' 24" W on H-2001, further south of the charted 7.

The area was investigated with 200 m sounding line spacing, a 0 fm curve and a 200 m offshore line.

Recommendation: Delete the charted 7 fm depth and chart the 26 fm sounding. Chart according to the present survey.

ITEM 15

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT</u> <u>SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360			^{25.03} 57/40/24.85 N
100	48	6750 + 3	133/56/57.7 ₈ W

This current survey sounding is about 800 m offshore in a relatively sloping area. The charted 100 fm contour crosses the current survey 48 fm sounding.

The area was developed with 200 m line spacing out to the 100 fm contour.

Recommendation: Move the 100 fm contour approximately 400 m further offshore in the area. *chart according to the present survey.*

ITEM 16

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT</u> <u>SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360			³⁸ 57/37/56.40 N
34	47	4206 + 4	133/57/12.08 W

The discrepancy between the charted depth and the survey soundings was likely due to the scale of the chart. The sounding is an area with moderately steep slopes about 400 m offshore.

The area was sounded with lines 200 m apart.

Recommendation: Chart the current survey sounding and delete the charted depth. *chart according to the present survey.*

ITEM 17

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT</u> <u>SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360	7.1	6020	57/35/30.27 N
6 1/2	24	6100	133/47/49.85 W
			^{57/35/10.95 N}
			133/47/50.62 W

The discrepancy is likely due to the scale of the chart. The current survey sounding is about 300 m offshore in a steep area. The 6 1/2 fm area is 200 m further inshore.

The area was developed with 200 m splits and two shorelines.

Recommendation: Reposition the 6 1/2 fm depth and insert the 24 fm sounding.

see EVAL RPT. sect 7

ITEM 18

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT</u> <u>SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360 96	72	6114	57/35/54.1 ² N 133/46/57.72 W

The 72 fm survey sounding is 0.6 mile offshore, in a moderately sloping area.

The area was surveyed with 400 m mainscheme lines and a crossline.

Recommendation: Delete the charted depth and insert the current survey sounding.

concur

ITEM 19

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT</u> <u>SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360 70	34	4081	57/34/55.45 N 133/55/52.78 W

The least depth of a ridge oriented north-south and about .75 miles offshore is indicated by the current survey sounding. The ridge extends 1800 m south of this position and is about 350 m wide. Depths east and west of the ridge drop to over 80 fms.. The 100 fm curve is 350 m east of this position.

The evidence of the shoal is verified by mainscheme lines and 200 m splits. The least depth was found on a mainscheme line.

Recommendation: Add the 34 fm sounding to the chart at the above position to show the presence of the ridge.

concur

ITEM 20

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT</u> <u>SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360 70	36	3733 + 5	57/34/10.16 N 133/55/28.03 W

The least depth of the southern extremity of the ridge described above is represented by this sounding. The 100 fm curve is 200 m east of this position. Depths of over 90 fms are 200 m west of this position.

The least depth was discovered by running 100 m splits over the shoal. One line heading south was run to determine the length of the ridge.

Recommendation: Chart 36 fm at the position above to show the location of the ridge.

concur

ITEM 21

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360 34	20.8	3957 + 2	57/32/4 ⁶ 0.94 N 133/55/4 ^{38.42} 1.74 W

The 20 fm survey sounding is about 350 m offshore and 1.6 miles north of station DON (117). This is the north end of a submerged ledge that extends 1 nm south adjacent to shore.

The ridge was developed with 200 m line spacing, shorelines, and a crossline. The sounding was taken from a mainscheme line.

Recommendation: Since the survey sounding is the least depth in the offshore area the 20 fm should be charted to show the position of an offshore ridge.

concur

ITEM 22

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360 81	44	3924 + 1	57/32/07. ⁵⁰ 49 N 133/54/20. ^{21.04} 98 W

About 1 mile north of DON (117) and about 0.6 miles offshore the ridge described above moves the 50 fm curve to a maximum of about 1000 m offshore. The 81 fm charted depth lies on the east limit of the ridge. The 20 fm curve extends 540 m offshore.

The ridge was developed with 200 m splits, two shorelines and a crossline.

Recommendation: The 44 fm sounding should supersede the 81 fm depth at the above position.

concur

ITEM 23

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT</u> <u>SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17362			^{54.37} 57/31/53.73 N
19	12.7	3919 + 1	133/54/31.87 W _{36.21}

The least depth of the ridge described above was found to be 12 fm. This sounding is 400 m offshore.

The ridge was developed with 200 m splits, two shorelines and a crossline.

Recommendation: Supersede the 19 fm depth with the 12 fm survey sounding. *concur*

ITEM 24

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT</u> <u>SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17362			⁸¹ 57/32/13.79 N
39	30	7037	133/54/52.08 W

One hundred meters west of the charted 39 fm depth, a 30 fm sounding was recorded. The ridge on which this sounding was taken is described in the comparisons above.

The ridge was developed with 200 m line spacing, two shorelines and a crossline.

Recommendation: Delete the 39 fm depth and chart the 30 fm sounding at the position above. *concur*

ITEM 25

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT</u> <u>SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360			^{49.16} 57/32/47.14 N
6.25	6.1	5000	133/45/33.72 ⁵ W

The shoal was sounded with 100 m line spacing. A dive investigation of the least depth from the development resulted in a leadline least depth of 6.1 fm reduced to MLLW using predicted tides. Two crosslines were run to show the northern extent of this ridge.

The bottom was a bedrock plateau about 7 m x 7 m with steeply sloped sides. The least depth was found from a

boulder on the plateau.

Recommendation: If this sounding is verified by smooth tides then chart 6.1*fathoms.

* correct based on actual tides. Revise chart accordingly.

ITEM 26

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360		3888 + 4	57/31/49.93 ⁸⁹ N
81-114	36	3500 + 2	133/45/12.50 ₄₆ W

Located 2.9 miles SE of Point Hugh, this survey sounding lies on the charted 100 fm curve. The 100 fm curve is 200 m west of this position.

This ridge was developed with sounding line line spacing of 100 m and a crossline.

Recommendation: The location of the 114 fm depth is correct on the chart but the 36 fm peak should be added to show the existence of a ridge. The charted 100 fm curve should be moved 200 m to the west. *concur*

ITEM 27

<u>CHART NO.</u> <u>DEPTH</u>	<u>CURRENT SURVEY</u> <u>SOUNDING</u>	<u>FIX</u> <u>+ OUTS</u>	<u>POSITION</u>
17360			57/31/28.22 ¹ N
81-114	56	3881 + 4	133/45/33.05 _{32.99} W

This 56 fm survey sounding is the least depth over a ridge oriented in a north-south direction 3.2 miles SSE of Point Hugh. The 100 fm curve circles the ridge about 800 m north and south of this position and about 400 m to the east and west.

This ridge was developed with 100 m splits and a crossline.

Recommendation: Chart the 56 fm depth at the above position. *concur*

ITEM 28

<u>CHART NO.</u>	<u>CURRENT SURVEY</u>	<u>FIX</u>	<u>POSITION</u>
<u>DEPTH</u>	<u>SOUNDING</u>	<u>+ OUTS</u>	
17360			57/31/32.38 ⁶ N
112-127	96	3689 + 4	133/49/12.10 ³ W

This 96 fm sounding represents the least depth of a ridge oriented north-south 2.5 miles south of Point Hugh. The 100 fm curve circles the ridge about 200 m north and south of this position and 100 m to the east and west of this position.

Development of the feature was accomplished with 200 m line spacing and a crossline showing the extent of the ridge.

Recommendation: Chart the 96 fm least depth in the position described above. *concur*

For charting purposes, it is recommended that the shoreline be as depicted on the shoreline manuscript with the exceptions as noted in the Shoreline section. *concur*

An unidentified mark on the chart at 57/39/54 N, 133/55/54 W is directly on an 80 fathom sounding and should be removed. ✓

Present charted depths originate with the prior surveys discussed in section K. ✓

There were no dangers to navigation identified by the ship for this survey. "Chart Discrepancies and Verifications in Seymour Canal OPR-0179-RA-85" was submitted by the ship on May 15, 1985 to N/MOP. A letter was also sent, as requested, to the Southeastern Alaska Pilot's Association regarding Item 25. ✓

M. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede all prior surveys for charting purposes. ✓

N. AIDS TO NAVIGATION

The only aid to navigation in the survey area is the Point Hugh Light, Light List Number 3203. It's position was obtained using Third order, Class I techniques and was determined to be 57/37/13.237 N, 133/48/19.345 W. A radio-teletype message was sent to the Coast Guard with the preliminary field position as required in the project instructions. ✓

The light adequately serves its intended purpose.

O. STATISTICS

<u>Sounding Vessel</u>	<u>Linear Nautical Miles of Hydro</u>	<u>Square Nautical Miles of Hydro</u>	<u>Number of Positions</u>
2123	246.9		1039 1111
2124	49.7		232 225
2125	0.0		1
<u>2126</u>	<u>139.0</u>		<u>818</u> 774
Totals	435.6	45.85	2090
		VSSL 2120	23
Bottom Samples: 23			<u>2134</u>

Velocity Casts: 4

Tide Stations: 2

P. MISCELLANEOUS

No anomalous currents were observed or reported during this survey.

No Loran-C data were acquired.

Bottom samples were sent to the Smithsonian Institute.

Field units could not prove or disprove the existence of kelp symbols on the chart due to the season, however, kelp, when observed, was noted on the computer printout.

see EVAL RPT.
sect. 7

Q. RECOMMENDATIONS

This survey is complete and no additional field work is recommended. ✓

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished in accordance with the Hydrographic Manual (Fourth Edition), Manual of Automated Hydrographic Surveys, the PMC OORDER, Hydrographic Survey Guidelines.

Soundings and positions were taken by Hydroplot systems. Hyperbolic Range/Range Hydroplot program RK 112 was used in conjunction with the Hydroplot system. ✓

There are daily master tapes and corresponding corrector tapes which include the TRA for the sounding vessels, electronic control baseline correctors for Mini-Ranger

consoles and R/T units and all depth corrections. Velocity tapes were generated from Nansen and SV/D cast data. The following is a list of all computer programs and version dates used for data acquisition or processing:

<u>Number</u>	<u>Description</u>	<u>Version</u>
RK 112	Hyperbolic, R/R Hydroplot	4/23/84
RK 201	Grid, Signal, and Lattice Plot	4/18/75
RK 300	Utility Computations	10/21/80
RK 330	Reformat and Data Check	5/04/76
AM 360	Electronic Corrector Abstract	2/02/76
RK 407	Geodetic Inverse/Direct Computation	9/25/78
RK 500	Predicted Tide Generator	11/10/72
RK 530	Layer Corrections for Velocity	5/10/76
RK 561	H/R Geodetic Calibration	12/01/82
AM 602	Elinore-Line Oriented Editor	12/08/82
AM 606	Tape Duplicator	8/22/74
AM 607	Self-Starting Binary Loader	8/10/80
RK 610	Binary Tape Duplicator	12/01/82
RK 612	Line Printer List	3/22/78
RK 900	Plot Test Tape Generator for AM902	5/07/76
RK 901	Core Check	3/01/72
AM 902	Real Time Checkout	11/10/72
DA 903	Diagnostic-Instruction Timer	2/27/76
RK 905	Hydroplot Controller Checkout	3/18/81
RK 935	Hydroplot Hardware Tests	3/15/82
RK 950	Hardware Tests (Documentation Only)	6/02/75

The HP9815A and HP97 programmable calculators were used to compute the geographical positions of control stations.

S. REFERENCES TO OTHER REPORTS

The following reports contain information related to this survey:

Echo Sounding, Report	OPR-0179-RA-85
Electronic Control Report	OPR-0179-RA-85
Horizontal Control Report	OPR-0179-RA-85
Coast Pilot Report	OPR-0179-RA-85

Respectfully Submitted,

Nicholas E. Perusi

Clifford C. Wilson
Lieutenant (JG), NOAA

for.

Thomas K. Porta

Thomas K. Porta
Ensign, NOAA

APPROVAL SHEET

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY

RA-20-1-85 (H-10175)

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, Hydrographic Survey Guidelines and PMC OPORDERS. The data were examined daily during the execution of the survey.

The field sheet and the accompanying records have been examined by me, and are considered complete and adequate for charting purposes, and are approved.


John P. Vandermeulen
Captain, NOAA
Commanding Officer

MASTER STATION LIST

OPR-0179-RA-85
SEYMOUR CANAL, ALASKA

RA-20-1-85 (H-10175)

FINAL VERSION

100	4	57	44	00147	133	52	25196	250	0008	000000	
/MIDWAY 1920											
									NGS LISTING		
101	4	57	39	03609	133	40	28142	250	0006	000000	
/LOOKOUT 1921											
									NGS LISTING		
103	4	57	37	42869	133	40	20682	250	0002	000000	
/CLIFF 1921											
									NGS LISTING		
105	4	57	30	00116	133	35	10302	250	0006	000000	
/SUNSET RM 1 1920											
									FIELD G.P.		
112	3	57	37	132 ³⁷ 46	133	48	19 ³⁴⁶ 076	250	0000	000000	
/POINT HUGH LIGHT											
									NGS LISTING		
113	3	57	36	20827	133	48	03850	250	0003	000000	
/MID 1920											
									NGS LISTING		
114	3	57	35	04730	133	47	58970	250	0003	000000	
/HUGH 1920											
									NGS LISTING		
115	2	57	34	37268	133	50	08622	250	0004	000000	
/FLAT 1983											
									PRELIMINARY ADJUSTED		
117	3	57	31	06657	133	53	57684	250	0006	000000	
/DON 1983											
									PRELIMINARY ADJUSTED		
118	5	57	36	52812	133	56	07464	250	0005	000000	
/HELEN 2 1983											
									PRELIMINARY ADJUSTED		
119	0	57	37	08307	133	56	26096	250	0007	000000	
/TURNER 1983											
									PRELIMINARY ADJUSTED		
120	3	57	38	26576	133	58	30217	250	0003	000000	
/MOLE 1983											
									PRELIMINARY ADJUSTED		
121	3	57	40	41533	134	02	18811	250	0004	000000	
/RASP 1983											
									PRELIMINARY ADJUSTED		
123	4	57	41	17217	133	58	08343	250	0005	000000	
/FINGER 2 1983											
									PRELIMINARY ADJUSTED		
133	4	57	38	47375	133	53	29415	250	0003	000000	
/SIN 1983											
									PRELIMINARY ADJUSTED		
500	3	57	39	53044	134	01	29516	243	0000	000000	
/CAL POLE											
									FIELD G.P.		

*

ASCII SIGNAL TAPE LISTING
RA-20-1-85 (H-10175)

100	4	57	44	00147	133	52	25196	250	0008	000000
101	4	57	39	03609	133	40	28142	250	0006	000000
103	4	57	37	42869	133	40	20682	250	0002	000000
105	4	57	30	00116	133	35	10302	250	0006	000000
112	3	57	37	13246	133	48	19846	250	0000	000000
113	3	57	36	20827	133	48	03850	250	0003	000000
114	3	57	35	04730	133	47	58970	250	0003	000000
115	2	57	34	37268	133	50	08622	250	0004	000000
117	3	57	31	06657	133	53	57684	250	0006	000000
118	5	57	36	52812	133	56	07464	250	0005	000000
119	0	57	37	08307	133	56	26096	250	0007	000000
120	3	57	38	26576	133	58	30217	250	0003	000000
121	3	57	40	41533	134	02	18811	250	0004	000000
123	4	57	41	17217	133	58	08343	250	0005	000000
133	4	57	38	47375	133	53	29415	250	0003	000000
500	3	57	39	53044	134	01	29516	243	0000	000000

*

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	JOHN S. GRIFFIN, ENS, NOAA	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (<i>Specify</i>)
POSITIONS DETERMINED AND/OR VERIFIED	JOHN S. GRIFFIN, ENS, NOAA	FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' <i>(Consult Photogrammetric Instructions No. 64,</i>		
OFFICE I. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75 FIELD I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field P - Photogrammetric L - Located Vis - Visually V - Verified 1 - Triangulation 5 - Field identified 2 - Traverse 6 - Theodolite 3 - Intersection 7 - Planetable 4 - Resection 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75 *FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.		FIELD (Cont'd) 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 II. 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 III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 **PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

FIELD TIDE NOTE

Field tide reduction of soundings for survey OPR-0179-RA-85 was based on predicted tides from Juneau, Alaska (945-2210). Corrections were obtained from Preliminary Tidal Zoning OPR-0179-RA-85. The zoning correctors for the RA-20-1-85 (H-10175) are 0 min time corrector for high and low water and a height ratio of 0.94. The tide corrections were derived from the Tide Tables 1985 and the zoning correctors using program AM500.

Two Bristol Bubbler tide gages were installed at these locations in the project area. The gages were tended by RAINIER personnel at regular intervals. Annotations were made in UTC. Location and period of operation are as follows:

<u>SITE</u>	<u>LOCATION</u>	<u>PERIOD</u>
Rasp Ledge	57/40.7 N 134/02.3 W	April 15 - May 12, 1985 May 15 - May 23, 1985
Point Hugh	57/34.1 N 133/49.0 W	April 15 - May 7, 1985

RASP LEDGE (945-2128)

The 0-30 ft gage (S/N 67A16209) was installed and began operation April 15, 1985. Rasp Ledge is a rock outcrop offshore of Flaw Point just north of Mole Harbor. The gage site was only accessible by boat. Four benchmarks were recovered as described, one benchmark 2128A was set. The staff was a 2x4 with plastic sections marked with graduations nailed to it. The staff was installed and leveled April 16, 1985. The marigram reads 10.4 ft less than the staff.

Excellent records were obtained at Rasp Ledge. The gage was operational during all periods of hydrography and shoreline verification. However, due to weather and sea conditions before and after a scheduled import the gage could not be tended at the regular interval. This resulted in the clock stopping on May 12 (JD 132) for a period of 2.5 days. The gage was restarted May 15 (JD 135) and ran satisfactorily throughout the duration of the survey. The Tiedeman Island gage was operational during this period.

POINT HUGH (945-2091)

The 0-30 ft gage (S/N 67A10294) was installed and began operation April 15, 1985. The gage site is on a rock ledge on the southern most tip of Point Hugh. Three benchmarks and a staff were also installed and leveled April 15. The benchmarks were standard aluminum disks labeled 2091A,

2091B, and 2091C. The staff was a 2x4 with graduated plastic sections nailed to the side. Excellent records were obtained with no interruptions. The marigram reads 6.1 ft less than the staff.

LEVELS

The reference station at Juneau was leveled April 26, 1985. Final levels were run May 28, 1985. Initial and final levels had closing errors of less than .003 m. The elevation of the benchmarks above the zero of the staff were also within .003m of the original levels.

Final levels on the subordinate stations had a closing error of .003 m or less than the original levels. The variance in the elevations above the zero of the staff was within .006 m of the original levels, therefore there was no significant movement of the tide staffs at any of the subordinate stations.

COMPARISONS

Times and height of high and low tides were scanned off the marigrams. The following estimates were made using Juneau as the reference station.

<u>Location</u>	<u>TIME CORRECTORS</u>		<u>Height Ratio</u>
	<u>High Water</u>	<u>Low Water</u>	
Point Hugh	0 min	0 min	x0.94
Rasp Ledge	-7 min	-7 min	x0.92



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

TO: N/OMS12 - Chief, Tides and Water Levels Branch
FROM: *John P. Vandermeulen*
CAPT. John P. Vandermeulen
Commanding Officer, NOAA Ship RAINIER S221
SUBJECT: Request for Approved Tide Data

Please provide the Nautical Chart Branch (N/MOP21), Pacific Marine Center, the following tide data:

1. Approved Tide Note (Form 712)
2. Approved Hourly Heights for Days of Hydrography
3. Hourly Heights on Magnetic Tape

These data are required for the processing of hydrographic survey:

Registry No. H-10175
Project Instructions: OPR-0179-RA-85
Location: Seymour Canal, Pt. Hugh & Vicinity, Alaska

The final Progress Sketch and Abstract of Times of Hydrography/
Shoreline Verification (check one):

- are included with this request. will be
- ~~have been~~ forwarded with the final tide record package for this survey ~~on 5/29/85~~ on 5/29/85.
- are included with this request. The final tide record package for this survey will be forwarded at the end of this month.

Tide data are required within 90 days of receipt of this request. If this schedule cannot be met, please advise the Chief of the Hydrographic Section, N/MOP211, telephone FTS 392-6853.



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

TIDE NOTE FOR HYDROGRAPHIC SHEET

DATE: 08/08/85

Marine Center: Pacific

OPR: 0179

Hydrographic Sheet: H-10175

Locality: Seymour Canal, AK

Time Period: April 18-May 05, 1985

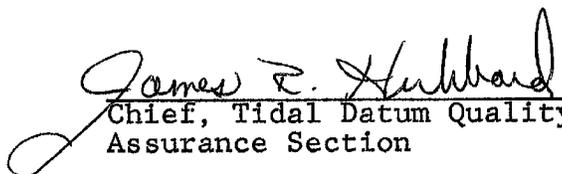
Tide Station Used: 945-2091 Point Hugh, Glass Peninsula, AK
945-2128 Rasp Ledge, Seymour Canal, AK

Plane of Reference (Mean Lower Low Water): 945-2091 = 15.19 ft.
945-2128 = 19.10 ft.

Height of Mean High Water Above Plane of Reference:
945-2091 = 14.3 ft.
945-2128 = 14.2 ft.

Remarks: Recommended Zoning:

- 1) on the east side of Glass Peninsula in Stephens Passage, and north into Seymour Canal to latitude $57^{\circ}36'N$, zone direct 945-2091.
- 2) north of latitude $57^{\circ}36'N$, zone direct on 945-2128.


Chief, Tidal Datum Quality
Assurance Section

GEOGRAPHIC NAMES

RA-20-1-85
H- 10175

Name on Survey	A ON CHART NO. 17360 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										
	ADMIRALTY ISLAND	X		X							
GLASS PENINSULA	X		X								2
PLEASANT BAY			X							(outside of sheet limits)	3
PT HUGH	X		X								4
SEYMOUR CANAL	X		X								5
STEPHENS PASSAGE	X		X								6
ALASKA (title)											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved:

Charles E. Harrington
Chief Geographer - N/CG2/x5

MAY 20 1985

HYDROGRAPHIC SURVEY STATISTICS

H-10175

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION			AMOUNT
SMOOTH SHEET		1	SMOOTH OVERLAYS: POS., ARC, EXCESS			7
DESCRIPTIVE REPORT		1	FIELD SHEETS AND OTHER OVERLAYS			5
DESCRIP- TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR- GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	2					
ENVELOPES						
VOLUMES	1					
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List): TP-01165 & TP-01166
 PHOTOBATHYMETRIC MAPS (List):
 NOTES TO THE HYDROGRAPHER (List):
 SPECIAL REPORTS (List):
 NAUTICAL CHARTS (List): 17360 & 17362

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			2134
POSITIONS REVISED			323
SOUNDINGS REVISED			88
CONTROL STATIONS REVISED			0
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	97.0		97.0
VERIFICATION OF SOUNDINGS	131.0		131.0
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	126.5		126.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		19.0	19.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		40.0	40.0
GEOGRAPHIC NAMES			
OTHER: Digitizing			12.0
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS		
	354.5	59.0	
Pre-processing Examination by A. Luceno	Beginning Date	6/27/85	Ending Date
			7/8/85
Verification of Field Data by T. Jones, P. Niland, E. Domingo	Time (Hours)	354.5	Ending Date
			4/25/86
Verification Check by T. Jones, J. Stringham, J. Green, B. Olmstead	Time (Hours)	91.5	Ending Date
			5/15/86
Evaluation and Analysis by I. Almacen	Time (Hours)	59.0	Ending Date
			5/14/86
Inspection by D. Hill	Time (Hours)	4.0	Ending Date
			5/27/86

PACIFIC MARINE CENTER
EVALUATION REPORT
H-10175

1. INTRODUCTION

H-10175 was accomplished by NOAA Ship RAINIER in accordance with the following project instructions:

OPR-0179-RA-85, dated March 14, 1985
Change No. 1, dated March 21, 1985

This is a basic hydrographic survey of the southern portion of Seymour Canal from latitude 57°41'30"N to latitude 57°30'00"N, off the east side of Admiralty Island. It includes the vicinity of Point Hugh and up around the southern extremity of Glass Peninsula on the Stephens Passage side to latitude 57°30'09"N.

The shore is generally fringed with ledges, isolated rocks, islets and kelp with some areas of boulder and gravel beaches. The bottom is made up of mud with some areas of hard bottom. The slope along the coast is generally steep with depths ranging from 0 to 192 fathoms.

Predicted tides based on the Juneau, Alaska gage were used during field processing. Tide correctors used for the reduction of final soundings reflect approved hourly heights zoned from Point Hugh (945-1091), Glass Peninsula, Alaska and Rasp Ledge (945-2128), Seymour Canal, Alaska.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The velocity and electronic control correctors have been revised during office processing. A +0.6-fathom corrector was inserted to complete the final velocity correction table. The electronic control correctors for DN 109 and 110 were updated to reflect the final baseline correction value. The revised data is listed in the smooth position/sounding printout.

A digital file for this survey has been generated and 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 included 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

Hydrographic control and positioning are adequately discussed in sections F and G of the hydrographer's report and in the Horizontal and Electronic Control Reports for OPR-0179-RA-85.

Horizontal control station positions used during hydrography are either published or field positions based on North American Datum of 1927.

Applicable shoreline manuscripts are TP-01165 and TP-01166. These maps are registered Class III, and originate from photography dated July 1983.

There are no significant changes noted to the shoreline shown on TP-01165 and TP-01166, except for the ledges and rocks mentioned in section H of the Descriptive Report. Changes to ledges shown in red on the field sheet were transferred directly to the smooth sheet in black.

3. HYDROGRAPHY

Soundings at line crossings are in good agreement. The depth curves could be completely and adequately drawn except in areas along the coast where the bottom is so steep that applicable depth curves cannot be completely plotted. Delineation of the bottom configuration and the determination of least depths are adequate. Brown depth curves were added to depict shoaler soundings not normally covered by standard depth curves.

4. CONDITION OF SURVEY

The hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change Three, except as noted in the Preprocessing Examination Report, dated July 12, 1985 and as follows:

Depths on the 1983 reconnaissance survey by NOAA Ship DAVIDSON (Field no. DA 20-1-83, filed as BP124982, CL 167/85) generally differ by about 1 to 2 fathoms from the present survey. However, it was noted that in the vicinity of latitude 57°37'00"N and longitude 133°53'00"W, soundings of 93 to 101 fathoms are located in an area of 130 to 140 fathoms. These shoaler soundings, which may be the result of an error in BS³ data, should have been investigated during this survey and mentioned in the hydrographer's report.

5. JUNCTIONS

H-10175 junctions with the following surveys:

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Note</u>	<u>Area</u>
H-10174	1985	1:20,000	Joins	Northwest
H-10176	1985	1:10,000	Joins	Northwest

The junctions have been adequately effected.

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

6. COMPARISON WITH PRIOR SURVEYS

H-1996 (1889-92) 1:80,000
H-2001 (1889) 1:80,000

Comparison with prior surveys is generally good, except for differences mentioned in section H and K of the hydrographer's report. These differences could be attributed to the combination of the following factors:

- a. Surveying methods used during the prior surveys.
- b. Positional errors due to scale and datum adjustments.
- c. Steepness of bottom profiles along the coast, where a slight positional displacement in soundings could result in significant depth changes.
- d. Changes in the bottom topography due to natural occurrences since the last survey.

The 34-fathom sounding listed as item 9 is the same sounding listed as item 12 in the hydrographer's report. This sounding was not disproven on this survey and therefore was carried forward to the smooth sheet.

Comparison with the 1983 reconnaissance survey of Seymour Canal by NOAA Ship DAVIDSON is generally good, except for the area mentioned in section 4 of this report.

With the exception of the 34-fathom sounding mentioned above, H-10175 is adequate to supersede the prior surveys H-1996, H-2001 and reconnaissance survey DA 20-1-83 within the common areas.

Comparisons were made with wire drag surveys H-4143WD (1920) and H-4143^aWD (1921). There are no conflicts noted between the present survey and the prior wire drag surveys of the area.

There are no pre-survey review and AWOIS items on this survey.

7. COMPARISON WITH CHART

Chart 17360, 26th Edition, August 18, 1984, 1:217,828
Chart 17362, 8th Edition, April 22, 1978; scale 1:40,000

- a. Hydrography - Charted information originates from the prior surveys discussed in Section 6 of this report. Charted inshore features and rocks are confirmed by this survey.

The 35-fathom sounding charted at latitude 57°38'18"N, longitude 133°49'00"W and noted under item 13 of the hydrographer's report was located in an area of steep bottom. It was found to be in proximity to an 18.6-fathom sounding and not a 90-fathom depth as listed in the report. It is recommended that the area be revised according to the present survey.

The 6 1/2-fathom sounding charted at latitude 57°35'12"N, longitude 133°47'48"W was found to be in an area of steep bottom. It was located beside a 7.1-fathom sounding and not in proximity to a 26-fathom depth as

listed in item 17 of the hydrographer's report. It is recommended that this area be revised according to the present survey.

The charted kelp in the vicinity of latitude 57°38'30"N and longitude 133°50'00"N was not observed during the time of the survey. However, because its existence is considered seasonal in nature, it is recommended that the symbol be retained as charted.

Geographic names appearing on the smooth sheet have been approved by the Chief Geographer and are plotted in accordance with the charts of the area.

H-10175 is adequate to supersede charted hydrography within the common area.

There have been no dangers to navigation identified or reports submitted by the ship or PMC Nautical Chart Branch for this survey.

b. Controlling Depths - There are no charted channels with controlling depths within the limits of this survey.

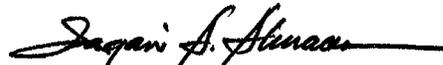
c. Aids to Navigation - Point Hugh Light is the only aid to navigation in the Light List that falls within the limits of this survey. The new geographic position of the light was determined in the field within Third-Order accuracy standards as required by the project instructions (sec. 4.2.1.1). This aid adequately serves its intended purpose.

8. COMPLIANCE WITH INSTRUCTIONS

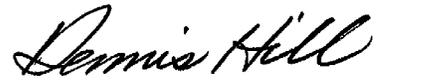
H-10175 adequately complies with the project instructions noted in section 1 of this report.

9. ADDITIONAL FIELD WORK

H-10175 is a good basic hydrographic survey. No additional field work is recommended.


Isagani A. Almacen
Cartographer

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


Dennis Hill
Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10175

I have reviewed the smooth sheet, accompanying data, and reports of this hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.

Thomas W. Liden 6-16-86
Chief, Nautical Chart Branch (Date)

CLEARANCE:

N/MOP2:LWMordock

SIGNATURE AND DATE:

Larry Mordock 6-16-86

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

Robert L. Saufert 6-16-86
Director, Pacific Marine Center (Date)

