10318

Diagram No. 8202-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. RA-10-6-89

Registery No. H-10318

LOCALITY

State Alaska

General Locality Icy Strait

Sublocality East and South of Pleasant Island

19 89-90

CHIEF OF PARTY
CAPT J.C. Albright

LIBRARY & ARCHIVES

DATE June 28, 1991

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

10318

REF: L-981(91)

WC/L

CHT
17316
17302
17300
16016-N/C

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.: H-10318

FIELD NO.: RA-10-6-89

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

State: Alaska

General locality: Icy Strait

Locality: East and South of Pleasant Island

Scale: 1:10,000 Date of survey: OCT 19-Nov 12, 1989; MAR 18-Mar 31, 1990

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

Vessel: NOAA Ship RAINIER (2120), Launches RA-3 (2123), RA-4 (2124), RA-5 (2125), RA-6 (2126)

Chief of party: CAPT J.C. Albright

Surveyed by: LT Niichel. LTJG Duffy, LTJG Haines, ENS Hawkins, ENS Muench, ENS Schoonover

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 ~~Processed by~~: T.O. Jones Automated plot by: PHS Xynetics Plotter

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

Soundings in fathoms ~~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.

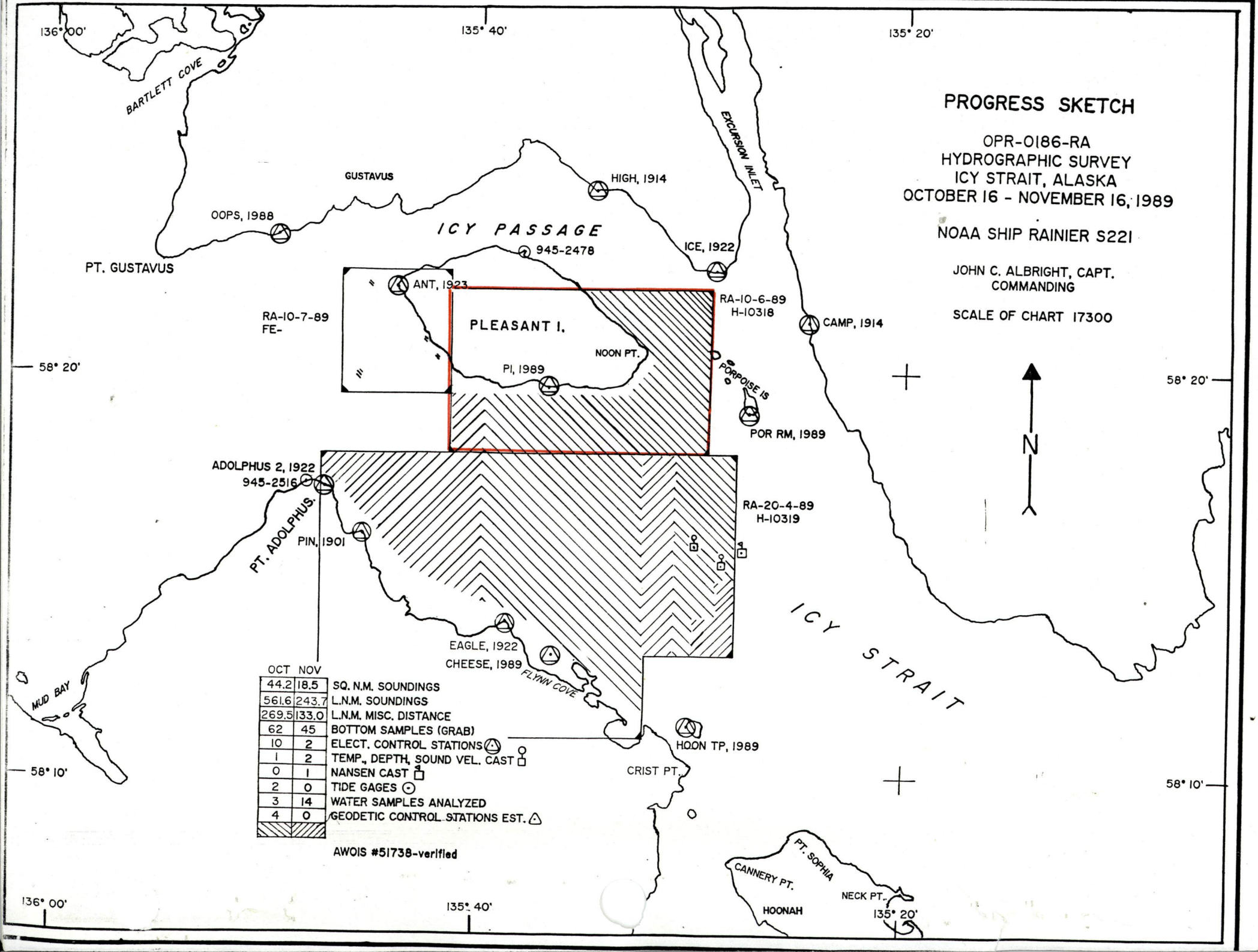
AWOLS/SURF Check 9/9/91 mcR

5C 1-30-97

X.W.W. 9/9/91

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

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



PROGRESS SKETCH

OPR-0186-RA
HYDROGRAPHIC SURVEY
ICY STRAIT, ALASKA
OCTOBER 16 - NOVEMBER 16, 1989

NOAA SHIP RAINIER S221

JOHN C. ALBRIGHT, CAPT.
COMMANDING

SCALE OF CHART 17300

N

OCT	NOV	
44.2	18.5	SQ. N.M. SOUNDINGS
561.6	243.7	L.N.M. SOUNDINGS
269.5	133.0	L.N.M. MISC. DISTANCE
62	45	BOTTOM SAMPLES (GRAB)
10	2	ELECT. CONTROL STATIONS △
1	2	TEMP., DEPTH, SOUND VEL. CAST
0	1	NANSEN CAST
2	0	TIDE GAGES ⊙
3	14	WATER SAMPLES ANALYZED
4	0	GEODETIC CONTROL STATIONS EST. △

AWOIS #51738-verified

Descriptive Report to Accompany Hydrographic Survey H-10318

Field Number RA-10-6-89
Scale 1:10,000
1989/1990

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

A. PROJECT

This basic hydrographic survey was completed in Icy Strait, Alaska as specified by Project Instructions OPR-O186-RA dated September 13, 1989 and February 22, 1990. This survey is designated Sheet H 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 for planned larger scale coverage of Icy Strait and vicinity. It responds to requests from the Southeastern Alaska Pilots' Association, NOAA, and federal, state, and local government agencies.

B. AREA SURVEYED

The survey is located in southeast Alaska, 40 NM west of Juneau, along the eastern and southern shores of Pleasant Island in Icy Strait. It includes Pleasant Island Reef and the western shore of the northernmost Porpoise Island. The survey limits are latitudes 58°22'0~~0~~"N to 58°~~18'00~~"N, and longitudes 135°41'~~36~~"W to 135°29'~~12~~"W. Data acquisition was conducted from October 19 through November 12, 1989 (DN 292 to 316) and March 18 through March 31, 1990 (DN 077 to 090).

The shoreline around the majority of Pleasant Island is generally characterized by stone beaches with occasional boulders and rock outcrops. The shoreline around Noon Point has steeper features including bluffs, rock outcrops, and ledges, with scattered foul areas and stone beaches.

The bathymetry south of Pleasant Island is generally gently sloping except for the shoal areas in the vicinity of Pleasant Island Reef which bares at MLLW. The bathymetry between Pleasant Island and Porpoise Islands is gently sloping with a few shoal areas nearshore and one isolated 30-fathom shoal two nautical miles southeast of Noon Point.

Bottom samples throughout the survey area consisted primarily of broken shell, green mud, and grey clay.

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	AML/Nansen Casts

RA-3	2123	Hydrography
RA-4	2124	Hydrography Shoreline Verification
RA-5	2125	Hydrography Shoreline Verification Bottom Samples AML Cast
RA-6	2126	Hydrography Shoreline Verification

No changes to the standard sounding configurations were necessary.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

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

Vessel	Serial No.	DN(1989)	DN(1990)
2120	A119N	306	---
2123	A114N	300-304	---
2124	A119N	298-300	---
	A103N	302-313	077-090
2125	A117N	292-301	090
2126	B048N	292-316	088-089

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 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.

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 March 1, 1989 and 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. *

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 DSF-6000N 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 Package for OPR-O186-RA. Data and computations for 1990 correctors are appended to this report. *

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 three dates: February 10, 1989, February 23 and March 13, 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 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:

Cast No.	Deepest Depth (m)	DN	Geographic Position
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
5	200	088	58°15'00"N, 135°25'54"W
N2	200	088	58°15'00"N, 135°25'54"W

N=Nansen cast

* 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 SVP Profiler, S/N 3004, which was calibrated at the Northwest Regional Calibration Center (NRCC) in Bellevue, WA on October 17, 1988. Correctors for

* Filed with the survey data

1990 data were acquired with an AML SVP 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. The Beckman Salinometer (S/N 24663) used in 1989 was calibrated on March 1, 1989 and February 7, 1990. The 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. Calibration constants for the AML probe had not been received in time to process this survey's data. Therefore, 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:

Velocity Table No.	Cast No.	Applicable DN
1	1	292-306
2	3	311-317
3	N2	077-090

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. *

Settlement and Squat

Settlement and squat correctors were determined for the automated survey launches in Shilshole Bay, WA on February 23 and March 3, 1989, and February 23 and March 13, 1990. 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.

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 1989 settlement and squat correctors used on-line are listed in Offset Table 1. 1990 correctors are in Offset Tables 1, 4, and 6. Copies of all offset tables are appended to this report. *

Tide Correctors

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

* Filed with the survey data

Zone	Time Corrections	Height Ratio
East of line between Burger Point and 58°22'24"N, 135°29'00"W	Direct	x0.92
West of line defined above to line between Pt. Adolphus and 58°23'36"N, 135°48'12"W	Direct	x0.90

Although both 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. HDAPS listings of the data used in generating tide corrector tables are appended to this report. *

Tide gages were installed in 1989 at stations on the north side of Pleasant Island (945-2478) and Point Adolphus (945-2516), and were maintained by RAINIER personnel. In 1990, only the gages at Pt. Adolphus were installed and maintained. The field tide records and the Field Tide Notes for these stations 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. * See attached Tide Note for tides used for final processing

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 1:10,000-scale final field sheets are designated RA-10-6N-89 and RA-10-6S-89 (HDAPS Plotter Sheet Table Nos. 1 and 2). Two NAD27 grid ticks were plotted on the final field sheets for ease in comparing with charted and prior survey soundings. Two 1:10,000-scale overlays include bottom sample characteristics and detached positions. One 1:10,000-scale sheet, one 1:5,000-scale sheet, and three 1:2500-scale sheets (HDAPS Plotter Sheet Table Nos. 1, 6, 7, 9, and 10) were used to depict soundings acquired over shoal areas.

Depth contours are drawn on the final field sheets in accordance with the Hydrographic Manual, except in areas of steep bathymetry where all prescribed contours could not be drawn without degrading the legibility of the sheets.

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. Positions for all existing stations are from the NGS data base and from NOAA Ship FAIRWEATHER's 1988 Horizontal Control Report. All existing stations were

* Filed with the survey data

recovered in 1989 in accordance with methods stated in FPM 5.2.4. Three stations were positioned to Third-Order Class I standards by RAINIER personnel in 1989: PI (116), HOON TP (108), and CHEESE (103). A Third-Order Class 1 position was also determined for reference mark POR RM (114). Field positions of new stations were not adjusted. No horizontal control work was conducted in 1990 in support of this survey.

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

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 in 1989 and 1990.

1989 Mobile Equipment

EDP No.	Vessel	Console/RT	DN
2120	RAINIER	E0148/E2716	306
2123	RA-3	F0245/B1405	299-302
2124	RA-4	E0138/F3413	298-304
2125	RA-5	F0245/B1405	292-298
		E0147/B1388	299-301
2126	RA-6	F0247/D2395	292-316

1990 Mobile Equipment

EDP No.	Vessel	Console/RT	DN
2124	RA-4	E0148/F3413	077-090
2125	RA-5	F0245/F3414	090
2126	RA-6	E0138/E2716	088-089

1989 Shore Equipment

Transponder Serial No.	Code	Transponder Serial No.	Code*
B1412	0	C1883	B/11
D2384	1	G3500	C/12

B1106	2	911711	D/13
911635	3	F3256	E/14
F3248	4	G3501	F/15
B1413	5		

1990 Shore Equipment

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

* hexadecimal/numerical designations

Baseline Calibrations

All opening and closing baseline calibrations were conducted over water in accordance with FPM 3.1.2.1. In 1989, opening calibrations occurred on Lake Union, Seattle, WA on DN 262-272 over a known baseline of 966m (MR CAL 1 - MR CAL 2). Closing calibrations were completed on Lake Washington, Sand Point, WA on DN 326-328 over a known baseline of 1312m. In Spring 1990, opening calibrations occurred on Lake Washington, Sand Point, WA on DN 058-061 over a measured distance of 1423m. Closing calibrations are scheduled to be completed in May, 1990. 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.

The final field sheets were plotted with 1989 and 1990 opening baseline calibration correctors. Any differences between opening and closing calibration correctors which exceed the allowable limits stated in FPM 3.1.2.3 are discussed in the Fall 1989 and Spring 1990 Electronic Control Data Packages.

System Check Procedures

Critical systems checks were conducted in accordance with FPM 3.1.2.2. Daily 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: On DN 292, Vesno 2125 acquired sounding data (Pos. Nos. 5000-5050; 5038-5057), but was unable to perform a critical systems check with console/RT pair F0245/B1405 because it received only two lines of position with signal strengths above cutoff. A launch-to-launch non-critical systems check was conducted with Vesno 2126 to confirm Vesno 2125's two lines of position. The results of the systems check showed the positioning was good; ECR and residual values were within allowable limits and the data were considered acceptable. Concur. This data has been accepted.

Vesno 2125 collected bottom samples on DN 299 and 301 with an uncalibrated console/RT pair, E0147/B1388. On DN 299, a launch-to-launch systems check was performed with Vesno 2123 to determine the uncalibrated console/RT's approximate baseline correctors. Critical systems checks were conducted as stated above. See the Fall 1989 Electronic Control Data Package for closing calibration data.

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).

During times of high water, signal strengths frequently dipped below the minimum cutoff values. When this occurred, the affected codes were de-selected on-line. Also, only one launch (Vesno 2126) was capable of receiving signals from codes located on the south shore of Icy Strait while acquiring data along the south shore of Pleasant Island. All other launches were able to acquire the signals, but they were a minimum of two units below the cutoff values.

1990: To alleviate the null zones and low signal strengths encountered last fall, most of the transponders were erected on 20-foot towers. The increase in transponder height greatly minimized positioning problems and kept signal strengths above cutoff values both at high water and over longer distances than experienced last fall.

Throughout 1989 and 1990, 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 and ECR/residual values remained within required limits. Data was, therefore, considered acceptable. Concur.

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, 4, and 6. Filed with the survey data.

H. SHORELINE

Also see section 2 of Eval Rpt.

Two shoreline maps (T-sheets) were used to transfer shoreline detail to the final field sheets. Pleasant Island shoreline originates from a 1:10,000-scale enlargement of TP-01318 (1:20,000; NAD83). Porpoise Island shoreline originates from a 1:10,000-scale enlargement of TP-01310 (1:20,000; NAD27). Shoreline features from TP-01310 were shifted to agree with NAD83 grids.

Shoreline verification was conducted either at or near lower low water in accordance with FPM 7.0. Shoreline verification was not completed in Fall 1989 due to lack of low tides during daylight hours and poor sea and weather conditions. Shoreline verification was completed in Spring 1990 in excellent sea and weather conditions and at convenient low tides.

Detached positions (D.P.s) taken at lower low water prove that the T-sheet photography was flown during a stage of tide higher than MLLW. T-sheet rocks

were found to be isolated boulders, reefs, islets or high points within foul areas or ledges. Changes in shoreline detail are shown in red on the final field sheets. Those details which were verified or added are shown in black.

D.P.s for all verified or new features were recorded on the master printouts; their associated position numbers are plotted on the two D.P. 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.

Disprovals

The T-sheet rocks at 58°19'46"N, 135°40'02"W and 58°19'46"N, 135°39'59"W were visually inspected on DN 087 during low water and were not seen. The bottom was sandy with a few scattered stones and sparce kelp. Drift soundings were also taken and no evidence of the rocks were apparent on the echogram; the bottom was flat and shallow at 1.2 fathoms. Disproven.

The T-sheet rock at 58°19'24"N, 135°38'52"W was visually inspected on DN 090 during a low tide and not seen. The bottom could not be seen visually from the surface. Areas of sparce kelp could be seen 20 meters towards the shore. No significant feature was seen on the echogram; the depth was 6.1 fathoms and the bottom was flat. Disproven

The T-sheet rock at 58°22'03"N, 135°35'04"W was visually inspected on DN 090 during a low tide and not seen. The bottom was rocky with sand in between. No kelp was seen in the area. The echogram showed no significant feature on a gently sloping bottom of 1.4 to 2.9 fathoms. Two rocks were found in the vicinity. Chart as shown on the smooth sheet.

Recommendation: The hydrographer recommends the rocks discussed above be deleted and replaced with data from this survey. Concur.

I. CROSSLINES

A total of 29.9 nautical miles of crosslines were run perpendicular to mainscheme lines, representing 11.1% of the mainscheme hydrography. Crossline soundings agree to within one fathom with mainscheme soundings, except in areas of steep bottom topography. In several instances, the vessel acquiring the crossline data did not acquire the corresponding mainscheme data. The agreement between soundings obtained by different echo sounders in a common area is as stated above.

J. JUNCTIONS Also see section 5 of the Eval. Rpt.

This survey junctions with H-10268 (1:10,000; 1988) to the north, H-10271 (1:10,000; 1988) to the west, H-10257 (1:10,000; 1987) to the east, and H-10319 (1:20,000; 1989) to the south. No irregularities were found when comparing soundings and depth contours. While minor discrepancies occur over steeply sloping areas, overall agreement of overlapping soundings between surveys is excellent, with all soundings agreeing to within 2 fathoms of the junction soundings.

K. COMPARISON WITH PRIOR SURVEYS Also see section 6 of the Eval. Rpt.

This survey was compared to the following prior surveys:

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

Overall sounding agreement between surveys was good, with depths agreeing to within 3 fathoms. In general, depths were deeper on the prior survey than on this survey. In addition, several shoals were discovered which were not found on the prior survey. The least depths of the shoals were determined by divers, echo sounder, and shoreline verification in 1989 and 1990. The shoal depths are shown on the final field sheets in Development 2, Developments 4-10, and as detached position numbers 4502, 4508, and 9361. The most probable cause for the discrepancies is wide line spacing on the prior survey. Additional causes may also be the techniques used for positioning and sounding during the prior survey, irregularity of the bottom, and various datum shifts which were applied to H-2562.

Recommendation: The hydrographer recommends the data from this survey be used to supersede soundings from H-2562. See Eval. Rpt. Sect. 6.

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

Soundings on the copy of H-2618 provided are illegible, making a direct comparison to the prior survey impossible. Therefore a comparison was made to the soundings carried forward onto Chart 17302.

Two charted soundings originate from H-2618. The 1 1/4-fathom sounding charted at 58°19'36"N, 135°36'12"W agrees with soundings from this survey. The 7-fathom sounding charted at 58°18'48"N, 135°40'12"W lies on a shoal which was investigated by divers on DN 080. A diver-obtained least depth of 5.0 fathoms was found at 58°18'43.4"N, 135°40'11.7"W (Pos. No. 4499).

Recommendation: The hydrographer recommends the 7-fathom sounding originating from H-2618 be deleted and a depth of 5.0 fathoms be charted at 58°18'43.4"N, 135°40'11.7"W. Concur.

H-3671 (1:40,000; 1914):

General sounding agreement between surveys is excellent, with soundings agreeing within two fathoms. The 10- and 20-fathom curves north of latitude 58°21'30"N have accreted eastward approximately 300 meters. The 50-fathom curve has moved westward approximately 150 meters. The shoaling north of this latitude could be caused by an eastward movement of sediments along the north shore of Pleasant Island.

The 20-fathom shoal off the northernmost Porpoise Island was found to extend 600 meters further northwest than shown on H-3671. The westernmost end of the shoal was investigated in 1989 by echo sounder and 10-meter line spacing. A least depth of 13 fathoms was found at 58°20'57.4"N, 135°30'09.6"W (DN 300, Pos. No. 3063+6).

Another shoal, also not shown on H-3671, was found 300 meters northwest of the northernmost Porpoise Island. A 1.3-fathom least depth was determined by divers at 58°20'40.1"N, 135°29'36.1" (DN 303, Pos. No. 4372).

Eleven charted rocks awash in the vicinity of Noon Point originating from H-3671 were found to be high points on ledges, reefs, and isolated boulders.

Recommendation: The hydrographer recommends the soundings and shoreline detail acquired from this survey be used to supersede prior survey sounding and shoreline information. Concur.

H-3672 (1:20,000; 1914):

Overall sounding agreement between surveys is very good, with most soundings agreeing to within three fathoms. The 10-fathom curve around the northernmost of the Porpoise Islands has accreted westward approximately 200 meters. Within the 10-fathom curve, the diver-investigated shoal mentioned in the discussion of H-3671 was not found on H-3672.

Recommendation: The hydrographer recommends soundings from this survey supersede the soundings from the prior survey. Concur.

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

The eight soundings originating from H-4310 WD mark shoal areas located between Pleasant and Porpoise Islands and on Pleasant Island Reef. The shoals were investigated by divers in 1989 and 1990. Depths from the wire drag survey ranged from approximately one to six fathoms deeper than depths found in this survey. Comparison of depths are listed below.

H-4310 Depth (fm)	H-10318 Depth (fm)	H-10318 Pos. No.
4	~~2.3~~ 6	4500
1 3/4	2.0 1.0 1.0	4544
3 3/4	~~1.7~~, ~~2.3~~, 4 ~~0.8~~*	4504, 4505, 4506*
2 3/4	~~1.0~~ 1	4488
9	6.9	9359
6 1/2	~~3.9~~ 8	9364
11	10.~~3~~5	4371
7 1/2	1.~~+~~3	4372

* also a danger to navigation

Recommendation: The hydrographer recommends soundings from the prior survey be deleted and soundings from this survey be applied to the chart. Concur.

H-10~~271~~ 68 (1:10,000;1988): (Feature plots on H-10268)

AWOIS Item #51738: Determine position of diesel engine remains at ~ 58°23.8'N, 135°38.6'W.

The remains of a large diesel engine attached to a mounting bracket baring at MLLW, was located in 1989 by angle and distance from Icy Passage Light "2", with a check distance from station HIGH (DN 304). See Supplemental Appendix for computations. Filed with the survey records.

Concur

Recommendation: Delete the black rectangular symbol charted at 58°23'~~48~~ 50"N, 135°38'3~~6~~ 5"W. Chart the same symbol at 58°23'51.~~5~~ 3"N, 135°39'20.~~4~~ 2"W. See Evol Rpt., sec 7.b.

L. COMPARISON WITH THE CHART Also see Eval Rpt, sect 7.

This survey was compared to a 1:10,000-scale enlargement of NOS Chart 17302, 15th Edition, May 20/89, 1:80,000 (NAD83).

Comparison of Sounding Features

All charted depths originated from prior surveys discussed in Section K and junction survey H-10257 discussed in this Section. The charted depths originating from prior surveys will not be addressed here.

Mainscheme lines were oriented east-west on the north sheet and north-south on the south sheet. Mainscheme lines were spaced at 200 meters and then split to 100 meters in depths less than 50 fathoms. Line spacing was reduced to 50 meters in depths less than 20 fathoms in order to locate shoal depths and to better define depth contours. Additional developments consisting of 10-, 20-, and 25-meter line spacing were run to better define shoals and to determine the shoalest depths on which to conduct dive investigations.

Dive investigations resulted in least depth determinations of 21 shoals. 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.

Four soundings (54, 40, 16, and 23 fathoms) located on the eastern limit of this survey appear on the 15th Edition of NOS Chart 17302 but are not shown on the chart mark-up dated July 18, 1986. The soundings appear to have originated from survey H-10257 (1987). Overall agreement of overlapping soundings between surveys is excellent, with all soundings agreeing to within two fathoms of the junction survey.

Comparison of Non-Sounding Features

The charted shorelines of Pleasant and Porpoise Islands are good representations of the area. Charted rocks shown around the islands are ledges, reefs, foul areas or individual rocks.

Recommendation: The hydrographer recommends applying to the chart data from this survey. Concur.

Dangers to Navigation

Eleven

~~Six~~ 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 copy of the radio message. Six additional dangers were found during office procesing. See attached letters to this report

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

There are no fixed aids to navigation within the limits of this survey.

One floating aid to navigation, Pleasant Island Lighted Bell Buoy 11, marks the southern limit of Pleasant Island Reef. The buoy, a green can buoy, was positioned by hydrographic methods by Vesno 2124 (DN 300, Pos. No. 4303 and DN 088, Pos. No. 4533). The field position was checked against published and charted positions. The comparisons are shown below:

Navigational Aid Light List No.	Published Position*	Charted Postion	Field Position
Pleasant Is. Lighted Bell Buoy 11 24170 (Fl G 2.5s)	58°18.4'N 135°39.2'W	58°18.4'N 135°39.3'W	58°18'23.0"N 135°39'16.8"W

*Source: United States Coast Guard Light List, Volume VI, 1990.

The light characteristics given above were observed in the field and agree with the charted and Light List characteristics. The bell was heard and verified in the field. The buoy adequately serves the apparent purpose for which it was established. Concur

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

O. STATISTICS

Vessel:	2123	2124	2125	2126	Total
# of Pos	321	321	239	1278	2159
NM Hydro	59.3	48.6	46.3	213.2	367.4

NM^2 Hydrography	16.5	Velocity Casts	7
Detached Positions	240	Tide Stations	2
Bottom Samples	56	Current/Magnetic Stations	0

P. MISCELLANEOUS

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

Tide rips and strong currents in excess of two knots were observed by divers on Pleasant Island Reef approximately two hours before and after slack current.

Q. RECOMMENDATIONS

None.

R. AUTOMATED DATA PROCESSING

HDAPS 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. Versions 4.01, 4.10, and 4.13 of "POSTSUR", field-modified to plot without position numbers, was used in plotting the final field sheets. The survey data, stored according to sheet number, were forwarded to N/CG245 on 32-track tape cartridges. A listing of the acquisition and processing hardware components is appended to this report.

The following position numbers were duplicated in 1989:

Pos. Nos.	DN	Vesno	DN	Vesno
5038-5050	292	2125	292	2125
6547-6563	299	2126	299	2126
9293-9311	306	2126	306	2126

S. REFERRAL TO REPORTS

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

Title	Date Sent to N/CG245
Fall 1989 Horizontal Control Report for OPR-O186-RA	January, 1990
Fall 1989 Electronic Control Data Package for OPR-O186-RA	January, 1990
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,

David A. Cole
For
Heidi J. Muench
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	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
105	EAGLE, 1922
107	HIGH, 1914
108	HOON TP, 1989
109	ICE, 1922
112	OOPS, 1988
114	POR RM, 1989
115	CAMP, 1914
* 116	PI, 1989

} Stations used in 1989

* Station offshore

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	136:07:19.250	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	136:06:27.997	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	136:02:37.343	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	E	04/17/90
205	F	058:13:54.846	135:38:41.748	10	250	0.0	0.0	3	03/17/90
133	F	058:16:16.743	136:02:14.424	11	250	0.0	0.0	1	04/16/90
134	F	058:20:30.117	136:07:23.370	5	250	0.0	0.0	4	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	B	04/27/90
137	F	058:13:12.460	136:09:58.937	7	250	0.0	0.0	F	04/27/90
138	F	058:17:49.341	136:07:31.798	5	250	0.0	0.0	E	04/27/90

NO.	NAME
100	ADOLPHUS 2, 1922
105, 205	EAGLE, 1922
106	HELP , 1901
107	HIGH, 1914
108	HOON TP, 1989
109	ICE, 1922
113	PIN, 1901
114	POR RM, 1989
*116	PI, 1989

stations used in 1990

* station offshore

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 NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTC (NAVWARN) WASHINGTON DC//MCNM//
INFO ZEN/NOAAMOP SEATTLE WA
ACCT CM-VCAA
BT
UNCLAS

Unrevised - retained as reported

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 ISLAND; ITEMS A-F) AND H-10319 (HOONAH ISLAND TO POINT ADOLPHUS; ITEMS G AND H). THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

	LN	Pos. No.
A. "SHOAL SUBMERGED 13-1/2 FATHOMS AT LATITUDE 58-20-57.4N, LONGITUDE 135-30-09.6W."	308	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."	307	4102 0+1

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

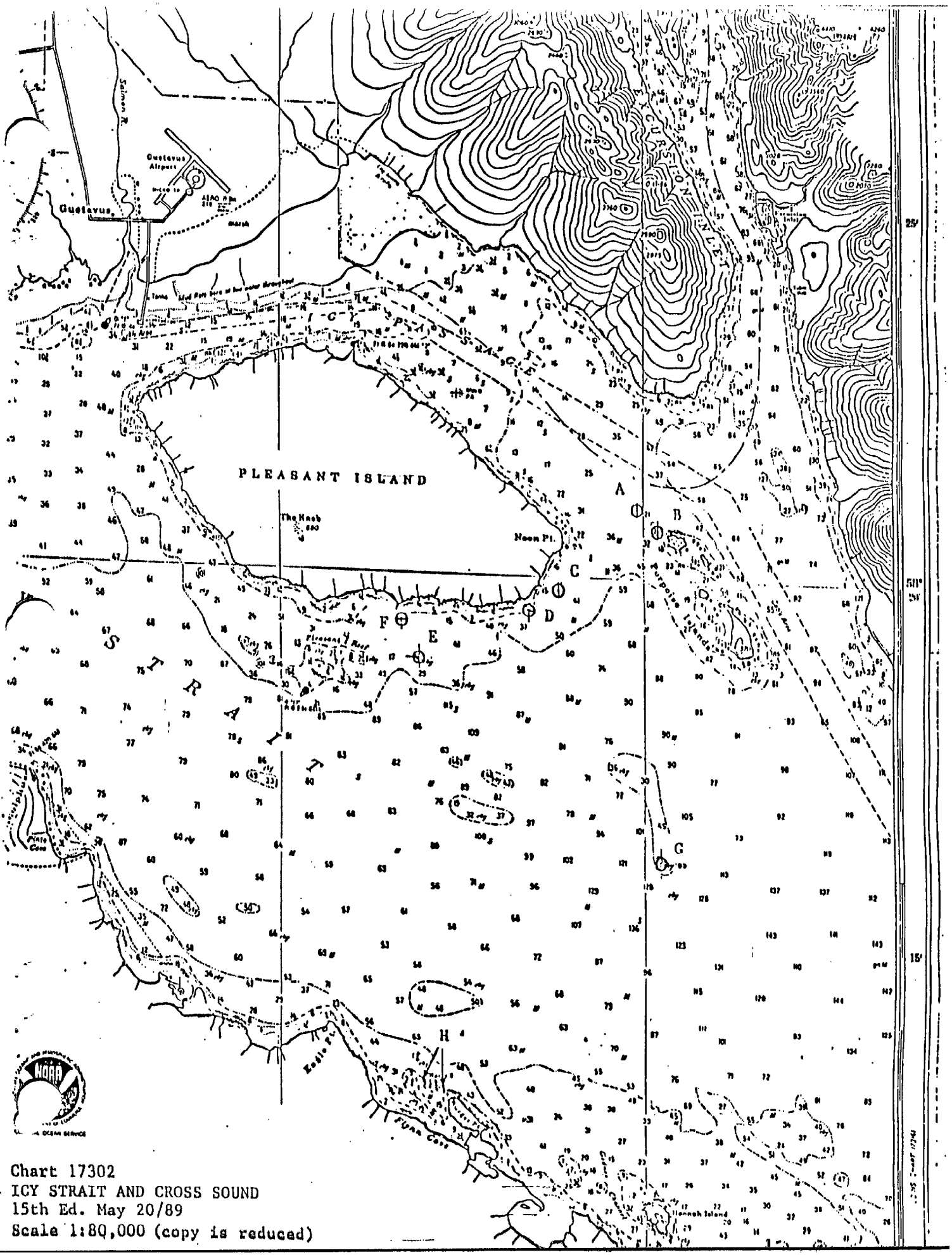


Chart 17302
ICY STRAIT AND CROSS SOUND
15th Ed. May 20/89
Scale 1:80,000 (copy is reduced)

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 corespondence 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
MCM | TPOST

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

Unrevised-retained as reported

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 20/89 NAD83
17300 25TH ED 1:209,978 APR 29/89 NAD83

	DN	Pos. No.
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 +1,+2
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 DPs	
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 +5-+6
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

DN Pos. No.

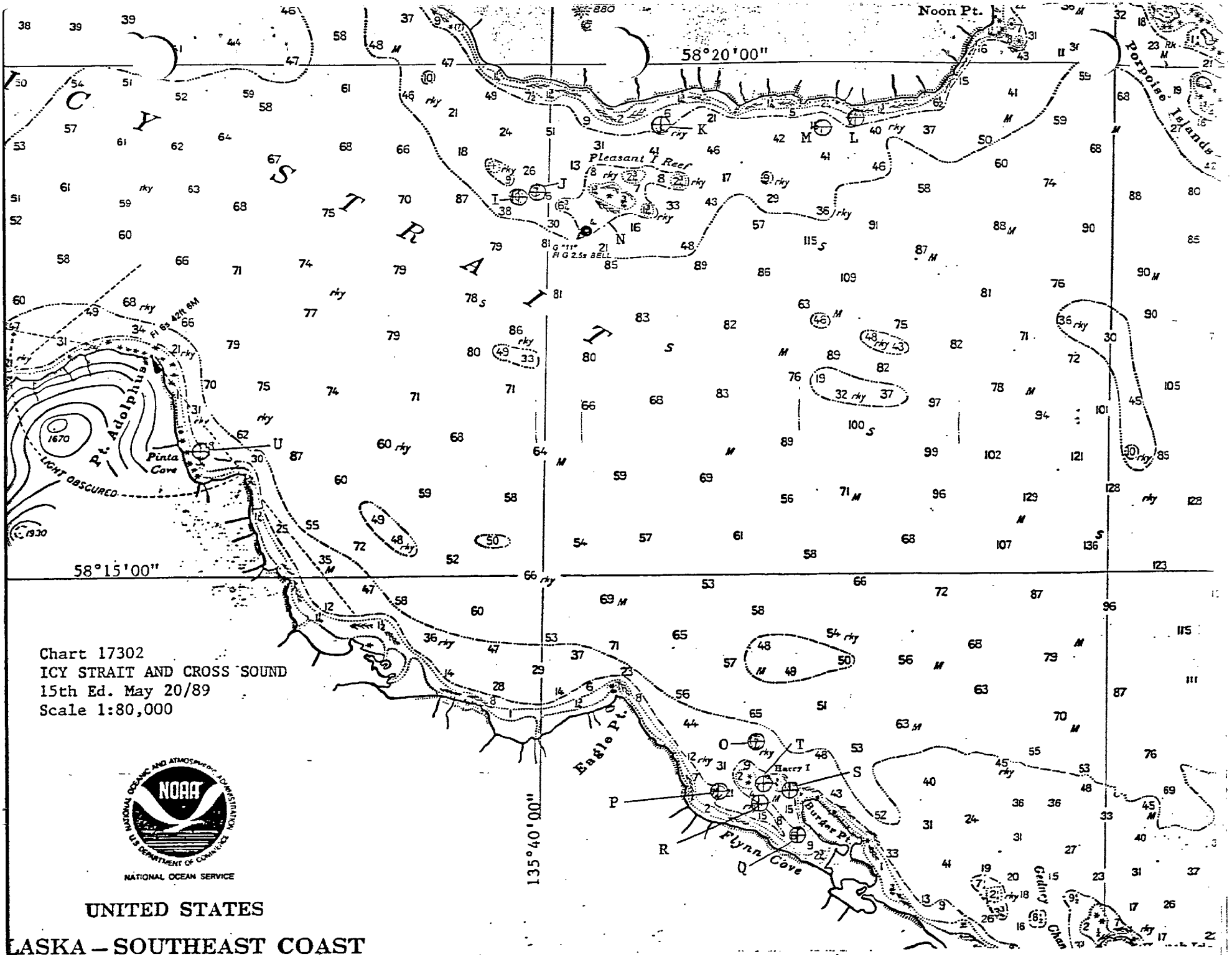
S. "SHOAL SUBMERGED 2-1/4 FATHOMS AT LATITUDE 58-12-53.7N, 091 4599
LONGITUDE 135-35-40.7W."

T. "SHOAL SUBMERGED 2-1/4 FATHOMS AT LATITUDE 58-12-59.5N, 364 2171[15]
LONGITUDE 135-36-07.0W."

U. "SHOAL SUBMERGED 1/2 FATHOM AT LATITUDE 58-16-14.4N, 092 4668
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) 526-6895. A LETTER WITH ATTACHED CHARTLET IS BEING MAILED TO CONFIRM THIS MESSAGE.
BT


Noon Pt.
58°20'00"
Porpoise Islands
ICY STRAIT
Pleasant I Reef
G "11" Fl G 2.5s BELL
Pt. Adolphus
Pinta Cove
LIGHT OBSCURED
1670
1930
58°15'00"
135°40'00"
Eagle Pt.
Harry I
Burdar Pt.
Flynn Cove
Gedney Chan
Chart 17302
ICY STRAIT AND CROSS SOUND
15th Ed. May 20/89
Scale 1:80,000
NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEAN SERVICE
UNITED STATES
ALASKA – SOUTHEAST COAST

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
[redacted]

Pacific Hydrographic Section
BIN C15700, Bldg. 3
7600 Sand Point Way NE
Seattle, WA 98115-0070

MAY 25 1990

Commander (OAN)
Seventeenth Coast Guard District
P.O. Box 3-5000
Juneau, AK 99802-1217

Dear Sir:

During office review of hydrographic survey H-10318, Alaska, Icy Strait, two dangers to navigation affecting chart 17302 (14th ed., October 3, 1981: NAD 27) were found.

It is recommended that the enclosed Report of Dangers to Navigation be included in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526-6853.

Sincerely,

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

Enclosure

cc: DMA/TC
N/CG221

REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H-10318
Survey Title: State: Alaska
Locality: Icy Strait
Project Number: OPR-0186-RA, NOAA Ship Rainier

The following items were discovered during office processing of hydrographic survey H-10318.

Objects discovered: One shoal and one submerged rock corrected to MLLW.

Affected nautical chart:

CHART NUMBER	EDITION NO.	EDITION DATE	REPORTED DEPTH	CHARTED HORIZ DATUM	GEOGRAPHIC POSITION LATITUDE(N)	GEOGRAPHIC POSITION LONGITUDE(W)
17302	14th	10/3/81	14.0 Fm. shoal	NAD 27	58°19'22.50"	135°33'42.00"
17302	14th	10/3/81	10.3 Fm. Rock	NAD 27	58°20'04.81"	135°31'09.58"

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526-6853.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
[illegible]SERVICES
Seattle, Washington 98115-0070
COAST AND GEODETIC SURVEY

May 30, 1991

MEMORANDUM FOR: Commander (OAN)
Seventeenth Coast Guard District
P.O. Box 3-5000
Juneau, AK 99802-1217

Dear Sir:

During office review of hydrographic survey H-10318, Alaska, Icy Strait, East and South of Pleasant Island, dangers to navigation affecting charts 17302 (15th Edition, May 20, 1989) and 17316 (16th Edition, January 5, 1991) were found.

It is recommended that the enclosed Report of Dangers to Navigation be included in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526-6853.

Sincerely,

for Pamela R. Chelgren-Koterba
Commander, NOAA
Chief, Pacific Hydrographic Section

Enclosure

cc: DMA/TC
N/CG221

REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H-10318
Survey Title:
State: Alaska
Locality: Icy Strait
Sublocality: East and South of Pleasant Island
Project Number: OPR-0186-RA, NOAA Ship RAINIER

The following items were discovered during the office processing of hydrographic survey H-10318.

Objects discovered: Four submerged rocks.

Affected nautical charts:

CHART NUMBER	EDITION NO. DATE	REPORTED DEPTH	HORIZ DATUM	LATITUDE(N)	LONGITUDE(W)
17302	15th 5/20/89	Rock cov 2 3/4 FA	83	58°18'27"	135°39'11"
17302	15th 5/20/89	Rock cov 2 1/4 FA	83	58°19'31"	135°33'37"
17302	15th 5/20/89	Rock cov 2 FA	83	58°20'13"	135°32'03"
17302	15th 5/20/89	Rock cov 2 1/2 FA	83	58°20'21"	135°31'54"
17316	16th 1/5/91	Rock cov 2 FA	83	58°20'13"	135°32'03"
17316	16th 1/5/91	Rock cov 2 1/2 FA	83	58°20'21"	135°31'54"

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526 6853.

APPROVAL SHEET

for

H-10318

(RA-10-6-89)

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 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

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: Febuary 27, 1990

MARINE CENTER: Pacific

OPR: O-186-RA

HYDROGRAPHIC SHEET: H-10318

LOCALITY: Alaska, Icy Strait, East and South of Pleasant Island

TIME PERIOD: October 19 - November 12, 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.

James L Hubbard

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-10318

LOCALITY: Alaska, Icy Strait, East and South of Pleasant Island

TIME PERIOD: March 18 - March 31, 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

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10318

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 17302	B ON CHART NO. 17300	C ON U.S. QUADRANGLE MAPS	D Manuscript TP-01318	E Manuscript TP-01319	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ALASKA (title)	X	X		X	X					1
ICY STRAIT	X	X		X	X					2
NOON POINT	X	X		X						3
PLEASANT ISLAND	X	X		X						4
PLEASANT ISLAND REEF	X	X		X						5
PORPOISE ISLANDS	X	X		X	X					6
										7
										8
										9
										10
										11
										12
										13
										14
										15
				Approved:						16
				Charles E. Hammond						17
				Chief Geographer - NOS C&GS x5						18
										19
				OCT 30 1990						20
										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-10318

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	6
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	8

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	2					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES				1		

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			2542
POSITIONS REVISED	82		82
SOUNDINGS REVISED	363		363
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	98		98
VERIFICATION OF SOUNDINGS	361		361
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	250		250
COMPARISON WITH PRIOR SURVEYS AND CHARTS		4	4
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		16	16
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	709	20	729

Pre-processing Examination by LT M.B. Brown	*Beginning Date* 5/9/90	*Ending Date* 5/29/90
Verificaton of Field Data by E.H. Brown, T.O. Jones, J.L. Stringham	*Time (Hours)* 709	*Ending Date* 4/23/91
Verification Check by L.T. Deodato, J.L. Stringham	*Time (Hours)* 71	*Ending Date* 4/26/91
Evaluation and Analysis by C.R. Davies	*Time (Hours)* 20	*Ending Date* 5/30/91
Inspection by D.J. Hill	*Time (Hours)* 5	*Ending Date* 6/13/91

EVALUATION REPORT

H-10318

1. INTRODUCTION

Survey H-10318 is a basic hydrographic survey accomplished by the NOAA Ship RAINIER under the following Project Instructions.

OPR-O186-RA, dated September 13, 1989
OPR-O186-RA, dated February 22, 1990

Survey H-10318 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 which includes the southern and eastern shore of Pleasant Island. The surveyed area extends from latitude 58°17'57"N to latitude 58°22'08"N and from longitude 135°29'06"W to longitude 135°41'42"W. The southern and eastern shoreline of Pleasant Island and the western shoreline of Porpoise Islands consists of ledges and rocks with some beaches of either boulders, stone or gravel. Offshore of the islands, the bottom is irregular with many isolated reefs, rocks and submerged rock pinnacles. The bottom consists of mud, sand and shells. Depths range from 0 to 112 fathoms.

Predicted tides for Juneau, Alaska, were used for the reduction of soundings during field processing. Approved hourly heights zoned from Pt. 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, 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 1989 and 1990 Horizontal and Electronic Control Reports for OPR-O186-RA contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are 1988 and 1989 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: -1.217 seconds (-37.646 meters)
Longitude: 6.534 seconds (106.330 meters)

The year of establishment of control stations shown on the smooth sheet originates with 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-01310	May, June, July 1985	III
TP-01318	June 1987	III

3. HYDROGRAPHY

With the exception noted in section 4 of this report, 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, August 1988 Edition, except as follows.

A charted isolated shoal sounding, originating from prior survey H-2562, was not found or disproven during this survey. Prior survey data, or charted information, not supported by, or in disagreement with, the present survey data should be thoroughly investigated and resolved (Hydrographic Manual, section 4.1.1). See section 6 of this report for additional information.

5. JUNCTIONS

Survey H-10318 junctions with the following surveys.

Survey	Year	Scale	Area
H-10257	1987	10000	East
H-10268	1988	10000	North
H-10271	1988	10000	West
H-10319	1989/1990	20000	South

The junction with survey H-10319 is complete. The junctions with surveys H-10257, H-10268 and H-10271 have not been formally completed since those surveys were previously processed and forwarded for charting. The junction comparison was made using copies. Soundings are in good agreement. Some soundings and features have been transferred to survey H-10318 to better portray

the bottom in the common area. Portions of the depth curves on survey H-10257 should be adjusted to conform with those on survey H-10318.

6. COMPARISON WITH PRIOR SURVEYS

H-2562 (1901) 1:40000
H-2618 (1902) 1:40000

Surveys H-2562 and H-2618 cover the southern portion of the present survey. Taking into consideration the differences in the scales of the surveys and the methods of surveying, comparison with this prior survey is satisfactory. Some discrepancies between the two surveys were noted, however, and are discussed in section K of the hydrographer's report and as follows.

A 6 3/4 fathom sounding on prior survey H-2562 was not found or disproven on the present survey. This sounding is at latitude 58°18'~~37~~37.5"N, longitude 135°39'~~39~~39.3"W (NAD83). The prior sounding has been brought forward to survey H-10318.

The existence of kelp was confirmed along the shoreline of Pleasant Island on the present survey but was not as extensive as found on prior survey H-2562. Therefore, the kelp symbol has been brought forward in areas where it was not annotated on survey H-10318.

H-3671 (1914) 1:40000
H-3672 (1914) 1:20000

Surveys H-3671 and H-3672 cover the eastern and northern portion of the present survey. Taking into consideration the differences in the scales of the surveys and the methods of surveying, comparison with these prior surveys is satisfactory. Some discrepancies between the prior and present surveys were noted, however, and are discussed in section K of the hydrographer's report.

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.

With the transfer of the one prior sounding from survey H-2562 noted above, survey H-10318 is adequate to supersede the prior surveys within the common area.

H-4310WD (1923) 1:40000

Wire-drag survey H-4310 covers the entire limits of the present survey. Effective depths from the prior wire-drag 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 1:80000
Chart 17316, 15th edition, dated August 29, 1987; scale 1:80000
Chart 17316, 16th edition, dated January 5, 1991; scale 1:80000

a. Hydrography

All charted hydrography originates with the surveys mentioned in section 6 of this report and requires no further discussion.

Survey H-10318 is adequate to supersede charted hydrography within the common area.

b. AWOIS

AWOIS Item 51738, a position approximate obstruction identified as a large diesel engine on a mounting bracket at latitude 58°23'50"N, longitude 135°38'35"W, on junction survey H-10268, was investigated during this survey and a position determined. This item, which is located north of this survey area in the area covered by survey H-10268, was found at latitude 58°23'51.3"N, longitude 135°39'20.2"W. Delete the black rectangular symbol charted at latitude 58°23'50"N, longitude 135°38'35"W, and chart an obstruction at the position found on this survey.

c. Controlling Depths

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

d. Aids to Navigation

There are no fixed aids located within the area of this survey. One floating aid to navigation was located within the survey area and it 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 eleven submerged rocks and shoals to the USCG and N/CG222. Six additional dangers were found during office processing and were reported to the USCG and DMA. Copies of the messages and reports are attached.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10318 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is an adequate hydrographic survey. Additional field work is recommended on a low priority basis to investigate the prior sounding discussed in section 6 of this report.

Charles R. Davies
Cartographer

APPROVAL SHEET
H-10318

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: 6-13-91

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: 6/17/91

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

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Final Approval

Approved: J. Austin Yeager Date: 7/1/91

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

INDEX
HYDROGRAPHIC SURVEYS
Complete through March 1979

1962-1976
GULF OF ALASKA
ALASKA

Diagram No. 8202-3

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

NOAA FORM 75-96
(1C-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-10318

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	7-12-91	Russ Davis	Full ~~Part Before~~ After Marine Center Approval Signed Via Full application
			Drawing No. of sndgs. from SS.
17300	10-03-91	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
		H	Drawing No. sndgs applied.
530	6-17-91	Russ Davis	Full ~~Part Before~~ After Marine Center Approval Signed Via Examined, NO sndgs
			Drawing No. applied
531	8/14/95	R. Elliott	(Full) Part Before After Marine Center Approval Signed Via
			Drawing No. 21 NO CORRS
			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.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED

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-10318

INSTRUCTIONS

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

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			Drawing No. of sndgs. from SS.
17300	10-03-91	Russ Davis	Full ~~Part Before~~ After Marine Center Approval Signed Via Full application
			Drawing No. of sndgs. from SS thru 17302.
			Full ~~Part Before~~ After Marine Center Approval Signed Via
17316	22 Mar 93	AM Darrigan	Drawing No. 17316 Revised hydro thru Chart 17302
			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.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.