

10333

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-10-1-90
Registry No. H-10333

LOCALITY

State Alaska
General Locality Icy Strait
Sublocality Vicinity of Point Gustavus

1990

CHIEF OF PARTY
CAPT J.C. Albright

LIBRARY & ARCHIVES

DATE August 6, 1991

10333

wel

CHTS
17318
17302
17300

HYDROGRAPHIC TITLE SHEET

H-10333

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

FIELD NO.

RA-10-1-90

State Alaska

General locality Icy Strait

Locality Vicinity of Point Gustavus

Scale 1:10,000

Date of survey April 2-May 12, 1990

Instructions dated February 22, 1990

Project No. OPR-0186-RA

Vessel NOAA Ship ^{RAINIER} RAINIER 2120, Launches 2123, 2124, 2125, 2126

Chief of party CAPT. J.C. ALBRIGHT

Surveyed by LT. David Cole, LTJG. Gerd F. Glang, LTJG. Donald W. Haines, ENS. Karen L. Schoonover, ENS. Heidi J. Muench, ENS. Pamela K. Weber, ENS. Chris J. Ward

Soundings taken by echo sounder, hand lead, pole DSF 6000N

Graphic record scaled by ^{RAINIER} RAINIER Personnel

Graphic record checked by ^{RAINIER} RAINIER Personnel

Evaluation by R.N. Mihailov

Produced by XXXXXXXXXXXX Automated plot by PMC Xynetics Plotter

Verification by Elizabeth H. Brown

Soundings in METERS ^{and decimeters} ~~fathoms~~ ~~feet~~ at MKW 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.

AWOIS/SURE check 8/22/91 MCR

SC 1-30-97

X.W.W. 8/15/91

Descriptive Report to Accompany Hydrographic Survey H-10333

Field Number RA-10-1-90

Scale 1:10,000

April-May 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 February 22, 1990. This survey is designated Sheet F 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 other federal, state, and local government agencies. ✓

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

B. AREA SURVEYED

The survey is located in southeast Alaska, 40 nautical miles west of Juneau, along the southern shore of Pt. Gustavus and south of the entrance to Glacier Bay in Icy Strait. The survey limits are latitudes $58^{\circ}20'30''N$ to $58^{\circ}23'30''N$, and longitudes $135^{\circ}40'00''W$ to $136^{\circ}01'00''W$, except where the survey area junctions with prior surveys H-9638, H-8816, and H-9848. Acquisition was conducted from April 2 through May 12, 1990, (DN 92 to 132). ✓

The shoreline south and east of Pt. Gustavus is characterized by sandy and muddy boulder beaches with areas of existing and broken piles and ruins. The shoreline is very broad and gently sloping with sandy bars extending far offshore at low water. ✓

The bathymetry within the survey limits is gently sloping except for the shoal areas in the vicinity of Pt. Gustavus and Ancon Rock, where the terrain becomes more irregular. Shoal areas extend well offshore south and west of Pt. Gustavus. This area is marked by a bouy at Ancon Rock (N "2"), located west of RA-10-1E-90. A second shoal area exists at the intersection of North Passage with the entrance to Glacier Bay. $58^{\circ}21'00''N$, $136^{\circ}00'00''W$ ✓

Bottom samples throughout the survey area consisted primarily of pebbles, gravel, green sand, and broken shells. ✓

C. SOUNDING VESSELS

All data were acquired by NOAA Ship RAINIER, four automated survey launches, and two Boston Whalers as shown below: ✓

<u>Vessel</u>	<u>EDP No.</u>	<u>Operation</u>
RAINIER	2120	AML/Nansen Casts
RA-3	2123	Hydrography
RA-4	2124	Hydrography Shoreline Verification
RA-5	2125	Hydrography Bottom Samples
RA-6	2126	Hydrography Shoreline Verification
RA-7	2127	Shoreline Verification
RA-8	2128	Shoreline Verification

Due to the gently sloping terrain, much of the shoreline verification was conducted by utilizing two Boston Whalers (RA-7 and RA-8) and by walking the shoreline.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

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

Raytheon DSF-6000N Echo Sounders

<u>Vessel</u>	<u>Serial No.</u>	<u>DN(1990)</u>
2123	A114N	93-95 94-95
2124	A103N	102-106
	A119N	130-132
2125	A117N	92- 115 117
2126	B046N	115

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.

*Rescanning echograms resolved most problems.
No significant gaps exist in sounding coverage.*

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

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 corrections to echo soundings, except heave, are included in the Spring 1990 Corrections to Echo Soundings Data Package for OPR-0186-RA. ✓

Static Draft

For all launches, the distance from the transducer face to the gunwale was measured with a large metal carpenter-square. Static draft measurements were then determined by dropping a leadline from the gunwale to the water and subtracting this distance from the distance measured with the carpenter-square. The measurements from the gunwale to the waterline were conducted with the fuel tanks averaging 3/4 full and three people aboard. A transducer depth of 0.6 meter ~~was determined~~ was determined for all launches on March 20, 1990. This transducer draft ~~agree~~ 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 any significant fluctuations resulting from sea action. ✓

Sound Velocity

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

<u>Cast No.</u>	<u>Deepest Depth (m)</u>	<u>DN</u>	<u>Geographic Position</u>	
N3	100	106	58°18'30"N, 135°45'55"W	
6	157	115	58°17'54"N, 136°15'48"W	
N4*	150	115	58°17'54"N, 136°15'48"W	NOT USED
7	119	131	58°17'34"N, 135°47'10"W	
8	190	133	58°17'55"N, 136°15'27"W	NOT USED

N=Nansen cast

* Data not applied to echo soundings as results were almost identical to those of cast No. 6.

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

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

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

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

<u>Velocity Table No.</u>	<u>Cast No.</u>	<u>Applicable DN</u>
4 DN 100	N3	092-113 103
6 131	7	130-132
5 115	6	104-118

Velocity correctors were computed at increments in accordance with Hydrographic Survey Guideline 69 (HSG 69), using the PC program VELOCITY (version 1.11). An HDAPS listing of each velocity table is appended to this report. + ✓

Settlement and Squat *

Settlement and squat correctors were determined for three of the automated survey launches in Shilshole Bay, WA: Vesno 2124 and 2126 on February 23, and Vesno 2125 on March 13, 1990. Vesno 2123 was tested at the working grounds on April 12, 1990, near Pt. Aldolphus in Icy Strait. Because correctors for Vesno 2125 varied slightly from 1989 data, this launch was retested on May 20, 1990, at Bartlett Cove, near the working grounds. ✓

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. ✓

Correctors from 1989 were applied to data from Vesnos 2123 and 2125 during acquisition until the 1990 correctors became available. Final field sheets were prepared with 1990 data. ✓

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

Settlement and Squat correctors were incorporated into TRA tables and applied during office processing.

+ Filed with hydrographic data

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

<u>Vessel No.</u>	<u>Table No.</u>	<u>Period Used On line (DN)</u>
2123	1 (1989)	101-128
	3	129-138
2124	4	101-138
2125	1 (1989)*	101-128
	5 (1989)*	129-138
	5 (1990)	used for FFS only
2126	6	101-138

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

Offset Tables 3, 4, 5, and 6 were used to prepare the final field sheets. Copies of all offset tables are appended to this report. - *filed with hydrographic data.*

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. The zone applicable to this survey has a range ratio of "x0.87" and no time corrections. HDAPS listings of the tables used to generate tide correctors are appended to this report. - *Filed with hydrographic data*

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

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-10-1E-90 and RA-10-1W-90 (HDAPS Sheets 11 and 12).

Two 1:10,000-scale overlays (HDAPS Sheets 11 and 12) show bottom sample characteristics, detached positions, and 25-meter developments. Four 1:2500-scale sheets show two 10-meter shoal developments (HDAPS Sheets 42 and 47), and 20-meter line spacing over a charted wreck (HDAPS Sheet 20) and over charted piles (HDAPS Sheet 21).

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

office processing

correctors used on sheet smooth sheets were determined during office processing and applied to smooth sheet.

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. *No offshore stations in this survey area.*

Positions for all existing stations are from the NGS data base. All existing stations were recovered in accordance with methods stated in FPM 5.2.4. New stations meet Third-Order Class 1 standards for positioning. Geographic positions are based on the North American Datum of 1983 and the Geodetic Reference System 1980 Ellipsoid. Further information can be found in the Spring 1990 Horizontal Control Report for OPR-0186-RA. *No new stations applicable to this survey.*

G. HYDROGRAPHIC POSITION CONTROL

Soundings were located using Motorola Mini-Ranger Falcon 484 microwave, multi-range positioning equipment. Range-azimuth techniques were used along the southern shore of Point Gustavus to mark detached positions for shoreline verification.

Positioning Equipment

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

Mobile Equipment

<u>EDP No.</u>	<u>Vessel</u>	<u>Console/RT</u>	<u>DN</u>
2123	RA-3	D0051/B1405	94-95
2124	RA-4	E0148/F3413	102-132
2125	RA-5	F0245/F3414	92-118
2126	RA-6	E0138/E2716	115

Shore Equipment

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

* hexadecimal/numerical designations

All angle and distance measurements for range-azimuth shoreline verification along the southern shore of Point Gustavus were made from station ANT (101), initializing on station ADOLPHUS 2 (100). A Wild T-2 Theodolite, S/N 320734, was used in conjunction with a Wild DI-3000 EDM, S/N 63706, on station ANT (101). Shoreline detached positions (D.P.s) were manually logged and positions computed via MTEN and HDAPS. All computation forms are included in the survey data. *



Baseline Calibrations

Baseline calibrations were conducted over water in accordance with FPM 3.1.3.2 on DN 058-061 at Sand Point, Lake Washington, Seattle, WA, over a measured distance of 1423m. Detailed information, calibration data, and a description of the baseline are included in the Spring 1990 Electronic Control Data Package for OPR-O186-RA.



System Check Procedures

Critical systems checks were conducted in accordance with FPM 3.1.3.3. 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. See Evaluation Report, section 2

Problems and Unusual Position Configurations

Nearly all of the transponders were erected on 10-, 20-, and 30-foot towers. The placement of transponders on towers instead of tripods greatly minimized any positioning problems and kept signal strengths above cut-off values over longer distances.



On DNs 92 and 93, Vesno 2125 collected sounding data (Pos. Nos. 6000-6124 and 6127-6252) with incorrect baseline correctors (BLCs) entered in the C-O Table. The codes affected were codes 2, 5, and B. ECR and maximum residual values observed on line and those shown on the critical systems check were within allowable limits and the data were considered acceptable. The error was discovered during processing and the C-O Table was updated the next day.

See Evaluation report Section 2

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).



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 the Offset Tables appended to this report. *



* Filed with hydrographic data.



H. SHORELINE

One shoreline map (T-sheet) was used to transfer shoreline detail to the final field sheets. Point Gustavus shoreline originates from a 1:10,000-scale enlargement of TP-01317 (1:20,000) based on NAD83 and dated 1988. ✓

Shoreline verification was conducted either at or near lower low water in accordance with FPM 7.0 in excellent sea and weather conditions. Heights of islets are based upon predicted MHW (3.63 meters above MLLW) in accordance with HSG 69. There are no areas where shoreline verification was not completed. The high water line is as depicted on the T-sheet. Details which were verified or added are shown on the final field sheets. ✓

Due to the gently sloping shoreline, launches were unable to safely conduct shoreline verification. Positions were obtained by range-azimuth by using Boston Whalers and by walking the shoreline. D.P.s for all verified or new features were recorded on range-azimuth field sheets and in sounding volumes. Their associated position numbers are plotted on the D.P. overlay for RA-10-1E-90. Cartographic codes have been included in the field records. Heights are recorded in meters and are corrected for predicted tides. Disproval DPs over some features were not achieved because real-time positioning was not feasible using this method. *An H-10333. ✓ Field Sheet

Several discrepancies were found between the T-sheet and this survey and are explained below: *The following comments apply to "Notes to the Hydrographer" note added to a copy of the shoreline map*
The submerged wreck shown on the T-sheet at location 58°22'25"N, 135°54'55"W was not discovered after conducting an echo sounder search with 20-meter line spacing. N/CG241 informed RAINIER verbally on May 15, 1990, that this wreck was outside H-10333 survey limits, and that a dive investigation was not required. *The charted wreck falls within the limits of H-10333*
As 20-meter line spacing does not adequately disprove this item, the hydrographer recommends that the submerged wreck remain charted.

note
The submerged rock indicated on the T-sheet at 58°22'45"N, 135°55'20" was shown to be a reef trending ENE and WSW, with a length of approximately 150m (Pos. Nos. 4069-70). *A reef uncovering 2 meters is shown on the smoothsheet*

note
The submerged rock shown on T-sheet at 58°22'28"N, 135°55'22"W was discovered to be a submerged reef (Pos. Nos. 4072-73). *A rock awash was transferred from H-8816. A sub reef limit line is shown from the field sheet.*
Several pilings not depicted on the T-sheet were located in this area. Due to their broken and eroded nature, they would be difficult to discern from aerial photography. Many were indicated on prior surveys and will be discussed in Section K. Additional pilings not shown on prior surveys were also discovered, and are discussed below. ✓

A lone broken pile positioned at 58°22'52"⁵N, 135°48'50"W (Pos. No. 1745), was located just S of a charted row of piles. A second row of piles was located to the west of this row at 58°23'05"N, 135°48'55"⁴W (Pos. Nos. 1858-59). *Shown on smoothsheet as one row of piles.*

A broken set of eroded piles located just E of a charted set of piles was positioned at 58°22'47"⁸N, 135°51'58"W, (Pos. Nos. 1725-28).

58/22/40.58N 135/53/37.75W (Pos# 1834)
58/22/38.85N 135/53/36.65W (Pos# 1835)

Two piles were positioned at ~~58°22'42"N, 135°53'37"W~~; marking the N limit of a fish trap shown on prior survey H-6339 (Pos. Nos. 1834-35). In addition, a small lone broken pile (not depicted on the final field sheet as it was smaller than surrounding rocks) was located at 58°22'35"N, 135°53'24"W (Pos. No. 1810). These piles probably are the only remains of the once existing fish trap.

recommendations: The hydrographer recommends that the additional pilings located during this survey be charted as shown on the final field sheets. *chart piles as shown on the smooth sheet.*

I. CROSSLINES

A total of 17.2 nautical miles of crosslines were run perpendicular to mainscheme lines, representing 11.6% of the mainscheme hydrography. Crossline soundings agree to within one meter with mainscheme soundings, except in areas of steep bottom topography in which crossline soundings agree to within two meters with mainscheme soundings. 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 *See Evaluation Report, Section 5*

The eastern portion of this survey junctions with H-10271 (1:10,000; 1988) to the east, H-10334 (1:20,000; 1990) to the south, H-9638 (1:5,000; 1976) to the west, and H-8816 (1:20,000; 1964) to the northwest. The western portion of the survey junctions with H-9638 to the east, H-10334 to the south, H-10335 (1:10,000; 1990) to the west, H-9848 (1:20,000; 1979) to the north, and H-8816 to the northeast. No irregularities were found when comparing soundings and depth contours. Agreement between overlapping soundings is good, with all junctions agreeing within 3 meters.

A 53m shoal located on H-9848 at 58°21'50"N, 135°59'43"W was not located during this survey. However, 200m mainscheme lines were conducted in this area and a *with adjustment to NAD 83 applied,* *this survey confirms the 53 meter shoal.* *minimum* least depth determination of 53m was found 200m to the west, at 58°21'50"N, 135°59'55"W. As this shoal was not developed further, the hydrographer recommends that the *minimum* ~~least~~ depth of 53m remain charted.

The location of all piles shown on H-10271 agreed with the findings in this survey.

The reef shown on H-8816 at 58°22'47"N, 135°55'20"W extended further ENE by 120m and further N by 35m than did the reef located in this survey. The hydrographer recommends that the reef limits defined in this survey be used to supersede the reef limits found in H-8816. - *concur*

K. COMPARISON WITH PRIOR SURVEYS *see Evaluation Report section 6*

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

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

H-6339 (1:20,000; 1938):

In general, comparison of depths and contours between H-6339 and this survey is very good, agreeing within 2 meters. The abundance of soundings in shoal areas on H-6339 makes direct comparison of soundings impossible. In general, location of shoals between the two surveys agree, with this survey recording shoaler depths. Discrepancies between surveys may be in the techniques used for positioning and sounding during the prior survey, in possible distortion obtained when enlarging H-6339 to a 1:10,000-scale, and in shifting between NAD 27 and NAD 83. ✓

The pile shown on H-6339 at $58^{\circ}22'50''\text{N}$, $135^{\circ}49'25''\text{W}$ was not located during shoreline verification, although the area was visually inspected while exposed (Pos. No. 1704). *58/22/30 N 135/50/09 W (NAD 83) no pile found on H-6339* See Eval report Sect. 6 - Disregard

The row of piles shown on H-6339 and charted at $58^{\circ}22'50''\text{N}$, $135^{\circ}50'05''\text{W}$ was verified while walking the shoreline (Pos. Nos. 1729-30). The length of the row of pilings extended approximately 200 meters further S on H-6339 than was discovered in this survey. A possible explanation is that seaward pilings were eroded by sea action. The hydrographer recommends that the positions of the pilings in this survey supersede the charted positions. *- Concur - chart piles as delete charted row of piles shown on smooth sheet.*

The pilings shown on H-6339 and charted at $58^{\circ}22'35''\text{N}$, $135^{\circ}50'05''\text{W}$ were not located after conducting an echo sounder search of 20m line spacing. As 20m line spacing does not adequately disprove this feature, the hydrographer recommends that the pilings remain charted, but be shown as submerged, since they were not visible at MLLW. *concur, The 2 piles have been brought forward to this survey.*

The pile shown on H-6339 at $58^{\circ}22'47''\text{N}$, $135^{\circ}50'35''\text{W}$ was not located while walking the shoreline during shoreline verification, although the area was visually inspected while exposed (Pos. Nos. 1713-14, 1740-41). *No pile found on H-6339* See Eval Report Sect. 6 Disregard.

The pile shown on H-6339 at $58^{\circ}22'47''\text{N}$, $135^{\circ}51'33''\text{W}$ was not located while walking the shoreline during shoreline verification, although the area was visually inspected while exposed (Pos. Nos. 1720, 1724, 1735). *No pile found on H-6339, Disregard see Eval report Sec. 6*

The rows of piles shown on H-6339 and charted at $58^{\circ}22'50''\text{N}$, $135^{\circ}52'15''\text{W}$ were verified while walking the shoreline (Pos. Nos. 1731, 1825-26, 1828-29, 1842-43, 1845-47). The lone pile at $58^{\circ}22'45''\text{N}$, $135^{\circ}51'58''\text{W}$ charted on the S end of the piles was not discovered, although the area was visually inspected while exposed (Pos. No. 1724). As this was the most seaward of piles, it may have been lost to sea action. *Chart row of piles found on this survey. delete*

Four charted piles
~~Three~~ piles were located at $58^{\circ}22'43''\text{N}$, $135^{\circ}53'18''\text{W}$ (Pos. Nos. 1831-33), verifying the area of broken piles as shown on H-6339. *- Concur - chart piles as shown on this survey. delete charted piles*

The house on the fish trap shown on H-6339 at $58^{\circ}22'20''\text{N}$, $135^{\circ}53'25''\text{W}$ and charted as two "piles" on Chart 17302, was not located after conducting an echo sounder search with 20m line spacing. As 20m line spacing does not adequately disprove these piles, the hydrographer recommends that the pilings remain charted, but should be shown as "submerged piles", since they were not visible at MLLW. *- Concur*
 Two piles have been brought forward to this survey.

The fish trap itself was not located after running an echo sounder search along a skewed line over the area where the fish trap was shown, from 58°22'20"N, 135°53'25"W to 58°22'42"N, 135°53'37"W (Pos. Nos. 4042-44). However, additional piles were located at the N end, which may be all that remains of the fish trap (Pos. Nos. 1834-35). As the fish trap is not currently shown on Chart 17302, the hydrographer recommends that the additional piles to the north be charted as shown on the ~~final field sheets~~. *Smooth* **CONCUR** ✓

The pile shown on H-6339 and charted at 58°22'35"N, 135°54'23"W was not located during shoreline verification, although the area was visually inspected while exposed (Pos. No. 1800). *no pile found on H-6339, disregard* **See Eval report Sec. 6**

The pile shown on H-6339 at 58°22'28"N, 135°54'48"W was not located. The area was searched with an echo sounder at a spacing of 50m, in depths of 4m. As the pile is not currently shown on Chart 17302, *no change is recommended. no pile found on prior, disregard* **See Eval report Sec. 6**

The shoal depth of 9m shown on H-6339 at 58°22'05"N, 135°55'00"W was not discovered in this survey. This shoal was not investigated as it did not fall within the current survey limits, however, junctioning mainscheme lines spaced at 100m intervals indicated depths of 17m in this area. As the shoal depth of 9m is not currently shown on Chart 17302, no change is recommended. **See Eval report Sec. 6**

recommendation: The hydrographer recommends that, unless otherwise indicated above, all shoreline features be plotted as shown on the ~~final field sheets~~, and soundings and least depths acquired on this survey be used to supersede those of H-6339 within their common areas. *CONCUR* **See Eval Report Sec. 6**

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

Most soundings on H-2618 were illegible, especially in shoaler areas, making direct comparison of soundings impossible. However, the legible soundings agreed within 2m of the soundings in this survey. ✓

More extensive shoaling was discovered on this survey than on H-2618. Comparison between shoal depths cannot be made due to the illegibility of soundings on H-2618. Modern methods of sounding and positioning, along with tighter line spacing are the most probable causes for discrepancies between surveys. ✓

Significant features such as piles were not located on H-2618, and were probably built after the survey was completed.

recommendations: The hydrographer recommends that the soundings, least depths, shoreline and high water line acquired on this survey be used to supersede those of H-2618 within their common boundaries. *CONCUR* ✓

L. COMPARISON WITH THE CHART *See Evaluation Report Sec. 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

In general, agreement of depths and contours between the chart and this survey is very good. Offshore depths agree within 3m, while in inshore areas the charted depths are shoaler by about 4m. Possible sources of discrepancies are in datum shifts and in distortions introduced when enlarging the chart. ✓

Mainscheme lines were oriented north-south on both the east and west sheets. Mainscheme lines were spaced at 400m and then split to 200m in depths less than 60m. Line spacing was reduced to 100m in depths less than 40m in order to locate shoal depths and to better define depth contours. Additional developments consisting of 10-, 20-, 25-, and 50-meter line spacing were conducted to better define shoaler depths and to locate significant features. Due to limited visibility and swift currents, shoal least depths were determined by conducting echo sounder searches of 10m line spacing rather than by conducting dive investigations. ✓

Comparison of Non-Sounding Features

In general, the chart adequately portrays all non-sounding features. Changes to the charted shoreline were accurately shown on the T-sheets. Most changes and additions to the chart have been discussed in Sections H and K and will not be discussed here. A few additional discrepancies are noted below: ✓

The charted piles at 58°23'00"N, 135°48'50"W were verified in this survey, however, the row of piles extended further S by 90m than was indicated on chart 17302 (Pos. Nos. 1745,4061-62,4064). The furthest S pile is broken and eroded due to sea action. *chart area as shown on smooth sheet.*

Dangers to Navigation

Five 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. ✓

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 Eval Report Sec. 6*

N. AIDS TO NAVIGATION

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

One floating aid to navigation, Ancon Rock Buoy 2, marks a shoal southwest of Pt. Gustavus. The red nun buoy was positioned by hydrographic methods (Pos. No. 4066). The field position compared with published and charted positions as follows: *at 58/22/23.84N, 135/55/59.51W* ✓

<u>Navigation Aid</u>	<u>Published Position</u>	<u>Charted Position</u>	<u>Field Position</u>
Ancon Rock Buoy 2 L.L. No. 24190	58°22.4'N 135°55.8"W	58°22'24"N 135°55'54"W	58°22'23.84"N 135°55'59.51"W

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

The buoy adequately serves the apparent purpose for which it was established.

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

O. STATISTICS

<u>Vessel:</u>	<u>2123</u>	<u>2124</u>	<u>2125</u>	<u>2126</u>	<u>2127</u>	<u>2128</u>	<u>Total</u>
# of Pos	205	287	627	15	46	60	1240
NM Hydro	36.1	19.6	89.6	3.2	0.0	0.0	148.5
NM ² Hydrography	9.2		Velocity Casts		2		
Detached Positions	115		Tide Stations	2			
Bottom Samples	35		Current/Magnetic Stations	0			

P. MISCELLANEOUS

All bottom samples were submitted to the Smithsonian Institution.

Tide rips and currents in excess of two knots were observed by the survey launches and Boston Whalers throughout the survey area 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, were 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.


There were no duplicate position numbers recorded on this survey.

S. REFERRAL TO REPORTS

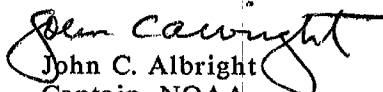
The following supplemental reports contain additional information relevant to this survey:

<u>Title</u>	<u>Date Sent to N/CG245</u>
Fall 1989 Horizontal Control Report for OPR-O186-RA	January, 1990
Spring 1990 Horizontal Control Report for OPR-0186-RA	July, 1990
Spring 1990 Electronic Control Data Package for OPR-O186-RA	July, 1990
Spring 1990 Corrections to Echo Soundings Data Package for OPR-O186-RA	July, 1990
Spring 1990 Coast Pilot Report for OPR-O186-RA	July, 1990

Respectfully Submitted,


Karen Schoonover
Ensign, NOAA

Approved and Forwarded,


John C. Albright
Captain, NOAA
Commanding Officer

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

- 100 - ADOLPHUS 2, 1922
- 101 - ANT, 1923
- 110 - KNOB, 1923
- 120 - DAM, 1901
- 121 - DAMP, 1901
- 128 - POINT GUSTAVUS WEST BASE, 1923
- 134 - HAG, 1901
- 135 - INIAN, 1970
- 136 - AID, 1901



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


July 6, 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 twelve dangers to navigation. These items are in addition to the eight dangers reported in 1989 (reference letter dated December 26, 1989) and the thirteen dangers reported April 16, 1990. 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

July 6, 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. These items are in addition to the eight dangers reported in 1989 (reference letter dated December 26, 1989) and the thirteen dangers reported April 16, 1990. A copy of the chart showing the areas in which the dangers exist is also attached.

Sincerely,

John C. Albright
Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
PMC



P 061610Z JUL 90
 FM NOAA S RAINIER
 TO CCGDSEVENTEEN JUNEAU AK
 DMAHTC (NAVWARN) WASHINGTON DC//MCNM//
 INFO NOAA MOP SEATTLE WA
 ACCT CM-VCAA

KVJ / TBOST
JMA 061616Z
JUL

BT
 UNCLAS
 NOAA SHIP RAINIER HAS FOUND TWELVE DANGERS TO NAVIGATION IN ICY STRAIT, ALASKA (PROJECT OPR-0186-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEYS H-10338 (LEMESURIER ISLAND TO PT DUNDAS; ITEMS A-G) AND H-10333 (ICY PASSAGE TO PT CAROLUS; ITEMS H-L). THESE DANGERS SUPPLEMENT THOSE REPORTED IN MY P 262100Z DEC 89 AND P 170322Z APR 90 MESSAGES. THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

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

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

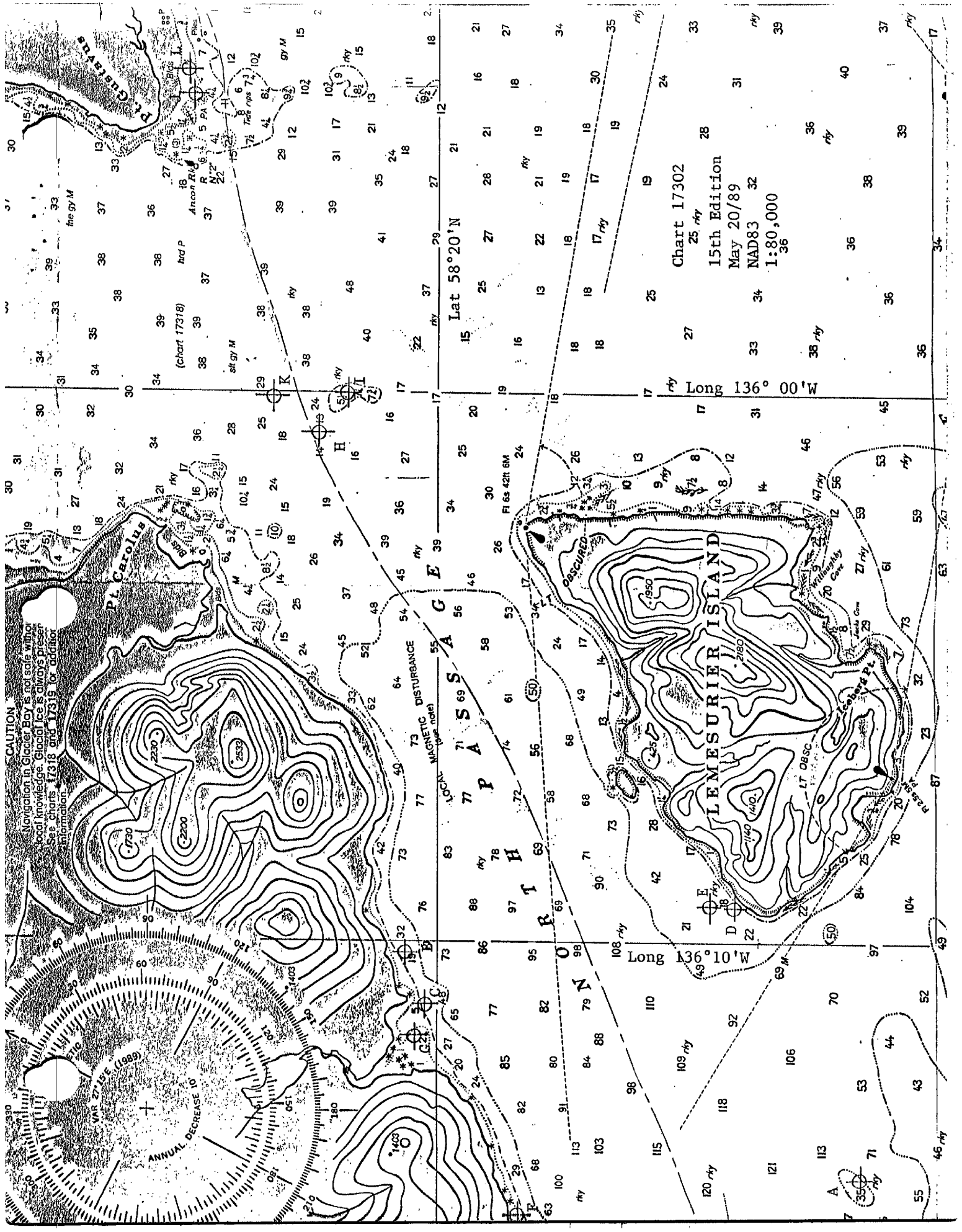
ITEM	DANGER	DEPTH	DATUM	LATITUDE	LONGITUDE	Posno.
A.	SHOAL SUBM	15 3/4FM	NAD83	58-15-52.83N ✓	136-14-26.55W	8511+1
B.	SHOAL SUBM	9 1/2FM 9FM 3FT	NAD83 NAD27	58-20-18.28N ✓ 58-20-19.58N ✓	136-10-15.38W 136-10-08.79W	4143+2
C.	SHOAL SUBM	7 1/2FM 7FM 3FT	NAD83 NAD27	58-20-06.95N ✓ 58-20-08.25N ✓	136-11-13.35W 136-11-06.76W	4153+4
D.	SHOAL SUBM	10FM	NAD83	58-17-05.54N ✓	136-09-23.87W	4216+3
E.	SHOAL SUBM	13 1/2FM	NAD83	58-17-20.25N ✓	136-09-19.50W	4224+3
F.	ROCK COV	3/4FM 0FM 5FT	NAD83 NAD27	58-19-12.80N ✓ 58-19-14.10N ✓	136-15-08.00W 136-15-01.41W	2012
G.	ROCK AWASH	0FM 0FM 0FT	NAD83 NAD27	58-20-12.25N ✓ 58-20-13.90N ✓	136-11-46.90W 136-11-40.31W	6008
H.	SHOAL SUBM	10 1/2FM 10FM 4FT	NAD83 NAD27	58-21-09.00N ✓ 58-21-10.30N ✓	136-00-42.50W 136-00-35.91W	4281+7
I.	SHOAL SUBM	5FM 5FM 0FT	NAD83 NAD27	58-20-53.50N × 58-20-54.80N ×	136-00-02.50W 135-59-55.91W	6545+4
J.	SHOAL SUBM	3/4FM 0FM 5FT	NAD83 NAD27	58-22-23.50N ✓ 58-22-24.80N ✓	135-54-34.00W 135-54-27.41W	4172+11
K.	SHOAL SUBM	12 3/4FM 12FM 5FT	NAD83 NAD27	58-21-39.00N × 58-21-40.30N ×	136-00-36.00W 136-00-29.41W	4134+2
L.	ROCK AWASH	0FM 0FM 0FT	NAD83 NAD27	58-22-27.10N ✓ 58-22-28.40N ✓	135-54-08.00W 135-54-01.41W	1856

NUMEROUS UNCHARTED ROCKS EXIST BETWEEN PT DUNDAS AND PT CAROLUS, ALONG THE WESTERN END OF LEMESURIER ISLAND, AND FROM PT GUSTAVUS TO ABOUT 3NM EAST, GENERALLY AT OR NEAR THE LOW WATER LINE. MARINERS SHOULD EXERCISE CAUTION WHEN NAVIGATING CLOSE INSHORE IN THESE AREAS.

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

*unrevised, retained
 as submitted*

BT



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

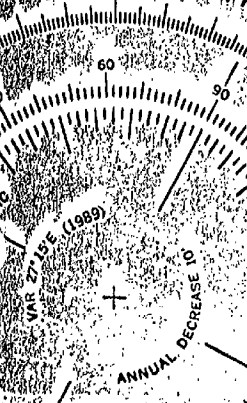


Chart 17302
15th Edition
May 20/89
NAD83
1:80,000

Lat 58° 20' N

Long 136° 00' W

Long 136° 10' W

LEMSURIER ISLAND

GLACIER BAY

Pt. Carolina

Pt. Glacier

Arcon P

Ind P

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

Sh gy M

APPROVAL SHEET

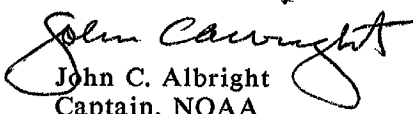
for

H-10333

RA-10-1-90

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

The field 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

ORIGINAL

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: July 24, 1990

MARINE CENTER: Pacific

OPR: O-186-RA

HYDROGRAPHIC SHEET: H-10333

LOCALITY: Icy Passage to Pt. Carolus , Icy Strait, Alaska

TIME PERIOD: April 2 - May 12, 1990

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

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

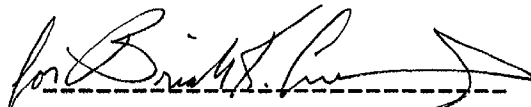
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 945-2516 = 13.1 ft.
945-2569 = 12.3 ft.

REMARKS: RECOMMENDED ZONING

1. West of 135 46.5'W and East of 135 50.5'W, all times and heights are direct on Pt. Adolphus(945-2516).
2. West of 135 50.5'W and East of 135 54.5'W - times are direct and apply a X0.97 range ratio to all heights at Pt. Adolphus(945-2516).
3. West of 135 54.5'W and East of 135 58.5'W - times are direct and apply a X1.02 range ratio to all heights at Lemesurier Is.(945-2569).
4. West of 135 58.5'W and East of 136 2.5'W - all times and heights are direct on Lemesurier Is.(945-2569).

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

Note: Times are tabulated in Greenwich Mean Time.


CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

GEOGRAPHIC NAMES

H-10333

Name on Survey	ON CHART NO. 17302 CHART NO. 17300 CON U.S. QUADRANGLE MAPS FROM LOCAL INFORMATION ON LOCAL MAPS P.O. GUIDE OR MAP RAND McNALLY ATLAS U.S. LIGHT LIST											
	A	B	C	D	E	F	G	H	I	J	K	
ALASKA (title)	X	X										1
ANCON ROCK	X	X										2
GLACIER BAY	X	X										3
GUSTAVUS, POINT	X	X										4
ICY STRAIT	X	X										5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

Approved:

Charles E. Harrington
Chief Geographer - 11/16/90

DEC 21 1990

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET		1	SMOOTH OVERLAYS: POS., ARC, EXCESS		7
DESCRIPTIVE REPORT		1	FIELD SHEETS AND OTHER OVERLAYS		4
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS
ACCORDION FILES	1				
ENVELOPES					
VOLUMES	1				
CAHIERS					
BOXES					

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES
The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS			
	VERIFICATION	EVALUATION	TOTALS	
POSITIONS ON SHEET			1183	
POSITIONS REVISED				
SOUNDINGS REVISED				
CONTROL STATIONS REVISED				
	TIME-HOURS			
	VERIFICATION	EVALUATION	TOTALS	
PRE-PROCESSING EXAMINATION				
VERIFICATION OF CONTROL				
VERIFICATION OF POSITIONS	70		70	
VERIFICATION OF SOUNDINGS	208		208	
VERIFICATION OF JUNCTIONS				
APPLICATION OF PHOTOBATHYMETRY				
SHORELINE APPLICATION/VERIFICATION				
COMPILATION OF SMOOTH SHEET	91		91	
COMPARISON WITH PRIOR SURVEYS AND CHARTS		7	7	
EVALUATION OF SIDE SCAN SONAR RECORDS				
EVALUATION OF WIRE DRAGS AND SWEEPS				
EVALUATION REPORT		64	64	
GEOGRAPHIC NAMES				
OTHER*				
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	369	71	440

Pre-processing Examination by M. Brown	Beginning Date 7/11/90	Ending Date 7/27/90
Verification of Field Data by B.H. Brown, L.T. Deodato, M.G. Sander R.S. Shipley, J.L. Stringham	Time (Hours) 369	Ending Date 4/12/91
Verification Check by J.L. Stringham	Time (Hours) 10	Ending Date 4/12/91
Evaluation and Analysis by R.N. Mihailov	Time (Hours) 71	Ending Date 7/25/90
Inspection by D. Hill	Time (Hours) 4	Ending Date 7/18/91

**EVALUATION REPORT
H-10333**

1. INTRODUCTION

Survey H-10333 is a basic hydrographic survey accomplished by the NOAA Ship RAINIER under the following Project Instructions.

OPR-O186-RA, dated February 22, 1990

This survey occurred in Alaska and covers two separate areas in Icy Strait. The eastern portion surveyed is located along the southern shore of Point Gustavus. The western portion surveyed is located offshore and in the southern entrance to Glacier Bay. The survey limits extend from latitude 58/20/30N to latitude 58/23/30N and longitude 135/48/35W to longitude 136/01/10W. The surveyed area is divided by a 1974 1:5000 survey (H-9638), which provides a current larger scale survey of the central area of this survey. In addition, updated positions were provided for Ancon Rock, the Ancon Rock buoy and two reefs, which lie outside of the surveyed area, on junction survey H-8816 (1964). The shoreline consists of boulders, mud, sand and areas of ruins. The bottom consists of sand, gravel and broken shells. Depths range from 0 meters to 75 meters.

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

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

A digital file has been generated for this survey that includes categories of information required to comply with Hydrographic Survey Guideline No. 53, 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 information.

2. CONTROL AND SHORELINE

Sections F and G of the hydrographer's report and the Spring 1990 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 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 correction.

Latitude:	-1.241 seconds	(-38.392 meters)
Longitude:	6.571 seconds	(106.843 meters)

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

On days 92 and 93, Vessel number 2125, an incorrect baseline corrector of 0.0 meters was applied to code 2, code 5, and code B. The correct baseline corrector for code 2 was +7.0 meters, for code 5 was -5.0 meters, and for code B was +8.0 meters. With ECR values generally less than 6 meters and residuals under 3 meters, the effect of this error is within the accuracy requirements for the scale of this survey. Also, these positions were not used to locate dangers to navigation or any dangerous features and did not affect the depth curves in the area. Positions 6000-6024 and positions 6127-6266 were accepted.

The quality of 35 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 soundings located by these fixes are consistent with the surrounding data.

The following shoreline map applies to this survey.

<u>Map Number</u>	<u>Photo Date</u>	<u>Class</u>
TP-01317	June 1987	III

3. HYDROGRAPHY

Except for a charted dangerous submerged wreck (PA) which was not adequately investigated, 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
- show the survey was properly controlled and soundings are correctly plotted.

4. CONDITION OF SURVEY

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

5. JUNCTIONS

Survey H-10333 junctions with the following surveys.

H-8816	1964	1:20,000	Northeast (Unreviewed)
H-9638	1976	1:5,000	Center
H-9848	1979	1:20,000	North
H-10271	1988	1:10,000	East
H-10334	1990	1:20,000	South
H-10335	1990	1:10,000	West

GRK
2/14/92

The junctions with surveys H-10334 and H-10335 are complete.

The junctions with surveys H-8816, H-9638, H-9848 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. These surveys are plotted in fathoms and survey H-10333 is plotted in meters. There is good agreement between soundings, however, the depth curves shown on the surveys delineate different depths and, therefore, do not agree. Some soundings have been transferred to survey H-10333 from surveys H-8816, H-9638, and H-9848 to better portray the depth curves in the common area.

A rock awash symbol at latitude 58/22/28N, longitude 135/55/25W, was transferred from survey H-8816 to survey H-10333. This rock awash appears to be the high point of a submerged reef located during this survey.

Survey H-9848 includes a development located entirely within the limits of this survey, at latitude 58/21/00N, longitude 136/00/00W. Several soundings have been transferred from survey H-9848 to justify the junction depth curves. As survey H-10333 has a lesser minimum depth and better delineates this shoal, a butt junction has been effected. The common area of survey H-9848 has been superseded by the present survey. The H-9848 smoothsheet will be revised in accordance with the appropriate supersession notations by N/CG24.

*Done
AKH
N/CG 24*

6. COMPARISON WITH PRIOR SURVEYS

H-2618 (1902) 1:40,000
H-6339 (1938) 1:20,000

Prior survey H-6339 covers the northern half of the present survey. Soundings generally agree within one meter, with this survey tending towards being shoaler. Lesser depths have been found on the all shoals during this survey. The differences are attributed to the differences in accuracy between the two surveys and the tectonic activities that have been and are occurring in this area.

Refer to section K of the hydrographer's report for additional discussion on the comparison between these two surveys.

Several of the piles discussed in section K could not be found on the prior survey. They appear to be zero soundings. These comments in the hydrographer's report should be disregarded.

The four piles not verified or disproved during this survey have been brought forward at the following positions, as submerged. — mcr

<u>Feature</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
Subm pile	58/22/19	135/53/29
Subm pile	58/22/23	135/53/36
Subm pile	58/22/33	135/50/04
Subm pile	58/22/37	135/50/12

In addition, kelp shown on survey H-6339 south of Point Gustavus was confirmed during this survey, but not shown as extensively as on the prior. Kelp symbols have been brought forward from survey H-6339 to better delineate this area.

Prior survey H-2618 covers the entire area of the present survey. The northern half, which is the inshore area, has been superseded by survey H-6339. The soundings generally agree within 3 meters, with the present survey usually shoaler. The differences are attributed to the differences in accuracy between the two surveys and the tectonic activities that have been and are occurring in this area.

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 features noted above, survey H-10333 is adequate to supersede surveys H-2618 and H-6339 for the areas of common coverage.

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

Prior wire-drag survey H-4310 covers the offshore portion of the present survey.

The shoal depth of 9 meters (5 fathoms) discussed by the hydrographer in section K was brought forward to survey H-6339 from survey H-4310. This sounding was discredited in the Quality Control Report for junction survey H-9638, therefore, it is no longer charted.

Except as noted above, present depths do not conflict with the cleared areas of the prior wire-drag 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 (NAD 83)

Chart 17318, 3rd edition, dated December 15, 1990; scale 1:80,000 (NAD 83)

a. Hydrography

Charted hydrography originates with surveys H-2618, H-6639, H-9848, and miscellaneous sources. H-9848, a junction survey, is the charting source for the shoal located at latitude 58/21/00N, longitude 136/00/00W.

The dangerous submerged wreck (PA), at latitude 58/22/25N, longitude 134⁵/55/00W, discussed in section H of the hydrographer's report, was not verified or disproved. It should be retained as charted. m-c-R

Except for the submerged wreck noted above, survey H-10333 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

There are no fixed aids to navigation within the limits of survey H-10333.

There is one floating aid to navigation located within the area of this survey. Ancon Rock Buoy 2 (Light List number 24190) was located by detached position at latitude 58/22/23.84N, longitude 135/55/59.51W. This position agrees well with the charted position. This floating aid adequately serves the 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

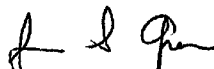
The hydrographer reported five dangers to navigation to the DMAHTC and the Seventeenth Coast Guard District on July 6, 1990. Copies of these messages and confirming reports are attached. No additional dangers were discovered during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10333 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

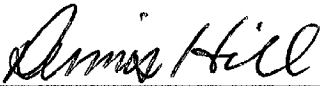
This is an adequate hydrographic survey. Additional field work is recommended to locate or disprove the four piles noted in section 6 and the submerged wreck noted in section 7 of this report.

for 
Robert N. Mihailov
Cartographer

APPROVAL SHEET
H-10333


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.



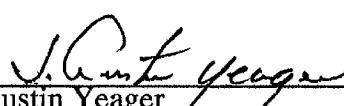
Dennis J. Hill Date: 7-18-91
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

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.



Commander Pamela Chelgren-Koterba, NOAA Date: 7/22/91
Chief, Pacific Hydrographic Section

Final Approval

Approved: 

J. Austin Yeager Date: Aug. 14, 1991
Rear Admiral, NOAA
Director, Coast and Geodetic Survey



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Coast and Geodetic Survey
Rockville, Maryland 20852

JUN 23 1992

MEMORANDUM FOR: *DFS* Captain Dean R. Seidel, NOAA
Chief, Hydrographic Surveys Branch

FROM: *George K. Myers*
George K. Myers
Chief, Standards Section

SUBJECT: Examination of Hydrographic Survey H-10333,
(1990), Alaska, Icy Strait, Vicinity of Point
Gustavus

Chief of Party.....J. C. Albright
Field Unit.....NOAA Ship RAINIER
Processed by.....Pacific Marine Center
Examined by.....G. K. Myers

An examination of hydrographic survey H-10333 (1990) was accomplished to monitor the survey for adequacy with respect to data acquisition, conformance with applicable project instructions, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, smooth plotting, digital data standards, decisions made and actions taken by the evaluator, and the cartographic presentation of data.

Cartographic deficiencies and a constructive comment are noted on a 1/2-scale copy of the survey smooth sheet which will be forwarded to the marine center. Digital data on magnetic tape were not available during the examination of this survey. Therefore, an inspection of a graphic plot from the certified tape was not performed.

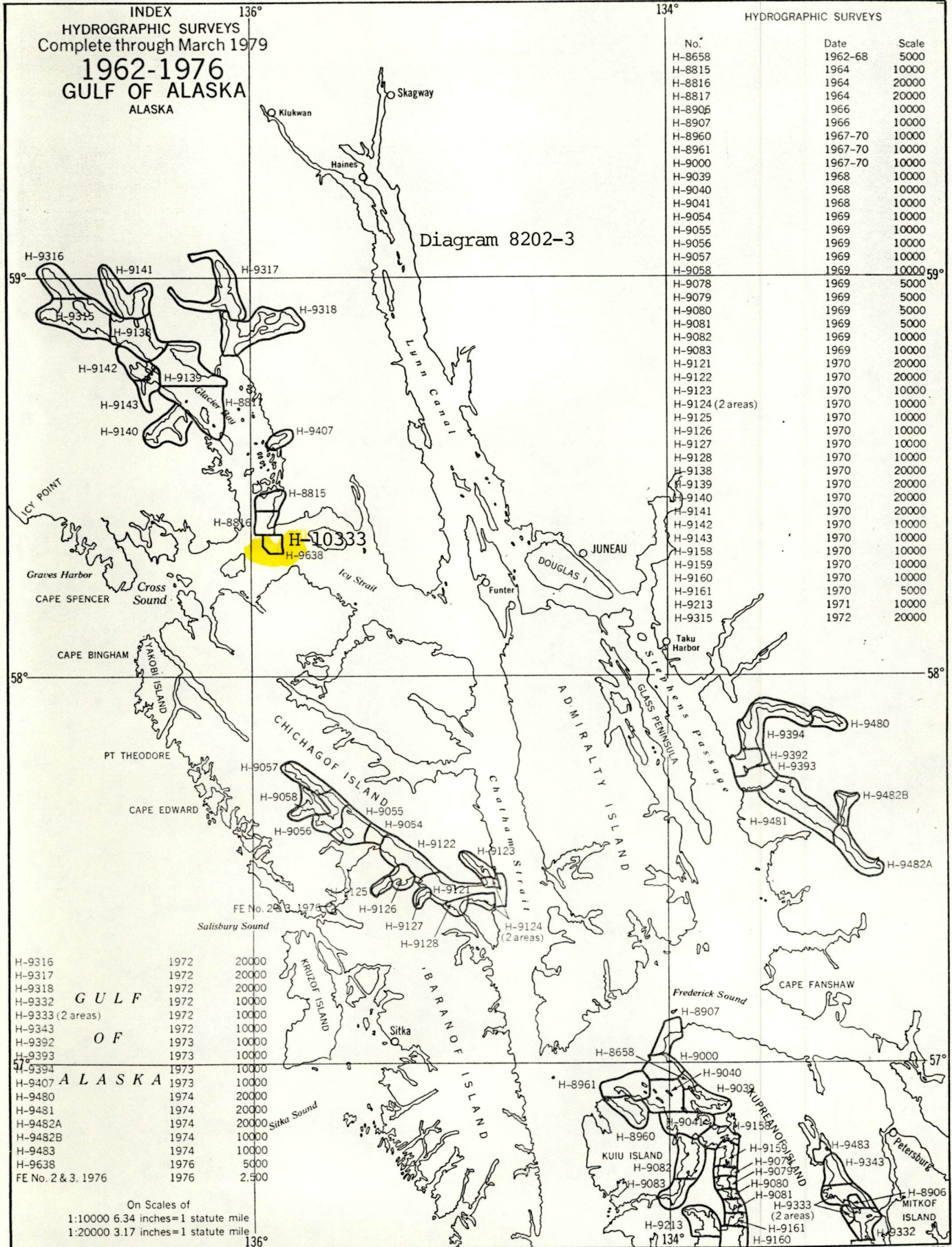
In general, the survey was found to conform to National Ocean Service standards and requirements except as stated in the Evaluation Report.

cc: N/CG245 - D. Hennick



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 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-9394		
H-9392		
H-9393		
H-9481		
H-9482B		
H-9482A		
H-9483		
H-9343		
H-8906		
H-9332		
H-9160		
H-9161		
H-9161		

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)

