

10319

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-20-4-89
Registry No. H-10319

LOCALITY

State Alaska
General Locality .. Icy Strait
Sublocality Hoonah Island to
..... Point Adolphus
.....
..... 19 89-90
.....
CHIEF OF PARTY
..... CAPT J.C. Albright

LIBRARY & ARCHIVES

DATE April 11, 1991

10319

CHTS

17302
17316
17300

HYDROGRAPHIC TITLE SHEET

H-10319

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-20-4-89

State Alaska

General locality Icy Strait

Locality Hoonah Island to Point Adolphus

Scale 1:20,000 Date of survey October 28 - November 13, 1989
March 18 - April 2, 1990

Instructions dated September 13, 1989 Project No. OPR-0186-RA
February 22, 1990

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

Chief of party CAPT John C. Albright

Surveyed by LCDR Mozgala, LT Nichel, LTJG Duffy, LTJG Glang, LTJG Haines,
ENS Hawkins, ENS Schoonover, ENS Muench, ENS Ward, ENS Weber

Soundings taken by echo sounder, hand lead, pole DSF 6000 and pneumatic depth gage

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Evaluation by: Gordon E. Kay Automated plot by PHS Xynetics Plotter
~~Processed by~~

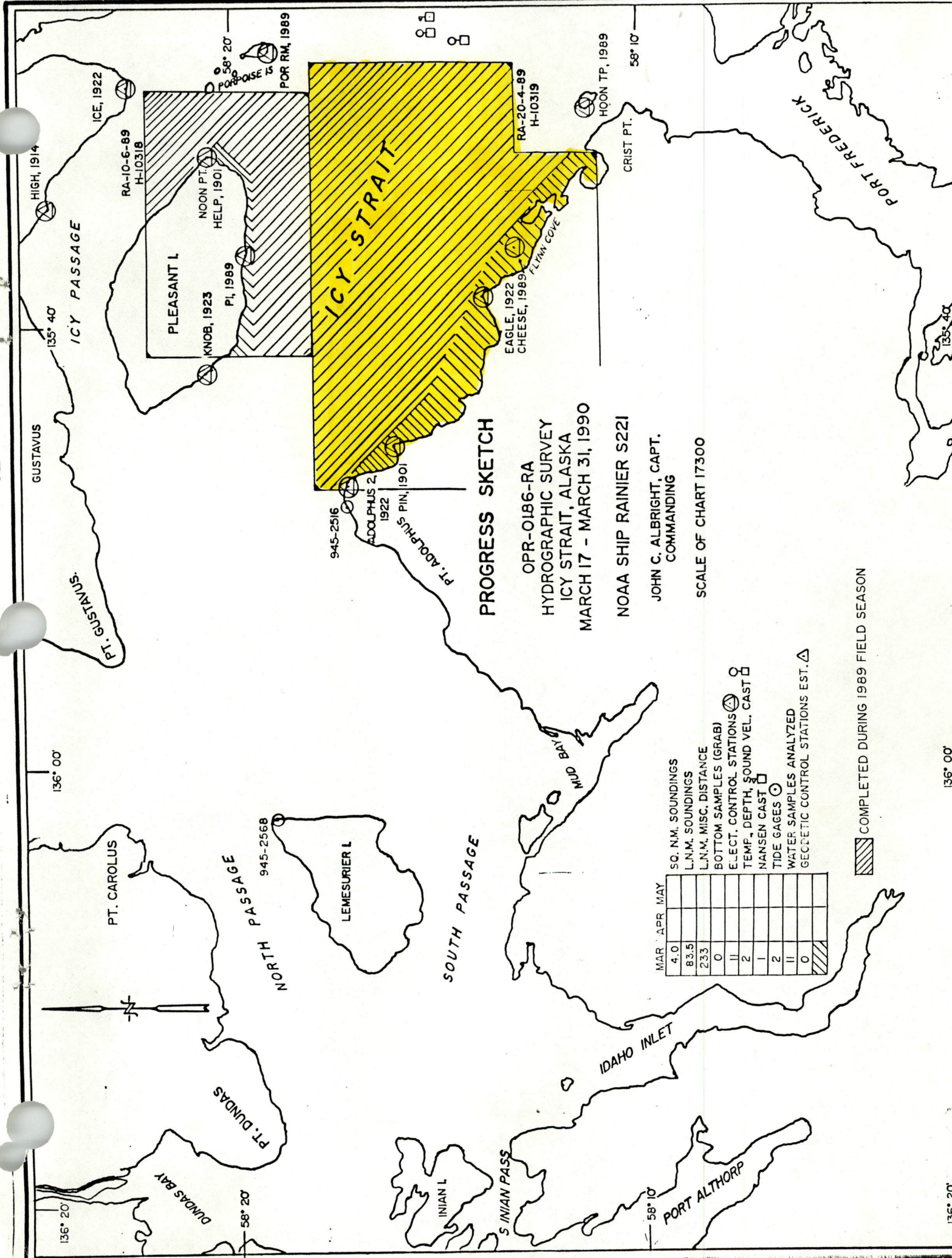
Verification by Matthew Sanders

Soundings in fathoms ~~xxxx~~ and tenths ~~xxxx~~ at ~~MLLW~~ MLLW

REMARKS: All times are 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.

AWD15/SURF M.S.A 7/3/91

SO. 1-30-91
R.W.W. 6-25-91



PROGRESS SKETCH
 OPR-01B6-RA
 HYDROGRAPHIC SURVEY
 ICY STRAIT, ALASKA
 MARCH 17 - MARCH 31, 1989
 NOAA SHIP RAINIER S221
 JOHN C. ALBRIGHT, CAPT.
 COMMANDING
 SCALE OF CHART 17300

	MAR	APR	MAY
SO. N.M. SOUNDINGS	4.0		
L.N.M. SOUNDINGS	83.5		
L.N.M. MISC. DISTANCE	233		
BOTTOM SAMPLES (GRAB)	0		
ELECT. CONTROL STATIONS	11		
TEMP., DEPTH, SOUND VEL. CAST	2		
NANSEN CAST	1		
TIDE GAGES	2		
WATER SAMPLES ANALYZED	11		
GENETIC CONTROL STATIONS EST.	0		

COMPLETED DURING 1989 FIELD SEASON



PT. CAROLUS
 PT. DUNDAS
 DUNDAS BAY
 INIAN L.
 S INIAN PASS
 IDAHO INLET
 PORT ALTHORP
 SOUTH PASSAGE
 NORTH PASSAGE
 LEMESURIER I.
 945-2568
 PT. GUSTAVUS
 GUSTAVUS
 ICE, 1922
 HIGH, 1914
 ICY PASSAGE
 RA-10-6-89
 H-10318
 PLEASANT I.
 KNOB, 1923
 PI, 1989
 NOON PT.
 HELP, 1901
 PORPOISE IS.
 POR RM, 1989
 ICY STRAIT
 RA-20-4-89
 H-10319
 EAGLE, 1922
 CHEESE, 1989
 FLYNN COVE
 CRIST PT.
 HOON TP, 1989
 PORT FREDERICK

136° 20' 136° 00' 135° 40' 58° 20' 58° 10' 136° 00' 135° 40'

Descriptive Report to Accompany Hydrographic Survey H-10319

Field Number RA-20-4-89
Scale 1:20,000
1989-1990

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 September 13, 1989 and February 22, 1990. This survey is designated Sheet N on the revised sheet layout dated February 16, 1988. ✓

The 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 regards 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. ✓

B. AREA SURVEYED

The survey is located in southeast Alaska, 40 NM west of Juneau, on the southern shore of Icy Strait, and encompasses the area between Point Adolphus and Hoonah Island. The north-south boundaries are $58^{\circ}18'00''$ N and Chichagof Island, respectively. The eastern limits are $135^{\circ}28'00''$ W and the boundaries of H-9990. The western limit is $135^{\circ}47'30''$ W. Survey data was acquired from October 28 through November 13, 1989 (DN 301-317) and from March 18 through April 2, 1990 (DN 077-092). ✓

The topography along the southern portion of Icy Strait consists of densely wooded foot hills ending at a ledge and cobble shoreline. The shore between Pt. Adolphus and Eagle Point has three small rivers which form sand and cobble deltas alongshore. ✓

The bathymetry within the survey area is characterized by a deep central basin with three shoals along the northern boundary. The shoals are steep-sided and irregular on top. The basin runs the entire east-west length of the survey, sloping upward to the shoreline along the southern boundary. Depths within the basin range from 50 to 130 fathoms. ✓

The bottom character, including Flynn Cove, is primarily grey to green mud mixed with sand and broken shell. On the offshore shoals, samples indicated a bottom of pebbles and broken shell mixed with coral. ✓

C. SOUNDING VESSELS

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

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

No changes to the standard sounding configurations were necessary.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

NOAA Ship RAINIER and 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. Variations in the instrument initial, stylus arm length, and belt tension are not present in these echo sounders. Soundings were recorded in fathoms and tenths of fathoms. Two-fathom 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

<u>Vessel</u>	<u>Serial No.</u>	<u>DN (1989)</u>	<u>DN (1990)</u>
2120	A119N	307	-----
2123	A114N	303-304	087-089
2124	A103N	302-313	081-092
2125	A117N	301-312	081-089
2126	B048N	306-317	077-090

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 and deeps were inserted, but also to verify the digitized depths. While running over extremely steep, 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.

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 #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 correctors were applied to each depth determined with the pneumatic depth gage. Copies of the calibration results and correctors are ~~appended to this report.~~ *Filed with the Survey Records.*

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. All correctors were applied to the final field sheets. Sounding correctors apply to both narrow and wide beams of the echo sounder. Supporting data and computations for all 1989 corrections to echo soundings, except heave, are included in the Fall 1989 Corrections to Echo Soundings Data Packages for OPR-O186-RA. Data and computations for 1990 correctors are ~~appended to this report.~~ *filed with the Survey Records.*

Static Draft

For all launches, the distance from the transducer face to the gunwhale was measured with a large metal carpenter-square. Static draft measurements were then determined by dropping a leadline from the gunwhale to the water and subtracting this distance from the distance measured with the carpenter-square. The measurements from the gunwhale to the waterline were conducted with the fuel tanks averaging 3/4 full and three people aboard. A transducer depth of 0.3 fathom was determined for all launches on the following dates: February 10, 1989, February 23 and March 13, 1990. This transducer depth agrees with the launches' historical records.

While RAINIER was in drydock in February 1989, the distance from the transducer to an upper deck was measured with a leadline. Distances on both port and starboard sides (from the upper deck to the water) were then measured when the ship was refloated and the fuel tanks were at 60% and 100% capacity. A transducer depth of 2.4 fathoms was calculated from these measurements.

Heave

Corrections for heave were applied while scanning. The scanning technique used in comparing the analog trace with the digital record eliminated fluctuations greater than 0.2 fathom resulting from sea action.

Sound Velocity

Correctors for the velocity of sound through water were determined from three of the casts listed below:

<u>Cast No.</u>	<u>Deepest Depth (m)</u>	<u>DN</u>	<u>Geographic Position</u>
1	222	303	58°15'48"N, 135°29'48"W
2*	203	306	58°15'36"N, 135°27'36"W
N1*	200	306	58°15'36"N, 135°28'00"W
3	208	315	58°15'18"N, 135°28'30"W
4	204	081	58°14'12"N, 135°26'06"W
N2	200	088	58°15'00"N, 135°25'54"W
5	200	088	58°15'00"N, 135°25'54"W

N = Nansen casts

* data not applied to echo soundings as results were almost identical to those of Cast #1.

Data required to compute the 1989 velocity correctors were obtained with an AML SVD Profiler, S/N 3004, which was calibrated at the Northwest Regional Calibration Center (NRCC) in Bellevue, WA on October 17, 1988. Velocity correctors for the 1990 hydrographic data were acquired with AML SVD Profiler S/N 3042, which was calibrated at NRCC on

March 27, 1990.

The thermometers used in the Nansen cast were calibrated between January 6, 1988 and January 19, 1989 and again between April 26, 1989 and January 25, 1990. Beckman Salinometer, S/N 24663, was calibrated on March 1, 1989 and February 7, 1990. Beckman Salinometer, S/N 59265, which was used in 1990, was calibrated March 9, 1990. The thermometers and the salinometers were also calibrated at NRCC. ✓

The 1989 Nansen cast (N1) was taken on the same day as AML Cast #2 to ensure the AML sensors were operating properly. The sound velocities determined by the two methods showed excellent agreement. The 1990 Nansen cast (N2) was taken on the same day as AML Cast #5, again as a check on the AML. The calibration constants for the AML probe had not been received in time to process this survey's data. Therefore, the AML data from Cast #4 and 5 were not used for velocity correction determinations. ✓

The surface water temperature, and the corresponding sound velocity, decreased over time during 1989. The casts used for each velocity table, and the days to which each velocity table is applied, are shown below. ✓

<u>Velocity Table No.</u>	<u>Cast No.</u>	<u>Applicable DN</u>
1	1	301-306
2	3	311-317
3	N2	077-092

Velocity correctors were computed at 0.1-fathom increments using the PC program VELOCITY. An HDAPS listing of each velocity table is ~~appended to this report.~~ *Filed with the survey records.* ✓

Settlement and Squat

The 1989 settlement and squat correctors were determined for all automated survey launches in Shilshole Bay, WA on February 23 and March 3 of 1989. The 1990 settlement and squat observations were conducted for all launches (except Vesno 2123) in the same bay on February 23 and March 13, 1990. Vesno 2123 was not available for testing prior to RAINIER's departure from Seattle on March 13. All tests were conducted over a hard bottom in depths well exceeding seven times the vessels' drafts. Both sea and wind were calm. All observations were made with a Zeiss Ni2 level (S/N 103453) to a rod held vertically on deck, directly over the transducer. ✓

Ten level readings were made at each speed tested, and the average taken, to compute the correctors. Tide staff readings were taken concurrently with each set of level readings, and all tidal height differences were normalized to the tidal height of the dead-in-the-water level readings before the correctors were computed. The 1990 data acquired for Vesno 2125 varied slightly from historical data; therefore, the 1989 correctors were applied to all data until a second set of observations is acquired. ✓

Offset Table 1 contains 1989 settlement and squat correctors used on-line by all launches, and for Vesno 2123 and Vesno 2125 in 1990. The 1990 correctors for the remaining two launches are listed in Offset Tables 4 and 6. Copies of all tables are ~~appended to this report.~~ *Filed with the survey records.* ✓

Tide Correctors

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

<u>Zone</u>	<u>Time Corrections</u>	<u>Height Ratio</u>
East of line between Burger Point and 58°22'24"N, 135°29'00"W	None	x0.92
Between line defined above and line between Pt. Adolphus and 58°23'36"N, 135°48'12"W	None	x0.90

Although both zones encompass the survey area, the majority of data were acquired within the second zone. Therefore, the correctors from this zone were applied to all soundings. HDAPS listings of the data used in generating tide corrector tables are ~~appended to this report.~~ *filed with the survey records.*

In 1989, two tide gages were installed and maintained by RAINIER personnel at tide stations on the north side of Pleasant Island (945-2478) and at Pt. Adolphus (945-2516). In 1990, only the gages at Pt. Adolphus were installed and maintained. According to Section 5.8.4 of the Project Instructions, only the data from the Pt. Adolphus tide station applies to this survey. The field tide records and the Field Tide Notes for this station have been forwarded to N/OMA121 in accordance with Hydrographic Survey Guideline #50 and Section 4.3 of the Field Procedures Manual (FPM). 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 survey records.*

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-20-4E-89 and RA-20-4W-89 (HDAPS Plotter Sheet Table Nos. 4 and 5). 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 mainscheme splits, detached positions and bottom sample characteristics. In addition, one 1:2500-scale sheet was drawn to depict a 10m-line spacing shoal development southeast of Burger Point (HDAPS Plotter Sheet Table No. 15). Two 1:10,000-scale sheets were used to legibly depict soundings and detached positions (DPs) from range-range and range-azimuth hydrography within Flynn Cove (HDAPS Plotter Sheet Table No. 27).

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

F. CONTROL STATIONS

A listing of the geodetic stations used to control this survey is included in this report. A "*" on the listing marks stations located on offshore islands where the station symbols may obscure the depiction of the islands' shoreline. *Stat 1003 and #108*

Positions for all existing stations originate from the NGS data base and from NOAA Ship

FAIRWEATHER's 1988 Horizontal Control Report. All existing stations were recovered in 1989 in accordance with methods stated in Section 5.2.4 of the Field Procedures Manual. Three stations were positioned to Third-Order Class 1 standards in 1989 by RAINIER personnel: PI (116), HOON TP (108), and CHEESE (103). A Third-Order Class 1 position was also determined for reference mark POR RM (114) that same year. Field positions of new stations were not adjusted. No horizontal control work was conducted in 1990 in support of this survey.

All 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 Fall 1989 Horizontal Control Report for OPR-O186-RA.

G. HYDROGRAPHIC POSITION CONTROL

The majority of soundings were located using Motorola Mini-Ranger Falcon 484 microwave, multi-range positioning equipment. Soundings within the small cove centered at ~58°12'18"N, 135°34'18"W were also positioned with multi-range equipment, but electronic control was absent on the inshore limits of one sounding line. The inshore limit was plotted by time and estimated distance from the high water line. *Position 8560-8561, most are in excess. A ledge is on the Smith Sheet. Thereby obviating the requirement for inshore depths.*

Range-azimuth techniques were used within Flynn Cove to position five diver-obtained least depths, sounding lines spaced at 50m intervals within the southern half of the cove and detached positions from shoreline verification within the cove.

Positioning Equipment

The following tables summarize the mobile console/R-T units and shore transponders used each year:

1989 Mobile Equipment

<u>EDP No.</u>	<u>Vessel</u>	<u>Console/R-T</u>	<u>DN</u>
2120	RAINIER	E0148/E2716	307
2123	RA-3	F0245/B1405	303-304
2124	RA-4	E0138/F3413	302-313
2125	RA-5	E0147/B1388	301-312
2126	RA-6	F0247/D2395	306-317

1990 Mobile Equipment

<u>EDP No.</u>	<u>Vessel</u>	<u>Console/R-T</u>	<u>DN</u>
2123	RA-3	D0051/B1405	087-089
2124	RA-4	E0148/F3413	081-092
2125	RA-5	F0245/F3414	081-089

2126 RA-6 E0138/E2716 077-090

1989 Shore Equipment

<u>Transponder Serial No.</u>	<u>Code *</u>	<u>Transponder Serial No.</u>	<u>Code</u>
C1883	B/11	B1412	0
G3500	C/12	D2384	1
911711	D/13	911635	3
F3501	E/14	F3248	4
G3501	F/15	B1413	5

1990 Shore Equipment

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

* hexadecimal/numerical designations

All angle and distance measurements for range-azimuth hydrography in and around Flynn Cove were made from station CHEESE (103), initialling on station EAGLE (105). T-2 theodolite, S/N 320741, was used in conjunction with EDM1 (S/N 67306) and transponder Code 15(F) on CHEESE. Dive DPs were manually logged and positions computed via MTEN. Data from sounding lines and shoreline verification done by Vesno 2125 were acquired on-line using HDAPS PC-DAS.

A check position for one dive in Pinta Cove was determined by range-azimuth from station PIN (113), initialling on KNOB (110) (DN 092, Pos. #4608). The T-2 and EDM1 listed above were used. Position computations for range-azimuth data were computed via MTEN, and checked against the HDAPS position. All computation forms are included in the survey data.

Baseline Calibrations

All opening and closing baseline calibrations were conducted over water in accordance with FPM 3.1.2.1. Opening calibrations in 1989 occurred on Lake Union, Seattle, WA on DN 262-272 over a 966-meter baseline (MR CAL 1-MR CAL 2). Closing calibrations occurred on Lake Washington, Sand Point, WA on DN 326-328 over a known baseline of 1312 meters. Opening baseline calibrations for 1990 were also conducted at Sand Point, Lake Washington, Seattle on DN 058-061, over a newly-measured baseline of 1423 meters.

The final field sheets were plotted with the 1989 and 1990 opening baseline calibration correctors. For the data acquired in 1989, the differences between the opening and closing calibrations were within the limits stated in FPM 3.1.2.3, except for code F when used in conjunction with console-R/T pair F0245-B1405. Although the difference between calibration correctors for this code and console-R/T pair was 13 meters, this code and

console-R/T pair were not used on this survey. Detailed information, calibration data, and descriptions of the baselines can be found in the Fall 1989 and Spring 1990 Electronic Control Data Packages for OPR-O186-RA. ✓

System Check Procedures

Critical systems checks were conducted in accordance with FPM 3.1.2.2. Printouts of HDAPS screen graphics displaying multiple lines of position confirmed that the error circle radius and maximum residual did not exceed allowable rejection limits. ✓

Problems and Unusual Position Configurations

1989: Vesno 2125 collected bottom samples with an uncalibrated console/RT pair, E0147/B1388. A launch-to-launch systems check was performed with Vesno 2123 on DN 299 to determine 2125's approximate baseline correctors. Critical systems checks were conducted as stated above. Closing calibrations indicated that the field correctors were within the allowable limits for a 1:20,000-scale survey. ✓

Although most shore station transponders were set on 10-foot towers, the console/R-T unit aboard Vesno 2126 was the only unit capable of receiving rates above signal strength cutoff values over long distances. Therefore, 2126 was used to acquire the data along the southern shore of Icy Strait, which required the interrogation of shore stations on the north side of Icy Strait. The other launches were able to receive rates, but were a minimum of one unit below their calculated cutoff values. Any shore station displaying a low signal strength was de-selected on-line and not used during data acquisition. ✓

Null zones and erratic ranges were occasionally experienced due to the destructive interference of direct and reflected microwaves. Time-and-course interpolations were used during data processing to correct the position of soundings taken when launches approached null zones (as indicated by the launches' erratic steering needles and higher ECR and residual values). ✓

A small amount of positioning data was acquired with signal strengths one unit below the computed cutoff values. No soundings acquired during these periods plotted off-line; therefore, positional quality was not affected. *Concur; the data has been accepted.* ✓

1990: All shore station transponders were set atop 20-foot towers in attempts to increase the transponders' ranges. The higher towers helped, except in the area along the south shore from Flynn Cove eastward. In this area, again only Vesno 2126 could receive (above signal strength cut-off) the codes on the north side of Icy Strait. ✓

Antenna Offset Distances

The antenna offset distance was 0.0 meters for all launches as each launch had its antenna located over the transducer. For NOAA Ship RAINIER, the antenna offset distance was -6.6 meters. Antenna offset and layback correctors are included in Offset Tables 1, 2, 4 and 6. ✓

H. SHORELINE

~~Three~~ ^{Four} 1:20,000-scale shoreline maps (T-sheets) were used to transfer shoreline detail to the final field sheets. The shoreline east of 135°45'00"W originates from TP-01321. TP-01320 covers the area between 135°45'00"W and 135°46'00"W. Shoreline west of 135°46'00"W originates from TP-01317. All T-sheets are based on NAD83 datum and dated 1988. *See Evaluation Report Section 2*

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. The high water line was verified as shown on the T-sheets either by hydrographic means or by acquiring detached positions during high water in very shallow areas. ✓

Detached positions (DPs) taken at lower low water prove 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. *Refer to the Smooth Sheet for final depiction of the data.*

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-fathom curve as defined by sounding lines; the 0-fathom curve is dashed in areas where the curve is approximated. *Refer to the Smooth Sheet for depiction of the processed data.* ✓

DPs were recorded on the master printouts. A detailed paper plot showing all DPs and notes relating to each feature is included with the sheets submitted with this survey. Position numbers for all DPs are plotted on the two DP overlays. Cartographic codes have been included in the field records. Heights are recorded in feet and are corrected for predicted tides. The heights recorded for islets refer to the features' highest points. *Smooth Sheet heights are corrected for observed tides.* ✓

I. CROSSLINES

A total of 22.5 nautical miles of crosslines were run perpendicular to mainscheme lines, representing 10.3% of the mainscheme hydrography. Crossline soundings agree within one fathom 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. The agreement between soundings acquired with various equipment is as stated above. ✓

J. JUNCTIONS

This survey junctions with H-10271 (1:10,000; 1988), H-10318 (1:10,000; 1989), and H-10257 (1:10,000; 1987) on the northern boundary, and H-10231 (1:20,000; 1986) and H-9990 (1:10,000; 1981) on the eastern boundary. There is no contemporary survey on the western boundary. *See Evaluation Report Section* ✓
 No irregularities were found when comparing soundings and depth contours. Agreement between overlapping soundings is excellent, with all junction soundings agreeing within one fathom. ✓

One small reef within the limits of H-9990 was also positioned during shoreline verification (Pos. #8485-8486). The center of the reef, $58^{\circ}11'35.8''N$, $135^{\circ}32'31.5''W$, agrees well with the position scaled from H-9990 ($\sim 58^{\circ}11'35.7''N$, $135^{\circ}32'32.6''W$ - converted from NAD27 to NAD83). The height of the reef, 2 ft above MLLW, is identical to that determined on H-9990. This reef is shown on Chart 17302 as a rock awash. *Chart area as shown on Smooth Sheet.* ✓

K. COMPARISON WITH PRIOR SURVEYS

There are no AWOIS items within the survey limits that originate from prior surveys. ✓

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

H-2562 (1:40,000; 1901):

In general, agreement of depths and contours between H-2562 and this survey is very good. Inshore depths agree within 2 fathoms, while deeper areas (70 - 130 fathoms) agree within 5 fathoms. ✓

Substantial discrepancies on the offshore shoals were found. Most shoal areas were more extensive than depicted on H-2562, 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: ✓

The 43-fm shoal at $\sim 58^{\circ}17'30''\text{N}$, $135^{\circ}35'12''\text{W}$ and the 43-48-fm shoal at $\sim 58^{\circ}17'12''\text{N}$, $135^{\circ}34'00''\text{W}$ were investigated with 50m line spacing, and found to be one shoal with three areas under 30 fms: ✓

23 fms at $58^{\circ}17'18.5''\text{N}$, $135^{\circ}33'59.6''\text{W}$ (DN 312, Pos. #4399⁺¹⁻⁺²)
 26 fms at $58^{\circ}17'30.6''\text{N}$, $135^{\circ}34'45.4''\text{W}$ (DN 312, Pos. #4348⁺⁵)
 29 fms at $58^{\circ}17'30.4''\text{N}$, $135^{\circ}35'03.9''\text{W}$ (DN 306, Pos. #8004⁺⁵).

The shoal with depths ranging from 19-37 fms centered at $\sim 58^{\circ}16'54''\text{N}$, $135^{\circ}35'12''\text{W}$ exists but has two areas with depths less than 20 fms. An echo sounder search with 50m line spacing revealed a least depth of 14 fms at $58^{\circ}16'55.3''\text{N}$, $135^{\circ}34'54.7''\text{W}$ (DN 312, Pos. #4381⁺³⁻⁺⁴). ✓

A large north-south oriented shoal is centered at $\sim 58^{\circ}17'00''\text{N}$, $135^{\circ}30'00''\text{W}$. Soundings from H-10319 show this area to be two shoals separated by a channel 50 to 80 fms deep and 300m wide. The least depth on the north shoal is 21 fms at $58^{\circ}17'40.0''\text{N}$, $135^{\circ}29'56.6''\text{W}$ (DN 312, Pos. #4446⁺⁴). The 50-fm curve also extends approximately 500m further north than depicted on H-2562. The south shoal has depths less than 20 fathoms, most notably the charted depth less than 10 fms which originates from prior survey H-4227 WD and is discussed below. ✓

A shoal approximately 1000m long with depths ranging from 49-50 fms was found centered at $\sim 58^{\circ}15'18''\text{N}$, $135^{\circ}40'00''\text{W}$. Prior survey depths in the area ranged from 54 to 66 fms. ✓

A shoal $\sim 400\text{m}$ across with a least depth of 46 fathoms was found at $58^{\circ}15'48.8''\text{N}$, $135^{\circ}35'59.9''\text{W}$ (DN 312, Pos. #4414⁺¹). The prior survey indicated a depth of 56 fathoms in this area. ✓

A small shoal $\sim 1.0\text{NM}$ east of Burger Point was found with 100m line spacing. An echo sounder search consisting of 10m line spacing revealed a least depth of 14 fms at $58^{\circ}12'02.0''\text{N}$, $135^{\circ}33'09.9''\text{W}$ (DN 090, Pos. #8524⁺¹). The surrounding depths are 22-26 fms. The nearest prior survey sounding in this area is 41 fms. ✓

The 18-1/2 fathom prior survey depth (19 fms on Chart 17302) between Harry Island and Burger Pt. ($\sim 58^{\circ}12'54''\text{N}$, $135^{\circ}35'42''\text{W}$) was found to be considerably shoaler. The area was first developed with an echo sounder and 50m line spacing. The echo sounder search revealed depths less than 10 fathoms extending from the ^{East} side of Burger Pt., westward to Harry Island and the islet on which station CHEESE is set. A diver-obtained least depth of ✓

2.7 fms was found at $58^{\circ}12'53.7''^{\text{N}}$, $135^{\circ}35'40.7''^{\text{W}}$ (DN 091, Pos. #4599). Depths of 18-20 fms were found 200m east of Harry Island. The diver-obtained least depth was reported as a danger to navigation. ✓

Divers obtained a least depth of 0.7 fm on a rock inside Pinta Cove at $58^{\circ}16'14.4''^{\text{N}}$, $135^{\circ}46'09.1''^{\text{W}}$ (DN 092, Pos. #4608). The charted prior survey depth nearest this rock is 3-1/4 fms. This depth was reported as a danger to navigation. ✓

Recommendation: The hydrographer recommends that the soundings and least depths acquired on this survey be used to supersede those of H-2562 within their common areas. CONCUR

H-4227WD (1:40,000; 1922-23):

The 59-ft depth (10 fms on Chart 17302) at $58^{\circ}16'12''^{\text{N}}$, $135^{\circ}29'36''^{\text{W}}$ originates from this wire drag. The shoal area was developed with 50-meter line spacing, revealing an echo sounder least depth of 7.9 fathoms (DN 302, Pos. #4102⁰⁻⁺¹), 100 meters east of the charted position. Divers obtained a least depth of 8.0 fathoms at $58^{\circ}16'12.0''^{\text{N}}$, $135^{\circ}29'34.2''^{\text{W}}$ (DN 081, Vesno 2124, Pos. #8422). Although no kelp was reported in the vicinity of the shoal, the echo sounder depth was retained and shown on the final field sheet. The 7.9-fathom depth was reported as a danger to navigation in 1989. ✓

A 70-foot depth at $\sim 58^{\circ}13'24''^{\text{N}}$, $135^{\circ}36'12''^{\text{W}}$ was also shown on this wire drag survey. This depth was investigated in 1923 (H-4310WD) and is discussed below. ✓

Recommendation: The hydrographer recommends that the least depth obtained by echo sounder be used to supersede the depth from H-4227WD until final tide correctors are applied to both echo sounder and diver-obtained depths. Final tide correctors results in a least depth of 8.1 fathoms. The 59 foot depth from H-4227WD is superseded. Chart according to the survey.

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

One 43-ft depth (7 fms on Chart 17302) at $\sim 58^{\circ}13'24''^{\text{N}}$, $135^{\circ}36'18''^{\text{W}}$ originates from this wire drag. A 3.9 fm sounding was found in this area while conducting 50m splits (DN 306, Pos. #8053⁺⁵). Divers obtained a least depth of 2.7 fms at $58^{\circ}13'23.7''^{\text{N}}$, $135^{\circ}36'16.1''^{\text{W}}$ (DN 091, Pos. #4597). This depth was reported as a danger to navigation. ✓
~~Exceeded by 2.7 fathoms Pos. #4597~~

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

CL-2168 (Coast Pilot Report, NOAA SURVEYOR, 1975):

The 33-fathom depth within the shoal charted at $\sim 58^{\circ}17'08''^{\text{N}}$, $135^{\circ}40'18''^{\text{W}}$ originates from this Coast Pilot report. The shoal was developed using 100-meter line spacing, revealing a least depth of 34 fathoms at $58^{\circ}17'11.5''^{\text{N}}$, $135^{\circ}40'47.8''^{\text{W}}$, approximately 400 meters WNW of the reported depth (DN 306, Pos. #4456⁺³⁻⁺⁴). ✓

Recommendation: The hydrographer recommends that the soundings acquired over this shoal be used to supersede the depth reported in the chart letter. SEE EVALUATION SECTION 7a.

L. COMPARISON WITH THE CHART

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. *SEE EVALUATION REPORT SECTION 7.2.* ✓

Main scheme lines were oriented north-south and spaced at 400 meters. Line spacing was reduced to 200 meters in depths less than 50 fathoms, and to 100 meters in depths less than 30 fathoms. ✓

Dive investigations resulted in least depth determinations of eight 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. ✓

Comparison of Non-Sounding Features

In general, the chart 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 major change in the high water line occurred on the shallow bay charted at $\sim 58^{\circ}11'00''\text{N}$, $135^{\circ}33'00''\text{W}$. In addition to the overall change in the bay, one uncharted reef was found at $\sim 58^{\circ}11'26''\text{N}$, $135^{\circ}32'00''\text{W}$. A large ledge was also positioned along the west entrance to this shallow bay at $\sim 58^{\circ}11'30''\text{N}$, $135^{\circ}32'54''\text{W}$. ✓

The two rocks charted at $\sim 58^{\circ}13'00''\text{N}$, $135^{\circ}36'24''\text{W}$ are a small islet surrounded by a large ledge and foul area (DN 090, Pos. #8501-8514). Station CHEESE is set atop the islet. ✓

The rocks charted alongshore from $\sim 135^{\circ}46'00''\text{W}$ to $135^{\circ}47'30''\text{W}$ were found to be a rock/boulder beach. Scattered kelp patches were visible along the shore, particularly around Pt. Adolphus. ✓

A group of 8-10 piles, protruding about 1 ft above the gravel beach were found 50-100m from the high water line at $\sim 58^{\circ}13'33''\text{N}$, $135^{\circ}40'03''\text{W}$. They are 10-20m east of a small stream that runs from the high water line down into the gravel beach (DN 087, Pos. #5103). *The Piles were not positioned by sounder. The piles were transferred to the Smooth Sheet from the Final Field Sheet. LIMIT LINE WAS* ✓

Dangers to Navigation

Nine 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. ✓

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. *SEE EVALUATION REPORT SECTION 6*

N. AIDS TO NAVIGATION

Pt. Adolphus Light (Light List #24175) is the only fixed aid to navigation within the limits ✓

of this survey. In 1988, NOAA Ship FAIRWEATHER determined its position to Third Order, Class I specifications (see 1988 Horizontal Control Report). FAIRWEATHER's field position was compared to published and charted positions. Comparisons are shown below:

<u>Navigation Aid</u>	<u>Published Position *</u>	<u>Charted Position</u>	<u>Survey Position</u>
F1 W 4s	58°17'12"N	58°17'09"N	58°17'09.652"N
NR	135°46'54"W	135°47'00"W	135°46'58.357"W
obscured from 322° to 102°			

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

The Light List characteristics given above 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 is 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

<u>Vessel:</u>	<u>2120</u>	<u>2123</u>	<u>2124</u>	<u>2125</u>	<u>2126</u>	<u>TOTAL</u>
# of Pos.	330	408	733	235	605	2014
NM of Hydro:	-	103.4	151.8	52.9	111.9	420.0
NM ² Hydro:		44.6				6
Detached Positions:		200				1
Bottom Samples:		54				1
			Velocity Casts:			6
			Tide Stations:			1
			Current/Magnetic Stations:			1

P. MISCELLANEOUS

All bottom samples were forwarded to the Smithsonian Institution in 1989.

No current measurements were made in 1989 as no anomalous currents were observed within this survey's limits. However, tide rips were regularly seen at Pt. Adolphus out to 0.5NM from shore. During periods of maximum flood and ebb, divers operating in the area estimated currents to be 2-3 knots.

In 1990, RAINIER occasionally anchored 2.0NM west of Pt. Adolphus between March 27 and April 5. 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 noticeably lighter, 0.4 to 1.0 kt, and set southwestward at 230°T.

Q. RECOMMENDATIONS

The hydrographer recommends that a 1:20,000- or 1:40,000-scale inset of Flynn Cove and its western entrance be compiled and placed on NOS Chart 17302 as the cove is an ideal anchorage for small- to medium-sized vessels. RAINIER frequently anchored 0.25NM south of Harry Island in the fall of 1989 and the spring of 1990. Small sailing and fishing vessels

were seen anchored in the south end of the cove during the same time periods. *CONCUR*

R. AUTOMATED DATA PROCESSING

HDAPS software programs "SURVEY" (versions 4.00 and 4.13), "FILESYS" (versions 1.40, 1.41 and 1.50) and "POSTSUR" (versions 4.01, 4.10 and 4.13) were used in the creation of all field sheets and the acquisition and processing of data. All versions of "POSTSUR" were field-modified to plot the final field sheets without position numbers. A listing of the acquisition and processing hardware components is appended to this report. PC-DAS program, NOAA EXE (version 3.55) was used for the range-azimuth hydrography.

Detached positions for all bottom samples are included in Contact Table Nos. 40-42. Positions for the five diver-obtained least depths which were positioned by range/azimuth (DN 091, Pos. #4597-4601) were computed via MTEN and placed into Contact Table No. 43. The master printout and echogram, along with all computation forms for the dives, are included in the survey data. Copies of all contact tables are ~~appended to this report.~~ *Filed with the Survey Records.*

The orientation of sounding lines on the first rough sounding plot shows inconsistent line spacing between mainscheme lines and mainscheme splits. The inconsistencies are due to: (1) changes in sounding rotation between adjacent sounding lines, (2) plotter pen incorrectly placed on the origin, and (3) misalignment of the sheet due to the ripping of the paper's sprocket holes. The track plots for both RA-20-4E-89 and RA-20-4W-89, along with the two sounding plots labeled "CO Copy", reflect accurate spacing/orientation of all lines.

Station EAGLE was assigned two station numbers, 105 and 205, as two shore transponders were simultaneously set over the mark (one pointing NE, one pointing NW). *ONLY Station #105 IS SHOWN ON THE SMOOTH SHEET. DATA COLLECTED WITH Station #205 WAS RE ASSIGNED TO Station #105 SAME POSITION. For Processing and Plotting.*
The survey data, stored according to sheet number, were forwarded to N/CG245 on 32-track tape cartridges.

The following position numbers were duplicated during this survey:

<u>Pos. Nos.</u>	<u>DN</u>	<u>Vesno</u>	<u>DN</u>	<u>Vesno</u>
4254-4316	304	2124	311	2124
4317-4338	306	2124	311	2124
4339-4452	306	2124	312	2124
4453-4461	306	2124	313	2124
8422	081	2124	081	2126

S. REFERRAL TO REPORTS

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

<u>Title</u>	<u>Date Sent to</u>
Fall 1989 Horizontal Control Report for OPR-O186-RA	<u>N/CG245</u> December, 1989
Fall 1989 Electronic Control Data Package for OPR-O186-RA	December, 1989
Spring 1990 Electronic Control Data Package for OPR-O186-RA	June, 1990

Fall 1989 Corrections to Echo Soundings
Data Package for OPR-O186-RA

November, 1989

Spring 1990 Corrections to Echo Soundings
Data Package for OPR-O186-RA

June, 1990

Spring 1990 Coast Pilot Report
for OPR-O186-RA

July, 1990

Respectfully Submitted,

for *Harlene Hoggala*
LCDR, NOAA
Matthew J. Hawkins
Ensign, NOAA

Approved and Forwarded,

John C. Albright
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	9	250	0.0	0.0	3 10/18/89
101	F	058:22:02.097	135:44:01.316	4	250	0.0	0.0	5 11/01/89
102	V	058:22:00.658	135:35:05.705	5	139	0.0	0.0	00/00/00
103	F	058:13:00.750	135:36:26.826	5	250	0.0	0.0	1 11/07/89
104	V	058:11:23.061	135:29:35.285	20	139	0.0	0.0	00/00/00
105	F	058:13:54.846	135:38:41.748	4	250	0.0	0.0	E 10/18/89
106	V	058:20:23.377	135:32:11.011	9	139	0.0	0.0	00/00/00
107	F	058:24:26.749	135:34:33.856	4	250	0.0	0.0	2 10/24/89
108	F	058:11:21.969	135:29:59.786	12	250	0.0	0.0	0 10/18/89
109	F	058:22:30.552	135:29:02.346	10	250	0.0	0.0	B 10/24/89
110	V	058:20:47.818	135:42:26.049	3	139	0.0	0.0	00/00/00
111	V	058:12:48.704	135:35:06.724	8	139	0.0	0.0	00/00/00
112	F	058:23:13.034	135:49:27.324	5	250	0.0	0.0	1 10/24/89
113	F	058:16:00.946	135:45:18.766	7	250	0.0	0.0	D 11/07/89
114	F	058:19:02.314	135:27:19.259	8	250	0.0	0.0	C 10/24/89
115	F	058:21:14.164	135:24:44.196	8	250	0.0	0.0	F 11/08/89
116	F	058:19:30.080	135:36:48.509	2	250	0.0	0.0	4 10/27/89
117	F	058:16:10.918	135:20:35.724	2	250	0.0	0.0	10/27/89
118	F	058:19:02.197	135:27:19.510	0	250	0.0	0.0	10/27/89

NO.	NAME
100	ADOLPHUS 2, 1922
101	ANT, 1923
103	* CHEESE, 1989
105	EAGLE, 1922
108	* HOON TP, 1989
109	ICE, 1922
113	PIN, 1901
114	POR RM, 1989
116	PI, 1989

*Stations used in 1989, during
SURVEY H-10319.*

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	4	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	F	03/17/90
105	F	058:13:54.846	135:38:41.748	10	250	0.0	0.0	2	03/17/90
106	V	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	C	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	4	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	B	03/17/90
119	F	058:16:25.074	136:02:19.250	11	250	0.0	0.0	1	04/03/90
120	F	058:19:08.821	136:02:27.081	10	250	0.0	0.0	B	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	3	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	136:02:27.084	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	E	04/12/90
205	F	058:13:54.846	135:38:41.748	10	250	0.0	0.0	3	03/17/90
33	F	058:16:16.742	136:02:14.424	11	0	0.0	0.0	1	04/16/90
34	F	058:20:30.117	136:07:23.370	5	0	0.0	0.0	4	04/16/90
135	F	058:16:08.426	136:16:52.403	13	0	0.0	0.0	C	04/16/90

NO.	NAME
100	ADOLPHUS 2, 1922
101	ANT, 1923
103	*CHEESE, 1989
105	EAGLE, 1922
108	*HOON TP, 1989
109	ICE, 1922
110	KNOB, 1923
113	PIN, 1901
114	POR RM, 1989
116	PI, 1989
128	PT. GUSTAVUS WEST BASE, 1923

*Stations used in 1990
For Survey H-10319*

NOAA FORM 76-40
(6-74)

Replaces C&GS Form 567.

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

REPORTING UNIT
(If field Party, Ship or Office)

NOAA SHIP RAINIER

STATE

ALASKA

LOCALITY

ICY STRAIT

DATE

4-27-90

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY

- HYDROGRAPHIC PARTY
 - GEODETIC PARTY
 - PHOTO FIELD PARTY
 - COMPILATION ACTIVITY
 - FINAL REVIEWER
 - QUALITY CONTROL & REVIEW GRP.
 - COAST PILOT BRANCH
- (See reverse for responsible personnel)

OPR PROJECT NO.

OPR-0186-RA

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

DATUM

NAD 83

JOB NUMBER

N/A

H-10319

POSITION

LATITUDE		LONGITUDE	
D.M. Meters	° /	D.P. Meters	° /
58-17	09.652	135-46	58.357

CHARTING NAME

Pt. Adolphus Light
LL#24175

DESCRIPTION
(Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)

FL W 4s, Ht=16.775ft.
Obscured from 322°-102°

METHOD AND DATE OF LOCATION
(See instructions on reverse side)

OFFICE

F-6-L
1988

CHARTS AFFECTED

17302
17300

NOAA SHIP
FAIRWEATHER

Previ appd
L-541(90)

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	CAPT JOHN C. ALBRIGHT, NOAA
POSITIONS DETERMINED AND/OR VERIFIED	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	
<p style="text-align: center;">INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' (Consult <i>Photogrammetric Instructions No. 64</i>)</p>	
<p>OFFICE</p> <p>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</p> <p>FIELD</p> <p>I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection</p> <p>A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75</p> <p>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	<p>FIELD (Cont'd)</p> <p>B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982</p> <p>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</p> <p>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75</p> <p>**PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>
<p><input type="checkbox"/> PHOTO FIELD PARTY</p> <p><input checked="" type="checkbox"/> HYDROGRAPHIC PARTY</p> <p><input type="checkbox"/> GEODETIC PARTY</p> <p><input type="checkbox"/> OTHER (Specify)</p>	<p>FIELD ACTIVITY REPRESENTATIVE</p>
<p><input type="checkbox"/> REVIEWER</p> <p><input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE</p>	<p>OFFICE ACTIVITY REPRESENTATIVE</p>



CO

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

NOAA Ship RAINIER
1801 Fairview Avenue East
Seattle, Washington 98102-3767

December 26, 1989

Director
DMAHTC
6500 Brooks Lane
Washington, DC 20315

Dear Sir:

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

Sincerely,

John C. Albright
Captain, NOAA
Commanding Officer

Enclosures





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

NOAA Ship RAINIER S221
1801 Fairview Avenue East
Seattle, Washington 98102-3767

December 26, 1989

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

Dear Sir:

Enclosed is a confirmation copy of the radio message forwarded to your office regarding the dangers to navigation which I recommended for inclusion in the Local Notice to Mariners for the Seventeenth Coast Guard District. A copy of a chartlet showing the area in which the dangers exist is also enclosed.

Sincerely,

John C. Albright
Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
N/MOP



P 262100Z DEC 89
 FM NDAAS RAINIER
 TO CCGDSEVENTEEN JUNEAU AK
 DMAHTC (NAVWARN) WASHINGTON DC//MCNM//
 INFO ZEN/NOAAMOP SEATTLE WA
 ACCT CM-VCAA
 BT

UNCLAS

NOAA SHIP RAINIER HAS FOUND EIGHT DANGERS TO NAVIGATION IN
 ICY STRAIT, ALASKA (PROJECT OPR-0186-RA) WITHIN THE LIMITS
 OF HYDROGRAPHIC SURVEYS H-10318 (EAST AND SOUTH OF PLEASANT *UNREVISED*
 ISLAND; ITEMS A-F) AND H-10319 (HOONAH ISLAND TO POINT *RETAINED AS REPORTED*
 ADOLPHUS; ITEMS G AND H). THE FOLLOWING INFORMATION IS
 PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

	<u>DN</u>	<u>Pos.No.</u>
A. "SHOAL SUBMERGED 13-1/2 FATHOMS AT LATITUDE 58-20-57.4N, LONGITUDE 135-30-09.6W."	300	3063 ^{*6}
B. "ROCK SUBMERGED 1 FATHOM AT LATITUDE 58-20-40.1N, LONGITUDE 135-29-36.1W."	303	4372
C. "ROCK SUBMERGED 8-1/4 FATHOMS AT LATITUDE 58-19-49.8N, LONGITUDE 135-32-26.2W."	311	9361 ✓
D. "ROCK SUBMERGED 3-3/4 FATHOMS AT LATITUDE 58-19-33.4N, LONGITUDE 135-33-11.8W."	311	9364
E. "ROCK SUBMERGED 6-3/4 FATHOMS AT LATITUDE 58-18-53.1N, LONGITUDE 135-36-14.1W."	311	9359
F. "ROCK SUBMERGED 4-1/4 FATHOMS AT LATITUDE 58-19-24.5N, LONGITUDE 135-36-42.2W."	311	9360
G. "SHOAL SUBMERGED 7-3/4 FATHOMS AT LATITUDE 58-16-10.6N, LONGITUDE 135-29-33.1W."	302	4102 ⁰⁷¹

H. "DEPTHS OF TWO TO THREE FATHOMS HAVE BEEN FOUND BETWEEN
 BURGER POINT AND HARRY ISLAND, AND BETWEEN HARRY ISLAND AND
 THE ROCKS 0.3NM TO THE WEST. LESSER DEPTHS MAY EXIST.
 MARINERS ENTERING FLYNN COVE FROM THESE DIRECTIONS ARE URGED
 TO EXERCISE CAUTION."

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.
 GEOGRAPHIC POSITIONS ARE BASED ON NAD83 DATUM. THE NOS
 CHARTS AFFECTED ARE CHART 17302, 15TH EDITION (MAY 20/89,
 1:80,000, NAD83) AND CHART 17300, 25TH EDITION (APR 29/89,
 1:209,978, NAD83).

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

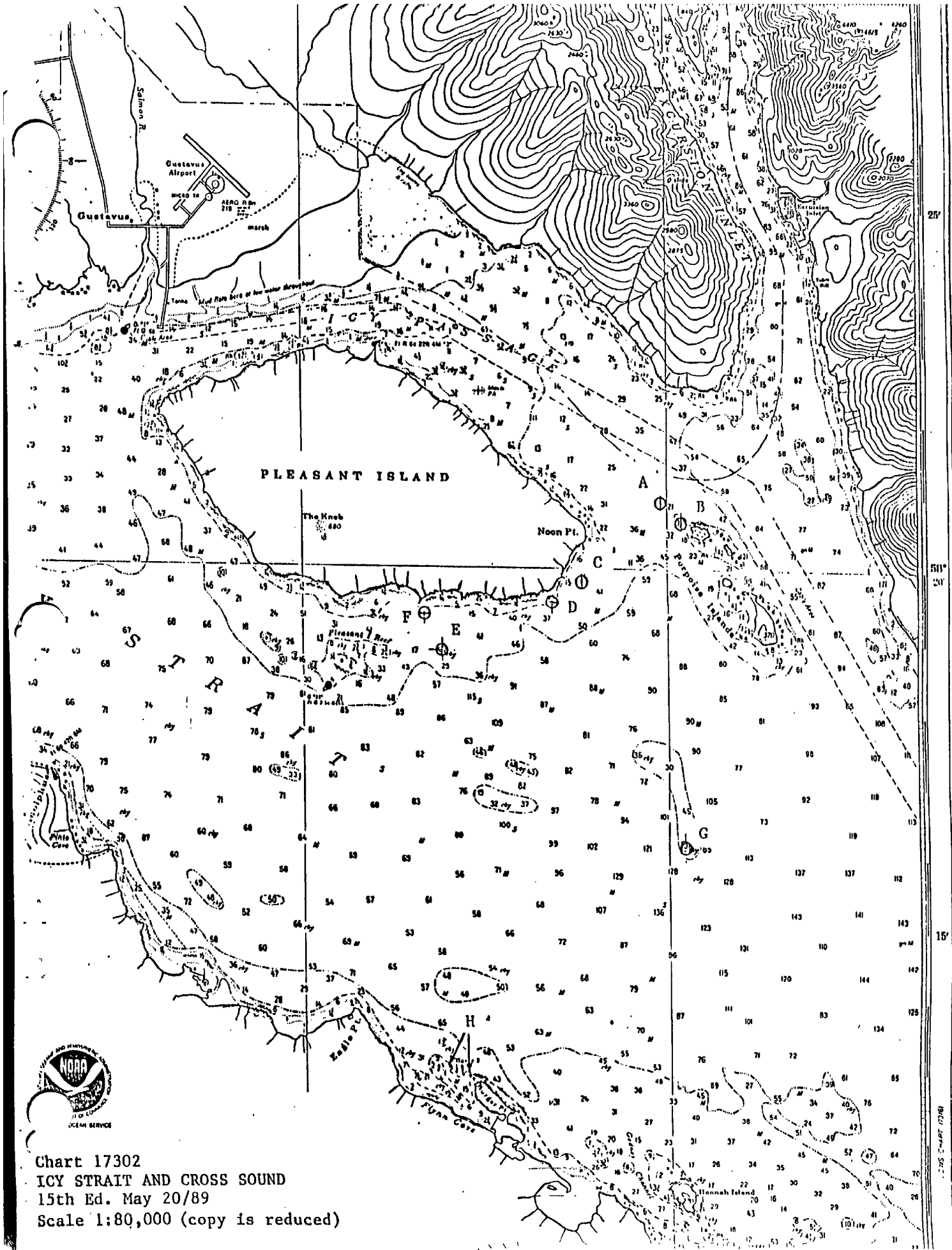


Chart 17302
 ICY STRAIT AND CROSS SOUND
 15th Ed. May 20/89
 Scale 1:80,000 (copy is reduced)

25'

511°
 21'

15'

NOAA Chart 17302



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 16, 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 thirteen dangers to navigation, in addition to the eight dangers reported in 1989 (reference letter dated December 26, 1989). 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 98102-3767

April 16, 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 the dangers to navigation which I recommend for inclusion in the Local Notice to Mariners for the Seventeenth Coast Guard District. The dangers supplement those reported in correspondence dated December 26, 1989. A copy of the chartlet 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



CO JC

KVJ / 0359Z
17 APR 90
MCH / TPOST

P 170322Z APR 90
FM NOAA S RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTC (NAVWARN) WASHINGTON DC//MCNM//
INFO NOAA MOP SEATTLE WA
ACCT CM-VCAA
BT
UNCLAS

NOAA SHIP RAINIER HAS FOUND THIRTEEN DANGERS TO NAVIGATION
IN ICY STRAIT, ALASKA (PROJECT OPR-0186-RA) WITHIN THE
LIMITS OF HYDROGRAPHIC SURVEYS H-10318 (EAST AND SOUTH OF
PLEASANT ISLAND; ITEMS I-N) AND H-10319 (HOONAH ISLAND TO
POINT ADOLPHUS; ITEMS O-U). THESE DANGERS SUPPLEMENT THOSE
REPORTED IN MY P 262100Z DEC 89 MESSAGE. THE FOLLOWING
INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO
MARINERS:

CHARTS AFFECTED: 17302 15TH ED 1:80,000 MAY 20/89NAD83
17300 25TH ED 1:209,978 APR 29/89NAD83

- | | <u>DN</u> | <u>Pos. No.</u> |
|--|-----------|--------------------------|
| I. "ROCK SUBMERGED 5 FATHOMS AT LATITUDE 58-18-41.3N,
LONGITUDE 135-40-35.0W." | 080 | 4502 |
| J. "ROCK SUBMERGED 5 FATHOMS AT LATITUDE 58-18-43.4N,
LONGITUDE 135-40-11.7W." | 080 | 4499 |
| K. "ROCK SUBMERGED 3/4 FATHOM AT LATITUDE 58-19-23.7N,
LONGITUDE 135-38-06.4W." | 081 | 4506 ✓ |
| L. "ROCK SUBMERGED 1/2 FATHOM AT LATITUDE 58-19-26.1N,
LONGITUDE 135-34-38.0W." | 081 | 4508 |
| M. "SHOAL SUBMERGED 11 FATHOMS AT LATITUDE 58-19-19.8N,
LONGITUDE 135-35-15.2W." | 300 | 6787 ^{41,42} |
| N. "SUBMERGED ROCKS AND DEPTHS LESS THAN THOSE CHARTED WERE
FOUND WITHIN THE 10 FATHOM CURVE SURROUNDING PLEASANT ISLAND
REEF. MARINERS ARE URGED TO EXERCISE CAUTION WHEN
TRANSITING THIS AREA." | | Shoreline
DP's |
| O. "SHOAL SUBMERGED 2-3/4 FATHOMS AT LATITUDE 58-13-23.2N,
LONGITUDE 135-36-16.7W." | 091 | 4597 |
| P. "SHOAL SUBMERGED 5 FATHOMS AT LATITUDE 58-12-53.6N,
LONGITUDE 135-36-59.2W." | 087 | 2271 ⁴⁵⁻⁴⁶ /J |
| Q. "ROCK SUBMERGED 1-1/2 FATHOMS AT LATITUDE 58-12-27.4N,
LONGITUDE 135-35-31.7W." | 091 | 4601 |
| R. "ROCK SUBMERGED 3 FATHOMS AT LATITUDE 58-12-47.1N,
LONGITUDE 135-36-13.4W." | 091 | 4598 |

UNREVISED RETAINED AS REPORTED

DN Pos. No.

S. "SHOAL SUBMERGED 2-1/4 FATHOMS AT LATITUDE 58-12-53.7N, 091 4599
LONGITUDE 135-35-40.7W."

T. "SHOAL SUBMERGED 2-1/4 FATHOMS AT LATITUDE 58-12-59.5N, 304 2171¹⁵
LONGITUDE 135-36-07.0W."

U. "SHOAL SUBMERGED 1/2 FATHOM AT LATITUDE 58-16-14.4N, 092 4608
LONGITUDE 135-46-09.1W."

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.
GEOGRAPHIC POSITIONS ARE BASED ON NAD83 DATUM.

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

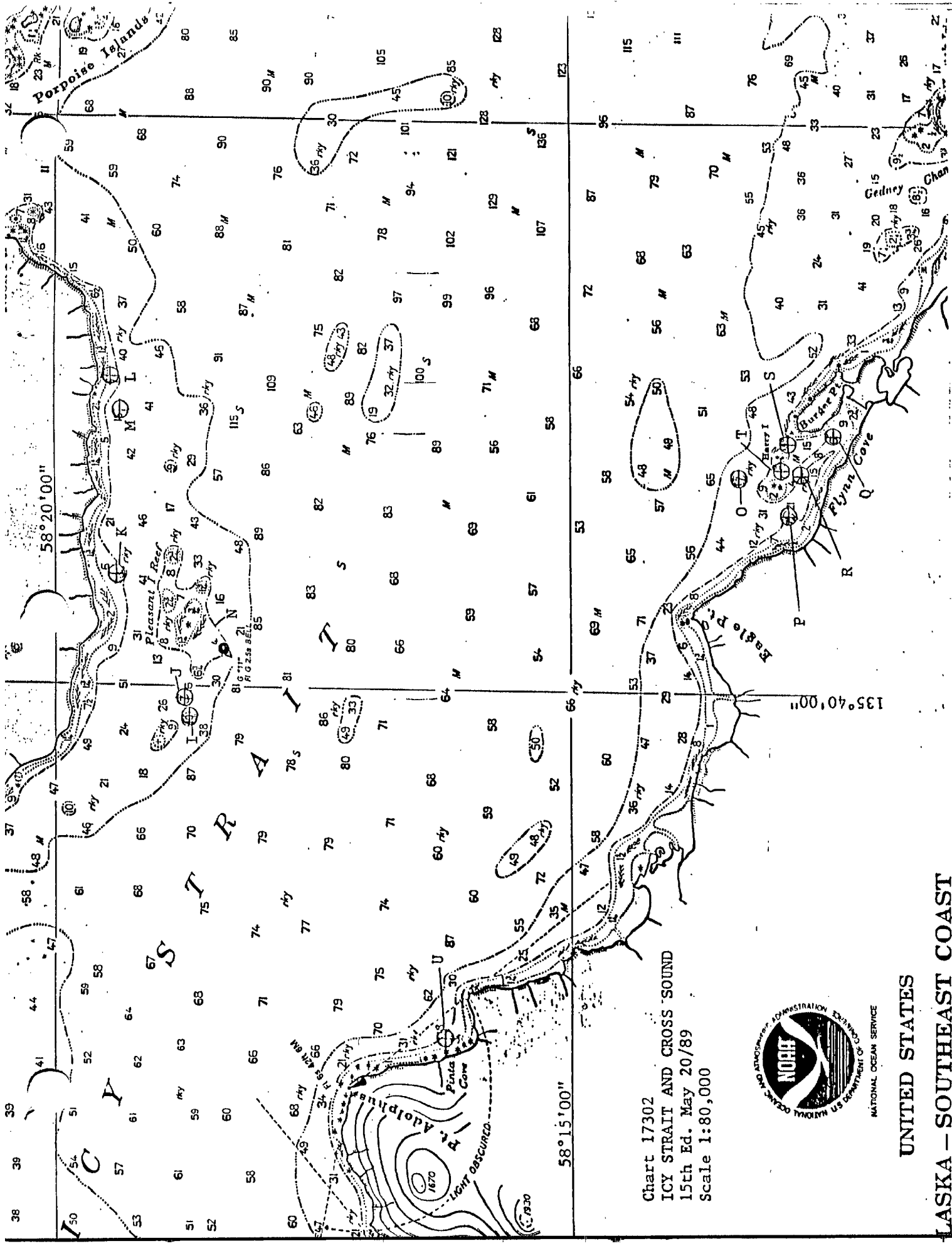


Chart 17302
 ICY STRAIT AND CROSS SOUND
 15th Ed. May 20/89
 Scale 1:80,000



NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 DEPARTMENT OF COMMERCE

UNITED STATES
 ALASKA - SOUTHEAST COAST

APPROVAL SHEET

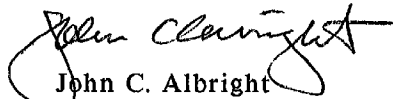
for

H-10319

RA-20-4-89

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 sheet 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

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: February 27, 1990

MARINE CENTER: Pacific

OPR: O-186-RA

HYDROGRAPHIC SHEET: H-10319

LOCALITY: Alaska, Icy Strait, Hoonah Island to Pt. Adolphus

TIME PERIOD: October 28 - November 13, 1989

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

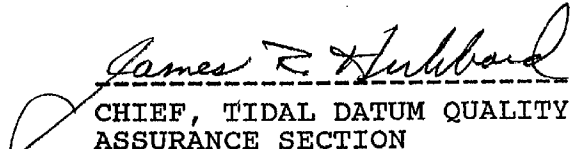
PLANE OF REFERENCE (MEAN LOWER LOW WATER): -0.18

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 12.96

REMARKS: RECOMMENDED ZONING

All times and heights are direct on Pt. Adolphus (945-2516).

Times are tabulated in Greenwich Mean Time.


CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: July 11, 1990

MARINE CENTER: Pacific

OPR: O-186-RA

HYDROGRAPHIC SHEET: H-10319

LOCALITY: Alaska, Icy Strait, Hoonah Island to Pt. Adolphus

TIME PERIOD: March 18 - April 2, 1990

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

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 8.98 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 13.1 ft.

REMARKS: RECOMMENDED ZONING

All times and heights are direct on Pt. Adolphus (945-2516).

Note: Times are tabulated in Greenwich Mean Time.

Caution: staff movement of 0.07 ft. occurred between
installation and removal of gage.



CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

7/11/90


H-10319

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 17302 B ON PREVIOUS SURVEY NO. 17300 C ON U.S. QUADRANGLE MAPS D FROM LOCAL INFORMATION E ON LOCAL MAPS F TP-01313 G TP-01317 H TP-01320 K TP-01321									
	A	B	C	D	E	F	G	H	K	

ADOLPHUS, POINT	X	X	X					X	X	1
ALASKA (title)	X		X			X	X	X	X	2
BURGER POINT	X		X						X	3
CHICHAGOF ISLAND	X	X	X			X	X	X	X	4
EAGLE POINT	X	X	X						X	5
FLYNN COVE	X	X	X						X	6
GALLAGHER CREEK			X						X	7
GEDNEY CHANNEL	X		X							8
HARRY ISLAND	X		X						X	9
HOONAH ISLAND	X	X	X			X				10
ICY STRAIT	X	X	X			X	X	X	X	11
PINTA COVE	X	X	X				X	X		12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

Approved:

Charles E. Harrington
Chief Geographer - N/CG 245

AUG 28 1990

HYDROGRAPHIC SURVEY STATISTICS

H-10319

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

SHORELINE DATA

SHORELINE MAPS (List): TP-01313, TP-01317, TP-01320, TP-01321

PHOTOBATHYMETRIC MAPS (List): N/A

NOTES TO THE HYDROGRAPHER (List): N/A

SPECIAL REPORTS (List): None

NAUTICAL CHARTS (List): 17302 15th Ed. 5/20/89

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			1958
POSITIONS REVISED			
SOUNDINGS REVISED			144
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	71.50		71.50
VERIFICATION OF SOUNDINGS	193.		193.
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	97.50		97.50
COMPARISON WITH PRIOR SURVEYS AND CHARTS		8	8.
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		26	26.
GEOGRAPHIC NAMES			
OTHER: Digitization			
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	362	34
			396

Pre-processing Examination by M. Brown, D. Hill	Beginning Date 5/9/90	Ending Date 5/9/90
Verification of Field Data by E. Brown, M. Sanders, D. Deodato	Time (Hours) 362	Ending Date 12/12/90
Verification Check by J. Stringham, G.E. Kay	Time (Hours) 76	Ending Date 1/7/91
Evaluation and Analysis by Gordon E. Kay	Time (Hours) 34	Ending Date 1/31/91
Inspection by Dennis J. Hill	Time (Hours) 4	Ending Date 3/18/91

EVALUATION REPORT
H-10319

1. INTRODUCTION

Survey H-10319 is a basic hydrographic survey accomplished by the NOAA Ship RAINIER under the following Project Instructions.

OPR-0186-RA, dated September 13, 1989

OPR-0186-RA, dated February 22, 1990

Survey H-10319 is a two year survey, field work was started during the 1989 fall field season and completed in the spring of 1990. The information for both years has been combined into one report.

This survey occurred in Alaska and covers an area in Icy Strait from Point Adolphus southeast to Gedney Channel. The survey northern limit is at latitude $58^{\circ}18'06''\text{N}$. The survey southern boundary is along the shoreline of Chichagof Island to latitude $58^{\circ}11'00''\text{N}$. The survey extends from longitude $135^{\circ}47'36''\text{W}$ on the west to longitude $135^{\circ}27'54''\text{W}$ on the east. The northern portion of the Chichagof Island shoreline consists of ledges and rocks with some beaches of either cobble, pebbles or gravel. The rest of the shoreline consists of seaward accessible beaches of gravel or sand. The bottom consists of mud, sand or broken shells. Depths range from 0 to 138 fathoms.

Predicted tides for Juneau, Alaska, gage 945-2210, were used for the reduction of soundings during field processing. Approved hourly heights zoned from Point Adolphus, Icy Strait, Alaska, gage 945-2516, 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 and sound velocity correctors are adequate. An accompanying computer printout contains the parameters and the correctors. The electronic control correctors have been determined according to the established procedures and are adequate.

A digital file has been generated for this survey that includes categories of information required to comply with Hydrographic Survey Guideline No. 52, Standard Digital Data Exchange Format, dated 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 information.

2. CONTROL AND SHORELINE

Sections F and G of the hydrographer's report and the 1989 and 1990 Horizontal and Electronic Control Reports for OPR-0186-RA contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are 1989 field and published values based on NAD 83. These values were used during office processing for the computations 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 correction.

Latitude: -1.225 seconds (-37.892 meters)
Longitude: +6.520 seconds (+106.347 meters)

The year of establishment of control stations shown on the smooth sheet originates with published data and the survey records.

The quality of 376 positions exceeds limits in terms of the error circle radius and residual. A review of the data indicates that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with the surrounding data.

The hydrographer states that 8-10 piles were observed in the vicinity of latitude 58°13'33"N, longitude 135°40'03"W, see page 12 of the hydrographer's report. These piles were not positioned by the hydrographer. The limits of the piles were transferred to the smooth sheet from the final field sheet without supporting positional information.

The following shoreline maps apply to this survey.

<u>Map Number</u>	<u>Photo Date</u>	<u>Class</u>
TP-01313	May-June 1985	III
TP-01317	June 1987	III
TP-01320	June 1987	III
TP-01321	June 1987	III

3. HYDROGRAPHY

Hydrography is adequate to:

- delineate the bottom configuration, determine least depths, and draw the standard depth curves;
- 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, August 1988 Edition, except:

The hydrographer uses the term, shoal, to describe bathymetric features as much as 50 fathoms deep. The correct use of this term is restricted to offshore hazards to navigation on which there is a depth of ten fathoms or less, and composed of unconsolidated material.¹

5. JUNCTIONS

Survey H-10319 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-9990	1981-82	1:10,000	Southeast
H-10231	1986	1:20,000	East
H-10257	1987	1:10,000	Northeast
H-10271	1988	1:10,000	Northwest
H-10318	1989-90	1:10,000	North
H-10334	1990	1:10,000	West

The junction with survey H-10318 is complete.

The junction with survey H-10334 is not complete. Survey H-10334 is plotted in meters and this survey in fathoms. There is good agreement between soundings, however, the depth curves shown on these surveys delineate different depths and, therefore, do not agree. The note on the smoothsheet is shown as "ADJOINS". Refer to the Evaluation Report for survey H-10334 for additional discussion on the agreement with the fathom depth curves.

The junctions with surveys H-9990, H-10231, H-10257 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. Some soundings have been transferred to survey H-10319 from surveys H-9990 and H-10231 to better portray the depth curves in the common area.

¹ Hydrographic Survey Guideline No. 43, June 11, 1985

6. COMPARISON WITH PRIOR SURVEYS

H-2562(1901) 1:40,000

Survey H-2562 covers the entire area of the present survey. The surveys compare well with one another. Some discrepancies between the two surveys were noted. Refer to section K of the hydrographer's report, pages 10-11, for a comparison between these surveys.

Survey H-10319 is adequate to supersede prior survey H-2562 within the common area.

H-4227(1922-23)WD 1:40,000

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

Wire-drag survey H-4227 covers the eastern portion of survey H-10319. Wire-drag survey H-4310 covers all but the southeast portion of survey H-10319. Effective depths from the prior wire drag surveys are all deeper than those soundings found on the present survey.

There are no AWOIS items originating from these prior surveys applicable to this survey.

7. COMPARISON WITH CHART

Chart 17302, 15th edition, dated May 20, 1989; scale 1:80,000

Chart 17316, 15th edition, dated August 29, 1987; scale 1:80,000

a. Hydrography

Charted hydrography originates with surveys H-2562, H-4227WD, H-4310WD, H-9990 and miscellaneous sources and requires no further discussion. Survey H-9990 is a modern contemporary survey which junctions the present survey to the east, and has been used to update the last edition of chart 17302. Also, the charted shoreline covered by this survey has been updated from the current shoreline maps.

A charted 33-fathom depth at latitude 58°17'03"N, longitude 135°40'18"W, originating from a Coast Pilot Report by the NOAA Ship SURVEYOR in 1975, was investigated and a minimum depth of 34 fathoms found. Considering the extent of the investigation, the relative accuracies of positioning and the depth correctors and the depth involved, the charted 33-fathom depth is superseded and should be deleted from the chart. This feature should be charted as found on this survey, with a minimum depth of 34 fathoms.

Survey H-10319 is adequate to supersede charted hydrography within the common area.

b. AWOIS

There are no AWOIS items originating from miscellaneous sources within the area of this survey.

c. Controlling Depths

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

d. Aids to Navigation

Point Adolphus Light (Light List Number 24175) is the only aid to navigation within the limits of this survey. A copy of the NOAA Form 76-40, providing an updated position, is attached. This aid serves its intended purpose.

e. Geographic Names

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

f. Dangers to Navigation


The hydrographer reported nine shoal soundings to DMAHTC and the Seventeenth Coast Guard District on December 26, 1989 and April 17, 1990. Copies of these messages and confirming reports are attached. No additional dangers were discovered during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10319 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is an adequate hydrographic survey. No additional field work is recommended.


Gordon E. Kay
Cartographer

APPROVAL SHEET
H-10319

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 disproof 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: 3-18-91
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.

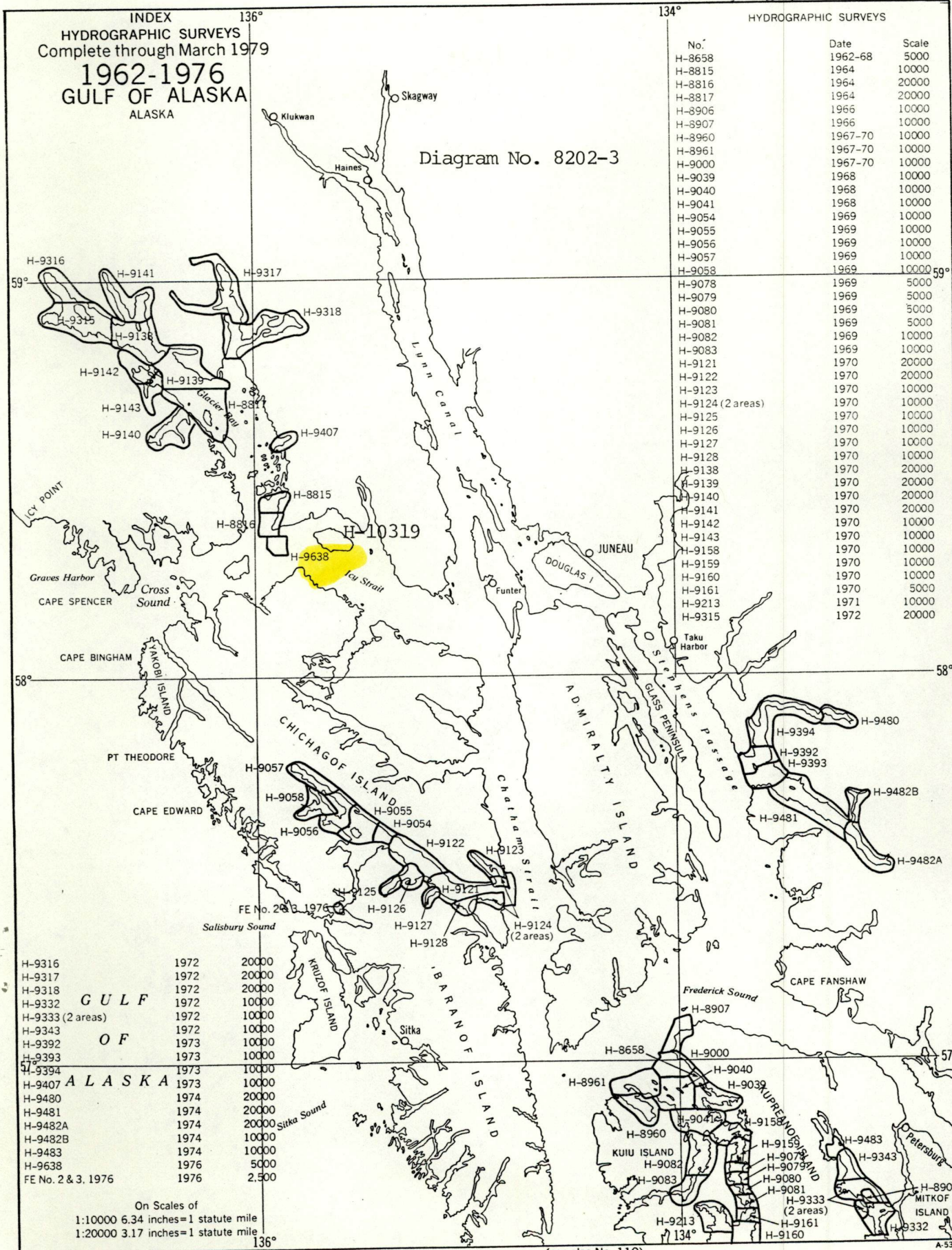
Pamela Chelgren-Koterba Date: 3/19/91
Commander Pamela Chelgren-Koterba, NOAA
Chief, Pacific Hydrographic Section

Final Approval

Approved: J. Austin Yeager Date: 6/21/91
J. Austin Yeager
Rear Admiral, NOAA
Director, Charting and Geodetic Services

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

Hydrographic Index No. 111E



INDEX
HYDROGRAPHIC SURVEYS
Complete through March 1979
1962-1976
GULF OF ALASKA
ALASKA

Diagram No. 8202-3

HYDROGRAPHIC SURVEYS

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

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

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

(see also No. 110)

A-5324

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10319

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	3-19-91	Andrew L. Key	Full Part Before After Marine Center Approval Signed Via <i>Full application</i> Drawing No. <i>of sndgs. from SS.</i>
17300	3-19-91	Andrew L. Key	Full Part Before After Marine Center Approval Signed Via <i>Full application</i> Drawing No. <i>of sndgs. from SS thru 17302.</i>
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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			Full Part Before After Marine Center Approval Signed Via Drawing No.

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10319

INSTRUCTIONS

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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
531	4-16-91	ALVACEN	Full Part Before After Marine Center Approval Signed Via Drawing No. <i>No snags. and corrections applied.</i>
500	4-18-91	ALVACEN	Full Part Before After Marine Center Approval Signed Via Drawing No. <i>No snags. and corrections applied.</i>
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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			Full Part Before After Marine Center Approval Signed Via Drawing No.

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 4-10319

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
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

MARINE CHART BRANCH RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10319

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	3-19-91	Andon L. Key	Full Part Before After Marine Center Approval Signed Via <i>Full application</i> Drawing No. <i>4 sdgs. from SS.</i>
17300	3-19-91	Andon L. Key	Full Part Before After Marine Center Approval Signed Via <i>Full application</i> Drawing No. <i>of sdgs. from SS thru 17302.</i>
17302	22 Mar 93	A.M. Barrigan	Full Part Before After Marine Center Approval Signed Via Drawing No. <i>Revised hydro thru chart 17302</i>
531	7-14-95	R. Elliott	(Full) Part Before After Marine Center Approval Signed Via Drawing No. <i>21 NO COARF</i>
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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