10230

Diagram No. 8202-3

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. RA-10-2-86

Registery No. H-10230

LOCALITY

State Alaska

General Locality Seymour Canal

Sublocality Fool Inlet & King Salmon Bay

to Vicinity of Swan Island

1986

CHIEF OF PARTY CAPT C.W. Fisher

LIBRARY & ARCHIVES

DATE September 9, 1987

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

Agen 5.

FCHTS

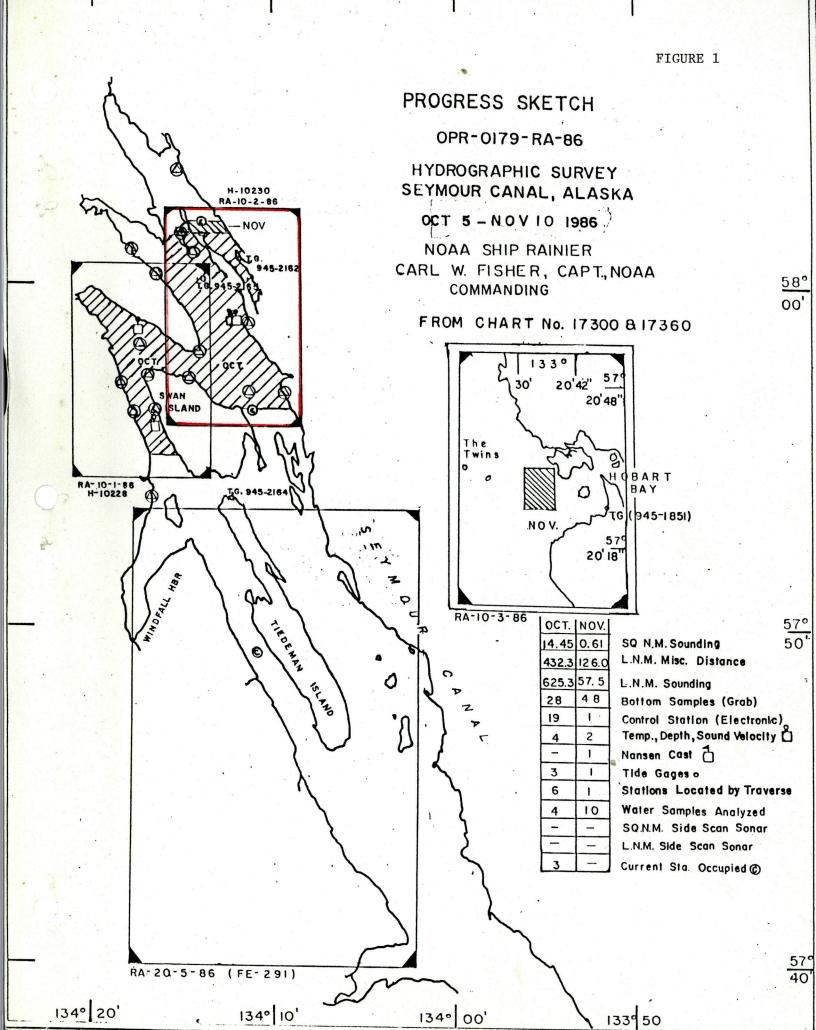
17300 - TO SIGNOFF SEE "RECORD OF APPLICATION"

10230

0AA FORM 77-28 U.S. DEPARTMENT OF COMMERCE 1-72) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTER NO.
HYDROGRAPHIC TITLE SHEET	H-10230
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-10-2-86
State ALASKA	
General locality SEYMOUR CANAL	
Locality FOOL INLET AND KING CATMON BAY TO VICINITY OF	SWAN ISLAND
Scale 1:10,000 Date of sur	vey <u>October 18 - November 4, 19</u> 8
Instructions dated March 14, 1985 Project No.	OPR-0179-RA-86
Vessel RAINIER (2120), Launches (2123), (2124), (2125	5), (2126), (2129)
Chief of party Carl W. Fisher, CAPT., NOAA	
Surveyed by IT. White, FNS. Brown, ENS. Damm, FNS. Post ENS. Hartzell, ENS.	con, ENS. Omara, Fellows
Soundings taken by echo sounder, hand lead, pole DSF-6000N	
Graphic record scaled by RAINIER Personnel	
Graphic record checked by RATNIER Personnel	
Verification. Sanders Automa	ted plot by PMC Xynetics Plotter
Evaluation C. R. Davies	
Soundings in fathoms and tenths MLW MLLW	
REMARKS: All times in U.T.C. Marginal notes in black	ck by evaluator.
All separates are filed with the hydrographic data.	

LC 2-5-97

SURF/ANOIS / AAA 9/14/87



Descriptive Report To Accompany Hydrographic Survey H-10230

Field Number RA-10-2-86 Scale 1:10,000 1986

NOAA Ship RAINIER Chief of Party: Captain Carl W. Fisher

A. Project √

A basic hydrographic survey was completed as specified by Project Instructions OPR-0179-RA-86, dated 14 March 1985 and changed as follows:

Changes	Date
1	3/21/85
2	9/27/85
3	1/17/86
4	6/24/86
5	9/10/86

The purpose of this project is to provide modern hydrographic survey coverage of Seymour Canal, Alaska for existing nautical charts covering the area. The survey is designated sheet G from the original sheet layout for the Seymour Canal survey project. The field number given this survey is RA-10-2-86 and the assigned registry number is H-10230.

B. Area Surveyed

The survey is located in northern Seymour Canal, Alaska, in the vicinity of King Salmon Bay (Figure 1). The area is characterized by a rocky shoreline, numerous reefs and ledges, and many submerged pinnacle rocks. The survey depths range from 0 to 32 fathoms. The survey area is frequently used by small vessels engaged in fishing or hunting. The survey is bounded by the limits:

North 58° 02' 00"N South 57° 56' 00"N 45" East 134° 09' 00"W 25" West 134° 142 30"W 48"

Data acquisition was conducted from 18 October 1986 to 4 November 1986 (day 291 to day 308).

C. Sounding Vessels

Data were acquired from the ship's four automated survey launches and a 17-foot aluminum hulled MonArk (Table 1).

Table 1. Sounding Vessels

VESSEL	EDP NO.	<u>OPERATION</u>
RA-3	2123	R/R, R/AZ
RA-4	2124	R/R, R/AZ
RA-5	2125	Bottom Samples
RA-6	2126	R/R
RA-9 (MonArk)	2129	Shoreline Verification

No changes to the standard sounding configurations were necessary.

D. Sounding Equipment and Corrections to Echo Soundings /

Sounding Equipment V

All vessels used for this survey were equipped with either DSF-6000N or DE-719B Raytheon echo sounders (Table 2). All DSF-6000N echo sounders were operated in the HIGH + LOW (HIGH DIGITIZED) function, using manual gain controls to obtain the best analog trace. DSF-6000N soundings were recorded in fathoms and tenths of fathoms. Two to six fathom bar checks were conducted once daily with both the narrow and wide beams in accordance with the Provisional Operating Instructions for DSF-6000N echo sounders.

Table 2. Raytheon Echo Sounders

VESSEL 2123	DSF-6000N <u>SERIAL NUMBER</u> A114N A117N	DAY <u>NUMBERS</u> 281-289 290-308	
2124	A103N	281-307	
2125	A117N	308,309	
2126	A119N	281-307	
 ····			

Transducers on the automated survey launches are mounted starboard midships. Transducer depths of 0.3 fathom for each of the launches were measured during the last winter inport and agree with historical data. Transducer installation locations on all the survey vessels are such that any sounding corrections apply to both the narrow and wide echo sounder beams.

All echo sounders functioned properly and remained in good working condition throughout the survey

Corrections to all soundings were determined for velocity of sound through water, settlement and squat, and tides. Variations in the instrument initial and stylus arm length are not present with the DSF-6000N.

Other Sounding Equipment Used

A calibrated leadline was used to obtain nine soundings from vessel 2123. The position numbers and day numbers for the leadline depths are as follows:

DAY NO.	FIX NO.
303	2956
303	2965
303	304R
303	2970
303	2971
303	302R
303	2972
306	3087
306	3096

Sea Surface Conditions

The effects of sea surface conditions were not a problem in this survey.

Velocity Correctors

Velocity of sound through water and the associated corrections to echo soundings were determined by velocity probe casts using a Plessy/Grundy Sound Velocity Sensor (S/N 3444) coupled to a Hewlett-Packard 5315A Universal Frequency Counter (S/N 1946A03637). The Plessy/Grundy Velocity Sensor was last calibrated in March, 1985 by the Northwest Regional Calibration Center in Bellevue, Washington.

Electronic sound velocity data were compared with velocities calculated from surface samples and from one Nansen cast to verify the validity of the electronic data (Table 3a). Agreement between the two methods was typically within one meter/sec.

TABLE 3a. Comparison of Velocities by Method of Acquisition

DEPTH(m) O	VELOCITY FROM NANSEN CAST OR SURFACE SAMPLE 1468.95	VELOCITY FROM PLESSY PROBE 1469.82	DAY <u>NUMBER</u> 290
0	1467.81	1468.76	308
0 5 15 25 35 45	1467.81 1468.42 1468.84 1468.94 1469.43	1467.01 1468.40 1468.52 1468.92 1469.41 1469.65	309

Five sound velocity casts were taken during the survey period, Table 3b.

Table 3b. Velocity Casts

CAST	DEEPEST DEPTH(m)	DAY <u>NUMBER</u>	POS	SITION
1	25	282	57 ⁰ 57.8'N,	134 ⁰ 17.2'W
2	30	290		134 ⁰ 19.5'W
3	60	295	57 ⁰ 59.0'N,	134 ⁰ 12.1'W
4	60	303	57 ⁰ 59.0'N.	134 ⁰ 11.9'W
5	55	308		134 ⁰ 12.0'W
N	43	309	57 ⁰ 56,4'N,	134 ⁰ 10.2'W

N=Nansen Cast

Velocity cast four was used as a representative cast for sound velocity correctors. This is due to the less than 0.1 fm difference between correctors over the period of the survey (Appendix IV). This cast (4) was used to create Velocity Corrector Table II as indicated in Table 4 of this report. No velocity correctors are applied to bottom sample depths or detached postions in shoreline development.

Table 4.	Velocity	Correction	n Table

VELOCITY CORRECTOR TABLE NUMBER	VELOCITY CAST <u>NUMBER</u>	APPLIES TO DATA ACQUIRED ON DAYS	APPLICABLE DEPTHS(FM) AND CORRECTORS(FM)
2	4	291-308	0.0 - 10.8 / 0.0 10.9 - 29.0 / +0.1 29.1 - 38.0 / +0.2

Velocity casts were performed in areas of the deepest depths. There was no indication of any change in sound velocity due to location.

Settlement and Squat

Settlement and squat trials were performed on survey launches 2123, 2124, and 2126 on 4 November 1986 (DN 308) in the vicinity of King Salmon Bay tide gage in a depth of approximately 10 fathoms. Seas were flat and wind was calm as each launch made a succesive run towards an observer positioned on a rock near the middle of the island. Observations were made with a Zeiss Ni2 leveling instrument (S/N 87102) to an elevation rod held vertically on deck directly above the transducer. The first observation was made while the launch was dead in the water (DIW). Succeeding observations were then made at 700, 1000, 1200, 1500, 1800, 2000, 2200, and 2400 RPM. Five readings were recorded and averaged at each RPM tested. A temporary tide staff, installed at the location of the observer, was read concurrently with the level observations, and all elevations were normalized to a common tide height. A correction of -0.1 fm is applicable to vessel 2126 and vessel 2123 for engine speeds of 2400 RPMs. A correction of -0.1 fm is applicable to vessel 2124 for engine speeds of 2200 RPMs and greater (Appendix IV).

The MonArk (vessel 2129) was not tested for settlement and squat because it was used only for reference system positioning.

Soundings on the final field sheet are not corrected for settlement and squat. A TC/TI tape has been cut and submitted with this survey. Records of all settlement and squat data are included in Appendix IV.

Tide Correctors

Preliminary tidal zoning for this survey was provided with the Project Instrutions using Juneau Alaska tide station (945-2210) as the reference station. The predicted time and height correctors applied to rough plotted soundings proved to be adequate as evidenced by consistencies observed when comparing mainscheme soundings with split and crossline soundings. Soundings on the Final Field Sheets were plotted using the tidal zoning scheme provided. The tide correctors are as follows (Table 5).

TABLE 5. Tide Correctors Applied to Tide Stations

SURVEY	APPLICABLE AREA	TIME CORRECTION High Water Low		HEIGHT <u>RATIO</u>
H-10230	North of 57°54.0'N	+15 min +1	5 min	0.98

Further details on all aspects of echo sounding corrections are provided in the supplemental <u>Corrections to Echo Soundings Report</u>, <u>OPR-0179-RA-86</u>.

E. Hydrographic Sheets

Survey data are plotted on two 1:10,000-scale plotter sheets designated RA-10-2N-86 and RA-10-2S-86. In addition to these sheets, two overlays were made to show greater shoreline detail. These sheets were prepared aboard the RAINIER on a Houston Instrument Complot DP-3 roll plotter using the PDP-8/e Hydroplot system and program RK 201, "Grid, Signal, Lattice Plot". This computer program draws a modified transverse Mercator projection.

The final field sheet and accompanying field records will be forwarded to the Pacific Marine Center for verification.

Office processing

F. CONTROL STATIONS

All horizontal control stations established for this survey were positioned to Third Order Class I standards with the exception of three photo points. The following stations were used in the completion of this survey:

Signal #	Station Name	Date Established
134	SEYMOUR	1983
146	MASK	1985
149	CYGNET	198 3
152	SAL	1986
153	MON	1986
154	RYAN	1986
155	${ t FOOL}$	1986
156	SLIDE	1986
157	LODGE	1986
158	INSULA	1986
159	GLASS	198 6
312	HP-35	1983
313	HP-30	1983
314	HP-34	1983

Stations SEYMOUR and CYGNET were set by the DAVIDSON in 1983 during her reconnaissance survey of this area. Stations HP-35, HP-30, and HP-34 were aerotriangulated in 1983. All other stations were set by the RAINIER, building upon the framework left by the DAVIDSON. All other stations were positioned by traverse.

The North American Datum of 1927 was used.

No unusual or non-standard survey methods were used.

For more information on horizontal control work for this survey, refer to the report, <u>Horizontal Control Report for OPR-0179-RA-86</u>.

G. HYDROGRAPHIC POSITION CONTROL

Soundings were located using range-range and range-azimuth geometry. Range data were acquired with Motorola's Mini-Ranger III electronic positioning system. Azimuths were measured using WILD T-2 theodolites.

Positioning Equipment

Four Mini-Ranger console/RT pairs and five vessels were used during this survey. The following table lists the days of use and corresponding vessel for each console/RT pair.

Console/RT pair	$\mathbf{\underline{DN}}$	EDP #	Vessel name
720/B1405	292-308	2123	RA-3
715/911615	292-305	2124	RA-4
711/C1712	291-294	2125	RA-5
B0269/B1388	295-308	2125	RA-5
B0269/B1388	291-294	2126	RA-6
711/C1712	295 - 308	2126	RA-6

Along with these console/RT pairs, nine shore transponders were used:

<u>Code</u>	<u>Serial Number</u>
0	01789
1	C1883
2	B1106
3	911635
Α	1645
В	B1412
D	1569
E	911721
\mathbf{F}	911711

See Appendix V for the location of transponders and the days used.

Calibrations and System Checks

Four console/RT pairs were calibrated to all nine transponders over a baseline on Lake Union at Seattle, Washington during September 1986. From this baseline calibration, signal strength cutoffs and correctors were determined. Throughout this survey these correctors were confirmed with critical and noncritical system checks.

Upon the return of the RAINIER to Seattle, a final baseline calibration was conducted over the Lake Union baseline during November 1986. To determine the final correctors, the following method was employed. If the opening and closing corrector values differed by two or more meters, the final corrector was the average of the opening and closing values. If the difference was found to be less than two meters, the opening value was retained as the final corrector value. The final field sheet plotted onboard the RAINIER was plotted using the opening baseline correctors. The average of the beginning and ending baseline correctors were used to plot the smooth sheet. Critical system checks were conducted at least once a week, using the theodolite intersection, or fixed point observation. Due to the ease in which a fixed point observation could be conducted, this became the most frequent form of daily calibration. An abstract of correctors derived from these system checks can be found in Appendix V.

When a critical check was not possible, a noncritical check using the baseline crossing method was employed.

Positioning Techniques <

Range-range geometry was the principle method of locating soundings throughout this survey. Range-azimuth geometry was used in areas near shore where range-range positioning could not. No unusual techniques were employed.

Problems and Unusual Position Configurations

On day number 295 the Mini-Ranger console/RT pair in RA-6 (serial numbers BO269/1388) was replaced with that from RA-5 (serial numbers 711/C1712). Console BO269 was found to have a cracked card connector which prevented the unit from functioning. The RT unit was also replaced in order to keep console/RT pairs together. The console was repaired and reinstalled onboard the RAINIER and placed in RA-5 along with the RT unit for the remainder of the season.

Antenna Distance /

On vessels 2123, 2124, 2125, and 2126 the RT is located over the transducer with an antenna distance of 0,0.

Refer to <u>Flectronic Control Report</u>, <u>OPR-0179-RA-86</u> for additional information.

H. Shoreline

Shoreline Manuscripts

Shoreline details on the field sheet were transferred directly from NOS shoreline manuscript:

TP-01163
ALASKA
SEYMOUR CANAL
KING SALMON BAY
Scale 1:20,000
Oblique Mercater Projection

TP-01164
ALASKA
SEYMOUR CANAL
SWAN ISLAND
Scale 1:20,000
Oblique Mercater Projection

These manuscripts were enlarged to 1:10,000 to conform with the scale of the survey.

Shoreline details have been verified by use of the following three methods:

- a. Detached positions
- b. Reference numbers (as directed in the PMC OPORDER Appendix P Sec. I.A.)
- c. Annotations made on data printouts during visual inspection of shoreline features at the termination of survey lines inshore.

Shoreline details and features have been transferred to the field sheet. Additions are shown in black and changes are shown in red. Detached positions on the final field sheet are plotted with their four digit position numbers. Reference system numbers are plotted with their three digit numbers preceded by the letter 'R'. The following table (Table 6) summarizes changes and additions to the manuscript that were found in the field.

Table 6. Changes and Additions to T-Sheet Manuscript;

CHANGES

POSITION NO.	GEOGRAPHIC POSITION	FEATURE
4991	58 ⁰ 01' 14.98 "N 134 ⁰ 12' 49.55 "W	rock bares 13 ft at MLLW
9426	58 ⁰ 01'41.8 5 ″N 134 ⁰ 13'59.33ੂ″W	group of 4 rocks uncovers bare 17:4 ft at MLLW
2018	57 ⁰ 57'12. 9 1"N 134 ⁰ 11'4 6.3 5"W 3.49	NW end of reef (≤) R∝k

	POSITION NO.	GEOGRAPHIC POSITION	<u>FEATURE</u>
- , Ţ	9447	58 ⁰ 00°00.7 3 "N 134 ⁰ 10'32.8 4 "W	rock bares 21.8 ft islet (6) at MLLW
,×-	9448	58 ⁰ 00'02.44"N 134 ⁰ 10'35: 0 6"W	rock-bares-19.3-ft at-MLLW islet (3)
	9449	58 ⁰ 00'07.59"N 134 ⁰ 10'25.7 4 "W	reef (30m X 10m) N-S, E-W 15/e+ (4)
	3170	58 ⁰ 00'45. 10 "N 134 ⁰ 14'34.44"W	southern end of rocks which bare ancovers 4.3 ft at MLLW
	2534	57 ⁰ 59'46.4 8 "N 134 ⁰ 15'24.81"W	uncovers 9,0 rock bares 1 3.4 ft at MLLW
	2538	57 ⁰ 59'18.0 <mark>6</mark> "N 134 ⁰ 14'40.7 7 "W	northern-end-of reef islet (10)
	2539	57 ⁰ 59'17. 5 8"N 134 ⁰ 14'39.46"W	castern limit of reef islet(11)
y *	2540	57 ⁰ 59'17.06"N 134 ⁰ 14'39.47"W	southern limit of reef, rock uncovers 12.0 H at MLW
	2953	57 ⁰ 59'15.43"N 134 ⁰ 11'33. 52 "W	northern limit of reef, rock uncovers 7.0
	2954	57 ⁰ 59'14.45"N 134 ⁰ 11'33. 8 6"W	southern limit of reef, rock uncovers 6 Pt at mecal
	2970	57 ⁰ 59'4 1:05 "N 134 ⁰ 15'19: 08 "W	rock bares 8.6 ft at MLLW
	2971	57 ⁰ 59'40. 60 "N 134 ⁰ 15'18.5 ‡ "W	rock bares 8.6 ft at MLLW
	2019	57 ⁰ 57'08. 20 "N 134 ⁰ 11'4 3.3 6"W 2.72	western end of ledge, rock uncovers 484 at mich
~~.	2020	57 ⁰ 57'04. 81 "N 134 ⁰ 11'4 0.8 8"W	western limit of ledge, rock uncovers 4 At at Mecw

	GEOGRAPHIC	
POSITION NO.	POSITION	<u>FEATURE</u>
2021	57 ⁰ 57'02. 77 "N 134 ⁰ 11'38. 27 "W	western limit of ledge, rock uncours 4ft at muw
2022	57 ⁰ 56'59. 51 "N 134 ⁰ 11'34. 96 "W	western end of ledge, rock uncovers 4ft at MLLW
2023	57 ⁰ 56'56.8 <mark>9</mark> "N 134 ⁰ 11'33. 14 "W	western end of ledge, rock lineovers
2024	57 ⁰ 56'54.3 ⁸ "N 134 ⁰ 11'32.04"W	western end of ledge, rock uncovers
2025	57 ⁰ 56'52. 2 5"N 134 ⁰ 11'31. 1 7"W	western end of ledge, rock uncovers 4ft at MLLW
2026	57 ⁰ 56'49. 14 "N 134 ⁰ 11'28. 54 "W	western end of ledge, rock uncovers 6ft of MILLW
2027	57 ⁰ 56'50 .80 "N 134 ⁰ 11'30. 6 4"W	western end of ledge, rock uncovers start meew
2034	57 ⁰ 57'08.8 <mark>6</mark> "N 134 ⁰ 11'35.8 6 "W	eastern end of ledge rock uncores 544 at MILW
4183	57 ⁰ 58 04.93"N 134 ⁰ 13'54 .34 "W	middle of western limit of reef, rock uncous both Micou
4184	57 ⁰ 58 12.34"N 134 ⁰ 13'54.89"W	southern end of reef, rock uncovers 5 ft at MCLW
4186	57 ⁰ 58 16.74"N 134 ⁰ 13'54. 33 "W	northern end of reef, rock uncovers 444 at MCCW

ADDITIONS

POSITION NO.	GEOGRAPHIC POSITION	FEATURE
9427	58 ⁰ 01'43.5 4 ″N 134 ⁰ 14'02. 10 ″W	group of 5 rocks
3172	58 ⁰ 01'24.65"N 134 ⁰ 15'19.94"W	rock bares 4.8 ft at MLLW
2972	57 ⁰ 59'59. 64 "N 134 ⁰ 15'47. 46 "W	rock bares 8.6 ft' at MLLW
2536	57 ⁰ 59'42.9 5 "N 134 ⁰ 15' 19.98 "W	rock bares 8 ft at MLLW
2201	57 ⁰ 57'35.7 0 "N 134 ⁰ 09'43. 51 "W	rock bares 7 ft at MLLW

I. Crosslines

A total of 15.6 nautical miles of crosslines were run, using the same vessels and sounding equipment used to run the mainscheme. This is equivalent to 9.3 percent of the total mainscheme hydrography. A random sample of 50 crossline/mainscheme comparisons were made across the sheet, and in all cases, crossline soundings agreed with mainscheme soundings within 0.3 fathom.

J. Junctions See EVAL Report Section 5

This survey junctions with the two contemporary surveys indicated in Table 7.

Table 7. Junction Surveys:

REGISTRY NO.	SCALE	YEAR	LOCATION
H-10228	1:10,000	1986	west junction south junction
H-1020 <i>}-4</i>	1;10,000	1985	

Depth contours at the junctions showed no discontinuities. Agreements were within one fathom.

K. Comparison With Prior Surveys - See Evac Report Section 6

The survey was compared to two prior surveys:

Table 8. Prior Surveys;

SURVEY	SCALE	DATE
H-2001	1:80,000	1889
BP-124984	1:20,000	1983

Both of these surveys were compared to the present survey (H-10230) on a sounding by sounding basis in all areas of significant shoaling or outstanding bottom features. The remaining soundings were compared either sounding to sounding or by the general depth trends.

Survey H-2001 is a leadline survey that was conduced by the survey ship PATTERSON of the U.S. Coast and Geodetic Survey. Due to its nearly 1/8 nm spacing between soundings, the PATTERSON's survey lacks the thoroughness found in the present survey. The present survey verifies principle depths, and provides far greater detail than the survey done by the PATTERSON.

While providing more accurate data than that of the PATTERSON, the reconnaissance survey conducted by the NOAA Ship DAVIDSON lacks the extensiveness of the present survey. In comparing this survey to the present survey, few discrepancies were found. Soundings compared to one another in close agreement, and discrepancies between adjacent soundings may be attributed to steep bottom slopes.

The prior surveys of this area consist of either leadline or reconnaissance surveys. Some of the features found during the course of the survey were in areas that had not been previously surveyed. These features, along with others, are addressed in the following section.

L. Comparison With The Chart - See EUAL Report Section 7

This survey was compared with one contemporary chart:

CHART NUMBER	SCALE	EDITION	<u>DATE</u>
17300	1:209,978	24 th	6/15/85

Comparisons between the small scale chart and the large scale survey are of little value. Yet, though the charted soundings are generally correct, some do not adequately represent the survey in certain areas. The following is a list of soundings which should be added to the chart.

SURVEY FEATURE: Sounding less than charted

depth

GENERAL LOCATION: NE of Swan Island

SURVEY SOUNDING: 2.1 fm at MLLW in the general

charted area

CHARTED DEPTH: 7.0 fm

GEOGRAPHICAL POSITION: 57°58'18.42"N 134°11'57.83"W

56.69

METHOD OF INVESTIGATION:

Charted 7 fm shoal area was developed at 25 meter spacing. Several rock pinnacles were found on a gently sloping plateau. A leadline least depth of 2.1 fm (DN 294, vessel 2126, Pos. 4513) was determined by divers at the above position.

RECOMMENDATIONS:

Add the least depth to the nautical chart. Chart least depth of 2.1 Fm of the above location.

SURVEY FEATURE: Sounding less than charted

depth

GENERAL LOCATION: NE of Swan Island

SURVEY SOUNDING: 17.1 fm at MLLW in the area of

the charted sounding

CHARTED DEPTH: 21 fm

GEOGRAPHICAL POSITION: 57°57' 45"N

134⁰10 ' 45"W

METHOD OF INVESTIGATION:

This shoal was developed by 50 meter spacing (DN 292, vessel 2126, Pos. 6400+4).

RECOMMENDATIONS:

The shoal area is near navigable waters and should be represented. Add the least depth to the nautical chart. Concur

SURVEY FEATURE:

Sounding less than charted

depth

GENERAL LOCATION:

NNE of Swan Island

SURVEY SOUNDING:

4.1 fm at MLLW

CHARTED DEPTH:

10 fm

GEOGRAPHICAL POSITION:

57⁰57'47.0⁸7"N 134⁰12'59.17"W

METHOD OF INVESTIGATION:

A submerged ridge in the area of the 10 fm charted depth was developed at 25 meter spacing. A least depth of 4.1 fm (DN 293, vessel 2124, Pos. 4511) was determined by divers at the above position.

RECOMMENDATIONS:

Add the least depth to the nautical chart. Chart 4.1 Rk at the above location.

SURVEY FEATURE:

Sounding less than charted

depth

GENERAL LOCATION:

Beginning of the entrance

to Fools Inlet

SURVEY SOUNDING:

8.5 fm at MLLW

CHARTED DEPTH:

23 fm

GEOGRAPHICAL POSITION:

58°00'50"N 134°13'50"W

METHOD OF INVESTIGATION:

The shoal area was developed with 50 meter spacing (DN 296, vessel 2124, Pos. 4566+1).

RECOMMENDATIONS:

The shoal area is near navigable waters and should be represented. Add the least depth to the nautical chart. Chart 8.5 Fm at the above position.

SURVEY FEATURE:

Sounding less than charted

depth

GENERAL LOCATION:

King Salmon Bay

SURVEY SOUNDING:

2,3 RK

3 fm at MLLW

CHARTED DEPTH:

2.2 fm

GEOGRAPHICAL POSITION:

57°58"49.35"N 134°12'35.05"W

METHOD OF INVESTIGATION:

A charted 3 fm shoal was developed at 25 meter spacing. Several rock pinnacles were found over the extent of the shoal. The shoalest pinnacle was a 2.2 fm (DN 306, vessel 2124, Pos. 4998) leadline depth determined by divers at the above position.

RECOMMENDATIONS:

Add the least depth to the nautical chart. chart 2.3 Rk at the above position.

SURVEY FEATURE:

Sounding less than charted

depth

GENERAL LOCATION:

King Salmon Bay

SURVEY SOUNDING:

2.5 fm at MLLW

CHARTED DEPTH:

3 fm

GEOGRAPHICAL POSITION:

57⁰58'59.78"N 134⁰12'51.65"W

METHOD OF INVESTIGATION:

The same charted shoal as referenced directly above was developed at 25 meter spacing. A leadline least depth of $2.5^8\,\mathrm{fm}$ (DN 305, vessel 2124, Pos. 4993) was determined on this second pinnacle by divers at the above position.

RECOMMENDATIONS:

Add the least depth to the nautical chart. concur

SURVEY FEATURE:

Added sounding

GENERAL LOCATION:

King Salmon Bay

SURVEY SOUNDING:

1.0 Rk 0.9 ∰m at MLLW

CHARTED DEPTH:

Not represented

GEOGRAPHICAL POSITION:

57°59'12.25"N 134°11'42.54"W

METHOD OF INVESTIGATION:

The area was developed at 25 meter spacing. An echo sounder least depth of 0.9 fm was found. A leadline depth of 1.0 fm $^{
m RK}$ (DN 306, vessel 2124, Pos. 4997) was determined by divers on the pinnacle rock at the above position.

RECOMMENDATIONS:

Add the least depth to the nautical chart. chart 1.0 RK at the above

SURVEY FEATURE:

Added sounding

GENERAL LOCATION:

NW of Swan Island

1.7 RK transferred

SURVEY SOUNDING:

1.5 fm at MLLW

to H-10230 from H-10204(1985)

CHARTED DEPTH:

Not represented

GEOGRAPHICAL POSITION:

57⁰56'45.10"N 134⁰12'10.77"W

METHOD OF INVESTIGATION:

An uncharted pinnacle was developed at 25 meter spacing. A leadline depth of 1.59 fm (DN 306, vessel 2124, Pos. 7000) was determined by divers at the above position.

RECOMMENDATIONS:

Add the least depth to the nautical chart. chart 1.7 RK from H-10204(1986)

SURVEY FEATURE:

Added sounding

GENERAL LOCATION:

King Salmon Bay

SURVEY SOUNDING:

4.2 fm at MLLW

CHARTED DEPTH:

Not represented

GEOGRAPHICAL POSITION:

4.61 57⁰59'13.99"N 134⁰11'52.58"W

METHOD OF INVESTIGATION:

A submerged ridge was developed at 25 meter spacing. A leadline depth of 4.2 fm (DN 305, vessel 2124, Pos. 4994) was determined by divers on a rock pinnacle at the above position.

RECOMMENDATIONS:

Add the least depth to the nautical chart. Chart 4.4 submerged rock at the above position.

SURVEY FEATURE:

Sounding less than charted

depth

GENERAL LOCATION:

King Salmon Bay

85

SURVEY SOUNDING:

-9 fm at MLLW

CHARTED DEPTH:

14 fm

GEOGRAPHICAL POSITION:

58°00 53;09 58°00 154"N 134°14'00"W 54.98

METHOD OF INVESTIGATION:

The channel that leads from King Salmon Bay to Fools Inlet was developed at 50 meter spacing. Depths of 5 fm (DN 304, 296 vessel 2126, Pos. 9268+1) were found in the immediate area. 4539+4

RECOMMENDATIONS:

Add the least depth to the nautical chart. (Mul

SURVEY FEATURE:

Sounding less than charted

depth

GENERAL LOCATION:

King Salmon Bay

SURVEY SOUNDING:

5 fm at MLLW

CHARTED DEPTH:

7 fm

GEOGRAPHICAL POSITION:

58⁰01'30"N 134⁰14'30"W

METHOD OF INVESTIGATION:

The channel connecting King Salmon Bay and Fools Inlet was developed at 50 meter spacing. Depths of 5 fm to 7 fm (DN 304, vessel 2126, Pos. 9223+4) were found in the middle of the channel.

RECOMMENDATIONS:

Add the least depth to the nautical chart. concur

Dangers to Navigation Reports

A Dangers to Navigation Report was submitted in conjunction with this survey and a copy is included in Appendix XII.

One was also submitted to the Coast Guard and DMA, see Preprocessing Exam. attached to the coast.

Non-Sounding Features

There were no charted non-sounding features in the survey area.

Recommendations ~

. î î

Aside from replacement of soundings obtained from prior surveys, no changes to scale, coverage, or format of the published charts for this survey area are recommended. Concur

M. Adequacy of Survey

This survey is complete and adequate to supercede the prior concur surveys.

N. Aids to Navigation <

There are no aids to navigation in the survey area, nor any bridges, overhead cables, overhead pipelines, submarine cables, submarine pipelines, or ferry routes.

O. Statistics

EDP NO.	NUMBER OF POSITIONS	
2123 2124	1279 995	151.5 122.4
2125	41	bottom samples
2126	1438	144.9
2129	14	reference system
TOTAL	3767	418.8
SQUARE HYDROG		11.3
воттом	SAMPLES	41
TIDE STA	ATIONS	2
CURREN	T STATIONS	due was had son had not not son had had not
VELOCIT	Y CASTS	4
DAYS OF	PRODUCTION	18
MAGNET	IC STATIONS	0

P. Miscellaneous

One current observation station was occupied within the area of this survey to provide preliminary tidal current information in compliance with the Project Instructions. All RAINIER current observations can be found in the supplemental <u>Current Report</u>, <u>OPR-0179-RA-86</u>.

All bottom samples have been submitted to the Smithsonian Institute.

Q. Recommendations 🗸

The hydrographer considers field work on this survey to be complete. No additional field work is required.

R. Automated Data Processing

Data acquisition and processing were accomplished with a PDP 8/e Hydroplot computer system, using the standard programs for data acquisition and processing (Table 9).

Table 9. Computer Programs Used For Data Processing

NUMBER	DESCRIPTION	VERSION
RK 112	HYPERBOLIC, R/R HYDROPLOT	3/01/86
RK 201	GRID, SIGNAL, AND LATTICE PLOT	4/18/75
RK 211	RANGE-RANGE NON-REAL TIME PLOT	2/13/84
RK 212	VISUAL STATION TABLE LOAD	4/01/74
RK 221	COMB R/R & HYPER PLOT NON-REAL TIME	3/26/86
RK 300	UTILITY COMPUTATIONS	10/21/80
RK 330	REFORMAT AND DATA CHECK	5/04/76
PM 360	ELECTRONIC CORRECTOR ABSTRACT	2/02/76
RK. 407	GEODETIC INVERSE/DIRECT COMPUTATION	9/25/78
RK 409	GEODETIC UTILITY PACKAGE	9/20/78
AM 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
RK 562	THEODOLITE CALIBRATION	9/05/84
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	1/31/85
RK 900	PLOT TEST TAPE GENERATOR FOR AM 902	5/07/76
RK 901	CORE CHECK	3/01/72
AM 902	REAL TIME CHECKOUT	11/10/72
DA 903	DIAGNOSTICINSTRUCTION TIMER	2/27/76
RK 905	HYDROPLOT CONTROLLER CHECKOUT	3/18/81
RK 935	HYDROPLOT HARDWARE TEST	3/15/82
RK 950	HARDWARE TEST (DOCUMENTATION ONLY)	6/02/75

S. Referral to Reports 🗸

Several supplementary reports contain additional information relevant to this survey.

Horizontal Control Report, OPR-0179-RA-86 Coast Pilot Report, OPR-0179-RA-86 FWD N/C6243 Corrections to Echo Soundings Report, OPR-0179-RA-86 Electronic Control Report, OPR-0179-RA-86 Current Report, OPR-0179-RA-86 FWD N/C6243

Respectfully submitted,

Robert D. Fellows, ENS, NOAA

FIELD TIDE NOTE RA-10-2-86 H-10230

Correctors were derived using program AM 500, Predicted Tide Generator, applying the following correctors to the Juneau reference station:

Time Correctors		Height
High Water	Low Water	Ratio
-0hr 11 min	-Ohr 14 min	x 0.92

The Juneau, Alaska tide station (945-2210) served as the control station for this project.

Three tide stations were installed in the project area. Bristol Bubbler tide gages were used at these locations. During the project, two gages failed and were replaced with spare gages. Two chart drives also failed and had to be replaced.

Tide station information follows:

NORTH END, TIEDEMAN ISLAND (945-2164)

Geographic Locale	- Tiedeman Island, Seymour Canal, Alaska 57° 53.7' N 134° 12.3' W
Installation date	- October 5, 1986
Removal date	- November 4, 1986
Gage type	- Bristol Bubbler s/n 64A 11028, after failing on 10/20, gage was replaced with Bristol Bubbler s/n 67A 235. The gage was located 15 yards behind the treeline on the island. The orifice was bolted to a rocky ledge. A length of 120 feet of tubing was required to reach the gage.
Staff	- The staff was a 16 foot 2x4 with vitrified
Staff-Gage	staffing attached. The staff was secured to the same ledge as the orifice 64A 11028 - 10.0 67A 235 - 9.8

Levels

- Installation levels were run on 10/5/86 connecting 3 existing bench marks. was to 0.001 m. Two additional bench marks were set on 10/20 and levels were run connecting the 5 bench marks (closure = 0.003 m). Final levels were run on 11/4 connecting 5 bench marks (closure = 0.003 m). Elevations agreed to 0.005 m of previous bench mark elevations. Due to the large tide range, the base of the staff was installed above the zero of marigram. staff stop was located at the 30.05 ft mark on the staff.

Bench Marks

- Three marks were recovered in good condition: 2164 A 1985, 2164 B 1985, and 2164 C 1985. marks were set: 2164 D 1986 and 2164 E 1986.

Gage Time Marigram Records - Coordinated Universal Time

- Records were continuous with the following exceptions: 1. 1820 Z (10/6) to 0006 Z (10/8) due to a malfunctioning pen. No hydrography was run during this period. 2. 2000 Z 10/18 to2350 Z 10/19 due to a malfunctioning gage. During this period, this gage was not required for hydrography and 2 other gages were in operation.

Station Problems

- Gage 64A 11028 failed on 10/20 when it could not hold pressure. It was replaced with 67A 235.

SOUTH POINT, KING SALMON BAY (945-2169)

Geographic Locale - King Salmom Bay, Seymour Canal, Alaska

58° 00.3'N 134° 13.7'W

Installation date Removal date

- October 5, 1986 - November 5, 1986

Gage type

- Bristol Bubbler s/n 67A 16205, after failing on 10/8, gage was replaced with Bristol Bubbler s/n 68A 14940. The gage was located at the top of a small islet, under a tree. The orifice was A length of 200 secured to an anchor plate. feet of tubing was required to reach the gage.

Staff

- The staff was a 16 foot 2x4 with vitrified staffing attached. The staff was secured to a

ledge, north of the orifice.

Staff-Gage

- 68A 14940 - 13.1

Levels

- Installation levels were run on 10/7/86 connecting 5 newly set bench marks. The closure was to 0.001 m. Final levels were run on 11/4 connecting 5 bench marks (closure = 0.002 m). Elevations agreed well (0.005 m) with previous bench mark elevations. Due to the large tide range, the base of the staff was installed above the zero of marigram. The staff stop was located at the 26.52 ft mark on the staff.

Bench Marks

- Five bech marks were established on 10/6: 2169 A 1986, 2169 B 1986, 2169 C 1986, 2169 D 1986 and 2169 E 1986.

Gage Time Marigram Records - Coordinated Universal Time

- Upon replacing gage 67A 16205 with gage 68A 14940, records were continuous with the following exception: 1706 Z (10/17) to 1724 Z (10/17) while the chart drive was replaced.

Station Problems

- 1. Gage 67A 16205 failed and was replaced with 68A 14940 on 10/8. No hydrography was acquired with gage 67A 16205. 2. Time errors in excess of 12 minutes occured on several occasions with chart drive 502306. The clock could not be adjusted correctly. On 10/17, the chart drive was replaced with 21009 and time errors were eliminated.

SOUTH END, FOOL INLET (945-2162)

Geographic Locale

- Fool Inlet, Seymour Canal, Alaska 58° 00.9' N

134° 11.8' W

Installation date Removal date

- October 17, 1986 - November 5, 1986

Gage type

- Bristol Bubbler s/n 68A 9333. The gage was located at the treeline on a peninsula in Fool The orifice was attached to an anchor Inlet. plate. A length of 225 feet of tubing were required to reach the gage.

Staff

- The staff was a 16 foot 2x4 with vitrified staffing attached. The staff was secured to a boulder.

Staff-Gage Levels

- 68A 9333 - 2.6

- Installation levels were run on 10/17/86 connecting 5 newly established bench marks. closure was to 0.000 m. Final levels were run on 11/5 (closure = 0.001 m). Elevations agreed to 0.005 m of previous bench mark elevations. Due to the large tide range, the base of the staff was installed above the zero of marigram. The staff stop was located at the 18.00 ft mark on the staff.

Bench Marks

- Five bench marks were set on 10/15: 2162 A 1986, 2162 B 1986, 2162 C 1986, 2162 D 1986 and 2162 E 1986.

Gage Time Marigram Records - Coordinated Universal Time

- Records were continuous with the following exceptions: 1. 1712 Z (10/30) to 1730 Z (10/30) while the chart drive was replaced. 2. 0340 Z 11/3 to 0500 Z 11/3; 0420 Z 11/4 to 0550 Z 11/4; and 0505 Z 11/5 to 0630 11/5 due the orifice going dry. No hydrography was run during these

periods.

Station Problems

- Time errors in excess of 12 minutes occured on several occasions with chart drive 521413. The clock could not be adjusted correctly. On 10/30, the chart drive was replaced with 507799 and time errors problems were eliminated.

JUNEAU CONTROL STATION

The control station at Juneau was leveled and serviced by the NOAA Ship MT MITCHELL on September 15 and November 7.

ZONING RECOMMENDATIONS

Preliminary Tidal Zoning as supplied by Project Instructions OPR-RA-O179-86, Change No 5 (September 10, 1986) appears to be adequate. The RAINIER recommends that the zoning correctors as provided in the project instructions be maintained for next year's work.

MASTER STATION LIST OPR-0179-RA-86 SEYMOUR CANAL, AK RA-10-2-86

VERSION 12/31/86

- 134 3 57 56 51936 134 11 26091 250 0010 000000 /SEYMOUR 1983 DAVIDSON 1983 FIELD G.F.
- 146 3 57 56 50135 134 09 23943 250 0005 000000 ZMASK 1985 RAINIER 1985 FIELD G.P.
- 149 3 57 50 10726 134 17 11706 250 0012 000000 /CYGNET 1983 DAVIDSON 1983 FIELD 0.F.
- 152 3 57 58 02595 134 14 05956 250 0006 000000 /SAL 1986 RAINIER 1986 FIELD G.P.
- 153 3 57 57 18590 134 14 41421 250 0006 000000 ZMON 1986 RAINIER 1986 FIELD G.F.
- 154 3 58 02 45762 134 16 28046 250 0005 000000 /RYAN 1986 RAINIER 1986 FIELD G.F.
- 155 3 58 03 30460 134 15 34745 250 0006 000000 /FOOL 1986 RAINTER 1986 FIELD G.F.
- 156 3 58 01 34877 134 14 45583 250 0007 000000 /SLIDE 1986 FIELD G.P.
- 157 3 57 58 57064 134 11 26983 250 0004 000000 /LODGE 1986 RAINIER 1986 FIELD G.P.
- 158 3 58 00 53424 134 12 27817 250 0006 000000 /INSULA 1986 RAINIER 1986 FIELD G.F.
- 159 3 50 03 16992 134 14 37002 250 0005 000000 /GLASS 1986 RAINIER 1986 FIELD G.F.
- 312 3 58 01 09702 134 17 35635 254 0000 000000 ZHP-35 1983 1983 AEROTRIONOULATION MARK
- 313 3 58 00 59597 134 14 24806 254 0000 000000 /HP30 1983 T983 AEROTRIONGULATION MARK
- 314 3 58 00 20908 134 16 15133 254 0000 000000 /HP34 1983 1983 1983 AEROTRIONGULATION MARK



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

NOAA Ship RAINIER 1801 Fairview Ave E. Seattle Wa.

November 26, 1986

TO:

N/CG222 - Norman Banks

THRU:

N/MOP - Robert L. Sandquist

FROM:

S221 & Carl W. Fisher

SUBJECT:

Dangers to Navigation Report, Seymour Canal AK

OPR-0179-RA-86

Upon completion of the 1986 field season in Seymour Canal Alaska, RAINIER is submitting a Dangers to Navigation Report in accordance with the Hydrographic Manual as ammended by Hydrographic Survey Guideline No. 46. During October and early November, 1986, RAINIER completed the following basic hydrographic surveys in Seymour Canal under Project OPR-0179-RA-86.

Sheet	Field	Registry	Survey Title
<u>Letter</u>	<u>Number</u>	<u>Number</u>	
F	RA-10-1-86		North and West of Swan Island
G	RA-10-2-86		South Portion of King Salmon Bay

RAINIER has identified 14 features shoaler than ten fathoms which are not represented correctly on Chart 17300, 24th Ed., June 15/85 (1:209,978). Several of these items are new features not found on prior survey H-2001, 1889, (1:80,000). Other items represent shoal depths that were poorly delineated on the prior survey but have now been sufficiently developed to supersede currently charted deeper depths. Cartographic interpretations were applied to all items in bringing through depths on the small scale chart from the large scale survey. The recommendations which follow should be reviewed by office cartographers for their validity. Copies of preliminary field sheets are submitted with this report.

Hydrographic position control was accomplished using rangerange and range-azimuth geometry. Mini-Ranger was used as the electronic positioning system and azimuths were measured with Wild T-2 theodolites. All positions meet requirements for a 1:10,000 scale survey.



Two methods were used to determine least depths; 1) RAINIER launches equipped with DSF-6000N echo sounders and 2) Diver least depths using a leadline. The appropriate predicted tides furnished with the project instructions have been applied in the reduction of all soundings to MLLW.

All field procedures were performed in accordance with the Hydrographic Manual, the Hydrographic Survey Guidelines and the PMC Oporders.

ITEM A

Survey Depth: 1/2 fm to 3 fm

Charted Depth: 2 1/4 fm 57°57'30"N
General Locale: Northwest of Swan Island 134°17'24"W 601 H-10228

Method of Investigation: The area along the northwest tip of Swan Island was developed at 25 meter spacing. Depths in the channel range from 1/2 to 3 fm.

Recommendation: At the present chart scale, the charted 2 1/4 fm depth is a misleading representation. Change the charted depth to 1 fm.

ITEM B

Survey Depth: 3 fm

Charted Depth: 6 fm 57°57'48"N

General Locale: Northwest of Swan Island 134017'36"W on H-10228

Method of Investigation: The area was developed at 50 meter spacing. Depths of 3 to 6 fm were found in the vicinity of the charted 6 fm depth.

Recommendation: Change the charted 6 fm depth to 3 fm.

ITEM C

Survey Depth: 1/2 fm

Charted Depth: 1 1/2 fm 57058 '24"N m 1/-10228

General Locale: Northwest of Swan Island 134018'36"W

Method of Investigation: The area was sounded at 100 meter spacing. Depths of -1/2 fm to 2 fm were found in the immediate area. A large area which bares at MLLW exists to the west and northwest of the charted 1 1/2 fm depth.

Recommendation: Change the charted 1 1/2 fm depth to 1/2 fm.

ITEM D

Survey Depth: 1 fm

57⁰58 '36"N Charted Depth: Not represented General Locale: North of Swan Island 134016 106"W

on 17-10228

Method of Investigation: A shoal which extends about 500 meters north of the north shore of Swan Island was developed at 25 meter spacing.

Recommendation: Add a 1 fm depth at the above position.

ITEM E

Survey Depth: 4.1 fm Charted Depth: 10 fm 57°57'47.07"N General Locale: North of Swan Island 134°12'59.17"W

Method of Investigation: A submerged ridge in the area of a 10 fm charted depth was developed at 25 meter spacing. A leadline least depth of 4.1 fm was determined by divers at the above position.

Recommendation: Add a 4 fm depth to the chart at the above concur position.

ITEM F

Survey Depth: 1.5 fm

Charted Depth: Not represented 57°56 '45.10"N TRINSFERRED 1.7 RK from General Locale: North of Swan Island 134012 10.77"W 14-10204 (1985)

Method of Investigation: An uncharted pinnacle was developed at 25 meter spacing. A leadline least depth of 1.95 was determined by divers at the above position.

Recommendation: Add a 1 fm depth to the chart at the above concur position. Refer to H-10204(1985) for position of 1.7 R/C

ITEM G

50 Survey Depth: 4.9 fm 57°56 '50.78"N Charted Depth: Not represented General Locale: East of Swan Island 134010 06.49"W

Method of Investigation: An uncharted pinnacle was developed at 25 meter spacing. A leadline least depth of 4.9 fm was determined by divers at the above position.

Recommendation: Add a 5 fm depth to the chart at the above cases position.

| TEM H | Rk | Survey Depth: 2.1 fm | 17,98 | Charted Depth: 7 fm | 57°58 18:42"N | General Locale: North of Swan Island | 134°11 157.83"W

Method of Investigation: A charted 7 fm shoal area was developed at 25 meter spacing. Several rock pinnacles were found on a gently sloping plateau. A leadline least depth of 2.1 £m ¢k was determined by divers at the above position.

Recommendation: Add a 2 fm depth to the chart at the above concurposition.

TTEM I
Survey Depth: 2.2 fm
Charted Depth: 3 fm
General Locale: King Salmon Bay

57058 '49.35"N
134012 '35.05"W

Method of Investigation: A charted 3 fm shoal was developed at 25 meter spacing. Several rock pinnacles were found over the extent of the shoal. The shoalest pinnacle was a $2.2~\mathrm{fm}$ RK leadline depth determined by divers at the above position.

Recommendation: Add a 2 fm depth to the chart at the above concur position.

ITEM J 8 RK
Survey Depth: 2.5 fm
Charted Depth: 3 fm 57°58'59.78"N
General Locale: King Salmon Bay 134°12'51.65"W

Method of Investigation: The same charted 3 fm shoal referenced in Item K was developed at 25 meter spacing. A leadline least depth of 2.5% fm was determined by divers on this second pinnacle at the above position.

Recommendation: Add a 2 fm depth to the chart at the above concerposition.

ITEM K
Survey Depth: 0:9-fm
Charted Depth: Not represented
General Locale: King Salmon Bay

134011 142.54"W

Method of Investigation: The area was developed at 25 meter spacing. An echo sounder least depth of 0.9 fm was found. $_{\it Qk}$ A leadline least depth was determined by divers to be 1.0 fm on the pinnacle rock at the above position.

Recommendation: Add a 1 fm depth to the chart at the above position.

ITEM L 4.4 RK

Survey Depth: 4.2 fm
Charted Depth: Not represented 57059 13.99"N
General Locale: King Salmon Bay 134011 152.58"W

Method of Investigation: A submerged ridge was developed at 25 m spacing. A leadline least depth of $4.2^4 \, \mathrm{fm}$ was determined by divers on a rock pinnacle at the above position.

Recommendation: Add a 4 fm-depth to the chart at the above concur position.

ITEM M 85

Survey Depth: 9 fm

Charted Depth: 14 fm

General Locale: King Salmon Bay

53.09

58000 '54"N

134014 '00"W

57.128

Method of Investigation: The channel that leads from King Salmon Bay north into Fools Inlet was developed at 50 meter spacing. Depths of 9 fm to 12 fm were found in the immediate area.

Recommendation: Change the charted 14 fm to a 9 fm depth. concur

ITEM N

Survey Depth: 5 fm
Charted Depth: 7 fm
General Locale: King Salmon Bay

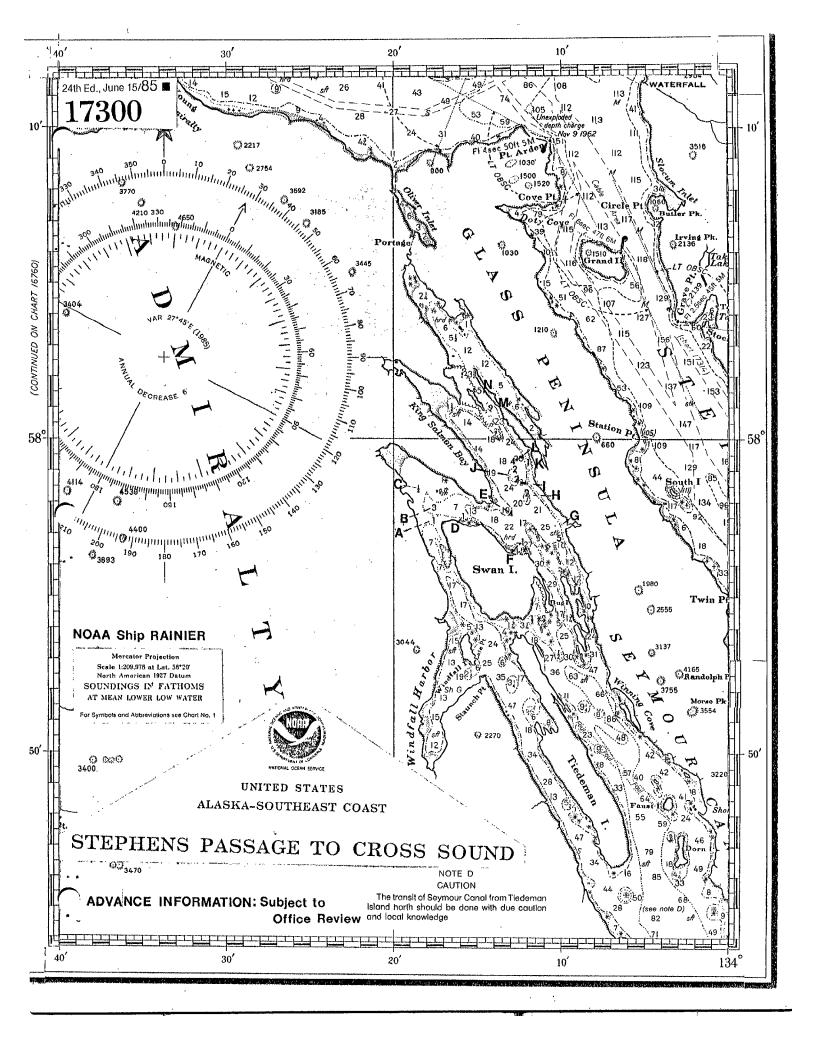
31,22

58⁰01'30"N

134⁰14'30"W
26.01

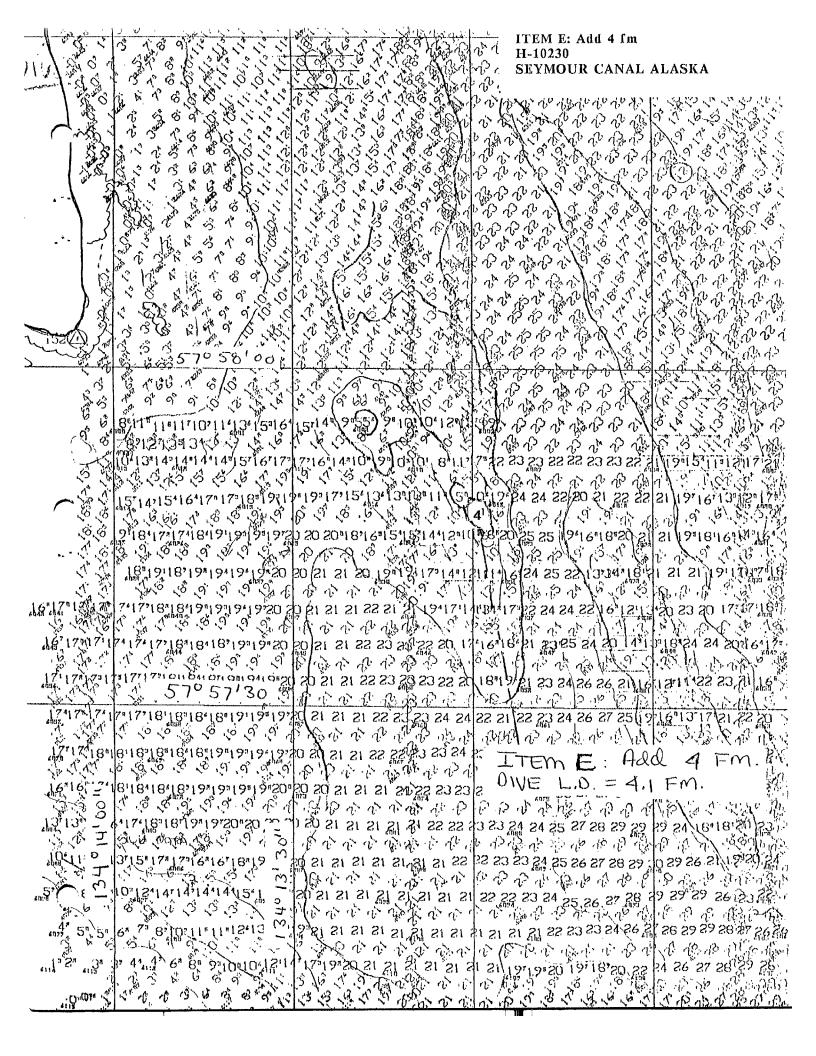
Method of Investigation: The channel channel connecting King Salmon Bay and Fools Inlet was developed at 50 meer spacing. Depths of 5⁹ fm to 7 fm were found in the middle of the channel.

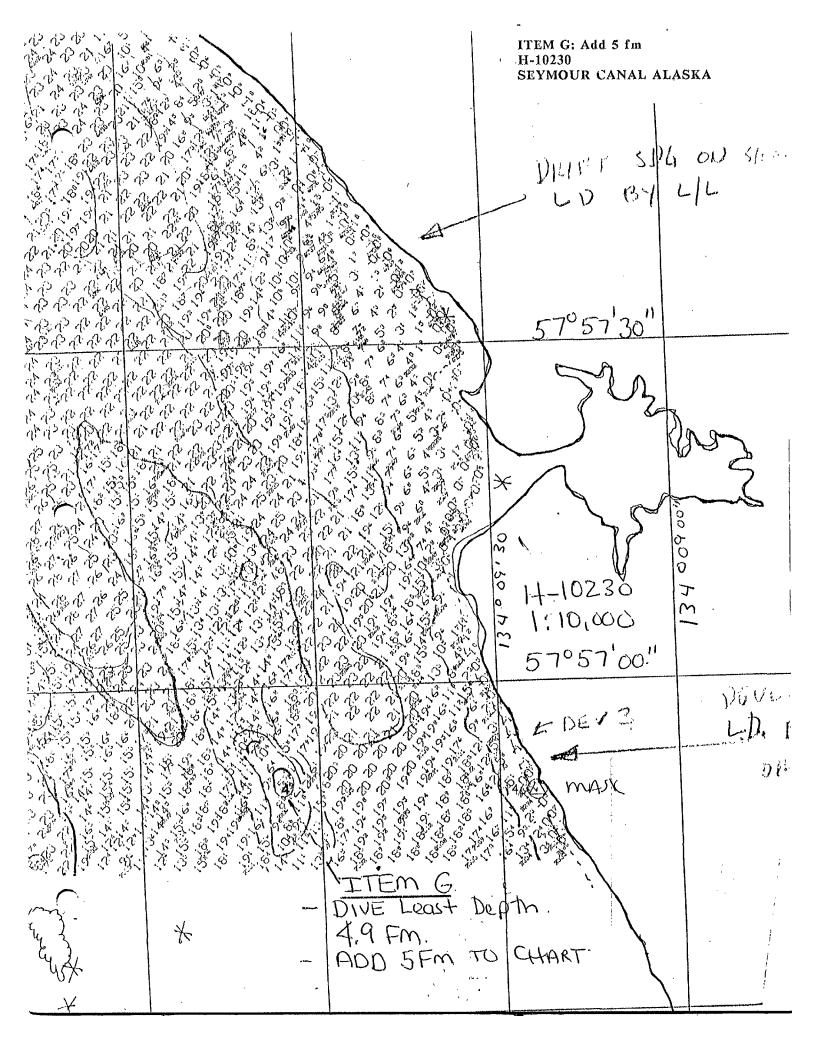
Recommendation: Change the charted 7 fm to a 59 depth. concur



ITEM A: Change 2 1/4 fm to 1 fm ITEM D: Add 1 fm 1, 82 8408136162 1875-1818.45 H-10228 1 80 80 73 7,100 1.120 1343 SEYMOUR CANAL ALASKA So 80 2/07/00/13/16/20 120/2 133 1301251 Series Se 50 50 72 20 101 20.00 , 0, 0, 0, 1 4 43 Sa 63 Br 30 4.53 Gag (6 00 80 100 10,00 8, 300 જુ જ \$ A Sold Street 8 18 88 Y ** * * * * * * * * × 80 80 80 95.00 1 K 2 8 K A Ġ 66 4 CHANGE. 33.330 C. 3.300 C. 3.

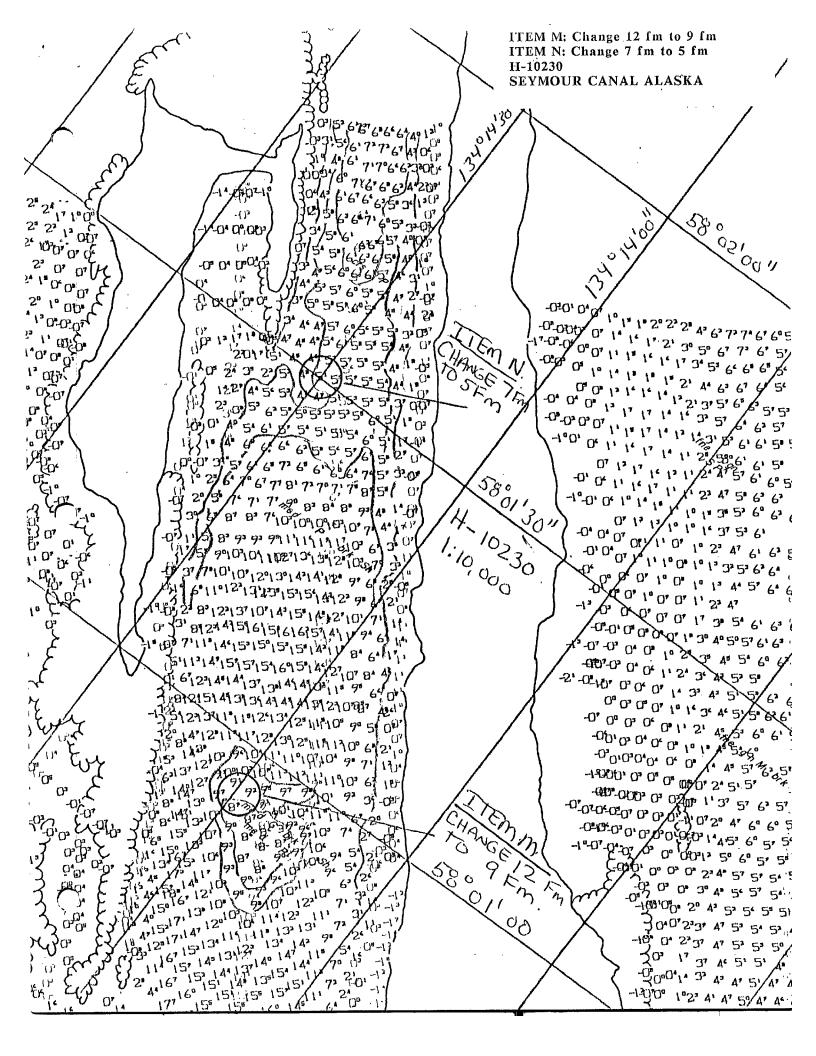
Us pe ar aur propose offe UNU 9 6 7 0 - 0 - 10/ ITEM B: Change 1 1/2 fm to 1/2 fm ITEM C: Change 6 fm to 3 fm -H-10228 SEYMOUR CANAL ALASKA 1.50.51.50.51.50.11 g. 5, 5, 5, 5, 5, 5, 5, 1. S. 5555 भीगा हर हर हर हर हर हर हर हो भी 13 13 13 13 13 Ofu fat Das Os 24700 (1. 12 12 12 1. 10 1e 12 14 So Se St. So St. 30 So 16.52.21 11/0 De 10 6. 5. 5/ 1111 e2 e2 e2 12 12 e2 | 50 50 50 50 50 11 12 11 1, 10 1/50 51 53 53 2 1. 20 51 52 58 10 00 be 0000 11 Si S2 S2 S1 S. S. S. S. J. J. J. 4. 32 35 3º 3c 130 37 4140 32. 30 41 4. 50 20 21 20 21 25 35 31 31 31 45 53/ 20 21 20 21 35 31 31 31 45 53/ 13/303 Fallo as as as as as as 12 8502 W. 4/10, H20, 13 15 11 10 00 03 4 505/ 3 30 30 41 A Sh 1515151 11 18. 50 19 23 35 36 41 45 A क्षेत्र रा । 33 30 30 40 41 4 5.5.5.5.5.5.5.5.6. 37233 30 30 41 3. 3. 5. 5. 5.0. 12. 20 20 G 33 B 30 30 A1 44 50 51 50 57 50 50 61 61 61 10 40 4. 4. 3. 3. 3. 4. 4. 5. 4. 7. 7. 7. 1) B. 41 gr 50 50 00,000 00 00 do Or 2/11 10 50 50 53 42 63 51 61 50 13 4 4 53 5 61 63 70 73 8 92 93 83 74 43 40 40 53 5 61 60 71 70 81 92 93 83 74 61 60 73 00 07 81 80 74 81 03 Rr 81 87 1 60 71 50 41 28 DOS ODOS OS OS OS OS OS OS OS 43 4. 50 51 60647 71 B3 91 158'00 , 51 83 83 10-16 8186 8.23 80 843 4. 4851 50 40 50 Je Jo Jo 42 عدا علواد او دو ۱۵۱۰ اردو الا مو دو دد در در ن 41 45 45 45 1 60 60 70 81 80 92 97 Pil On 03/12/03 30 31 10100 91 25. 50 70 70 1+ 10 12 80 93 83 57057130 10110 90 8, 8, 10, 13 61 70 B1 81 Be 15 15 le primie 8 7, 70 90 1111 80 80 Os Os Os Os Os Os Os 50 70 75 60 60 11/11/10/10% 21 64.27 Pa. 13 7. 7. 62 71 73 5,51 60 80 9, SED! to, 10, 19 12 50 60 51 1052 5010 6. 60 60 56 61 606, 3, 30 4152 68 3.34 2.5.5.3 o. 8. 10 50 60 5, 20 30 30 30 41 20 6061 koso 43 5153 50 61 3,33,30 5, 30 Ja 5.∞ 30 35 W. 30 34 J3 42 3. 5. 45 Bago 30 31 30 30 3 S. 33 1. 33 31 31 34 37 30 13 15 11 0.059 00-00 po 12 00 13 2,31





	1410230	T) ITEM H: Add 2 fm
		FI-10230
o Ita	DEN A 1:10'000	SZIMOOK CANAL ALASKA
安全中央中央 海南中省	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	9 3 8 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration NATIONAL OCEAN SERVICE

NOAA Ship RAINIER S-221 1801 Fairview Ave East Seattle, Wa 98102

November 25, 1986

Commanding Officer Seventeenth Coast Guard District P.O. Box 3-5000 Juneau, Alaska 99802

RE: Notice to Mariners

FILE COPY

Dear Sir:

It is requested that the following be published in the Local Notice to Mariners for the Seventeenth District:

The NOAA Ship RAINIER of the National Ocean Service has completed 1986 charting operations in Seymour Canal. The following is a list of dangers to navigation that represent changes and additions to chart 17300 in the area north of Windfall Harbor into King Salmon Bay. All depths have been reduced to Mean Lower Low Water using predicted tides. Locations are given in geographic positions as well as ranges and bearings from the charted position of Grand Island Light in Stephens Passage.

NORTHWEST OF SWAN ISLAND

1TEM	<u>FEATURE</u>	GEOGRAPHIC POSITION	GRAND ISLAN BEARING FROM		
A	Change 2 1/4 fm to 1 fm depth	57 ⁰ 57.5'N 134 ⁰ 17.4'W	215 ^O T	10.4 nm	H-10228
В	Change 6 fm depth to 3 fm	57 ⁰ 57.8'N 134 ⁰ 17.6'W	216 ⁰ T	10.1 nm	H-10228
C	Change 1 1/2 fm depth to 1/2 fm	57 ⁰ 58.4'N 134 ⁰ 18.6'W	220 ^O T	10.0 nm	14-102 28



FILE COPY

NORTH OF SWAN ISLAND

<u>ITEM</u>	<u>FEATURE</u>	GEOGRAPHIC POSITION	GRAND ISLAN BEARING FROM		<u>M</u>
D	Add 1 fm depth	57 ⁰ 57.6'N 134 ⁰ 16.1'W	210 ⁰ T	9.8 nm	H-10728
E	RK Add 4 fm depth	57°57.8'N 134° 13.0 'W	203 ⁰ T	9.0 nm	
F	Add 1 fm depth	57 ⁰ 56.8'N 134 ⁰ 12.2'W	199 ⁰ T		117 RK M H-10204 (1985)
	EA	ST OF SWAN IS	LAND		
G · .	Add 5 fm depth	57 ⁰ 56.8'N 134 ⁰ 10. 1'W	193 ⁰ T	9.4 nm	
		KING SALMON I	BAY		
Н	RK Add 2 f m dept h	57 ⁰ 58.3'N 134 ⁰ 12.6'W.	201 ⁰ T	8.3 nm	
I	Rk Add 2 fm dopt h	57°58.8'N 134°12.6'W	204 ^O T	8.0 nm	·
J	3 RK Add 2 fm depth	57 ⁰ 59.0'N 134 ⁰ 12.9'W	206 ⁰ T	7.8 nm	
K	RK Add 1 fm depth	57 ⁰ 59.2'N 134 ⁰ 11.7'W	203 ⁰ T	7.6 nm	
L	RK Add 4 £ m dept h	57°59.2'N 134°12.9'W	207 ⁰ T	7.5 nm	
M	Change 14 fm to 9-fm depth	58 ⁰ 00.9 N 134 ⁰ 14.0 W	219 ⁰ T	6.5 nm	
N	Change 7 fm to 5.9fm depth	58°01.5'N 134°14.8'W	225 ^O T	6.4 nm	

This is advance information subject to office review.

Sincerely,

Carl W. Fisher
Captain, NOAA
Commanding Officer, NOAA Ship RAINIER

Enclosure cc: DMAHTC

APPROVAL SHEET

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY

RA-10-2-86 (H-10230)

Standard procedures were followed in accordance with the Hydrographic Manual, Hydrographic Survey Guidelines, and PMC OPORDERS in producing this survey. The data were examined daily during the acquistion and processing phases of the survey.

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

Carl W. Fisher
Captain, NOAA
Commanding Officer

NOAA FORM 76-155 U.S. DEPARTMENT OF COMMERCE SURVEY NUMBER NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION **GEOGRAPHIC NAMES** H-10230 P.O. GUIDE OR MAP E ON LOCAL MAPS G RAMO MCNALLY U.S. LIGHT LIST DE FROM FORMATION Marite tight ALASKA, SEYMOUR CANAL
FOOL INLET & KING SALMON BAY
TO VICINITY OF SWAN ISLAND CON U.S. MAPS ALASKA (TITLE) 1 2 ADMIRALTY ISLAND Х Х 01163 01163 3 Х FOOL INLET 01163 GLASS PENINSULA Х Х KING SALMON BAY Х Х 01163 5 SEYMOUR CANAL Х 01163 6 Х SWAN ISLAND 01164 7 Х Χ 8 9 10 11 12 13 14 15 16 17 Approved: 18 19 20 Chief Georgether - NICC2x 21 APR 2 0 1987 22 23 24 25

NOAA FORM 76-155 SUPERSEDES C&GS 197

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

DATE: March 16, 1987

Marine Center: Pacific

OPR: 0179

Hydrographic Sheet: H-10230

Locality: South Portion King Salmon Bay, Seymour Canal, Alaska

Time Period: October 18 - November 4, 1986

Tide Station Used: 945-2162 South End, Fool Inlet, AK

-945-2164 North End, Tiedman Island, AK *

945-2169 South Point, AK

Plane of Reference (Mean Lower Low Water): 945-2162 = 6.27 Ft.

-945-2164 - 18.43 Ft.

Height of Mean High Water Above Plane of Reference:

945-2162 = 15.2 Ft.

-945-2164 = 14.6 Ft.

Remarks: Recommended Zoning:

945-2169 = 14.4 Ft.

- * -1. West of a line formed by 2 points located at -zone direct on 945 2164.
 - 2. East and North of the previous line to latitude $58^{\circ}01.0$ ' zone direct on 945-2169.
 - . 3. North of latitude $58^{\circ}01.0$ ' to $58^{\circ}02.3$ ' zone on 945-2169 and apply a X1.03 range ratio to all heights.

Chief, Tidal Datum Quali Assurance Section

4. In Fool Inlet zone direct on 945-2162.

* = FROM PHONE CONV. W/JOE MULLIN 3-23-87.



UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration

NATIONAL OCEAN SERVICE
Pacific Marine Center
1801 Fairview Avenue Fast
Seattle, Washington 98102-3767

MAR 2 1987

Start Server and Color and Server and Color and Server and Server

N/MOP21x2/MM

TO:

Commanding Officer NOAA Ship RAINIER

FROM:

N/MOP - Robert L. Sandquist

SUBJECT:

Preprocessing Examination of:

H-10228 Alaska, Seymour Canal,

North and West of Swan Island

H-10230 Alaska, Seymour Canal,

South Portion of King Salmon Bay

Hydrographic surveys H-10228 and H-10230 have been reviewed in accordance with Hydrographic Survey Guideline No. 15, and the Preprocessing Examination Critique for these surveys is attached. Surveys H-10228 and H-10230 are accepted for Pacific Marine Center processing.

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

Attachment

cc: N/MOP2x1

N/MOP21x2 N/MOP211 N/CG2





UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration

NATIONAL OCEAN SERVICE

Pacific Marine Center Nautical Chart Branch 7600 Sand Point Way NE Seattle, Washington 98115-0070

February 25, 1987

N/MOP21x2/MM

TO:

N/MOP - Robert L. Sandquist

(...

FROM:

N/MOP 21 - Thomas W. Richards

RA-10-2-86

Subject: Preprocessing Examination for H-10228 and H-10230

I. SURVEY INFORMATION

A. Field No. RA-10-1-86

Registry No. H-10228

H-10230

B. State:

Alaska

General Locality:

Seymour Canal

Sublocality:

North and West of Swan Island South Portion of King Salmon Bay

C. Project Instructions:

OPR--0179-RA--86

Original dated:

March 14, 1985

Change No. 1 dated:

March 21, 1985

Change No. 2 dated:

September 27, 1985

Change No. 3 dated:

January 17, 1986

Change No. 4 dated:

June 24, 1986

Change No. 5 dated:

September 10, 1986

D. Dates:

<u>H-10228</u> <u>H-10230</u>

Field Work Commenced: Field Work Completed:

Oct. 8, 1986 Nov. 4, 1986 Oct. 18, 1986 Nov. 4, 1986

plus 6 weeks:

Dec. 16, 1986

Dec. 16, 1986

Data received at Marine Center:

Dec. 23, 1986

Jan. 13, 1987

plus 2 months:

Feb. 23, 1987

Mar. 13, 1987

Examination critique transmitted to field

March 2, 1987

Target for completion of Marine Center processing

September 2, 1987



II. PREPROCESSING EXAMINATION CRITIQUE

£ ...

Hydrographic surveys H-10228 and H-10230 were performed by personnel of the NOAA Ship RAINIER, CAPT Carl W. Fisher, Commanding Officer. The following personnel supervised portions of the data acquisition: LCDR Perugini, LT White, ENS Brown, ENS Damm, ENS Poston, ENS O'Mara, ENS Hartzell and ENS Fellows.

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

A. Danger to Navigation Report:

There were fourteen dangers to navigation reported by RAINIER surveys H-10228 and H-10230. The Danger to Navigation report is included in both Descriptive Reports.

One additional danger to navigation for H-10230 was found during the preprocessing examination. A Danger to Navigation report was sent to the Seventeenth Coast Guard District for inclusion in the Local Notice to Mariners (see Attachment A).

B. Compliance with Instructions:

Surveys H-10228 and H-10230 generally comply with the Project Instructions and Changes 1-5.

C. Final Field Sheets:

The depth curves for H-10230 are not continuous between north and south final field sheets (see Attachment B). Careful sheet alignment and drafting of depth curves will allow for smooth curves to be drawn from one sheet to another.

An area between the north and south final field sheets for H-10230 was not investigated (see Attachment C). No significant features within this area appear on the chart, shoreline manuscript or prior surveys.

Some peaks on the echograms from H-10230 were not inserted into the sounding records and were not further investigated for least depth determinations (see Attachments D,E). All echograms should be carefully inspected to ensure each important sounding has been properly scaled and recorded [HM 4.9.8.1]. Least depths over pinnacles should be carefully determined [HM 1.4.1, 4.5.9].

Excessive gain in the high frequency mode was used on occasion during data acquisition on H-10230 (see Attachment F). High and low frequency settings should be adjusted to ensure adequate bottom delineation [DSF-6000N Provisional Instructions].

D. Descriptive Report:

Section D (Sounding Equipment and Corrections to Echo Soundings) of the Descriptive Report for H-10230 states two types of echo sounders were used during survey operations although the table included within this section does not show which vessel used the DE-719B Raytheon echo sounder. The type and serial number of all echo sounding equipment should be described in Section D of the Descriptive Report [HM 5.3.4.D; PMC OPORDER, Appendix Q, Attachment B, Section D.1].

Section D of the Descriptive Report for H-10228 states that attempts were made to operate DSF-6000N echo sounder using auto gain controls as specified by the Provisional Operating Manual. No further discussion of gain settings followed. This information, however, is included in the 1986 Corrections to Echo Soundings Report. Any faults with the equipment that affect the accuracy of soundings and how they were resolved should be included in Section D [HM 5.3.4.D; PMC OPORDER, Appendix Q, Attachment B, Section D.3].

Section D of the Descriptive Report for H-10228 refers to Appendix IV of the report when discussing calibration of the Plessy/Grundy Velocity Sensor. Appendix IV contains no information regarding the calibration of the sensor.

Section G of both Descriptive Reports does not identify the Wild T2 theodolites used during the surveys. Control equipment, including sextants and theodolites, should be identified by manufacturer, model and serial number [PMC OPORDER, Appendix Q, Attachment B, Section G.3].

Section G of both Descriptive Reports refers to Appendix V of the reports for locations of shore transponders and the days used. Appendix V contains only electronic corrections abstracts and abstracts of baseline calibrations.

Section J of the Descriptive Report for H-10230 states the survey junctions with H-10228 and H-10201. Survey H-10230 junctions with H-10228 and H-10204.

Section L of the Descriptive Report for H-10228 states three charted depths do not accurately reflect the bottom topography of the area; the survey depths in these areas were included in the Dangers to Navigation report. This section of the report should also include the position numbers associated with the applicable survey depths [PMC OPORDER, Appendix Q, Section L.2].

F. Sounding Volumes and/or Raw Data Printouts:

Several entries in the sounding volumes for H-10228 were corrected by using "white out" to cover errors. Some entries for H-10230 were corrected by writing over errors. Corrections should be made by crossing out erroneous entries and making corrections above or to one side [HM 4.8.3.1].

Shore stations and type of sounding equipment used to collect bottom samples (H-10228, DN 289) were not identified in the sounding volumes. Other stamp information in the sounding volumes for H-10230 was not completed. Information regarding personnel, instruments used, weather conditions, etc. should be entered at the beginning of each work day [HM 4.8.3.2, 4.8.3.3].

K. Special and/or Ancillary Reports:

The Corrections to Echo Soundings Report and the Electronic Control Report were briefly examined during the preprocessing examination.

Section A of the Correction to Echo Soundings Report states all soundings were corrected for transducer depth, settlement and squat, sound velocity and tides. Section C of the report (and Section D of both Descriptive Reports) states settlement and squat correctors were determined but not applied to soundings on the final field sheets. Better wording for Section A would have been "Corrections were determined for transducer ...; corrections for settlement and squat were not applied to the final field sheets".

L. Automated Data Check:

All comments regarding automated data check refer to H-10230. One corrector tape was labelled backwards, causing parity errors during spooling of the survey.

Fifty percent of data designated "N.S.P." in the Abstracts of Positions were not annotated "N.S.P." on the corrector tapes. The Abstract of Positions was used during spooling to denote all data designated "N.S.P.".

Five errors on data tapes (resulting from incorrect time sequence, incorrect control number designated on one master tape, and no common time between first position on master/corrector tape) caused minor problems during spooling of the survey.

M. General Comments:

Particular attention should be made when writing the Descriptive Report to ensure the details within each section of the report accurately reflect the final field sheet data and data printouts.

Careful scanning of echograms should ensure all significant features within the survey area have been investigated. This is particularly important if final field sheets are immediately copied and forwarded to Rockville by the Nautical Chart Branch for application to existing charts.

N. Survey Acceptance:

The preprocessing examination of H-10228 and H-10230 were conducted under the time constraints of HSG 15. All comments contained herein are based on a spot check of the data, and it is possible that some problem areas have not been addressed.

(***

Except for the items noted in the critique, H-10228 and H-10230 are in compliance with the Project Instructions. I recommend that H-10228 and H-10230 be accepted for Nautical Chart Branch processing.

Prepared by:

Harene Le 0350la.

Marlene Mozgala

ATTACHMENT A

Tagl Physics Avenue 1: 6 George, Parlivion 98160-3767

FEB 1 7 1987 N/MOP21x2/100

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

Dear Sir:

During office review of hydrographic survey H-10230, South Portion of King Salmon Bay, Alaska, the following change affecting chart 17300 (NAD27 datum) was noted. Questions concerning the survey may be directed to Cdr. Thomas W. Richards, Chief, Nautical Chart Branch, telephone (206) 526-6835.

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

"An uncharted shoal covered by 8.5 fathers (MJW based on predicted tides) is at latitude 58°00'54"N, longitude 134°13'51"W."

Sincerely,

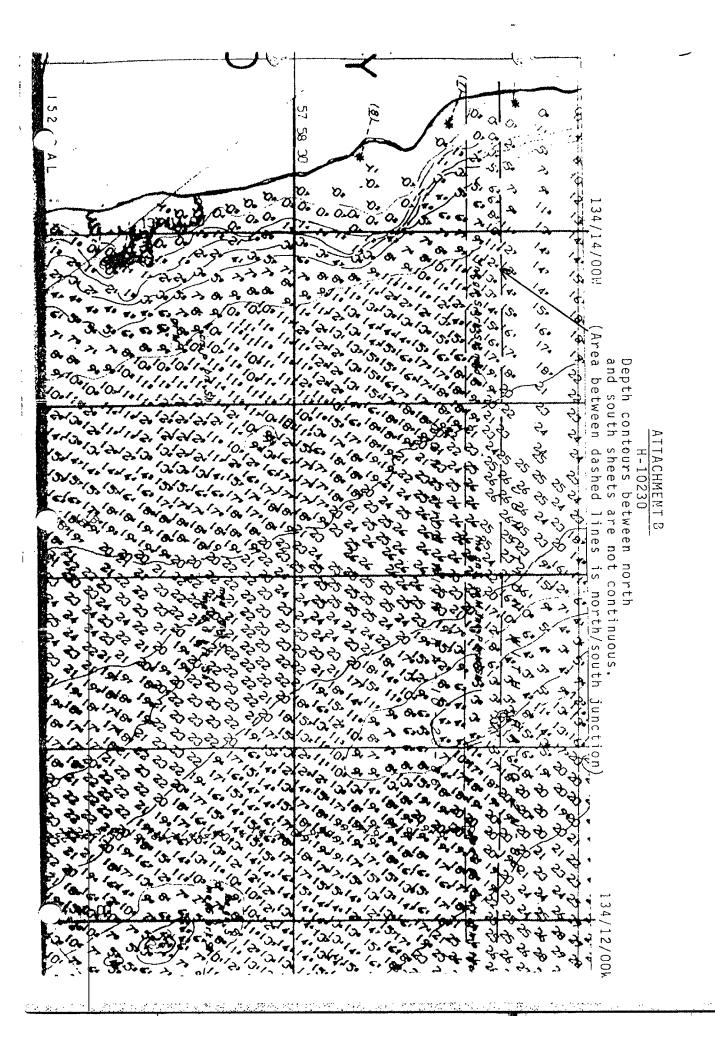
Pobert L. Sandquist Rear Admiral, NOVA Director, Pacific Marine Center

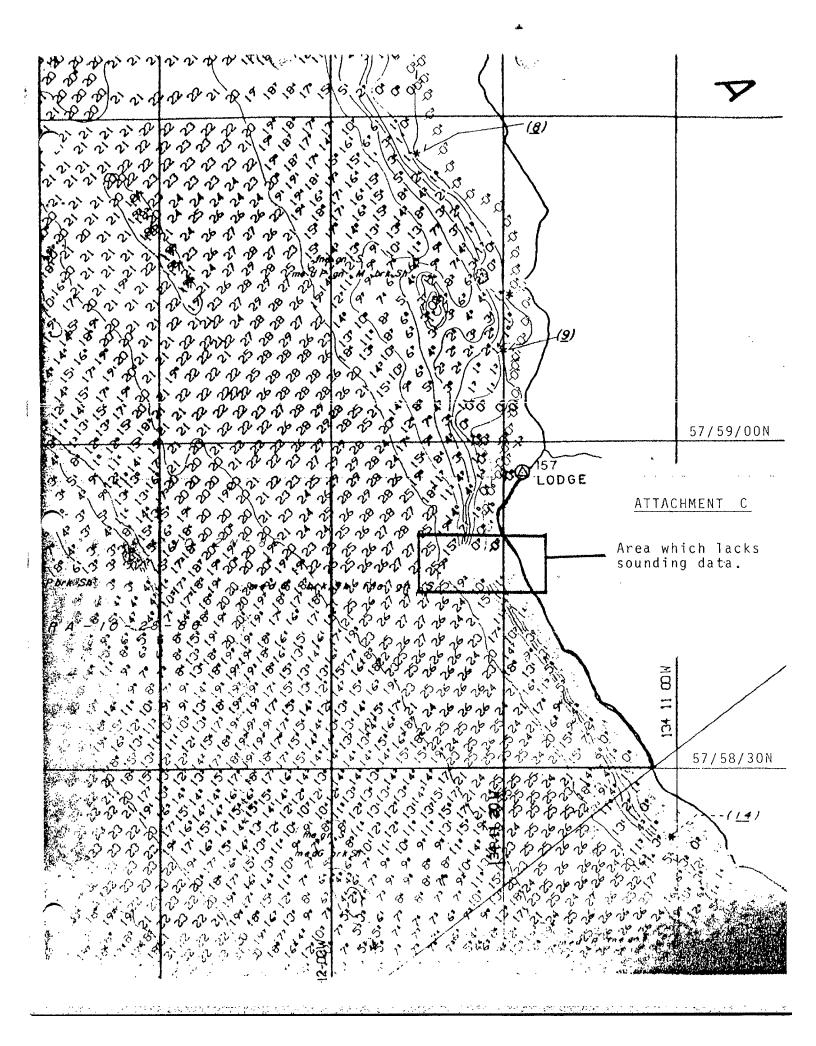
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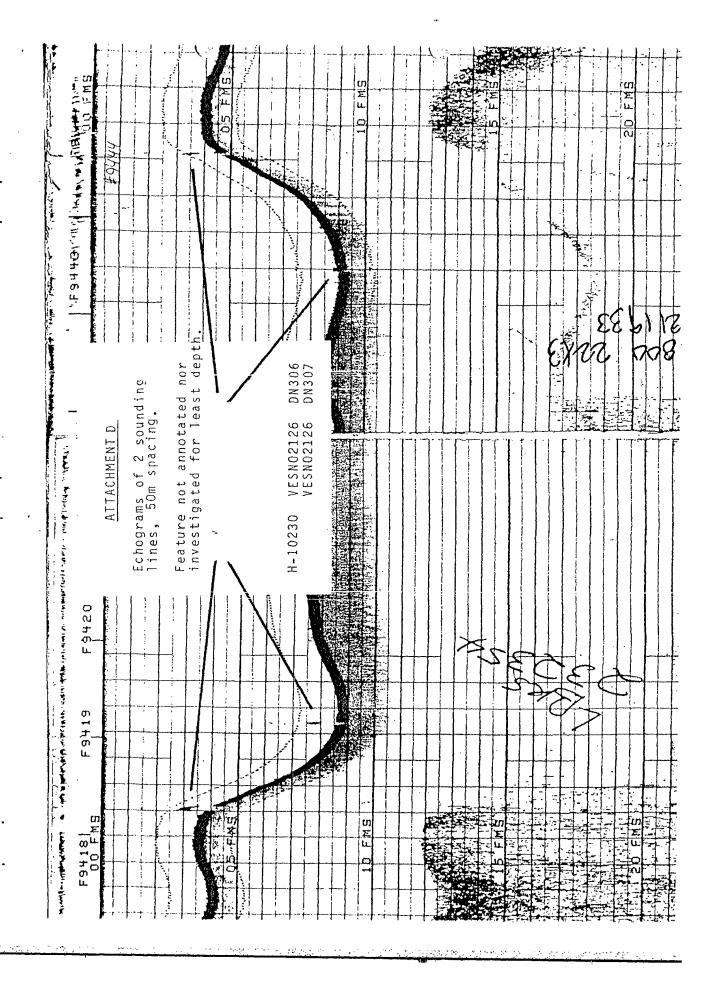
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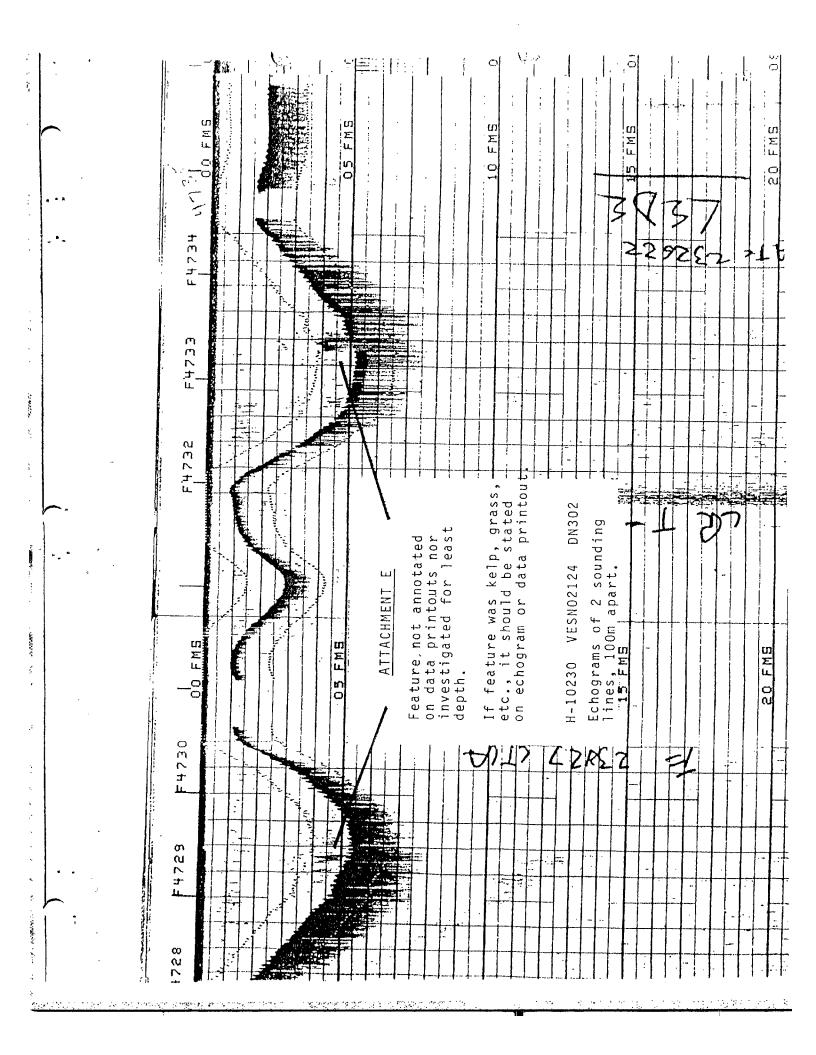
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N/MOPx	Petersen				

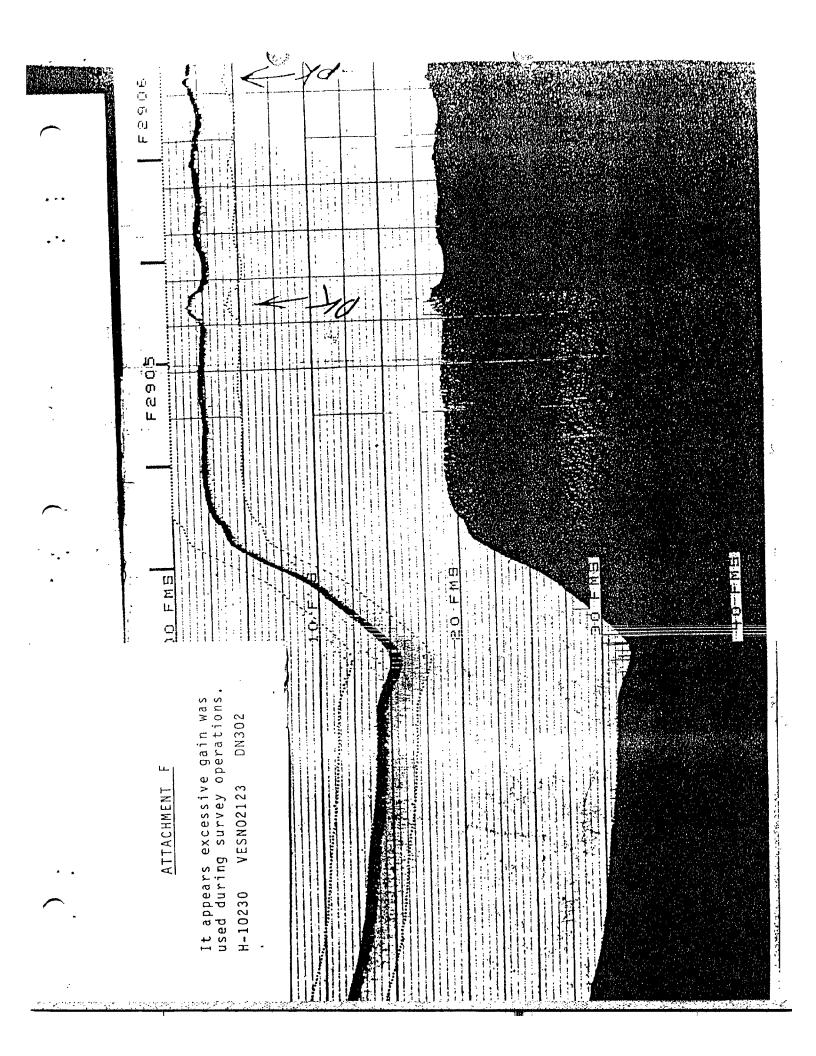
NOAA FORM 61-2











NOAA FORM 77	'-27(H)		U.S. DEPARTMEN	NT OF COMMERCE	REGISTRY NU	MBER
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SPECIAL REF	PORTS (List):					
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PACIFIC MARINE CENTER EVALUATION REPORT H-10230

1. INTRODUCTION

H-10230 was accomplished by the NOAA Ship RAINIER in accordance with the following project instructions:

OPR-0179-RA-86, dated March 14, 1985

Change Number 1, dated March 21, 1985 Change Number 2, dated September 27, 1985 Change Number 3, dated January 17, 1986 Change Number 4, dated June 24, 1986 Change Number 5, dated September 10, 1986

H-10230 is a basic hydrographic survey of the northern portion of Seymour Canal, Alaska, from latitude 57°56'45"N to latitude 58°02'00"N; and the southern section of Fool Inlet, from latitude 58°00'00"N to 58°02'00"N. H-10230 covers the area northeast of Swan Island north along the eastern shore of Admiralty Island to the entrance of King Salmon Bay and along the western shore of Glass Peninsula. The coast is comprised mostly of ledges, reefs and isolated off-lying rocks with a few stretches of sand and gravel beaches. The canal is deep and the bottom consists of mud with some hard and rocky areas. Both sides of the canal are generally steep with depths ranging from 0 to 28 fathoms.

Predicted tides for Juneau, Alaska were used during field processing. Tide correctors used for the final reduction of soundings are based on approved hourly heights zoned from South End (945-2162) and South Point (945-2169) gages.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The field values for electronic control correctors have been revised during office processing to incorporate the average of the beginning and ending baseline calibrations. 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.

The following features have been added to the smooth sheet from the field sheet without supporting positional information:

<u>Feature</u>	<u> Latitude North</u>	Longitude West
reef	57°59'17"	134°14'41"
reef	57°59'15"	134°11 ' 34"
ledge	58°00'09"	134°10'24"

2. CONTROL AND SHORELINE

Horizontal control and hydrographic 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-86.

Positions of horizontal control stations used during hydrography are field values based on the NA 1927 Datum. The computation of positions accomplished during office processing utilized these same values. The smooth sheet and accompanying overlays have been annotated with NA 1983 Datum adjustment ticks based on values determined by N/CG121. Geographic positions based on the NA 1983 Datum may be plotted on the smooth sheet utilizing the NA 1927 Datum projection by applying the following corrections:

Latitude: 1.195 seconds (37.0 meters)
Longitude: -6.307 seconds (-103.4 meters)

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

Applicable shoreline manuscripts are TP-01163 and TP-01164, compiled at the scale of 1:20,000 and photographically enlarged to 1:10,000. These registered Class III maps originate from photography dated July 1983.

Two rocks at latitude 58°00'30"N, longitude 134°12'58"W and latitude 58°00'33"N, longitude 134°14'22"W, originating from the shoreline manuscript, were transferred to the smooth sheet in lieu of the survey positioned rocks because of weak positioning; signal strengths were below the minimum acceptable level.

HYDROGRAPHY

Hydrography within the limits of the sheet is adequate to:

- a. Delineate the bottom configuration, determine least depths, and to draw the standard depth curves.
- b. Reveal that there are no significant discrepancies or anomalies requiring further investigation.
- c. Show that the survey had been properly controlled and soundings are plotted correctly.

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 No. 3, the Hydrographic Survey Guidelines, and the PMC OPORDER, except as noted in the attached Preprocessing Examination Report, dated March 2, 1987.

5. JUNCTIONS

H-10230 junctions with the following surveys:

<u>Area</u>	Scale	Year	Survey
south west	1:10,000 1:10,000	1985 1986	н-10204 н-10228
north	1:10,000	1987	H-10239

Soundings were transferred from H-10204 (1985) and H-10228 (1986) to justify depth curves and to portray shoaler information.

The junction with H-10228 has been adequately effected.

H-10204 has been processed and submitted to headquarters for charting. A junction comparison was made using a copy. Soundings are in agreement. Depth curves should be adjusted to conform with those on this survey.

A junction comparison was accomplished with H-10239 (1987) final field sheet and this survey. H-10239 was recently forwarded from the field for office processing and approved tides were not available at the time of comparison. No significant discrepancies were noted in the junction area of the two surveys.

6. COMPARISON WITH PRIOR SURVEYS

H-2001 (1889) 1:80,000 BP-124984 (1983) 1:20,000

H-2001 provides the basic survey coverage of the entire area of this survey. Comparison with prior survey H-2001 is satisfactory, taking into consideration the differences in the scale of the survey including datum shifts, the method of surveying used, the relative steepness of bottom profiles along the coast, where a slight positional displacement in soundings could result in significant depth changes, and the geophysical changes that have occurred in the area since 1889. Soundings from the present survey appear to be generally shoaler than those of the prior survey. The present survey was accomplished with more accurate positioning and determination of critical depths through closer line spacing, supplemented by leadline soundings and dive investigations. It also provides adequate position and height determination of features, especially rocks, which was not accomplished during the 1889 survey.

H-10230 was also compared with the 1983 reconnaissance survey of Seymour Canal by the NOAA Ship DAVIDSON (DA 20-3-83), BP124984. This survey consists of lines of reconnaissance hydrography throughout the area covered by H-10230. Soundings generally agree within one fathom.

There are no pre-survey review/AWOIS items originating from these prior surveys applicable to this survey.

H-10230 is adequate to supersede the prior surveys within their common areas.

7. COMPARISON WITH CHART

Chart 17300, 24th Edition, dated June 15, 1985; scale 1:209,978

a. <u>Hydrography</u> - Most charted information originates from the prior surveys discussed in Section 6 of this report. Other soundings and charted features originate from miscellaneous sources. For more details see section L of the hydrographer's report.

There are no pre-survey review/AWOIS items originating from miscellaneous sources applicable to this survey.

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

H-10230 is adequate to supersede charted hydrography within the common area.

The hydrographer submitted one danger to navigation report to the 17th Coast Guard District; a copy is attached.

One additional danger to navigation was identified during office processing; see attached Preprocessing Examination dated February 17, 1987.

- b. Controlling Depths There are no channels with controlling depths within the limits of this survey.
- c. Aids to Navigation There are no fixed or floating aids within the limits of this survey.

8. COMPLIANCE WITH INSTRUCTIONS

 $\mbox{H-10230}$ adequately complies with the project instructions noted in section 1 of this report.

9. ADDITIONAL FIELD WORK

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

Respectfully submitted,

Charles R. Davies

Cartographer

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

Dennis Hill

Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10230

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.

Chief, Nautical Chart Branch (Date)

CLEARANCE:

N/MOP2:LWMordock

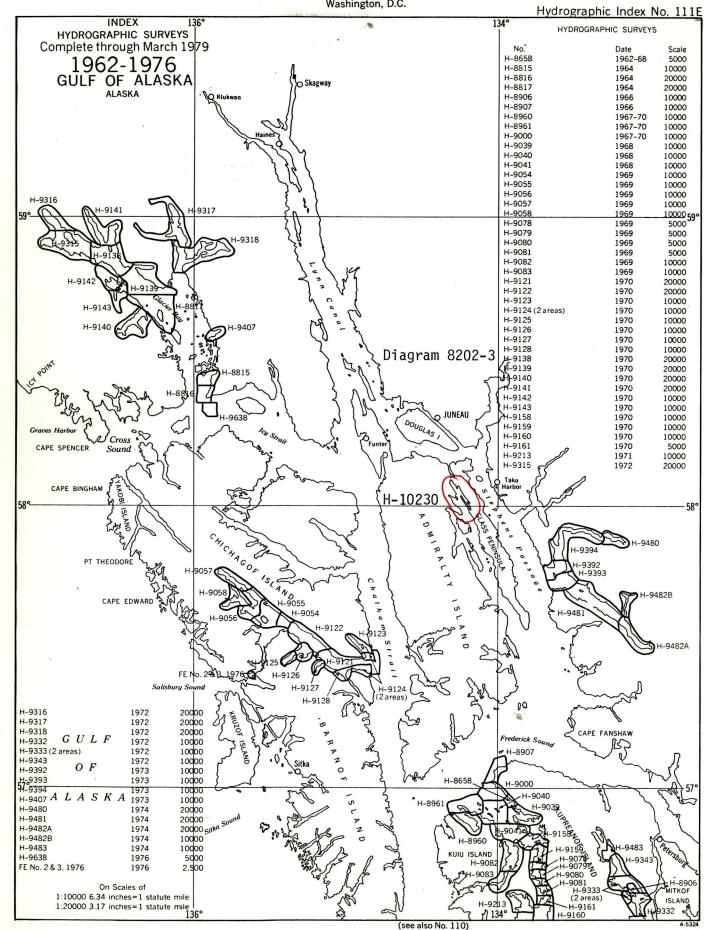
SIGNATURE AND DATE:

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.

Director, Pacific Marine Center (Date)

DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration National Ocean Survey

Washington, D.C.



MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10230

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.

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO.

H-10230

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.

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