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-20-1-90

Registery No. H-10334

LOCALITY

State Alaska

General Locality Icy Strait

Sublocality Point Adolphus to Mud Bay

1990

CHIEF OF PARTY
CAPT J.C. Albright

LIBRARY & ARCHIVES

DATE July 16, 1991

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

NOAA FORM 77-28
(11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO. H-10334

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 20-1-90

State: Alaska

General locality: Icy Strait

Locality: Point Adolphus to Mud Bay

Scale: 1:20,000 Date of survey: April 2, 1990 - May 16, 1990

Instructions dated: February 22, 1990 Project No.: OPR-0186-RA

Vessel: NOAA Ship RAINIER (2120), (2123), (2124), (2125), (2126)

Chief of party: CAPT J.C. Albright

Surveyed by: LT Cole, LTJG Glang, LTJG Haines, ENS Schoonover, ENS Muench, ENS Weber, ENS Ward

Soundings taken by echo sounder, ~~hand lead, pole~~: DSF-6000N; Pneumatic depth gage

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

Verification by: ~~Protracted by~~ Leo Deotato Automated plot by: PHS Xynetics Plotter

Evaluation by: ~~Verification by~~ C.R. Davies

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

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

AWOIS / SURF MSD 7/24/91

SC 1-30-97

KWW 7-22-91

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

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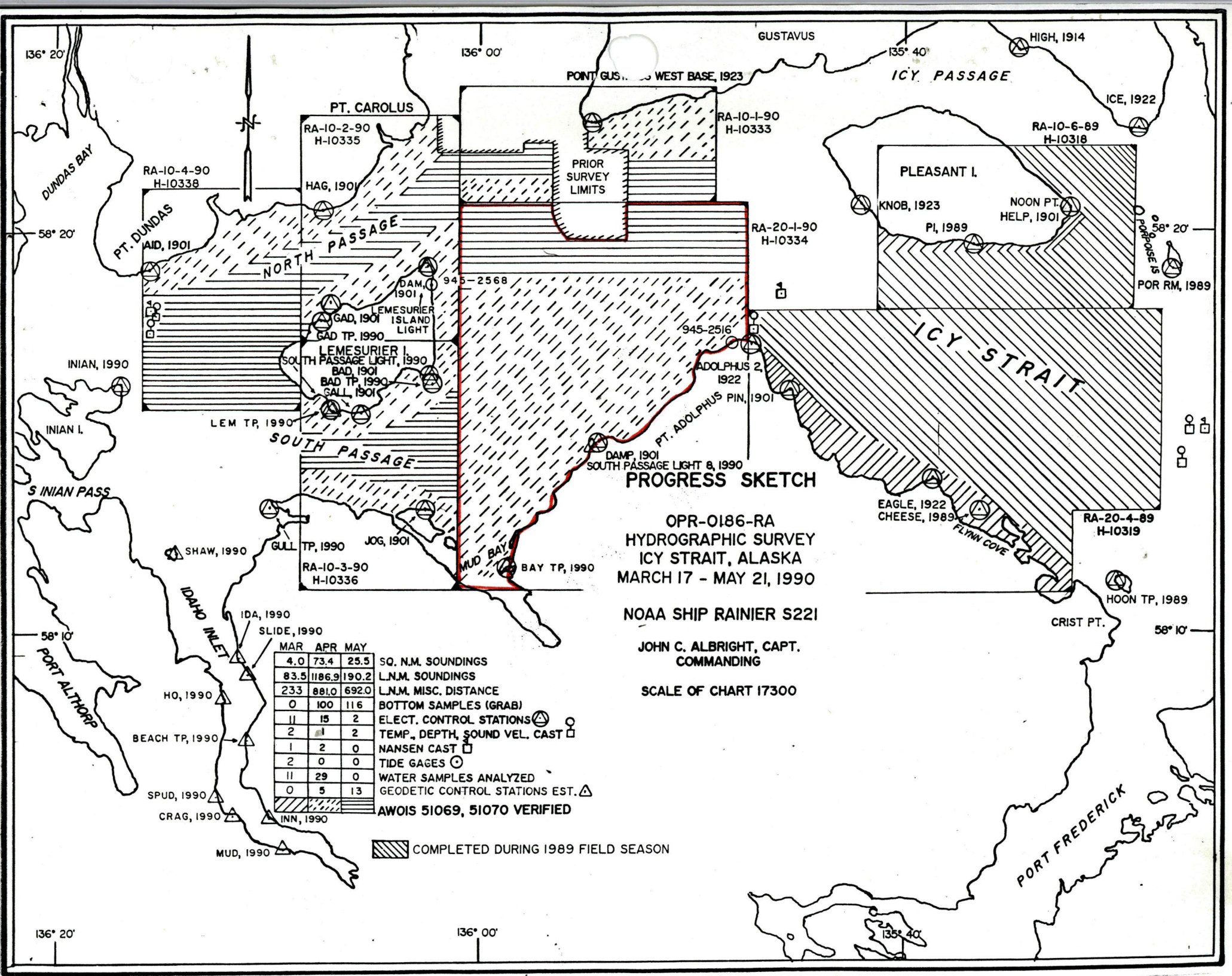
PROGRESS SKETCH
OPR-0186-RA
HYDROGRAPHIC SURVEY
ICY STRAIT, ALASKA
MARCH 17 - MAY 21, 1990
NOAA SHIP RAINIER S221
JOHN C. ALBRIGHT, CAPT.
COMMANDING
SCALE OF CHART 17300
MAR APR MAY
4.0 73.4 25.5 SQ. N.M. SOUNDINGS
83.5 1186.9 190.2 L.N.M. SOUNDINGS
233 881.0 692.0 L.N.M. MISC. DISTANCE
0 100 116 BOTTOM SAMPLES (GRAB)
11 15 2 ELECT. CONTROL STATIONS
2 1 2 TEMP., DEPTH, SOUND VEL. CAST
1 2 0 NANSEN CAST
2 0 0 TIDE GAGES
11 29 0 WATER SAMPLES ANALYZED
0 5 13 GEODETIC CONTROL STATIONS EST.
AWOIS 51069, 51070 VERIFIED
COMPLETED DURING 1989 FIELD SEASON
ICY STRAIT
ICY PASSAGE
NORTH PASSAGE
SOUTH PASSAGE
PT. CAROLUS
PT. DUNDAS
DUNDAS BAY
PLEASANT I.
LEMESURIER I.
PRIOR SURVEY LIMITS
MUD BAY
PT. ADOLPHUS
FLYNN COVE
PORPOISE IS
S INIAN PASS
INIAN I.
IDAHO INLET
PORT ALTHORP
PORT FREDERICK
GUSTAVUS
CRIST PT.
136° 20'
136° 00'
135° 40'
58° 20'
58° 10'
RA-10-2-90 H-10335
RA-10-4-90 H-10338
RA-10-1-90 H-10333
RA-10-6-89 H-10318
RA-20-1-90 H-10334
RA-20-4-89 H-10319
RA-10-3-90 H-10336
HIGH, 1914
ICE, 1922
KNOB, 1923
NOON PT. HELP, 1901
PI, 1989
POR RM, 1989
HAG, 1901
AID, 1901
DAM, 1901
GAD, 1901
GAD TP. 1990
LEMESURIER ISLAND LIGHT
SOUTH PASSAGE LIGHT, 1990
BAD, 1901
BAD TP, 1990
GALL, 1901
LEM TP, 1990
INIAN, 1990
945-2568
945-2516
ADOLPHUS 2, 1922
PIN, 1901
DAMP, 1901
SOUTH PASSAGE LIGHT 8, 1990
EAGLE, 1922
CHEESE, 1989
HOON TP, 1989
GULL TP, 1990
JOG, 1901
BAY TP, 1990
SHAW, 1990
IDA, 1990
SLIDE, 1990
HO, 1990
BEACH TP, 1990
SPUD, 1990
CRAG, 1990
INN, 1990
MUD, 1990

Descriptive Report to Accompany Hydrographic Survey H-10334

Field Number RA-20-1-90
Scale 1:20,000
April-May 1990

NOAA Ship RAINIER
Chief of Party: Captain John C. Albright, NOAA

A. PROJECT

This basic hydrographic survey was completed in Icy Strait, southeast Alaska, as specified by Project Instructions OPR-O186-RA dated February 22, 1990. This survey is designated Sheet M on the revised sheet layout dated February 16, 1988.

This survey is one in a series that will provide contemporary hydrographic data for updating existing nautical charts and planned larger scale chart coverage of the Icy Strait area. It responds to the concerns of federal, state, and local governments in regard to navigational safety due to an increase in fishing and tour vessels operating in the vicinity. Requests for updated surveys have also come from the Southeastern Alaska Pilots' Association and NOAA vessels, which have cited inaccurately charted data and numerous rocks and shoals.

This survey was completed using procedures outlined in the January 1989 edition of the Field Procedures Manual (FPM) for Hydrographic Surveying.

B. AREA SURVEYED

The survey is located in southeast Alaska, 45 NM west of Juneau, on the southern shore of Icy Strait, and encompasses the area from Point Adolphus westward to Mud Bay. The north-south boundaries are 58°20'40"N and Chichagof Island, respectively. The eastern limit is 135°47'30"W. The western limit is 136°01'00"W. Survey data was acquired from April 2 through May 16, 1990 (DN 092-136).

The topography along the southern portion of Icy Strait consists of densely wooded foothills ending at a ledge and cobble shoreline. The shore along Mud Bay to the east is composed of cobble beaches. Mud Bay River flows into Mud Bay and forms a delta along the southern shore.

The bathymetry within the survey area is characterized by a central basin and two large shoal areas along the northern boundary. The shoals are of consistent depths, forming a plateau feature on top, and gradually joining together. The basin runs the entire east-west length of the survey, steeply sloping to the shoreline along the southern boundary. Depths within the basin range from 50 to 110 meters.

The bottom character is primarily pebbles mixed with green sand and green mud. Mud Bay consists of green mud mixed with broken shells and gravel. On the offshore shoals, samples indicated a bottom of pebbles and broken shell.

C. SOUNDING VESSELS

All data were acquired by NOAA Ship RAINIER and the four automated survey launches shown below:

Vessel	EDP No.	Operation
RAINIER	2120	Nansen/AML Casts
RA-3	2123	Hydrography
RA-4	2124	Hydrography Shoreline Verification
RA-5	2125	Hydrography Bottom Samples AML Casts Shoreline Verification
RA-6	2126	Hydrography Shoreline Verification

No changes to the standard sounding configurations were necessary.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

All survey launches were equipped with the Raytheon DSF-6000N echo sounders shown below. The echo sounders were operated in the HIGH + LOW (HIGH DIGITIZED) function, using manual gain controls on both high and low frequencies to obtain the best analog trace. Soundings were recorded in meters and tenths of meters. Six-meter bar checks were conducted and recorded daily, using both the LOW and the HIGH + LOW (HIGH DIGITIZED) functions. The echo sounders were operated in accordance with the Provisional Instructions "Raytheon DSF-6000N Echo-Sounder Operating and Processing Instructions," dated July 5, 1983, and the N/CG2 memorandum "DSF-6000N Depth Errors as a Function of Receiver Gain," dated May 23, 1986.

Raytheon DSF-6000N Echo Sounders

Vessel	Serial No.	DN(1990)
2123	A114N	95-104
	B046N	128-131
2124	A103N	92-101
	A119N	123-132
	A103N	136
2125	A117N	100-136
2126	B046N	92-93
	B048N	94-101
	B046N	102-109
	A114N	129-130

The echo sounders were continuously monitored during data acquisition. All sounding data were scanned at least two times, not only to ensure all significant peaks were inserted, but also to verify the digitized depths. While running over steep or irregular areas, the echo sounders sometimes failed to track properly. Running at minimum speeds usually alleviated this problem, but marginal analog traces could not always be avoided.*

* No adverse effect on data quality

Bar check lines were calibrated by RAINIER personnel during January 1990 at PMC. Calibration forms are included in the Spring 1990 Corrections to Echo Soundings Data Package for OPR-0186-RA.

Diver-obtained least depths were determined with a 3D Instruments pneumatic depth gage S/N 8504192N. The gage was operated in accordance with Hydrographic Survey Guideline (HSG) 55, and was calibrated February 7, 1990, by the Pacific Operations Group (N/OMA 1214). In addition, field system checks were performed each day the pneumatic gage was used. Calibration data and correctors applied to the pneumatic depth gage are appended to this report. Filed with the hydrographic data.

Corrections to Echo Soundings

Corrections to echo soundings were determined for static draft, heave, velocity of sound through water, settlement and squat, and predicted tides. Sounding correctors apply to both narrow and wide beams of the DSF-6000N echo sounder. Supporting data and computations for all corrections to echo soundings, except heave, are included in the Spring 1990 Corrections to Echo Soundings Data Package for OPR-O186-RA.

Static Draft

For all launches, the distance from the transducer face to the gunwale was measured with a large metal carpenter's square. Static draft measurements were then determined by dropping a leadline from the gunwale to the water and subtracting this distance from the distance measured with the carpenter's square. The measurements from the gunwale to the waterline were conducted with the fuel tanks averaging 3/4 full and three people aboard. A transducer depth of 0.6 meter was determined for all launches on March 20, 1990. This transducer depth agrees with the launches' historical records.

Heave

Corrections for heave were applied while scanning echograms. The scanning technique used in comparing the analog trace with the digital record eliminated significant fluctuations resulting from sea action.

Sound Velocity

Correctors for the velocity of sound through water were determined from two of the casts, N3 and 7, listed below:

Cast No.	Deepest Depth (m)	DN	Geographic Position
N3	100	106	58°18'30"N, 135°45'55"W
N4*	150	115	58°17'54"N, 136°15'48"W
7	119	131	58°17'34"N, 135°47'10"W

N=Nansen cast

* Data not applied to echo soundings as results were almost identical to those of cast No. 6.*
*Not used, see following paragraph

Sound velocity correctors were acquired with an AML SVP Profiler, S/N 3042, calibrated at the Northwest Regional Calibration Center (NRCC) in Bellevue, WA, on March 27, 1990.

Thermometers used for the Nansen casts were calibrated between April 26, 1989, and January 25, 1990, at NRCC. Two Beckman salinometers were calibrated at NRCC: S/N 24663 on February 7, 1990, and S/N 59265 on March 9, 1990.

Nansen cast No. N4 was taken on the same day as AML cast No. 6 to ensure the AML sensor was operating properly. The sound velocities determined by the two methods showed excellent agreement. A hardware failure in the communications port of the IBM PC used for the program VELOCITY restricted use of the AML until DN 115. Therefore, data from Nansen cast No. N3 was used to compute sound velocity correctors for the first part of this survey.

The surface water temperature, and the corresponding sound velocity, increased over time during 1990. Sound velocity profiles showed significant regional variation within the project area as well; therefore, sound velocity correctors were applied regionally and temporally to this survey. The casts used for each velocity table, and the days to which each velocity table applies, are shown below:

Velocity Table No.	Cast No.	Applicable DN
4	N3	092-123
6	7	129-136

Velocity correctors were computed using the PC program VELOCITY (version 1.11) in accordance with Hydrographic Survey Guideline 69 (HSG 69), dated November 15, 1989. Printouts of velocity tables used in the HDAPS POST-SURVEY program are appended to this report. Filed with the hydrographic data.

Settlement and Squat*

Settlement and squat correctors were determined for three of the automated survey launches in Shilshole Bay, WA: Vesno 2124 and Vesno 2126 on February 23, and Vesno 2125 on March 13, 1990. Vesno 2123 was tested at the working grounds on April 12, 1990, near Pt. Adolphus in Icy Strait. Vesno 2125 was retested on May 20, 1990, at Bartlett Cove near the working grounds as the March 1990 correctors for this launch varied slightly from 1989 data. Correctors from 1989 were applied to data from Vesno 2123 and Vesno 2125 during acquisition until the 1990 correctors became available. Final field sheets were prepared with 1990 data.

All tests were conducted over a hard bottom in depths well exceeding seven times the vessels' drafts. Both sea and wind were calm. Observations were made through a Zeiss Ni2 leveling instrument, S/N 103453, to a rod held vertically on deck, directly over the transducer. Correctors were computed in accordance with Hydrographic Manual 4.9.4.2.

The following is a summary of Offset Tables used on this survey and their applicable period:

Vessel No.	Table No.	DN
2123	1 (1989)	092-128
	3	129-136
2124	4	092-136
2125	1 (1989)**	092-128
	5 (1989)**	129-136
	5 (1990)	*used for FFS only*
2126	6	092-136

** Offset Table 5 (1989) is identical to 1 (1989).

Offset Tables 3, 4, 5 (1990) and 6 were used to prepare the final field sheets. Copies of all Offset Tables are appended to this report.

* On June 29, 1990, RAINIER determined the HDAPS Survey Program and Post Survey Program do not apply settlement and squat correctors. Recommend the Offset Tables be applied to the smooth sheet when the HDAPS Post Survey Program is modified.

Tide Correctors ✓

Tidal zoning and correctors applicable to predicted tides for the Sitka, Alaska (945-1600) and Juneau, Alaska (945-2210) reference tide stations were provided on the tidal zoning chart accompanying the Project Instructions, and are shown below.

Zone	Time Corrections	Ratio	Reference
West of line between Pt. Adolphus and 58°23'36"N, 135°48'12"W to line below	Direct	x0.87	Juneau
South of line between 58°16'30"N, 135°49'50"W and Pt. Carolus to line below	High water: +10 min Low water: +15 min	x1.54	Sitka
West of line between 58°12'35"N,135°58'20"W and southeastern tip of Lemesurier Island	High water: +10 min Low water: +10 min	x1.47	Sitka

Although all three zones encompass the survey area, the majority of data was acquired within the second zone. Therefore, the correctors from this zone were applied to all soundings. Printouts of the HDAPS Predicted Tide Tables used to generate tide correctors are appended to this report.

Tide gages were installed and maintained by RAINIER personnel at stations on the east side of Lemesurier Island (945-2568) and Point Adolphus (945-2516). The field tide records and the Field Tide Notes for these stations have been forwarded to N/OMA121 in accordance with HSG 50 and FPM 4.3. Requests for approved tides have been forwarded to N/OMA121. Copies of the Field Tide Notes and the requests for approved tides are appended to this report. Filed with the hydrographic data. Approved tide note is attached to this report.

E. HYDROGRAPHIC SHEETS ✓

All field sheets were prepared aboard RAINIER on an automated Bruning Zeta 924-A plotter. The HDAPS system draws graticules based on a Universal Modified Transverse Mercator projection. The two 1:20,000-scale final field sheets are designated RA-20-1E-90 and RA-20-1W-90 (HDAPS Plotter Sheet Table Nos. 13 and 14). Two NAD 27 grid ticks were plotted on the two final field sheets to aid in comparing this survey with prior and junction surveys.

Each final field sheet has an accompanying 1:20,000-scale overlay showing position numbers for detached positions and bottom sample characteristics. Additional overlays for RA-20-1E-90 and RA-20-1W-90 show 50-meter splits, and another overlay for RA-20-1W-90 shows 100-meter splits.

In addition, there are three 1:2,500-scale plotter sheets for the 10-meter shoal developments and two 1:5,000-scale plotter sheets for 25-meter shoal developments on RA-20-1E-90, and four 1:2,500-scale plotter sheets for 10-meter shoal developments on RA-20-1W-90.

HDAPS Plotter Sheet No.	Scale	Description
13	1:20,000	RA-20-1W-90
14	1:20,000	RA-20-1E-90
22	1:5,000	RA-20-1E-90, DEV 22
23	1:2,500	RA-20-1W-90, DEV 23
24	1:5,000	RA-20-1E-90, DEV 24
43	1:2,500	RA-20-1W-90, DEV 43
44	1:2,500	RA-20-1E-90, DEV 44
45	1:2,500	RA-20-1W-90, DEV 45
46	1:2,500	RA-20-1W-90, DEV 46
50	1:2,500	RA-20-1E-90, DEV 50
62	1:2,500	RA-20-1E-90, DEV 62

All field sheets, accompanying field records, and this Descriptive Report are being forwarded to the Pacific Hydrographic Section (N/CG245) for verification.

F. CONTROL STATIONS

Positions for all existing stations are from the NGS data base. All existing stations were recovered in accordance with methods stated in FPM 5.2.4. New stations meet Third-Order Class 1 standards and were positioned via traverse method. Geographic positions are based on the North American Datum of 1983 and the Geodetic Reference System 1980 Ellipsoid. Further information can be found in the Spring 1990 Horizontal Control Report for OPR-0186-RA.

A listing of the geodetic stations used to control this survey is appended to this report.

G. HYDROGRAPHIC POSITION CONTROL

Soundings were located using Motorola Mini-Ranger Falcon 484 microwave, multi-range positioning equipment.

Positioning Equipment

The following tables summarize the mobile console/RT pairs and shore transponders used during this survey.

Mobile Equipment

EDP No.	Vessel	Console/RT	DN
2123	RA-3	D0051/B1405	95-131
2124	RA-4	E0148/F3413	92-136
2125	RA-5	F0245/F3414	100-131
2126	RA-6	E0138/E2716	92-118
		E0138/911615	119-130

Shore Equipment

Transponder Serial No.	Code	Transponder Serial No.	Code*
911059	1	C1883	B/11
B1106	2	G3500	C/12
E2713	3	F3256	E/14
F3248	4	G3501	F/15
B1413	5		

* hexadecimal/numerical designations

Baseline Calibrations

Opening baseline calibrations were conducted over water in accordance with FPM 3.1.2.1. Calibrations were conducted at Sand Point, Lake Washington, Seattle, on DN 058-061, over a measured baseline of 1423 meters.

Final field sheets were plotted with the 1990 opening baseline calibration correctors. Detailed information, calibration data, and descriptions of the baselines can be found in the Spring 1990 Electronic Control Data Package for OPR-0186-RA.

System Check Procedures

Critical systems checks were conducted in accordance with FPM 3.1.2.2. Printouts of the HDAPS SURVEY program Position Quality Page confirmed that the error circle radius (ECR) and maximum residual values were acceptable at times of hydrography.

Problems and Unusual Position Configurations

On DN 92, Vesno 2124 collected sounding data (Pos #40~~31~~00-40~~92~~00) with an incorrect baseline corrector (BLC) applied to code 1. ECR and maximum residual values observed on line and those shown on the critical systems check were within allowable limits and the data were considered acceptable.

See Exm Report section 2

On DN 119, the RT unit S/N E2716 in Vesno 2126 failed. The RT unit was replaced with a spare, S/N 911615. Both RT units had been calibrated with console S/N E0138.

Null zones and erratic ranges were occasionally experienced due to the destructive interference of direct and reflected microwaves. Due to these null zones, line-of-sight

interruptions, etc., a small amount of data were acquired with ECR's or maximum residuals above the acceptable limits. Time-and-course interpolations were used during data processing to correct the position of these data if they plotted off of the vessel track.

On DN 128, Vesno 2123 performed a non-critical systems check using only two codes. ECR values were observed to be within limits throughout the data collection period.

Antenna Offset Distances

The antenna offset distance was 0.0 meters for all launches as each launch had its antenna located over the transducer. The distances are included in Offset Tables 1, 3, 4, 5, 6.
Filed with the hydrographic data.

H. SHORELINE

Three 1:20,000-scale shoreline maps (T-sheets) were used to transfer shoreline detail to the final field sheets. The shoreline east of 135°50'16"W originates from TP-01317 (1988). TP-01320 (1988) covers the area between 135°50'16"W and 136°00'00"W. Shoreline west of 136°00'00"W originates from TP-01319 (1988). All T-sheets are based on NAD83.

Shoreline verification was conducted either at or near lower low water in accordance with FPM 7.0. There are no areas where shoreline verification was not completed. In very shallow areas, the high water line was verified as shown on the T-sheets either by hydrographic means or by acquiring detached positions during high water.

Detached positions (DPs) taken at lower low water indicate that the T-sheet photography was flown during a stage of tide higher than MLLW. Isolated T-sheet rocks were found to be islets or reefs, and alongshore T-sheet rocks were within foul areas or were rock and boulder beaches. No significant or prominent alongshore rocks were found at the T-sheet locations. Alongshore T-sheet rocks were retained and shown on the final field sheets, to represent the nature of the area. Ledge limit symbols were used on the final field sheets to depict the offshore limits of the rock/boulder beaches.

Lower low water DPs were also acquired along the water/beach interface. The two 1:20,000-scale DP overlays show, via dotted line, the water's edge and limits of various types of shoreline composition at the times the DPs were acquired. The two 1:20,000-scale mainscheme sheets show the 0-meter curve as defined by sounding lines; the 0-meter curve is dashed in areas where the curve is approximated.

Kelp was seen on the surface in most areas along the shoreline, particularly along the north and west sides of Pt. Adolphus. Kelp symbols are shown on the final field sheets in areas where surface kelp was visible. Kelp symbols were transferred to the smooth sheet.

DPs were recorded on the master printouts. Detailed 1:20,000-scale paper plots showing all DPs and notes relating to each feature are included with the sheets submitted with this survey. Position numbers for all DPs are plotted on the two DP overlays. Heights are recorded in meters and are corrected to predicted MLLW. The heights recorded for islets refer to the features' highest points.

I. CROSSLINES

A total of 37.4 nautical miles of crosslines were run perpendicular to mainscheme lines, representing 8.0% of the mainscheme hydrography. Crossline soundings agree within two meters compared to mainscheme soundings, except in areas of steep bottom

topography. The vessel which acquired crossline data did not always collect the corresponding main scheme data.

J. JUNCTIONS ✓ See Evaluation Report section 5

This survey junctions with H-10319 (1:20,000; 1989) and H-10271 (1:10,000; 1988) to the east, H-10333 (1:10,000; 1990) and H-9638 (1:5,000; 1976) on the northern boundary, and H-10335 (1:10,000; 1990) and H-10336 (1:10,000; 1990) on the western boundary. No irregularities were found when comparing soundings and depth contours. Agreement between overlapping soundings is excellent, with all junction soundings agreeing within two meters.

K. COMPARISON WITH PRIOR SURVEYS See Evaluation Report section 6

There are no AWOIS items within the survey limits that originate from prior surveys or any other source.

The following prior surveys lie within the limits of this survey:

H-2618 (1:40,000; 1902):

In general, agreement of depths and contours between H-2618 and this survey is very good. Inshore depths agree within ~~4~~ 2 meters, while deeper areas (50-110 meters) agree within 10 meters.

Substantial discrepancies on the offshore shoals were found. Most shoal areas were more extensive than depicted on H-2618, and many had lesser depths. Modern methods of sounding and positioning, along with tighter line spacing, are the most probable causes of the discrepancies. The significant differences are discussed below: See Evaluation Report, section 6

A shoal at 58°17'0~~8~~6.91"N, 135°51'0~~6~~0.74"W was developed with 10-m splits to determine a least depth of 27.7 meters (DN 128, Pos #2263). +2

Three other shoals were developed with 25-m splits:

46 m at 58°17'26"N, 135°51'38"W (DN 94, Pos #8204) (Same as shoal below)
47.6 m at 58°17'2~~8~~6.31"N, 135°51'~~24~~30.42"W (DN 128, Pos #2275 +2 & 2277 +4) ~47m
63 m at 58°16'3~~4~~3.08"N, 135°51'38.23"W (DN 128, Pos #~~2235~~ 8116)

Recommendation: The hydrographer recommends that the soundings and least depths acquired on this survey be used to supersede those of H-2618 within their common areas.

Concur

H-4310WD (1:40,000; 1923):

A 42-ft depth (12.8 m/7 fms on Chart 17302) at ~58°13'10"N, 135°58'10"W originates from this wire drag. A 11.4-m sounding was found in this area while conducting 10-m splits (DN 115, Pos #6101). Divers obtained a least depth of ~~10.8~~ 11.4 m at 58°13'18.~~5~~48"N, 135°58'06.~~4~~38"W (DN 129, Pos # 4611).

The 30-ft and 40-ft shoal at ~58°13'22"N, 135°58'52"W and ~58°13'24"N, 135°58'35"W (9.1 m/5 fms and 12.2 m/6.75 fms on Chart 17302) originates from this survey. Both ~~5.6~~ 6.1 m and 10.~~4~~7 m soundings were discovered during 10-m splits of the area (DN 115, Pos #6149 & ~~6153~~). By divers' least depth determination, the shoals were found to be 5.9 m and ~~9.7~~ 10.3 m at 58°13'28.8"N, 135°58'54.3"W (DN 123, Pos # 4605) and 58°13'31.2"N, 135°58'38.6"W (DN 128, Pos #4607), respectively.

At ~58°17'05"N, 135°51'00"W a 96-ft depth (29.3 m/16 fms on Chart 17302) was reduced by 10-m splits to a depth of 27 m (DN 128, Pos #2263) and located at 58°17'~~08~~06.91"N, 135°51'~~06~~0.74"W.

This wire drag survey determined a 20-ft depth at ~58°16'50"N, 135°49'48"W (6.1 m/3 fms on Chart 17302). The 100 m main scheme confirmed the depth to be ~~6.5 m at 58°16'54"N, 135°49'54" (DN 94, Pos #8204)~~. a submerged reef conf 0.2m at MLLW at lat 58°16'47"N, long 135°50'02"W (Pos # 6053)

Depths from the wire drag in Mud Bay of 32 ft and 33 ft at ~58°12'14"N, 135°59'45" (9.8 m/5.25 fms on Chart 17302) were shown by 200 m main scheme lines to be 7.~~8~~3 m - 8.~~3~~2 m at 58°12'20"N, 136°00'00"W (DN 95, Pos #4416 & DN 103, Pos #2092). (24ft - 27ft)

Recommendation: The hydrographer recommends the diver-obtained least depth and general soundings in the area be used to supersede the wire drag depths. Concur

L. COMPARISON WITH THE CHART See Ecnc Report section 7

This survey was compared to a 1:20,000-scale enlargement of NOS Chart 17302, 15th Edition, May 20/89, 1:80,000 (NAD83).

Comparison of Sounding Features ✓

All charted soundings originate from the prior surveys discussed in Section K, and will not be discussed here.

Dive investigations resulted in least depth determinations of ten features. Each echo sounder depth considered for a dive operation was assigned a dive site number; these numbers, along with the least depths originally investigated, appear on the dive investigation forms. The forms contain detailed descriptions and sketches of each feature and are included within the accordion files submitted with this survey. In cases where the echo sounder depth was shoaler than the divers' least depth, both depths were retained and are shown on the final field sheet. After approved tides all diver depths were equal to or less than echo sounder soundings.

Comparison of Non-Sounding Features

In general, the chart adequately portrays all non-sounding features. Any changes to the charted shoreline were accurately shown on the Notes to Hydrographer prints of the T-sheets. Discrepancies are discussed below:

The existence of an unidentified charted object at 58°13'48"N, 135°55'48"W was disproved by a visual search within a 50 m radius on three separate occasions. The fathometer trace indicates no perceptible bottom features (DN 100, Pos #4571). Concur

A cement anchor was found and positioned at 58°14'22.2"N, 135°54'56.1"W (DN 104, Pos #6088). Shown on the smooth sheet as a obstr uncovers 2.3m at MLLW AWOIS 51950

Charted at 58°13'21"N, 135°56'24"W are two cabins which, from seaward, are not visible. The existence of these cabins is unverified and unknown. Remain as charted.

Recommendation: South Passage Light 8 was positioned by Third-Order, Class I standards and its position should no longer be charted as "PA". See Section N and ~~Appendix VIII~~ Form 76/40 ~~to~~ of this report. concur

Dangers to Navigation

Ten dangers to navigation which lie within the limits of this survey were reported by radio message and hard copy to the Seventeenth Coast Guard District and DMAHTC. Copies of the correspondence are appended to this report. Position numbers associated with each reported danger are included on the copies of the radio messages. See attached messages

M. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede the areas common to the prior surveys listed within Section 6.10 of the Project Instructions. concur

N. AIDS TO NAVIGATION

South Passage Light 8 (Light List #24205) is the only fixed aid to navigation within the limits of this survey. RAINIER's field position was compared to published and charted positions. Comparisons are shown below:

Navigation Aid	Published Position *	Charted Position	Survey Position
Fl R 4s	58°14.9'N	58°14'48"N	58°14'46.237"N
TR	135°54.3'W	135°54'30"W	135°54'25.042"W
obscured from 230° to 049°			

* Source: U.S. Coast Guard Light List, Volume VI, 1990

The Light List characteristics given above, including the northern (230°) limit of the visible sector, were observed in the field and agree with charted and published characteristics. The light adequately serves the apparent purpose for which it was established. A copy of NOAA Form 76-40 and a letter to the U. S. Coast Guard are appended to this report.

There are no floating aids to navigation, bridges, overhead cables, submerged pipelines or ferry routes within the limits of the survey.

O. STATISTICS

Vessel:	2123	2124	2125	2126	TOTAL
# of Pos.	392	642	400	1003	~~2437~~ 2307
NM of Hydro:	83.8	196.8	44.3	271.1	596.0

NM^2 Hydro:	42.3	Velocity Casts:	2
Detached Positions:	120	Tide Stations:	2
Bottom Samples:	32	Current/Magnetic Stations:	0

P. MISCELLANEOUS

All bottom samples were forwarded to the Smithsonian Institution.

No current measurements were made as no anomalous currents were observed within this survey's limits. However, tide rips were regularly seen at Pt. Adolphus and to the west of Pt. Adolphus out to 1.5NM from shore. During periods of maximum flood and ebb, divers operating in the area estimated currents to be 4-5 knots.

RAINIER occasionally anchored 2.0NM southwest of Pt. Adolphus between March 27 and April 19. Periodic hourly current observations were logged during daylight hours by watchstanders. Maximum flood and ebb currents were observed, predictably, at mid-tidal cycles. Maximum flood currents of 1.6 to 2.0 kts were observed setting to the northeast 050°T. Maximum ebb currents were noticably less, 0.4 to 1.0 kt, and set southwestward at 230°T.

Q. RECOMMENDATIONS

None.

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished with Hewlett-Packard (HP) 340M workstations and the following HDAPS programs:

Program Name	Version
SURVEY	4.13
SURVEY (PC-DAS)	3.55
POSTSUR	4.13
FILESYS	1.50
ABST	3.03
PLOTALL	1.30, 1.55
POINT	1.10
BACKUP	1.02
CONVERT	2.33
PRINTOUT	2.23
DIAGNOSTIC	2.15
INVERSE	1.01
INSTALL	1.20
CONPUTE	2.02
CONSTAT	2.02
CONPLOT	1.02
AUTOST (BIGAUTOST)	2.00

Detached positions for all bottom samples and dives are included in Contact Table Nos. 26-27. Copies of all contact tables are appended to this report. Filed with the hydrographic data.

The following position numbers were duplicated during this survey:

Pos. Nos.	DN	Vesno	DN	Vesno
8314-8390	95	2126	100	2126
4605-4608	123	2124	128	2124

The survey data, stored according to sheet number, were forwarded to N/CG245 on 32-track tape cartridges.

S. REFERRAL TO REPORTS

The following supplemental reports contain additional information relevant to this survey:

Title	Date Sent to N/CG245
Spring 1990 Horizontal Control Report for OPR-O186-RA	July, 1990
Spring 1990 Electronic Control Data Package for OPR-O186-RA	July, 1990
Spring 1990 Corrections to Echo Soundings Data Package for OPR-O186-RA	July, 1990
Spring 1990 Coast Pilot Report for OPR-O186-RA	July, 1990

Respectfully Submitted,

Pamela K. Weber
Ensign, NOAA

Approved and Forwarded,

John C. Albright
Captain, NOAA
Commanding Officer

CONTROL STATIONS

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY
100	F	058:17:09.847	135:46:58.184	15	250	0.0	0.0		04/03/90
101	F	058:22:02.097	135:44:01.316	4	250	0.0	0.0		03/17/90
102	V	058:22:00.658	135:35:05.705	5	139	0.0	0.0		03/17/90
103	F	058:13:00.750	135:36:26.826	3	250	0.0	0.0		03/17/90
105	F	058:13:54.846	135:38:41.748	10	250	0.0	0.0		03/17/90
106	F	058:20:23.377	135:32:11.011	9	139	0.0	0.0		03/17/90
107	F	058:24:26.749	135:34:33.856	4	250	0.0	0.0		03/17/90
108	F	058:11:21.969	135:29:59.785	9	250	0.0	0.0		03/17/90
109	F	058:22:30.552	135:29:02.346	10	250	0.0	0.0		03/17/90
110	F	058:20:47.818	135:42:26.049	9	139	0.0	0.0		03/17/90
112	F	058:23:13.034	135:49:27.324	5	250	0.0	0.0		03/17/90
113	F	058:16:00.946	135:45:18.766	13	250	0.0	0.0		03/17/90
114	F	058:19:02.314	135:27:19.259	4	250	0.0	0.0		03/17/90
115	F	058:21:14.164	135:24:44.196	8	250	0.0	0.0		03/17/90
116	F	058:19:30.080	135:36:48.509	11	250	0.0	0.0		03/17/90
119	F	058:16:25.074	136:02:19.250	11	250	0.0	0.0		04/03/90
120	F	058:19:08.821	136:02:27.081	10	250	0.0	0.0		04/03/90
121	F	058:14:46.247	135:54:25.037	14	250	0.0	0.0	2	04/03/90
122	V	058:19:06.224	136:02:50.149	0	0	0.0	0.0		00/00/00
123	V	058:20:40.574	136:06:22.997	0	0	0.0	0.0		00/00/00
124	F	058:15:28.422	136:05:36.899	8	250	0.0	0.0	B	04/03/90
125	F	058:13:05.322	136:02:32.343	10	250	0.0	0.0	F	04/03/90
126	V	058:13:28.804	136:08:23.540	0	0	0.0	0.0		00/00/00
127	V	058:19:08.242	136:02:27.086	0	0	0.0	0.0		00/00/00
128	F	058:22:47.408	135:54:44.931	13	250	0.0	0.0	5	04/03/90
129	V	058:15:36.000	136:06:48.000	0	0	0.0	0.0		00/00/00
130	V	058:14:54.000	135:54:18.000	0	0	0.0	0.0		00/00/00
131	V	058:20:30.117	136:07:23.370	0	0	0.0	0.0		00/00/00
132	F	058:18:16.785	136:07:04.282	10	250	0.0	0.0		04/12/90
205	F	058:13:54.846	135:38:41.748	10	250	0.0	0.0		03/17/90
133	F	058:16:16.743	136:02:14.424	11	250	0.0	0.0	E	04/16/90
134	F	058:20:30.117	136:07:23.370	5	250	0.0	0.0		04/16/90
135	F	058:16:08.426	136:16:52.403	13	250	0.0	0.0	C	04/16/90
136	F	058:19:03.968	136:15:34.968	13	250	0.0	0.0		04/27/90
137	F	058:13:12.460	136:09:58.937	7	250	0.0	0.0	3	04/27/90
138	F	058:17:49.341	136:07:31.798	5	250	0.0	0.0		04/27/90
200	V	058:16:10.395	136:16:58.703	3	139	0.0	0.0		00/00/00
139	F	058:11:48.296	135:58:34.324	4	250	0.0	0.0	4	05/11/90
140	F	058:15:38.126	136:07:13.227	5	250	0.0	0.0	1	05/15/90

100 - ADOLPHUS 2, 1922
110 - KNOB, 1923
119 - BAD, 1901
120 - DAM, 1901
124 - GALL, 1901
125 - JOG, 1901
128 - POINT GUSTAVUS WEST BASE, 1923
133 - BAD TP, 1990
137 - GULL TP, 1990
139 - BAY TP, 1990
121 - DAMP, 1901

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

NONFLOATING AIDS ~~OR LANDMARKS~~ FOR CHARTS

ORIGINATING ACTIVITY

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

(See reverse for responsible personnel)

[ ] TO BE CHARTED [X] TO BE REVISED [ ] TO BE DELETED	REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
	NOAA Ship RAINIER	Alaska	Icy Strait	5/31/90

The following objects HAVE [X] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-0186-RA	N/A	H-10334	NAD 83

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
South Passage Light '8' (LL#24205)	TR on skeleton tower Height 10.7199 m, Fl R 4s (SOUTH PASSAGE LIGHT '8' 1990)	58 14	46.237	135 54	25.042		F-2-6-L 4/05/90	17302 17300

-18

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	CAPT J. C. Albright	☐ PHOTO FIELD PARTY ☒ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

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

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

NAV-0

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship RAINIER
1801 Fairview Avenue East
Seattle, Washington 98102-3767

April 28, 1990

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

Dear Sir:

Personnel from NOAA Ship RAINIER have determined the positions of South Passage Light 8 and Lemesurier Island Light at the request of the U.S. Coast Guard. Although not specifically requested, a position for South Passage Light has also been determined. The position of Pt. Adolphus Light was determined by the NOAA Ship FAIRWEATHER in 1988, and is submitted for your information. All positions meet Third-order, Class I specifications and are based on the North American Datum of 1983 and the GRS Ellipsoid of 1980. The positions listed below are field positions and are not adjusted.

Navigation aid	Latitude(N)	Longitude(W)	1990 Light List Number
SOUTH PASSAGE LT 8 Chichagof Island	58°14'46.237"	135°54'25.042"	24205
LEMESURIER ISLAND LT Lemesurier Island	58°19'08.280"	136°02'27.086"	24195
SOUTH PASSAGE LT Lemesurier Island	58°15'31.295"	136°06'56.385"	24200
PT ADOLPHUS LIGHT Chichagof Island	58°17'09.652"	135°46'58.357"	24175

Questions concerning these data may be directed to: Commanding Officer, NOAA Ship RAINIER, 1801 Fairview Avenue East, Seattle, Washington 98102-3767, telephone (206) 442-4794.

Sincerely,

John C. Albright
Captain, NOAA
Commanding Officer

~~Enclosures~~

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship RAINIER S221
1801 Fairview Avenue East
Seattle, Washington 98102

July 25, 1990

Director
DMAHTC
6500 Brooks Lane
Washington, D.C. 20315

Dear Sir:

While conducting hydrographic survey operations in Icy Strait, Alaska, the NOAA Ship RAINIER discovered 34 dangers to navigation. They have been reported to DMAHTC (NAVWARN) and the Seventeenth Coast Guard District. A copy of the correspondence describing the dangers is enclosed.

Sincerely,

John C. Albright
Captain, NOAA
Commanding Officer

Enclosures

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship RAINIER S221
1801 Fairview Avenue East
Seattle, Washington 98102

July 25, 1990

Commander
Seventeenth Coast Guard District
Post Office Box 3-5000
Juneau, Alaska 99802

Dear Sir:

Attached is a confirmation copy of the radio message sent to your office regarding 34 dangers to navigation which I recommend for inclusion in the Local Notice to Mariners for the Seventeenth Coast Guard District. A copy of the chart showing the areas in which the dangers exist is also attached.

Sincerely,

John C. Albright
Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
PMC

PTTUZYUW RUHPTEF0017 2052112-UUUU--RUHPSUU.
ZNR UUUUU
P 242112Z JUL 90
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTC (NAVWARN) WASHINGTON DC//MCNM//
INFO NOAAMOP SEATTLE WA
ACCT CM-VCAA
BT
UNCLAS

NOS/43020 MH RTTY
EBA/242302Z JUL 90

unrevised - retained as reported

NOAA SHIP RAINIER HAS FOUND 34 DANGERS TO NAVIGATION IN ICY STRAIT, ALASKA (PROJECT OPR-0186-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEYS H-10336 (SOUTH PASSAGE; ITEMS EA-EO), H-10334 (POINT ADOLPHUS TO MUD BAY; ITEMS MA-MJ), AND H-10335 (NORTH PASSAGE; ITEMS DA-DI). THESE DANGERS SUPPLEMENT THOSE REPORTED IN MY P 061610Z JUL 90 MESSAGE. THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

CHARTS AFFECTED:	17302	15TH ED	1:80,000	MAY 20/89	NAD83
	17300	25TH ED	1:209,978	APR 29/89	NAD83
	17318	2ND ED	1:80,000	JAN 12/85	NAD27

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES. Unrevised - retained as reported

ITEM	DANGER	DEPTH	DATUM	LATITUDE	LONGITUDE	Pos. No.
EA.	SHOAL SUBM	3 1/4FM	NAD83	58-13-28.90N	136-03-27.34W	4267+4
EB.	SHOAL SUBM	5 1/4FM	NAD83	58-16-56.46N	136-01-45.03W	8750+3
EC.	SHOAL SUBM	3 1/2FM	NAD83	58-13-14.50N	136-01-55.47W	8535+5
ED.	SHOAL SUBM	12FM	NAD83	58-16-03.75N	136-03-24.82W	4205+2
EE.	ROCK COV	3/4FM	NAD83	58-13-34.22N	136-08-15.16W	2665
EF.	REEF AWASH	0FM	NAD83	58-13-12.32N	136-05-32.49W	6224
EG.	REEF AWASH	0FM	NAD83	58-13-15.00N	136-04-18.50W	6208 to 6211
EH.	REEF AWASH	0FM	NAD83	58-13-04.35N	136-04-12.00W	6204 to 6207
EI.	ROCK UNCOV	1FT	NAD83	58-12-59.50N	136-01-54.70W	6175
EJ.	ROCK UNCOV	2FT	NAD83	58-12-29.25N	136-01-18.30W	6167
EK.	SHOAL SUBM	7 1/2FM	NAD83	58-13-36.13N	136-02-39.80W	4094+2
EL.	SHOAL SUBM	8FM	NAD83	58-13-34.86N	136-03-42.82W	4030+4
EM.	SHOAL SUBM	6 1/2FM	NAD83	58-15-30.11N	136-04-43.08W	4400+2
EN.	SHOAL SUBM	7 1/2FM	NAD83	58-16-10.30N	136-02-06.50W	8624+9
EO.	SHOAL SUBM	1 1/2FM	NAD83	58-13-23.01N	136-02-38.50W	4330
MA.	ROCK SUBM	3FM	NAD83	58-13-28.43N	135-58-53.43W	6149+4
MB.	ROCK SUBM	5 1/4FM	NAD83	58-13-31.22N	135-58-38.60W	4607
MC.	ROCK SUBM	5 1/2FM	NAD83	58-13-22.06N	135-59-19.15W	4612
MD.	ROCK SUBM	6FM	NAD83	58-13-18.47N	135-58-06.37W	4611
ME.	ROCK SUBM	3/4FM	NAD83	58-15-05.13N	135-53-13.39W	4610
MF.	ROCK SUBM	5 3/4FM	NAD83	58-13-39.52N	135-58-02.64W	8923+4
MG.	ROCK SUBM	2 3/4FM	NAD83	58-12-45.32N	135-58-22.25W	4450+2
MH.	SHOAL SUBM	2 1/4FM	NAD83	58-14-44.22N	135-54-54.30W	4125+4
MI.	ROCK AWASH	0FM	NAD83	58-16-47.92N	135-49-59.74W	6053
MJ.	SHOAL SUBM	9 3/4FM	NAD83	58-15-12.56N	135-53-15.61W	6363+3
DA.	SHOAL SUBM	1 1/4FM	NAD83	58-18-36.83N	136-04-21.69W	4945+4
		1FM 2FT	NAD27	58-18-38.13N	136-04-15.10W	
DB.	SHOAL SUBM	1FM	NAD83	58-18-25.24N	136-01-45.24W	5002+4
DC.	SHOAL SUBM	1 1/2FM	NAD83	58-17-21.52N	136-01-46.51W	2155+5
DD.	SHOAL SUBM	4 1/4FM	NAD83	58-21-56.61N	136-02-37.82W	2039+1
		4FM 2FT	NAD27	58-21-57.91N	136-02-31.23W	
DE.	SHOAL SUBM	3/4FM	NAD83	58-21-42.83N	136-03-53.97W	2081+3
		0FM 4FT	NAD27	58-21-44.13N	136-03-47.38W	
DF.	SHOAL SUBM	5 1/2FM	NAD83	58-21-52.20N	136-03-10.36W	4365+8
		5FM 4FT	NAD27	58-21-53.50N	136-03-03.77W	

GLACIER BAY NATIONAL PARK AND PRESERVE
(36 CFR 13.65, see Coast Pilot 8)

CAUTION
Navigation in Glacier Bay is not safe without local knowledge. Glacial ice is always present. See charts 17318 and 17319 for additional information.

Pt. Carolus

Pt. Gustavus

(chart 17318)

Ancon Rk

Tide rips

LOCAL MAGNETIC DISTURBANCE (see note)

58°20'00"N

NORTH PASSAGE

SOUTH PASSAGE

Fl 6s 42ft 6M

OBSCURED

LEMESURIER ISLAND

LT OBSC

Iceberg Pt.

Willoughby Cove

Jacks Cove

Fl 2.5s 5M

136°00'00"W

Subm piles

Gull Cove

Quartz Pt.

Goose L

Mud Bay

Fl R 4s 5M "B"

LIGHT OBSCURED

58°10'00"N

Mud Bay River

MAGNETIC

VAR 27°00'E

Chart 17302
ICY STRAIT AND CROSS SOUND
15th Ed. May 20/89
Scale 1:80,000

ALA

ICY STRAI

Place	
Name	(Lat/L
Cape Spencer	(58°12'N/136
Inian Cove, North Inian Pass	(58°16'N/136
Point Lavinia, South Inian Pass	(58°13'N/136
Point Adolphus	(58°17'N/135
Hoonah, Port Frederick	(58°08'N/135

(1989)

DG.	ROCK COV	1/4FM	NAD83	58-21-46.21N	136-04-14.15W	8241
		OFM 1FT	NAD27	58-21-47.51N	136-04-07.56W	
DH.	ROCK UNCOV	1/2FT	NAD83	58-18-14.14N	136-05-16.98W	4882
DI.	ROCK AWASH	OFM	NAD83	58-18-12.76N	136-05-30.12W	6028

NUMEROUS UNCHARTED ROCKS EXIST ALONG THE NORTH, EAST, AND SOUTH SHORES OF LEMESURIER ISLAND, AND ALONG SHORE FROM PT ADOLPHUS WEST TO LONGITUDE 136-09W. THESE UNCHARTED ROCKS EXIST GENERALLY AT OR NEAR THE LOW WATER LINE. THE AREA NORTH OF GOOSE ISLAND IS PARTICULARLY HAZARDOUS WITH SHOAL DEPTHS AND REEFS EXTENDING APPROXIMATELY 0.6NM OFFSHORE. MARINERS SHOULD EXERCISE CAUTION WHEN NAVIGATING CLOSE INSHORE IN THESE AREAS.

THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW. QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE CHIEF, PACIFIC HYDROGRAPHIC SECTION AT (206) 526-6835. A LETTER WITH ATTACHED CHARTLET IS BEING MAILED TO CONFIRM THIS MESSAGE.
BT
#0017

NNNN

PTTUZYUW RUHPTEF0017 2052112-UUUU--RUHPSUU.
ZNR UUUUU
P 242112Z JUL 90
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTC (NAVWARN) WASHINGTON DC//MCNM//
INFO NOAAMOP SEATTLE WA
ACCT CM-VCAA
BT
UNCLAS

NOS/43020 MH PTTY
EBA 242302Z JUL 90

Unrevised - retained as reported

NOAA SHIP RAINIER HAS FOUND 34 DANGERS TO NAVIGATION IN ICY STRAIT, ALASKA (PROJECT OPR-0186-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEYS H-10336 (SOUTH PASSAGE; ITEMS EA-EO), H-10334 (POINT ADOLPHUS TO MUD BAY; ITEMS MA-MJ), AND H-10335 (NORTH PASSAGE; ITEMS DA-DI). THESE DANGERS SUPPLEMENT THOSE REPORTED IN MY P 061610Z JUL 90 MESSAGE. THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

CHARTS AFFECTED:				
17302	15TH ED	1:80,000	MAY 20/89	NAD83
17300	25TH ED	1:209,978	APR 29/89	NAD83
17318	2ND ED	1:80,000	JAN 12/85	NAD27

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES. Unrevised - retained as reported

ITEM	DANGER	DEPTH	DATUM	LATITUDE	LONGITUDE	Pos. No.
EA.	SHOAL SUBM	3 1/4FM	NAD83	58-13-28.90N	136-03-27.34W	4267+4
EB.	SHOAL SUBM	5 1/4FM	NAD83	58-16-56.46N	136-01-45.03W	8750+3
EC.	SHOAL SUBM	3 1/2FM	NAD83	58-13-14.50N	136-01-55.47W	8535+5
ED.	SHOAL SUBM	12FM	NAD83	58-16-03.75N	136-03-24.82W	4205+2
EE.	ROCK COV	3/4FM	NAD83	58-13-34.22N	136-08-15.16W	2665
EF.	REEF AWASH	0FM	NAD83	58-13-12.32N	136-05-32.49W	6224
EG.	REEF AWASH	0FM	NAD83	58-13-15.00N	136-04-18.50W	6208 to 6211
EH.	REEF AWASH	0FM	NAD83	58-13-04.35N	136-04-12.00W	6204 to 6207
EI.	ROCK UNCOV	1FT	NAD83	58-12-59.50N	136-01-54.70W	6175
EJ.	ROCK UNCOV	2FT	NAD83	58-12-29.25N	136-01-18.30W	6167
EK.	SHOAL SUBM	7 1/2FM	NAD83	58-13-36.13N	136-02-39.80W	4094+2
EL.	SHOAL SUBM	8FM	NAD83	58-13-34.86N	136-03-42.82W	4030+4
EM.	SHOAL SUBM	6 1/2FM	NAD83	58-15-30.11N	136-04-43.08W	4400+2
EN.	SHOAL SUBM	7 1/2FM	NAD83	58-16-10.30N	136-02-06.50W	8624+9
EO.	SHOAL SUBM	1 1/2FM	NAD83	58-13-23.01N	136-02-38.50W	4330
MA.	ROCK SUBM	3FM	NAD83	58-13-28.43N	135-58-53.43W	6149+4
MB.	ROCK SUBM	5 1/4FM	NAD83	58-13-31.22N	135-58-38.60W	4607
MC.	ROCK SUBM	5 1/2FM	NAD83	58-13-22.06N	135-59-19.15W	4612
MD.	ROCK SUBM	6FM	NAD83	58-13-18.47N	135-58-06.37W	4611
ME.	ROCK SUBM	3/4FM	NAD83	58-15-05.13N	135-53-13.39W	4610
MF.	ROCK SUBM	5 3/4FM	NAD83	58-13-39.52N	135-58-02.64W	8923+4
MG.	ROCK SUBM	2 3/4FM	NAD83	58-12-45.32N	135-58-22.25W	4450+2
MH.	SHOAL SUBM	2 1/4FM	NAD83	58-14-44.22N	135-54-54.30W	4125+4
MI.	ROCK AWASH	0FM	NAD83	58-16-47.92N	135-49-59.74W	6053
MJ.	SHOAL SUBM	9 3/4FM	NAD83	58-15-12.56N	135-53-15.61W	6363+3
DA.	SHOAL SUBM	1 1/4FM	NAD83	58-18-36.83N	136-04-21.69W	4945+4
		1FM 2FT	NAD27	58-18-38.13N	136-04-15.10W	
DB.	SHOAL SUBM	1FM	NAD83	58-18-25.24N	136-01-45.24W	5002+4
DC.	SHOAL SUBM	1 1/2FM	NAD83	58-17-21.52N	136-01-46.51W	2155+5
DD.	SHOAL SUBM	4 1/4FM	NAD83	58-21-56.61N	136-02-37.82W	2039+1
		4FM 2FT	NAD27	58-21-57.91N	136-02-31.23W	
DE.	SHOAL SUBM	3/4FM	NAD83	58-21-42.83N	136-03-58.97W	2081+3
		0FM 4FT	NAD27	58-21-44.13N	136-03-47.38W	
DF.	SHOAL SUBM	5 1/2FM	NAD83	58-21-52.20N	136-03-10.36W	4365+8
		5FM 4FT	NAD27	58-21-53.50N	136-03-03.77W	

DG.	ROCK COV	1/4FM	NAD83	58-21-46.21N	136-04-14.15W	8241
		0FM 1FT	NAD27	58-21-47.51N	136-04-07.56W	
DH.	ROCK UNCOV	1/2FT	NAD83	58-18-14.14N	136-05-16.98W	4882
DI.	ROCK AWASH	0FM	NAD83	58-18-12.76N	136-05-30.12W	6028

NUMEROUS UNCHARTED ROCKS EXIST ALONG THE NORTH, EAST, AND SOUTH SHORES OF LEMESURIER ISLAND, AND ALONG SHORE FROM PT ADOLPHUS WEST TO LONGITUDE 136-09W. THESE UNCHARTED ROCKS EXIST GENERALLY AT OR NEAR THE LOW WATER LINE. THE AREA NORTH OF GOOSE ISLAND IS PARTICULARLY HAZARDOUS WITH SHOAL DEPTHS AND REEFS EXTENDING APPROXIMATELY 0.6NM OFFSHORE. MARINERS SHOULD EXERCISE CAUTION WHEN NAVIGATING CLOSE INSHORE IN THESE AREAS.

THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW. QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE CHIEF, PACIFIC HYDROGRAPHIC SECTION AT (206) 526-6835. A LETTER WITH ATTACHED CHARTLET IS BEING MAILED TO CONFIRM THIS MESSAGE.

BT

#0017

NNNN

APPROVAL SHEET

for

H-10334

(RA-20-1-90)

Standard procedures were followed in accordance with the Hydrographic Manual (Fourth Edition), the Hydrographic Survey Guidelines, and the Field Procedures Manual in producing this survey. The data were examined daily during data acquisition and processing.

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

John C. Albright
Captain, NOAA
Commanding Officer

ORIGINAL

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: July 24, 1990

MARINE CENTER: Pacific

OPR: O-186-RA

HYDROGRAPHIC SHEET: H-10334

LOCALITY: Pt. Adolphus to Mud Bay, Icy Strait, Alaska

TIME PERIOD: April 2 - May 17, 1990

TIDE STATIONS USED: 945-2516 Pt. Adolphus, Icy Strait, Alaska
945-2569 Lemesurier Is., Icy Strait, Alaska

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 945-2516 = 8.98 ft.
945-2569 = 8.41 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 945-2516 = 13.1 ft.
945-2569 = 12.3 ft.

REMARKS: RECOMMENDED ZONING

1. West of 135 46.5'W and East of 135 50.5'W, all times and heights are direct on Pt. Adolphus(945-2516).

2. West of 135 50.5'W and East of 135 54.5'W - times are direct and apply a X0.97 range ratio to all heights at Pt. Adolphus(945-2516).

3. West of 135 54.5'W and East of 135 58.5'W - times are direct and apply a X1.02 range ratio to all heights at Lemesurier Is.(945-2569).

4. West of 135 58.5'W and East of 136 2.5'W - all times and heights are direct on Lemesurier Is.(945-2569).

Caution: Staff movement of 0.07 ft. occurred at Pt. Adolphus between installation and removal of gage.

Note: Times are tabulated in Greenwich Mean Time.

for

CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10334

Name on Survey	A ON CHART NO. 17302	B ON 17300	C on TP-01317	D on TP-01319	E on TP-01320	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ADOLPHUS, POINT	X	X	X							1
ALASKA (title)	X	X	X	X	X					2
CHICHAGOF ISLAND	X	X	X	X	X					3
ICY STRAIT	X	X	X	X	X					4
MUD BAY	X	X		X	X					5
MUD BAY RIVER	X				X					6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
				Approved:						17
				Charles E. Harrington						18
				Chief Geographer - N/CG2x5						19
										20
				DEC - 4 1990						21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H)
(9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER
H-10334

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	8
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	9

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

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

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			2307
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	136		136
VERIFICATION OF SOUNDINGS	229		229
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	129		129
COMPARISON WITH PRIOR SURVEYS AND CHARTS		6	6
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		13	13
GEOGRAPHIC NAMES			
OTHER* DIGITIZING (Rick Shipley)			10
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	494	19	513

Pre-processing Examination by M. Brown	*Beginning Date* 5/1/90	*Ending Date* 8/16/90
Verification of Field Data by L. Deodato	*Time (Hours)* 493	*Ending Date* 5/28/91
Verification Check by J. Stringham	*Time (Hours)* 43	*Ending Date* 6/3/91
Evaluation and Analysis by C.R. Davies	*Time (Hours)* 19	*Ending Date* 6/14/91
Inspection by D. Hill	*Time (Hours)* 4	*Ending Date* 6/25/91

EVALUATION REPORT

H-10334

1. INTRODUCTION

Survey H-10334 is a basic hydrographic survey accomplished by the NOAA Ship RAINIER under the following Project Instructions.

OPR-O186-RA, dated February 22, 1990

This survey occurred in Alaska and covers an area in Icy Strait from Point Adolphus to Mud Bay. The surveyed area extends from latitude 58/11/30N to latitude 58/20/45N and from longitude 135/47/30W to longitude 136/01/10W. Shoreline along Chichagof Island is characterized by rocks, rock ledges, boulder and stone beaches and numerous submerged rocks near shore. The bottom consists of sand, gravel, mud and shells. Depths range from zero to 120 meters.

Predicted tides for Juneau, Alaska, were used for the reduction of soundings during field processing. Approved hourly heights zoned from Pt. Adolphus and Lemesurier Island, Alaska, gages 945-2516 and 945-2569, were used during office processing.

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

A digital file has been generated for this survey as required by the specifications contained in Hydrographic Survey Guideline No. 52, Standard Digital Data Exchange Format, April 15, 1986. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete depiction of survey data.

2. CONTROL AND SHORELINE

Sections F and G of the hydrographer's report and the Horizontal and Electronic Control Reports for OPR-O186-RA, 1990, contain adequate discussions of horizontal control and hydrographic positioning, except for the following.

On day 92, Vesno 2124, an incorrect baseline corrector of 0.0 meters was applied to code 1. The correct baseline corrector for code 1 was -6.0 meters, therefore, positions 4000-4100 are in error as a result of this discrepancy. With ECR values generally less than 6 meters and residuals under 3 meters, the effect of this error is within the accuracy requirements for the scale of this survey. Also, these positions were not used to locate dangers to navigation or any dangerous features and did not affect the depth curves in the area. These positions were accepted.

Positions of horizontal control stations used during hydrography are 1990 field and published values based on NAD 83. These values were used during office processing for the computation of positions. The smooth sheet and accompanying overlays are annotated with NAD 27 adjustment ticks based on values determined with the NGS

program, NADCON. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: -1.244 seconds (-38.504 meters)
Longitude: 6.551 seconds (106.810 meters)

The year of establishment of control stations shown on the smooth sheet originates with NGS listing and the hydrographer's signal list.

The quality of several positions exceeds limits in terms of error circle radius and residual. A review of the data, however, indicates that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with surroundings. These fixes are considered acceptable.

The following shoreline maps apply to this survey.

	Photo Date	Class
TP-01317	June 1987	III
TP-01319	June 1987	III
TP-01320	June 1987	III

3. HYDROGRAPHY

Hydrography is adequate to:

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

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

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

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, January 1989 edition.

5. JUNCTIONS

Survey H-10334 junctions with the following surveys.

Survey	Year	Scale	Area
H-9638	1976	5000	North
H-10271	1988	10000	Northeast
H-10319	1989-90	20000	East
H-10333	1990	10000	North
H-10335	1990	10000	Northwest
H-10336	1990	10000	West

With the exception of surveys H-9638, H-10271 and H-10319, all junctions are complete. The junctions with surveys H-9638 and H-10271 have not been formally completed since those surveys were previously processed and forwarded for charting. The junction comparisons were made using copies. Soundings are in good agreement. The depths on surveys H-9638, H-10271 and H-10319 are in fathoms, while the depths on survey H-10334 are in meters. There are good agreement between soundings, however the depth curves shown on these surveys delineate different depths and, therefore, do not agree. Some soundings have been transferred to survey H-10334 to better portray the bottom in the common area.

6. COMPARISON WITH PRIOR SURVEYS

H-2618(1902) 1:40000

Survey H-2618 covers the entire area of the present survey. Generally, the soundings agree between 2 to 4 meters, with extreme cases of 10 meters. Survey H-10334 tends to be shoaler than the prior survey on all accounts. This area has experienced earthquakes, possible isostatic rebound and natural accretion and erosional processes. These processes, the different horizontal datums and the relative accuracy of the data acquisition techniques account for the differences between the soundings of the two surveys. See section K of the hydrographer's report for additional discussion.

In accordance with Hydrographic Survey Guideline No. 39, the effects of the 1964 Prince William Sound earthquake were considered in the comparison of these surveys. No reasonable adjustment value for prior soundings could be determined.

Survey H-10334 is adequate to supersede the prior survey within the common area.

H-4310WD(1923) 1:40,000

Wire-drag survey H-4310 covers the entire area of the present survey. Effective depths from the prior wire-drag survey are all deeper than those soundings found on survey H-4310WD.

Survey H-10334 is adequate to supersede this wire-drag survey as a source for charted hydrography.

There are no AWOIS items originating from surveys H-2618 or H-4310WD applicable to the present survey.

7. COMPARISON WITH CHART

Chart 17302, 15th edition, dated May 20, 1989; scale 1:80000

a. Hydrography

All charted hydrography originates with surveys H-2618 and H-4310WD and requires no further discussion.

Survey H-10334 is adequate to supersede charted hydrography within the common area.

b. AWOIS

There are no AWOIS items originating from miscellaneous sources

c. Controlling Depths

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

d. Aids to Navigation

There is one fixed aid located within the area of this survey. This aid, South Passage Light 8, was located and it serves its intended purpose.

There are no floating aids to navigation within the survey limits.

e. Geographic Names

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

f. Dangers to Navigation

The hydrographer reported ten submerged obstructions to the USCG. A copy of the message is attached. No additional dangers were discovered during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10334 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

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

Charles R. Davies
Charles R. Davies
Cartographer

APPROVAL SHEET
H-10334

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproval of charted data. The digital data have been completed and all revisions and processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts have been made and are included with the survey records. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Dennis Hill Date: 6-25-91

Dennis J. Hill
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Date: 6/26/91

Commander Pamela Chelgren-Koterba, NOAA
Chief, Pacific Hydrographic Section

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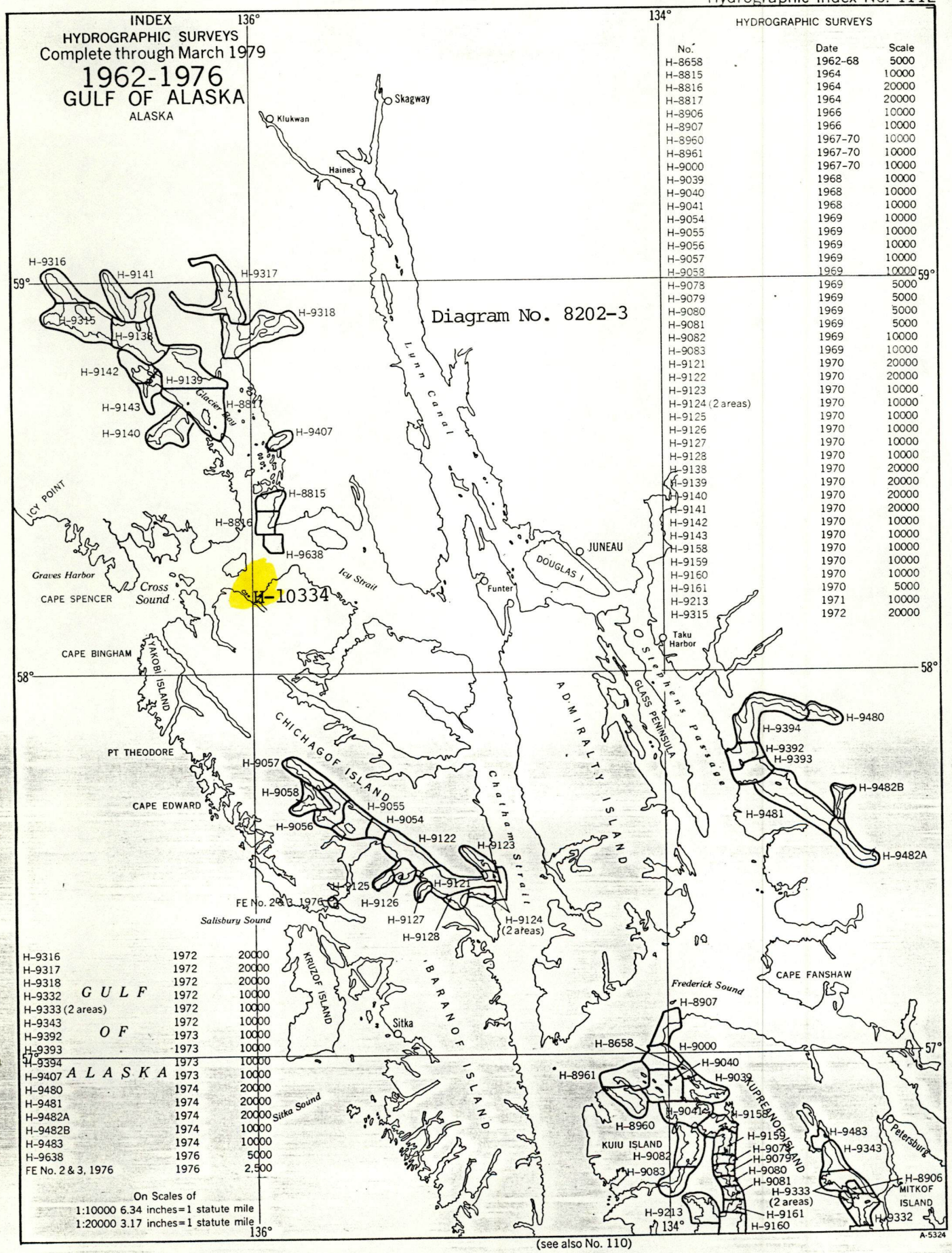
Final Approval

Approved: J. Austin Yeager Date: 7/18/91

J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

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

Hydrographic Index No. 111E



HYDROGRAPHIC SURVEYS

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

GULF OF ALASKA

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

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

(see also No. 110)

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10334

INSTRUCTIONS

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

CHART	DATE	CARTOGRAPHER	REMARKS
17302	9-20-91	Russ Davis	Full ~~Part Before~~ After Marine Center Approval Signed Via Full application
			Drawing No. of sndgs. from SS.
17300	10-04-91	Russ Davis	Full ~~Part~~ Before ~~After~~ Marine Center Approval Signed Via Full application
			Drawing No. of sndgs. from SS thru 17302.
531	1-23-92	Russ Davis	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Examined, no
			Drawing No. sndgs applied.
530	6-26-91	Russ Davis	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Examined, no
			Drawing No. sndgs applied
17318	8-21-92	Russ Davis	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application
			Drawing No. of sndgs from smooth sheet.
17302	9-20-91	Russ Davis	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application
			Drawing No. of sndgs from smooth sheet.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

EXAMINED FOR NM
GDBU
5-19-92 HBC N/C

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10334

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
~~17318~~	~~5-19-92~~	~~Holler Church~~	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 4 ~~fully app'd~~ Applied thru H-Drawing
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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