10295

Diagram No. 8201-4

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-10-1-89

Registery No. H-10295

LOCALITY

State Alaska

General Locality Frederick Sound

Sublocality Turnabout Island and Vicinity

1989

CHIEF OF PARTY
CAPT J. C. Albright

LIBRARY & ARCHIVES

DATE June 12, 1990

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

10295

CHTS

17368 ✓ 40000
17320 ✓ 217,828
17360 ✓ 217,828
16016 NC 969,756
531 NC ✓ 2,100,000
500 NC ✓ 3,500,000
530 NC ✓ 4,860,700

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-10295

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 10-1-89

State Alaska

General locality Frederick Sound

Locality Turnabout Island and Vicinity

Scale 1:10,000 Date of survey March 14 to April 15, 1989

Instructions dated September 13, 1988 Project No. OPR-0358-RA

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

Chief of party CAPTAIN John C. Albright, NOAA

Surveyed by LT Miller, LTJG Niichel, ENS K. Smith, ENS C. Groeneveld, ENS G. Noll, ENS T. Duffy, ENS Haines, ENS M. Schoonover, ENS Muench

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

Evaluation by: ~~Protracted by~~ Gordon E. Kay Automated plot by PMC Xynetics Plotter

Verification by Matthew G. Sanders

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW and tenths of fathoms

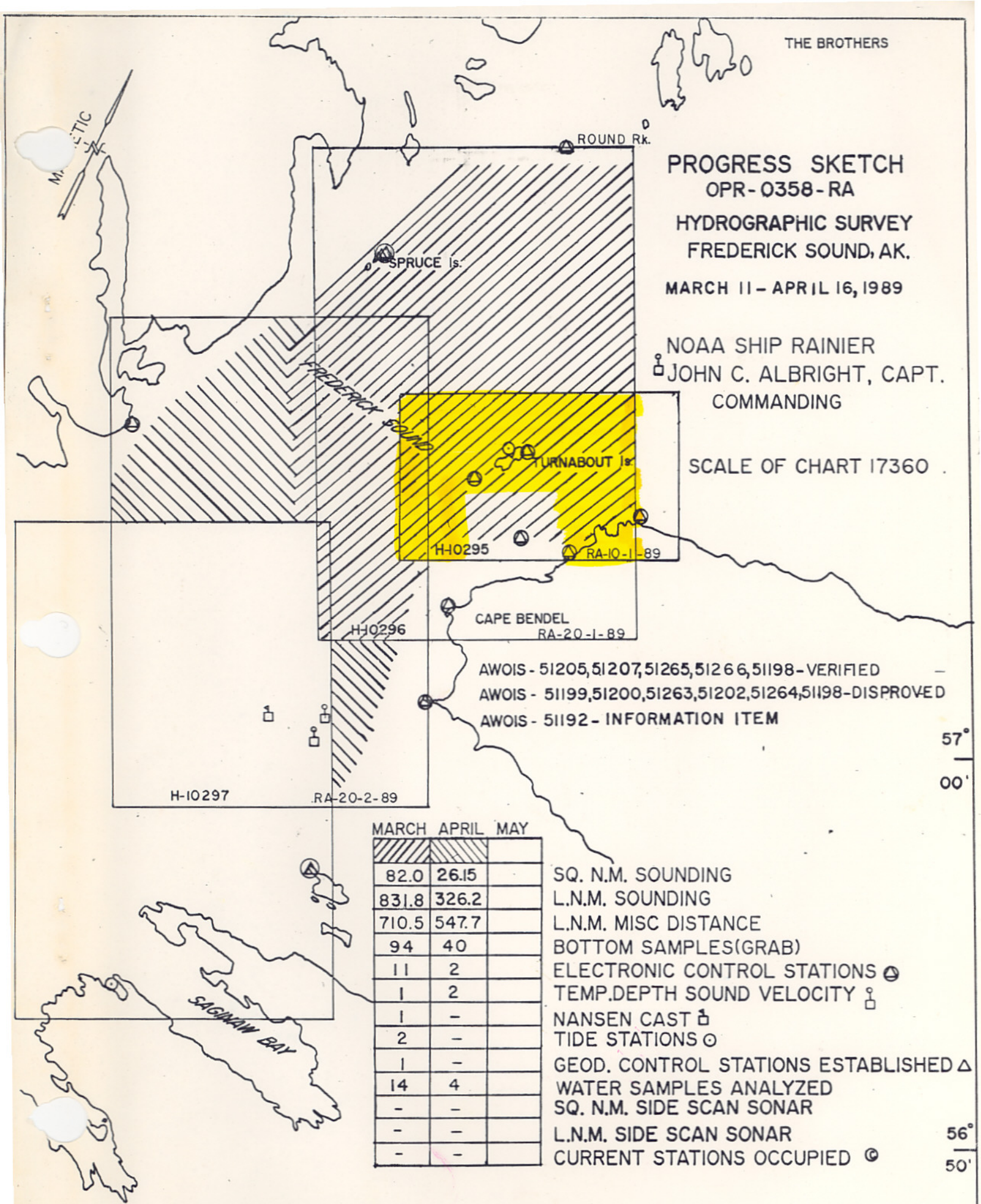
REMARKS: All times are UTC. Revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

5C32897
KWW. 6/14/90

AWOIS + SURF ✓ RWD 6/90

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

U.S. GOVERNMENT PRINTING OFFICE: 1986 - 652-007/41215



MARCH	APRIL	MAY	
82.0	26.15		SQ. N.M. SOUNDING
831.8	326.2		L.N.M. SOUNDING
710.5	547.7		L.N.M. MISC DISTANCE
94	40		BOTTOM SAMPLES(GRAB)
11	2		ELECTRONIC CONTROL STATIONS
1	2		TEMP.DEPTH SOUND VELOCITY
1	–		NANSEN CAST
2	–		TIDE STATIONS
1	–		GEOD. CONTROL STATIONS ESTABLISHED
14	4		WATER SAMPLES ANALYZED
–	–		SQ. N.M. SIDE SCAN SONAR
–	–		L.N.M. SIDE SCAN SONAR
–	–		CURRENT STATIONS OCCUPIED

Descriptive Report to Accompany Hydrographic Survey H-10295

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

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

A. PROJECT

A basic hydrographic survey was completed in Frederick Sound, Alaska as specified by Project Instructions OPR-O358-RA dated September 13, 1988 and Change No. 1 (January 17, 1989), Change No. 2 (February 13, 1989), Change No. 3 (March 27, 1989) and Change No. 4 (April 17, 1989). The survey is designated Sheet G on the revised sheet layout dated April 10, 1989.

This survey is one in a series which will provide contemporary hydrographic data for existing nautical charts and for a new series of 1:80,000-scale charts. It is part of a continuing program to improve chart coverage of the Inside Passage of southeast Alaska in response to requests from the Southeastern Alaska Pilots' Association, the Department of Transportation of Alaska, and other private interests such as the cruise liner and fishing industries.

B. AREA SURVEYED

The survey is located in southeast Alaska, in Frederick Sound, and encompasses Turnabout Island and vicinity. The survey is bounded on the north by latitude 57°09'00"N, and on the south by Kupreanof Island and the junction limits of survey H-8907. The eastern limit is longitude 133°53'46"W and the western limit is longitude 134°03'00"W.

Numerous ledges extend offshore from Kupreanof Island near Pinta Point. Ledges also surround Turnabout Island and the two adjacent islets. The bottom is primarily composed of green silt and sand with pebbles in the deeper areas and broken shell, coral, and coarse sand in the shallow areas.

Data acquisition was conducted from March 14 through April 15, 1989 (DN 073 - DN 105).

C. SOUNDING VESSELS

All data were acquired from RAINIER and three automated survey launches, as shown below:

Vessel	EDP No.	Operation
RAINIER	2120	Bottom samples Nansen/Plessey Casts
RA-4	2124	Hydrography
RA-5	2125	Hydrography Bottom Samples
RA-6	2126	Hydrography

No changes to the standard sounding configurations were necessary.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

NOAA Ship RAINIER and all survey launches were equipped with the Raytheon DSF-6000N echo sounders shown below. The echo sounders were operated in the HIGH + LOW (HIGH DIGITIZED) function, using manual gain controls on both high and low frequencies to obtain the best analog trace. Variations in the instrument initial, stylus arm length, and belt tension are not present in these echo sounders. Soundings were recorded in fathoms and tenths of fathoms. Two-fathom bar checks were conducted and recorded daily, using both the LOW and the HIGH + LOW (HIGH DIGITIZED) functions. The echo sounders were operated in accordance with the Provisional Instructions "Raytheon DSF-6000N Echo-Sounder Operating and Processing Instructions," dated July 5, 1983, and the N/CG2 memorandum "DSF-6000N Depth Errors as a Function of Receiver Gain," dated May 23, 1986.

Raytheon DSF-6000N Echo Sounders

Vessel	Serial Number	Day Numbers
2120	~~B048N~~	~~073-078~~
	B046N	~~079-106~~ 083-090
2124	A117N	073-106
2125	A114N	073-093
2126	B046N	073-078
	B048N	078-105

The echo sounders were continuously monitored during data acquisition. All sounding data were scanned at least two times, not only to ensure all significant peaks and deeps were inserted, but also to verify the digitized depths. While running over extremely steep, irregular bottoms, 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 last calibrated March 1, 1989 by the Pacific Operations Group (N/OMA 1214). In addition, field system checks were performed each day the pneumatic gage was used.

Leadline calibrations were performed by RAINIER personnel during February 1989 at PMC. Calibration forms are included in the Spring 1989 Corrections to Echo Soundings Data Package for OPR-0358-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 except settlement and squat 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 1989 Corrections to Echo Soundings Data Package for OPR-0358-RA.

* SETTLEMENT AND SQUAT HAVE BEEN APPLIED TO THE SMOOTH SHEET SOUNDINGS

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 for all launches was determined on February 10, 1989. This transducer depth agrees with the launches' historical records. ✓

While RAINIER was in dry-dock in February 1989, the distance from the transducer to the gunwhale was measured with a leadline. The distances from the gunwhale to the water were then measured when the ship was refloated and the fuel tanks were at 60% and 100% capacity. A transducer depth of 2.4 fathoms was calculated from these measurements. ✓

Heave

Corrections for heave were applied while scanning. The scanning technique used in comparing the analog trace with the digital record was chosen to eliminate fluctuations greater than 0.2 fathom resulting from sea action. In certain areas, the extremely irregular bottom topography made it sometimes difficult to determine which fathogram features were caused by sea action. ✓

Sound Velocity

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

Cast No.	Deepest Depth (m)	Day Number	Geographic Position
1	350	072	57°01.3'N, 134°08.2'W
N	300	072	57°01.3'N, 134°09.9'W
2	400	091	57°10.0'N, 133°51.4'W
3	350	106	57°00.9'N, 134°08.8'W

All Casts are off the Sheet limits

N=Nansen cast

The Plessey Sound Velocity Sensor, S/N 5653, was connected to a Hewlett/Packard 5326B Universal Frequency Counter, S/N 1312A02159. The sound velocity sensor was calibrated at Northwest Regional Calibration Center in Bellevue, WA on January 26, 1989. ✓

The thermometers used in the Nansen cast were calibrated between January 6, 1988 and January 19, 1989. The Beckman Salinometer, S/N 24663, was calibrated on March 1, 1989. The thermometers and the salinometer were calibrated at the Northwest Regional Calibration Center in Bellevue, WA. ✓

The Nansen cast was taken on the same day as Plessey Cast #1 to ensure the Plessey sensors were operating properly. The sound velocities determined by the two methods showed good agreement. Surface water temperatures and samples were obtained during each Plessey cast as additional checks on the Plessey system. ✓

The surface water temperature, and the corresponding sound velocity, increased over time. 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	073-087
2	2	087-096
3	3	101-106

The PC program, VELOCITY, was used to compute velocity correctors at 0.1-fathom increments for each velocity table. The velocity correctors were determined for both RAINIER and launches. The correctors for the launches were used for all sounding vessels, as there was no appreciable difference between the correctors. The velocity tapes have been forwarded with the survey data; tape listings are included with this report.

Settlement and Squat

Settlement and squat correctors were determined for the automated survey launches at Shilshole Bay, Washington on February 23 and March 3, 1989. The correctors were determined for RAINIER at Turnabout Island, Frederick Sound, Alaska on April 1, 1989. 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.

Soundings on the final field sheets are not corrected for settlement and squat.* TC/TI tapes for each sounding vessel have been submitted with this survey; tape listings are included with this report.

* HAVE BEEN APPLIED TO THE SMOOTH SHEET.

Tide Correctors

Tidal zoning and correctors applicable to predicted tides for the Juneau, Alaska tide station (945-2210) were provided on the chart accompanying the Project Instructions. The zone applicable to this survey has a height correction ratio of "x 0.87" and time corrections of minus 17 minutes for high water and minus 14 minutes for low water. A printout of the predicted tide tapes is included with the survey data.

Tide stations at Turnabout Island (945-1655) and Saginaw Bay (945-1497) were established and maintained by RAINIER personnel. Only the Turnabout Island station was required for this survey but the Saginaw Bay data may be applicable. The field tide records and the Field Tide Note for both stations have been forwarded to N/OMA121 in accordance with Hydrographic Survey Guideline #50 and the Field Procedures Manual. A request for approved tides has been forwarded to N/OMA121. Copies of the Field Tide Note and the request for approved tides are included with ~~this report.~~ THE SEPARATES

E. HYDROGRAPHIC SHEETS

All field sheets were prepared aboard RAINIER, on a Houston Instrument Complot DP-3 roll plotter, using the PDP8/e HYDROPLOT system and program RK201, "Grid, Signal, Lattice Plot". Program RK201 draws a Modified Transverse Mercator projection. The two 1:10,000-scale final field sheets are designated RA-10-1N-89 and RA-10-1S-89 and each has an accompanying 1:10,000-scale detached position and bottom characteristic overlay. In addition, four 1:5,000-scale sheets were used to legibly depict soundings from numerous shoal developments along the north shore of Kupreanof Island and in the vicinity of Turnabout Island. The limits of the developments are shown on the two overlays. Parameter tape listings are included in this report.

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.

In plotting the final field sheets, overprints were removed by various techniques. The pen was manually lifted and special corrector tapes were made to edit out individual soundings. These tapes have not be submitted. Some soundings, including least depths, have been transferred by hand to the final field sheets from NSP data.

All field sheets, accompanying field records, and this Descriptive Report are being forwarded to the Pacific ~~Marine Center (N/MOP 21)~~ for ~~verification.~~ HYDROGRAPHIC SECTION N/CG245 & OFFICE PROCESSING

F. CONTROL STATIONS

A listing of the geodetic stations used to control this survey is included in this report. All stations located on offshore islands are noted on the listing, AND THE SMOOTH SHEET.

Positions for all existing stations are from the NGS data base. All existing stations were recovered in accordance with methods stated in Section 5.2.4 of the Field Procedures Manual. New stations were positioned in 1989 by RAINIER personnel via closed traverse. A static calibration site on the islets west of Turnabout Island was established using an angle and distance from station LION. The field positions for new stations are unadjusted. All stations meet or exceed Third-order, Class I standards for positioning. Geographic positions are based on the North American Datum of 1927 and the Clark Ellipsoid of 1866. Further information can be found in the Spring 1989 Horizontal Control Report for OPR-O358-RA.

G. HYDROGRAPHIC POSITION CONTROL

Soundings were located using Motorola Mini-Ranger III microwave positioning equipment in HYDROPLOT's range-range and range-azimuth acquisition modes.

Positioning Equipment

Five Mini-Ranger III console/R-T pairs and nine shore transponders were used during the survey. The following tables summarize the mobile and shore equipment used.

Mobile Equipment

EDP No.	Vessel	Console/R-T	DN
2120	RAINIER	720/B1405	071-106
2124	RA-4	715/911102	071-076
"	"	711/F3413	076-106
2125	RA-5	506042/E2716	071-093
2126	RA-6	B0269/B1089	071-094
"	"	506042/E2716	094-106

Shore Equipment

Transponder Serial Number	Code
911697	A
G3500	C
911711	D
F3256	E
G3501	F
B1412	0
D2384	1
B1106	2
911635	3

Range-azimuth positioning was used to position Vesno 2124 while acquiring sounding data between Turnabout Island and Turnabout Island Light (DN 88 & 105). Wild T-2 theodolites, serial numbers 320741 and 320734, were used with Mini-Ranger Code E at station LION on these days.

Baseline Calibrations

Opening and closing baseline calibrations were conducted in accordance with Section 3.1.2.1 of the Field Procedures Manual (see table below). Calibration data and descriptions of the baselines can be found in the Spring 1989 Electronic Control Data Package for OPR-0358-RA.

Location	Distance	DN	Description
Seattle, WA	1312 m	044-066	Sand Point-Matthews Beach
Kodiak, AK	1626 m	130-131	Bell Flats-USCG tidal BM

The final field sheets were plotted with the opening baseline calibration correctors. The maximum difference between opening and closing baseline calibrations for all codes was less than seven meters. In accordance with Section 3.1.2.3 of the Field Procedures Manual, the hydrographer recommends the following correctors be

applied to all data acquired by VESNO 2124 using Console/R-T 711/F3413 and Codes 1,2, and 3: CONCUR

Code 1	Code 2	Code 3
DN 073-086 -1m	DN 073-080 -2m	DN 073-086 -1m
087-100 -2m	081-092 -3m	087-100 -2m
101-106 -3m	093-106 -4m	101-106 -3m

System Check Procedures

Critical systems checks were conducted in accordance with Section 3.1.2.2 of the Field Procedures Manual; noncritical systems checks were obtained daily when critical checks were not acquired.

Fixed-point critical systems checks were acquired at the following stations: FIXED CAL POINT (210), ROUND ROCK LT (204), and TURN (161).

Theodolite intersection and theodolite-EDMI critical systems checks were also used for checking the Mini-Ranger systems. The following Wild T-2 serial numbers were used: 320741, 68648, 75599E. The Wild T-2/EDMI serial numbers used were: 320734 / 67306.

Noncritical system checks were conducted using launch-to-launch, baseline crossing, or three-range methods. In general, noncritical system checks fell within the allowable ~~rejection~~ limits and no systematic discrepancies with opening baseline correctors were observed.

Problems and Unusual Position Configurations

Null zones and erratic ranges were occasionally experienced due to the destructive interference of direct and reflected microwaves. This problem was significantly reduced by placing several of the shore transponders atop twenty- to thirty-foot Raydist towers. 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 automated plotters).

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

Antenna Offset Distances (ANDIST)

The ANDIST corrector was 0.0 meters for all launches as each launch had its antenna located over the depth transducer.

H. SHORELINE

Shoreline detail was transferred to the final field sheets from shoreline maps ("T-sheets") T-12178 and T-12179 (1965-66). T-12178 covers the area from longitude 134°00'00"W to 134°05'00"W. T-12179 covers the area from longitude 133°55'00"W to 134°00'00"W. The shoreline east of T-12179 was transferred from a 1:10,000-scale enlargement of USGS Topographic Quadrangle SUMDUM (A-6), 1948, 1:63,360.

Shoreline verification was conducted in accordance with Section 7.1 of the Field Procedures Manual. There were no areas where shoreline verification was not completed. ✓

Numerous changes to the shoreline maps have been made along the ledges on Turnabout Island, the two adjacent islets, and the north shore of Kupreanof Island. Shoreline verification revealed ledges to be much more extensive than depicted on the T-sheets and the USGS quadrangle. Isolated alongshore rocks often were high points on ledges or foul areas. The discrepancies can be attributed to large concentrations of kelp and the photography not being flown at low stages of tide. Few changes were made in areas along steep shoreline. All changes to the T-sheets are shown in red on the final field sheets. ✓

Detached positions were obtained on all rocks and ledges which extended seaward of the mean high water line, as defined in Section 4.1.2 of the Project Instructions. Verified T-sheet features and additional features not shown on the T-sheets or USGS quadrangle are shown on the final field sheets in black. The four-digit position numbers associated with detached positions are shown on the overlays. All heights are in feet and are corrected to MLLW based on predicted tides. The heights of rocks and ledges refer to the highest portion of each feature. Cartographic codes are noted in the field records. ✓

The T-sheet rock at 57°05'02"N, 133°56'38"W was visually investigated on DN 082 during a low tide and was not seen. Drift soundings were also taken and no evidence of the rock was apparent on the echogram; depths ranged from 1.0 to 6.0 fathoms. The hydrographer recommends the rock be removed and replaced with data from this survey. ? CONCUR

The T-sheet islet at 57°07'16.5"N, 134°00'26.5"W was seen awash or covered on several days during high tides while running sounding lines in the area surrounding station LION. The islet is a high point on the ledge although no height was obtained for the feature. The islet was changed to a rock symbol (no height assigned) and is shown on the final field sheet. The hydrographer recommends the islet be charted as a rock within the ledge. CONCUR

The USGS quadrangle shows a group of four rocks and a reef in the vicinity of 57°05'30"N, 133°54'57"W. The reef and three of the four rocks were disproved (DN 082, Pos #2050,2051; DN 096, Pos #6656; DN 105, Pos #6690). CHART AREA AS SHOWN ON SMOOTH SHEET THE ONE ROCK FOUND IS LOCATED AT POSITION #2049 A ✳(6), LATITUDE 57°05'29.06"N, LONGITUDE 133°54'57.57"W
Two AWOIS items on the AWOIS listing dated January 10, 1989 originate from T-12178 and T-12179 and are discussed below. ✓

AWOIS #51265: Undetermined obstacle may be kelp or bare at MLLW. ✓

Investigation: A visual search of the entire area was conducted at various stages of tide; extensive amounts of kelp were visible. Hydrography in the area revealed a shoal area, but nothing that bares. Divers conducted a 50-meter search and reported a ~~2.6 ft~~ 3.6 FT. (0.6 FATHOMS) least depth on a rock which is 15 meters in diameter (see Dive Investigation Form, DN 095, Pos #7249). ✓

Recommendation: Chart kelp and a rock covered ~~1/2~~ 0.6RK fathom at 57°07'07.4"N, 134°00'49.5"W. :37" 49" POSITION #7249 LOCATED 43.2 METERS NE OF THE REPORTED AWOIS POSITION CONCUR

AWOIS #51266: Undetermined obstacle may be kelp or bare at MLLW.

Investigation: A visual search of the entire area was conducted at various stages of tide; small amounts of kelp were visible. Hydrography in the area revealed a shoal area, but nothing that bares. Divers conducted a 100-meter search and reported a ~~4.0 ft~~ 4.8 FT (0.8 Fathom Rock) least depth over a rock shoal 40 meters in diameter (see Dive Investigation Form, DN 094, Pos #7144). This shoal has been reported as a danger to navigation to the Seventeenth Coast Guard District and Defense Mapping Agency Hydrographic/Topographic Center (DMAHTC).

Recommendation: Chart a shoal area with a ~~least depth of 1/2 fathom~~ Rock Covered .8 Fathoms at MLLW. at 57°07'24.2"N, 134°00'08.0"W. .16" 07.95" CONCUR

Position #7194 Located 34.9 METERS EAST OF THE REPORTED AWOIS Position

I. CROSSLINES

A total of 32.0 nautical miles of crosslines were run perpendicular to the mainscheme sounding lines, representing 8.4% of the mainscheme hydrography. Crossline soundings agree very well (within two fathoms) with mainscheme soundings. In several instances, the vessel acquiring the crossline data did not acquire the mainscheme data. The agreement between soundings obtained by different echo sounders in a common area is as stated above.

In areas of extremely steep bottom topography, some crossline soundings occurring near mainscheme soundings differed by more than two fathoms.* However, considering the surrounding bathymetry, these soundings accurately depict the bottom topography.

* with the application of Actual Tides, Crosslines are in Agreement

J. JUNCTIONS

This survey junctions with H-8907 (1:10,000; 1966; south), H-10289 (1:20,000; 1988; east) and H-10296 (1:20,000; 1989; north and west). No irregularities were found when comparing soundings and depth contours. Minor discrepancies exist in areas of steep bathymetry, but overall agreement of overlapping soundings between surveys is excellent. All soundings agreed to within 2.0 fathoms of the junction soundings.

The rock at 57°05'57.8"N, 133°53'50.3"W was positioned on this survey (DN 096, Pos #6651) and H-10289. The hydrographer recommends that the height and position information from survey H-10289 be used for final chart compilation. .15" .17" — do NOT Concur

Position #6651 was kept on H-10295 the larger scale survey. Chart area as shown on Smooth Sheet.

ROCK AWASH (UNC 2FT MLLW) *(2)

K. COMPARISON WITH PRIOR SURVEYS

This survey was compared with prior surveys H-1996 (1:80,000; 1889-92) and H-3993 WD (1:20,000; 1917). No useful comparisons were obtained from the wire drag survey. No prior shoreline maps pertain to this survey.

H-1996 (1:80,000; 1889-92):

Overall sounding agreement between surveys was within five fathoms. The techniques used for positioning and sounding during the prior survey are the probable causes for any minor discrepancies.

The following two charted soundings, which originate from H-1996, were disproved by conducting an echo sounder search (100-meter line spacing; 100% bottom coverage) for a radius of 0.25 NM from the charted sounding positions: 120 fathoms at 57°08'10"N, 134°01'05"W and 117 fathoms at 57°06'35"N, 134°02'03"W. Depths in the two areas range from 170 - 180 fathoms and 120 - 160 fathoms, respectively. There were no consistent or distinct shifts in the contours. CHART AREA AS SHOWN ON SMOOTH SHEET

Recommendation: Delete the 120 and 170 fathom depths charted at the positions given above. Apply to the chart the soundings from this survey. CONCUR

L. COMPARISON WITH THE CHART

This survey was compared to NOS Chart 17368 (3rd Ed.; Jan 8/83; 1:40,000) and NOS Chart 17360 (26th Ed.; Aug 18/84; 1:217,828). All charted depths originate from the prior surveys discussed in Section K and will not be discussed here. SEE EVALUATION REPORT SECTION 7

The foul areas depicted on Chart 17368 which surround Turnabout Island are ledges. The foul area 0.3NM southwest of Turnabout Island Light does not exist. Survey depths in the area range from 5 - 20 fms. The hydrographer recommends deleting these foul areas and updating the chart with depths acquired on this survey. CONCUR

AWOIS #51192: 32-ft fishing vessel reported sunk. Charted at Latitude 57°06'10.0"N Longitude 134°02'26.0"W ✓

Investigation: No evidence of the wreck was visible on mainscheme hydrography. Although this item is listed as an "Information Item" in the AWOIS listing, an echo sounder search was conducted over the area using 100-meter line spacing for a radius of 1.0 NM from the charted position. Surrounding depths range from 120 to 170 fathoms. No evidence of the wreck was apparent on the echograms. ✓

Recommendation: The hydrographer recommends that the wreck remain as charted as it was neither verified nor disproved. The disposition of the wreck should be determined when deep-water scanning equipment becomes available. CONCUR

Dive investigations which were neither discussed earlier nor reported as dangers to navigation are listed below:

Item	DN/Pos. No.	Position	Least Depth (fms)
Ridge	081/4874	57°05'54.6"N, 133°53'56.1"W	2.3 4
Pinnacle	082/4935	57°05'04.1"N, 133°57'15.2"W .41"	5.9 4.1 ✓
Plateau	088/4982	57°05'05.4"N, 133°57'09.8"W 10.01"	4.6 ✓
	088/4983	57°04'57.9"N, 133°57'01.2"W	2.5 ✓
Pinnacle	089/7000	57°05'01.8"N, 133°57'04.6"W .18"	5.0 4.9
Ridge	089/7001	57°04'59.6"N, 133°57'02.0"W .19"	4.4 3

Recommendation: Chart the least depths at the above positions (see Dive Investigation Forms within survey data). CONCUR CHART AREA AS SHOWN ON SMOOTH SHEET

Non-Sounding Features

All non-sounding features originate from T-12178 and T-12179 and are discussed in Section K of this report, AND EVALUATION REPORT SECTION 2. ✓

Dangers to Navigation

Eight dangers to navigation originating from shoal investigations were reported by radio message and letter to the Seventeenth Coast Guard District and DMAHTC. A copy of the dangers to navigation correspondence is included with this report. Position numbers assigned to the reported dangers are noted on the radio message.

M. ADEQUACY OF SURVEY

This survey is complete and adequate to be used for charting purposes, and to supersede prior surveys in their common areas.

N. AIDS TO NAVIGATION

One floating and two fixed aids to navigation lie within or near the limits of this survey. The positions of the fixed aids were determined to Third-order, Class I accuracy per Section 4.2.1.1 of the Project Instructions. The unadjusted field positions were checked against published and charted positions. The comparisons are shown below:

Navigational Aid Light List No.	Published Position *	Charted Position @	Field Position NAD 1927
Turnabout Is Lt.	57°07.9'N	57°~~08.0~~ 07.93'N	57°07'56.~~5~~ .503"N
LL# 23570 (Fl W 4s)	133°59.2'W	133°59.2'W	133°59'09.~~5~~ .534"W
W. Pinta Rks Lt.	57°05.2'N	57°05.~~3~~ 2'N	57°05'11.~~0~~ .646"N
LL# 23555 (Fl W 2.5s)	134°00.6'W	134°00.~~6~~ 6'W	134°00'36.~~0~~ .892"W
East Pinta Rks Buoy 1	57°05.6'N	57°05.7'W .57"	57°05'34.~~0~~ .31"N
LL# 23560 (unlit)	133°58.4'W	133°58.~~4~~ 3'W .38"	133°58'~~21.0~~ 20.54"W

@ Scaled From Chart 17368

*Source: United States Coast Guard Light List, Volume VI, 1989.

East Pinta Rocks Buoy 1 is a green can buoy which marks the east edge of Pinta Rocks. The buoy was positioned by hydrographic methods (DN 079, Pos #5895). The field position is within 25 meters of the charted position.

The light characteristics given above were observed in the field and agree with the charted and Light List characteristics. All fixed and floating aids adequately serve the apparent purposes for which they were established.

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

O. STATISTICS

Vessel:	2120	2124	2125	2126	Total
# of Pos	3~~4~~5	~~1210~~ 1177	~~1103~~ 1067	~~594~~ 650	~~2941~~ 2929
NM Hydro	0	157.2	173.6	164.7	495.5

NM^2 Hydrography	22.2	Velocity Casts	3
Bottom Samples	86	Tide Stations	2
Detached Positions	177	Current/Magnetic Stations	0

P. MISCELLANEOUS

No current measurements were made during this survey, although strong tidal currents were observed between high and low tidal cycles. The strongest currents (estimated to be 2.0 kts) occurred in the channel between Pinta Rocks and the north shore of Kupreanof Island, along the northwest side of Turnabout Island and on all sides of the islets adjacent to Turnabout Island. Slack water near the north end of Kupreanof Island occurred up to two hours before predicted high and low water. Slack water occurred near predicted high and low water in the vicinity of the two islets by Turnabout Island.

All bottom samples have been submitted to the Smithsonian Institution. Bottom characteristics agree with those charted.

The format recommended in Hydrographic Survey Guideline #66 for reporting dangers to navigation was modified for submission by radio message. All the information required in the guideline was included in the radio message forwarded from RAINIER.

Q. RECOMMENDATIONS

The hydrographer recommends that the Kake inset on the northeast section of Chart 17368 be moved to show soundings east of Turnabout Island and Pinta Rocks. Extending the chart coverage to include this area would allow mariners to navigate on a larger-scale chart (17368) in the vicinity of Turnabout Island before transferring to Chart 17360 (1:217,828). Numerous vessels of all sizes were seen transiting north and south of Turnabout Island.

CONCUR

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished with a PDP 8/e HYDROPLOT computer system, using the following programs:

NUMBER	DESCRIPTION	VERSION
RK 112	HYPERBOLIC,R/R HYDROPLOT	3/01/86
RK 116	R/AZ REAL TIME HYDROPLOT	3/01/86
RK 201	GRID, SIGNAL, AND LATTICE PLOT	4/18/75
RK 221	COMB R/R & HYPER PLOT NON-RT	7/25/86
RK 226	R/AZ POSITION PLOT NON-RT	7/25/86
RK 300	UTILITY COMPUTATIONS	10/21/80
RA 362	RK 330 AND AM 602 COMBINED	8/20/84
RK 407	GEODETIC INVERSE/DIRECT COMP	9/25/78
RK 409	GEODETIC UTILITY PACKAGE	9/20/78
AM 500	PREDICTED TIDE GENERATOR	11/10/72
RK 561	H/R GEODETIC CALIBRATION	12/01/82
AM 602	ELINORE - LINE ORIENTED EDITOR	12/08/82
RK 606	TAPE DUPLICATOR	8/22/74

AM 607	SELF-STARTING BINARY LOADER	8/10/80
RK 610	BINARY TAPE DUPLICATOR	1/31/85
RK 900	PLOT TEST TAPE GENERATOR FOR AM902	5/07/76
PM 901	CORE CHECK	3/01/72
AM 902	REAL TIME CHECKOUT	11/10/72
DA 903	DIAGNOSTIC-INSTRUCTION TIMER	2/27/76
RK 905	HYDROPLOT CONTROLLER CHECKOUT	3/18/81
RK 935	HYDROPLOT HARDWARE TESTS	3/15/82
RK 950	HARDWARE TESTS (DOCUMENTATION ONLY)	6/02/75
	VELOCITY (Version 1.0)	3/11/88

S. REFERRAL TO REPORTS

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

Title	Date Sent to PMC
Spring 1989 Horizontal Control Report for OPR-0358-RA	May, 1989
Spring 1989 Electronic Control Data Package for OPR-0358-RA	June, 1989
Spring 1989 Corrections to Echo Soundings Data Package for OPR-O358-RA	May, 1989
Marine Mammal Report, RP-12-89	May, 1989
Spring 1989 Coast Pilot Report, OPR-O358-RA	June, 1989

Respectfully Submitted,

for Keith W. Smith
Ensign, NOAA

Approved and Forwarded,

John C. Albright
Captain, NOAA
Commanding Officer

MASTER STATION LIST
OPR-0358-RA
FREDERICK SOUND, ALASKA

VER. 4/12/89

154 1 57 06 00468 133 53 21953 250 0005 000000
/PINT 1965

161 1 57 07 52745 133 58 08473 250 0010 000000
/TURN 1988

*163 3 57 12 50490 134 04 57936 250 0003 000000
/BUS 1924

168 3 57 05 02713 133 56 32947 250 0001 000000
/KELP 1965

*169 3 57 07 12297 134 00 37354 250 0009 000000
/LION 1962

171 3 57 08 33433 134 16 39575 250 0020 000000
/PEAN 1917

*172 3 57 05 11646 134 00 36897 250 0011 000000
/PINTA ROCK LIGHT 1965

*173 3 57 12 42993 134 05 11538 250 0007 000000
/SPRUCE 1917

174 3 57 04 59934 133 56 46972 250 0002 000000
/ROSE 1989

*204 1 57 15 36405 133 56 07006 250 0013 000000
/ROUND ROCK LIGHT, 1989

* Stations located on offshore islands.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
NOAA Ship RAINIER S221
1801 Fairview Avenue East
Seattle, Washington 98102-3767

June 2, 1989

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

Dear Sir:

Attached is a confirmation copy of the radio message sent to your office regarding ten dangers to navigation and six information items which I recommend for inclusion in the Local Notice to Mariners for the Seventeenth Coast Guard District. Copies of chartlets showing the area in which the dangers exist are also attached.

Sincerely,

John C. Albright
Captain, NOAA
Commanding Officer

Enclosure

cc: DMAHTC
N/CG221
N/MOP

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
NOAA Ship RAINIER S221
1801 Fairview Avenue East
Seattle, Washington 98102-3767

June 2, 1989

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

Dear Sir:

While conducting hydrographic survey operations in Frederick Sound, southeast Alaska, NOAA Ship RAINIER discovered ten dangers to navigation and six information items. 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

Enclosure

JCA

PTTUZYUW RUHPTEF0294 3210015-UUUU--RUHPSUU.
ZNR UUUUU
P 290000Z MAY 89
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTC (NAVWARN) WASHINGTON DC//MCNM//
INFO NOAAMOP SEATTLE WA
ACCT CM-VCAA
BT
UNCLAS

MVH | NOT
4302K | 29-MAY-89
0619Z

NOAA SHIP RAINIER HAS FOUND TEN DANGERS TO NAVIGATION AND SIX INFORMATION ITEMS IN FREDERICK SOUND, ALASKA (PROJECT OPR-0358-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEYS H-10295 (TURNABOUT ISLAND AND VICINITY; ITEMS A-H), H-10296 (CAPE BENDEL TO PYBUS BAY; ITEMS I-N) AND H-10297 (POINT MACARTNEY TO DEEPWATER POINT LIGHT, ITEMS O-P). REQUEST THE FOLLOWING BE PUBLISHED IN LOCAL NOTICE TO MARINERS FOR THE SEVENTEENTH COAST GUARD DISTRICT:

DN/Pos. No

A. "ROCK SUBMERGED ~~5-3/4~~ 5.8 FATHOMS IS AT LATITUDE 57/07/22.7N, LONGITUDE 133/59/56.9W." 093/7002

B. "ROCK SUBMERGED ~~4-1/2~~ 4.7 FATHOMS IS AT LATITUDE 57/07/20.9N, LONGITUDE 133/59/27.6W." 094/7143

C. "ROCK SUBMERGED ~~1/2~~ 0.6 FATHOM IS AT LATITUDE 57/07/24.2N, 134/00/~~08.0~~ 7.9"W." 094/7144

D. "ROCK SUBMERGED ~~7-1/4~~ 7.6 FATHOMS IS AT LATITUDE 57/05/33.9N, LONGITUDE 133/55/54.2W." 095/7248

E. "ROCK SUBMERGED ~~3-1/2~~ 3.6 FATHOMS IS AT LATITUDE 57/05/57.4N, LONGITUDE 133/54/18.8W." 081/4872

F. "ROCK SUBMERGED 1.1 FATHOM IS AT LATITUDE 57/05/53.5N, 133/54/00.4W." 081/4873

G. "SHOAL SUBMERGED 10.~~1/2~~ FATHOMS IS AT LATITUDE 57/05/44.5N, LONGITUDE 133/55/18.~~0~~W." 079/2069 +6-

H. "ROCK SUBMERGED ~~2-1/2~~ 2.7 FATHOMS IS AT LATITUDE 57/04/55.8N, LONGITUDE 133/57/02.~~8~~W." 104/7385

I. "ROCK SUBMERGED 13 FATHOMS IS AT LATITUDE 57/14/39N, LONGITUDE 133/57/26W." This Rock is on H-10296 088/5182 +

J. "ROCK SUBMERGED 2-1/4 FATHOMS IS AT LATITUDE 57/04/50.3N, LONGITUDE 133/58/48.4W." This Rock is on H-10296 077/4516

K. "SHOAL SUBMERGED 38 FATHOMS IS AT LATITUDE 57/10/58N, LONGITUDE 134/06/38W." This Shoal is on H-10296 089/6917 0-

L. "SHOAL SUBMERGED 46 FATHOMS IS AT LATITUDE 57/11/34N, LONGITUDE 134/04/10W." This shoal is on H-10296 088/6798 +5

M. "SHOAL SUBMERGED 23 FATHOMS IS AT LATITUDE 57/14/36N, LONGITUDE 133/58/20W." 088/5189 +3-1 This shoal is on H-10296

N. "ROCK RIDGE SUBMERGED 8-3/4 FATHOMS IS AT LATITUDE 57/15/59.6N, LONGITUDE 133/56/41.2W." 105/4177 This Ridge is on H-10296

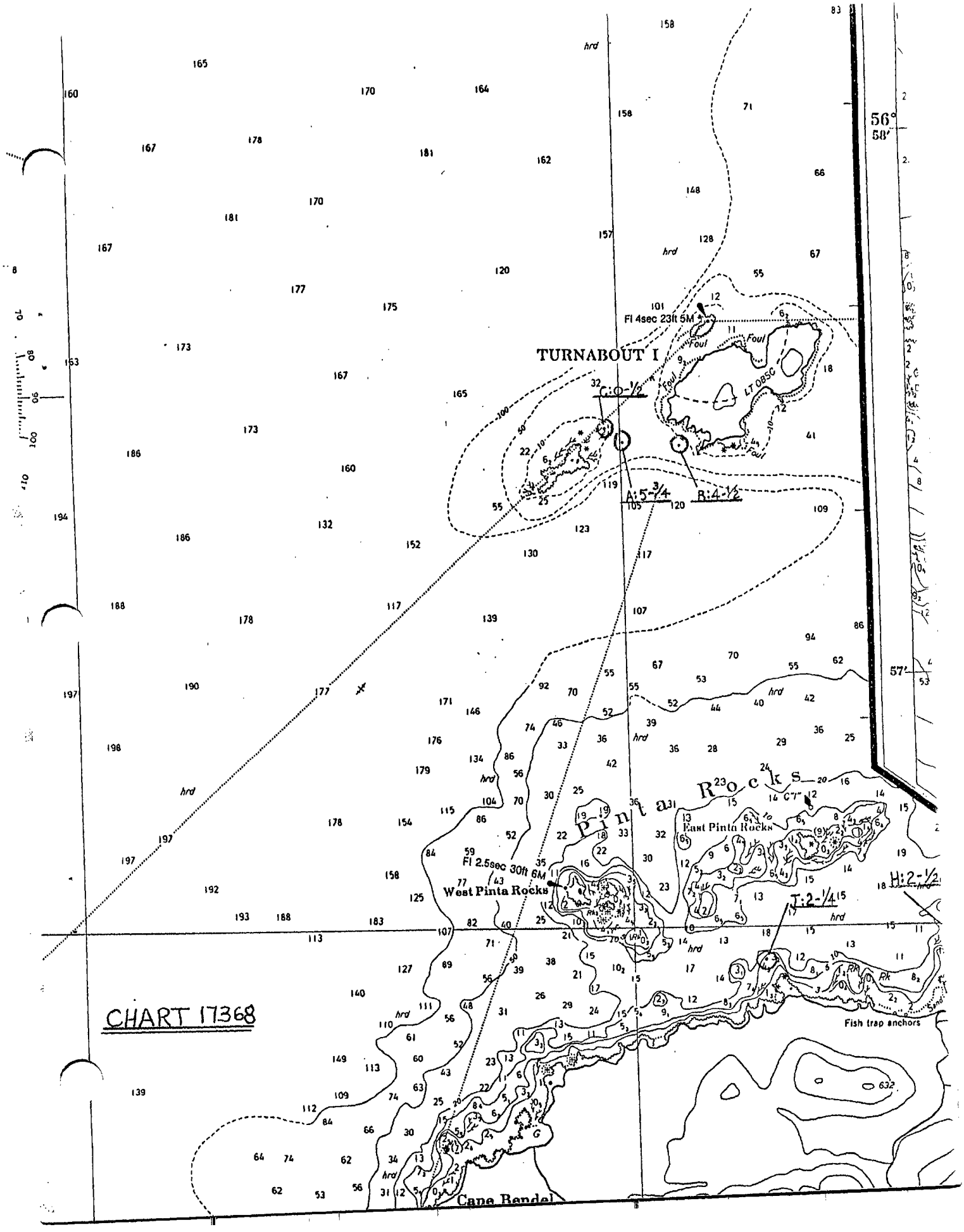
O. "SHOAL SUBMERGED 50 FATHOMS IS AT LATITUDE 57/07/42.2N, LONGITUDE 134/16/10.0W. SHOAL IS 2.9 NM BEARING 204 DEGREES TRUE FROM DEEPWATER POINT LIGHT." 091/3186 +4- NOT IN SURVEY AREA

P. "SHOAL SUBMERGED 68 FATHOMS IS AT LATITUDE 57/01/35.8N, LONGITUDE 134/05/23.4W. SHOAL IS 1.1 NM BEARING 275 DEGREES TRUE FROM POINT MACARTNEY LIGHT." 106/3858 +9 NOT IN SURVEY AREA

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.
POSITIONS ARE BASED ON NAD 27 DATUM.
THE FOLLOWING CHARTS ARE AFFECTED:

17360	26TH ED	AUG 18/84	1:217,828	NAD 27 DATUM
17368	3RD ED	JAN 08/83	1:40,000	NAD 27 DATUM
17320	13TH ED	FEB 25/89	1:217,828	NAD 27 DATUM
17363	10TH ED	SEP 03/83	1:40,000	NAD 27 DATUM

THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW. QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE PACIFIC MARINE CENTER AT (206) 526-6835. A LETTER WITH ATTACHED CHARTLETS IS BEING MAILED TO YOU TO CONFIRM THIS MESSAGE.
BT
#____


TURNABOUT I
Fl 4sec 23ft 5M
Foul
LT OBSC
C:0-½
A:5-¾
B:4-½
Pinta Rocks
East Pinta Rocks
West Pinta Rocks
Fl 2.5sec 30ft 6M
H:2-½
I:2-¼
Fish trap anchors
Cape Bendel
CHART 17368
56°
58'
57'

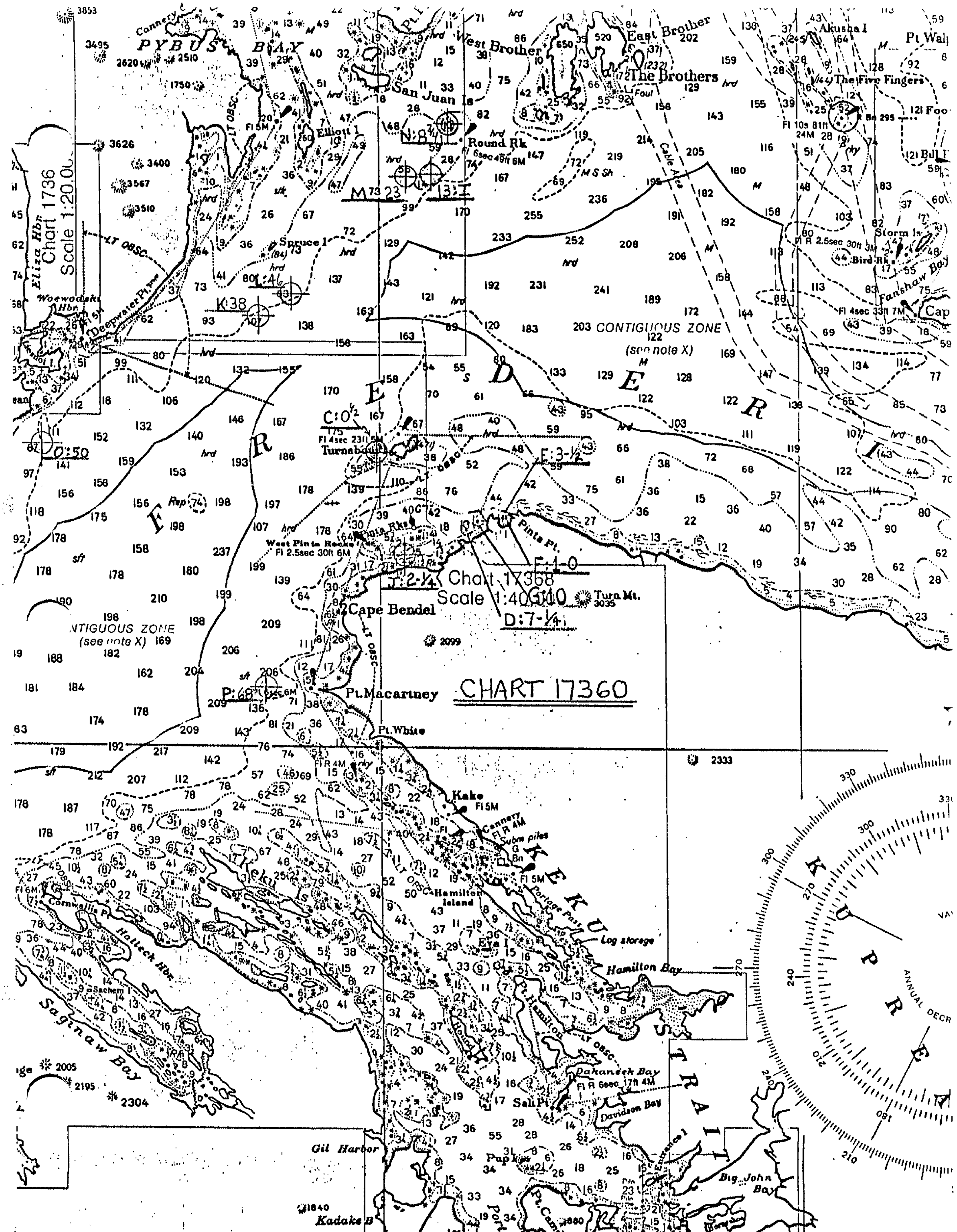


CHART 17360
Chart 17368
Scale 1:40,000
Chart 1736
Scale 1:20,000
PYBUS BAY
West Brother
East Brother
The Brothers
San Juan Is
Round Rk
Elliott I
Spruce I
Akusha I
The Five Fingers
Storm Is
Bird Rk
Fanshaw Bay
Eliza Hbr
Woewodski Hbr
Deepwater Pt
CONTIGUOUS ZONE
(see note X)
FREDERICK
Turnabout
West Pinta Rocks
Pinta Rks
Pinta Pt
Cape Bendel
Turn Mt.
Pt. Macartney
Pt. White
Kake
Cannery
Subm piles
Hamilton Island
Portage Pass
Log storage
Eye I
Hamilton Bay
Pt. Hamilton
Dakaneek Bay
Davidson Bay
Salt Pt
Keku Is
KEKU STRAIT
KUPREANOF
Cornwallis Pt
Halleck Hbr
Saginaw Bay
Sachem I
Gil Harbor
Kadake B
Pup I
Big John Bay
Cable Area
M S Sh

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

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

May 11, 1989

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

Dear Sir:

Personnel from NOAA Ship RAINIER have determined the positions of fifteen aids to navigation and survey monuments at the request of the U.S. Coast Guard. All geographic positions meet Third-order, Class I specifications and are based on the North American Datum of 1927 and the Clark Ellipsoid of 1866. The positions listed below, except for stations CARROLL and YASHA, are field positions and are not adjusted. Stations CARROLL and YASHA are adjusted positions from the National Geodetic Survey data base. Station ROSE is a newly established station SSE of Turnabout Island which may be helpful locating aids to navigation in the area.

Navigation Aid or Survey Monument	Latitude(N)	Longitude(W)	1989 Light List Number
CARROLL Carroll Island	57°01'37.477"	134°28'23.802"	N/A
ROSE Kupreanof Island	57°04'59.934"	133°56'46.972"	N/A
YASHA Yasha Island	56°57'52.570"	134°33'35.526"	N/A
DUCK POINT LIGHT Stephens Passage	57°12'42.892"	133°30'52.968"	23270
GRAVE ISLAND LIGHT Pybus Bay	57°16'00.654"	134°04'53.845"	23575
DEEPWATER POINT LIGHT Frederick Sound	57°10'20.367"	134°14'03.226"	23565
POINT MACARTNEY LIGHT Frederick Sound	57°01'30.872"	134°03'24.866"	23550
TURNABOUT ISLAND LIGHT Frederick Sound ON Survey H-10295	57°07'56.503"	133°59'09.534"	23570
WEST PINTA ROCKS LIGHT Frederick Sound	57°05'11.646"	134°00'36.892"	23555

KAKE ENTRANCE LIGHT 2 Keku Strait	56°59'06.539"	134°01'11.623"	23315
KAKE HARBOR LIGHT Keku Strait	56°57'39.846"	133°57'03.882"	23340
KAKE HARBOR LIGHT 5 Keku Strait	56°58'16.459"	133°56'50.722"	23325
KAKE MICROWAVE TOWER Keku Strait	56°58'35.630"	133°56'33.824"	N/A
PORTAGE PASS LIGHT Keku Strait	56°56'47.864"	133°53'51.998"	23360
PORTAGE PASS LIGHT 2 Keku Strait	56°57'25.922"	133°55'19.959"	23350

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

Sincerely,

John C. Albright
Captain, NOAA
Commanding Officer

Enclosures

APPROVAL SHEET

Descriptive Report to Accompany
Hydrographic Survey
RA-10-1-89
H-10295

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

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10295

Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K Manuscript	
ALASKA, FREDERICK SOUND TURNABOUT ISLAND AND VICINITY		17360 Chart 17368								
ALASKA (TITLE)										1
EAST PINTA ROCKS	X	X								2
FREDERICK SOUND	X	X							T-12178 T-12179	3
KUPREANOF ISLAND	X	X							T-12178 T-12179	4
PINTA POINT	X	X							T-12179	5
PINTA ROCKS	X	X							T-12178	6
TURNABOUT ISLAND	X	X							T-12178	7
WEST PINTA ROCKS	X	X								8
										9
										10
										11
										12
										13
										14
										15
										16
				Approved:						17
				Charles E. Harrington						18
				Chief Geographer – NCG 2x5						19
										20
				OCT 25 1989						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-10295

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	9
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	6

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

SHORELINE DATA

SHORELINE MAPS (List): T-12178, T-12179, USGS Topo Quad, SUMDUM (A-6), 1948

PHOTOBATHYMETRIC MAPS (List): None

NOTES TO THE HYDROGRAPHER (List): None

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List): 17360 26th Ed., Aug. 18, 1984, 17368 3rd Ed., Jan. 8, 1983

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS VERIFICATION	AMOUNTS EVALUATION	AMOUNTS TOTALS
POSITIONS ON SHEET			2929
POSITIONS REVISED			1795
SOUNDINGS REVISED			324
CONTROL STATIONS REVISED			
	TIME-HOURS VERIFICATION	TIME-HOURS EVALUATION	TIME-HOURS TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	57		57
VERIFICATION OF SOUNDINGS	197.5		197.5
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	75		75
COMPARISON WITH PRIOR SURVEYS AND CHARTS		11	11
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		15.5	15.5
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	329.5	26.5	352.0

Pre-processing Examination by: M.J. Bradley	Beginning Date: 6/7/89	Ending Date: 7/7/89
Verification of Field Data by: E. Domingo, M. Sanders, T. Jones	Time (Hours): 325.5	Ending Date: 3/30/90
Verification Check by: J. Stringham	Time (Hours): 74.5	Ending Date: 3/30/90
Evaluation and Analysis by: G.E. Kay	Time (Hours): 24.5	Ending Date: 4/10/90
Inspection by: D.J. Hill	Time (Hours): 2	Ending Date: 5/10/90

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: June 14, 1989

MARINE CENTER: Pacific

OPR: 0358

HYDROGRAPHIC SHEET: H-10295

LOCALITY: Turnabout Island and vicinity, Frederick Sound, Alaska

TIME PERIOD: March 14 - April 16, 1989

TIDE STATION USED: 945-1655 Turnabout Island, Alaska

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 7.55 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 13.3 feet

REMARKS: RECOMMENDED ZONING
Zone direct

James R. Hubbard
CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852
Pacific Hydrographic Section
BIN C15700, Bldg. 3
7600 Sand Point Way NE
Seattle, WA 98115-0070

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

Dear Sir:

During office review of hydrographic surveys H-10295 and H-10296, Alaska, Frederick Sound two dangers to navigation affecting chart 17368 (3rd ed., January 8, 1983: 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,

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 Numbers: H-10295, H-10296
Surveys Title: State: Alaska
Locality: Frederick Sound
Project Number: OPR-0358-RA, NOAA Ship Rainier

The following items were discovered during office processing of hydrographic surveys H-10295 and H-10296.

Objects discovered: Two submerged rocks corrected to MLLW.

Affected nautical chart:

CHART	EDITION		REPORTED	CHARTED HORIZ	GEOGRAPHIC POSITION	
NUMBER	NO.	DATE	DEPTH	DATUM	LATITUDE(N)	LONGITUDE(W)
17368	3rd	1/8/83	4.1 Fm. Rock	1927	57°05'03.96"	133°57'15.41"
17368	3rd	1/8/83	3.4 Fm. Rock	1927	57°02'02.30"	134°01'37.19"

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

EVALUATION REPORT
H-10295

1. INTRODUCTION

Survey H-10295 is a basic hydrographic survey accomplished by the NOAA Ship RAINIER under the following Project Instructions.

OPR-0358-RA, dated September 13, 1988
CHANGE NO. 1, dated January 17, 1989
CHANGE NO. 2, dated February 13, 1989
CHANGE NO. 3, dated March 27, 1989
CHANGE NO. 4, dated April 17, 1989

This survey occurred in Alaska and covers an area in Frederick Sound in the vicinity of Turnabout Island. The survey extends from its eastward limit at Pinta Point on Kupreanof Island west past West Pinta Rocks. The surveyed area extends from latitude 57°09'00"N south to latitude 57°04'30"N and from longitude 133°53'45"W to longitude 134°03'00"W. The bottom varies and consists of mud, stones, pebbles and shells. Depths range from zero to 189 fathoms.

Predicted tides for Juneau, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned from Turnabout Island, gage 945-1655, 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 N/CG2 Hydrographic Survey Guideline No. 23, Completion of Digital Hydrographic Surveys, September 7, 1983. The file, however, is incomplete. Certain feature descriptive information, all line type data and miscellaneous isolated features are not in the digital record due to the present lack of digitizing resources. 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 Spring 1989 Horizontal and Electronic Control Reports for OPR-0358-RA, contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are published and 1989 field values based on NAD 27. These values were used during office processing for the computation of positions. The smooth sheet and accompanying overlays are annotated with NAD 83 adjustment ticks based on values determined by N/CG121. Geographic positions based on NAD 83 may be plotted on the smooth sheet utilizing the NAD 27 projection by applying the following corrections.

Latitude: 1.220 seconds (37.7 meters)
Longitude: -6.240 seconds (-105.0 meters).

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

There are 33 positions with weak fixes, angles of intersection less than 30 degrees or more than 150 degrees, noted in this survey. However, there are no significant plotting differences between the soundings located by these fixes and those in adjacent areas. Also, none of these fixes are used to position dangers to navigation. These fixes are considered acceptable.

The following shoreline maps apply to this survey.

	Photo Date	Class
T-12178	July 1965	I
T-12179	June 1962/July 1965	I

AWOIS items 51265 and 51266 originate with the shoreline maps. The disposition of these items is adequately discussed by the hydrographer in section H, page 8-9, of the hydrographer's report.

Shoreline depicted in brown ink on the smooth sheet, east of longitude 133°55'00"W, originates with an enlarged copy of USGS Topographic Quadrangle, SUMDUM (A-6), dated 1948 and is used for orientation only. Along this section of shoreline, offshore features, such as reefs and rocks, were located by the hydrographer and are shown on the smooth sheet in black ink.

3. HYDROGRAPHY

Except in areas of steep slope where the inshore depth curves could not be drawn, 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.

5. JUNCTIONS

Survey H-10295 junctions with the following surveys.

Survey	Year	Scale	Area
H-8907	1966	1:10,000	South
H-10289	1988	1:20,000	East
H-10296	1989	1:20,000	North and West

Except for survey H-8907, all junctions are complete. The junction with surveys H-8907 has not been formally completed since that survey was previously processed and forwarded for charting. The junction comparison was made using a copy. Soundings are in good agreement. Some soundings have been transferred to survey H-10295 to better portray the bottom and foreshore area in the common area. Portions of the depth curves on survey H-8907 should be adjusted to conform with those on survey H-10295.

6. COMPARISON WITH PRIOR SURVEYS

H-1996(1889-92) 1:80,000

Present soundings agree well with this prior survey. Some discrepancies between the two surveys were noted, however, and are discussed in section K, page 9-10, of the hydrographer's report.

Survey H-10295 is adequate to supersede survey H-1996 within the common area.

H-3993WD(1917) 1:20,000

Wire drag survey H-3993WD agrees with the present survey.

T-1964(1889) 1:80,000

T-1964 was compared to survey H-10295. This shoreline map covers the land areas within the present survey limits. The present survey located more offshore rocks than the prior survey. Survey H-10295 is adequate to supersede the prior map as a source for charted hydrography.

There are no AWOIS items originating from priors T-1964, H-1996 and H-3993WD applicable to the present survey.

7. COMPARISON WITH CHART

Chart 17360, 26th edition, dated August 18, 1984; scale 1:217,828
Chart 17368, 3rd edition, dated January 8, 1983; scale 1:40,000

a. Hydrography

All charted hydrography on chart 17360 originates with survey H-1996 and requires no further discussion.

All charted hydrography on chart 17368 originates with surveys H-1996, H-3993WD, H-8907, and miscellaneous sources. Charted data of miscellaneous origin was investigated as AWOIS items.

Except for the charted wreck (AWOIS #51192), at latitude 57°06'10"N, longitude 134°02'26"W, which is to be retained as charted, survey H-10295 is adequate to supersede charted hydrography within the common area.

b. AWOIS

AWOIS items 51192, 51265 and 51266 originate with miscellaneous source. The disposition of each is adequately discussed by the hydrographer in section L, page 8-10, of the hydrographer's report.

c. Controlling Depths

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

d. Aids to Navigation

One floating aid and two fixed aids were located during this survey. Form 76-40's were not submitted for the two fixed aids that were located to third order, Class I, accuracy standards. The revised positions of these features are:

Light	Latitude North	Longitude West
Turnabout Island Light Light List #23570	57°07'56.503"	133°59'09.534"
West Pinta Rocks Light Light List #23555	57°05'11.646"	134°00'36.892"

These aids adequately serve their intended purposes.

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 eight dangers to navigation, including seven submerged rocks and a shoal, to the Seventeenth Coast Guard District and DMAHTC. One additional danger was discovered during office processing. It is a rock covered 4.1 fathoms at MLLW located at latitude 57°05'03.96"N, longitude 133°57'15.41"W (position number 4935). A copy of these messages are attached.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10295 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

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

Gordon E. Kay
Cartographer

APPROVAL SHEET
H- 10295

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, symbolization, comparison(s) with prior surveys and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts of the survey 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: 5/10/90

Name
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.

[signature] Date: 5/23/90

Name
Chief, Hydrographic Section

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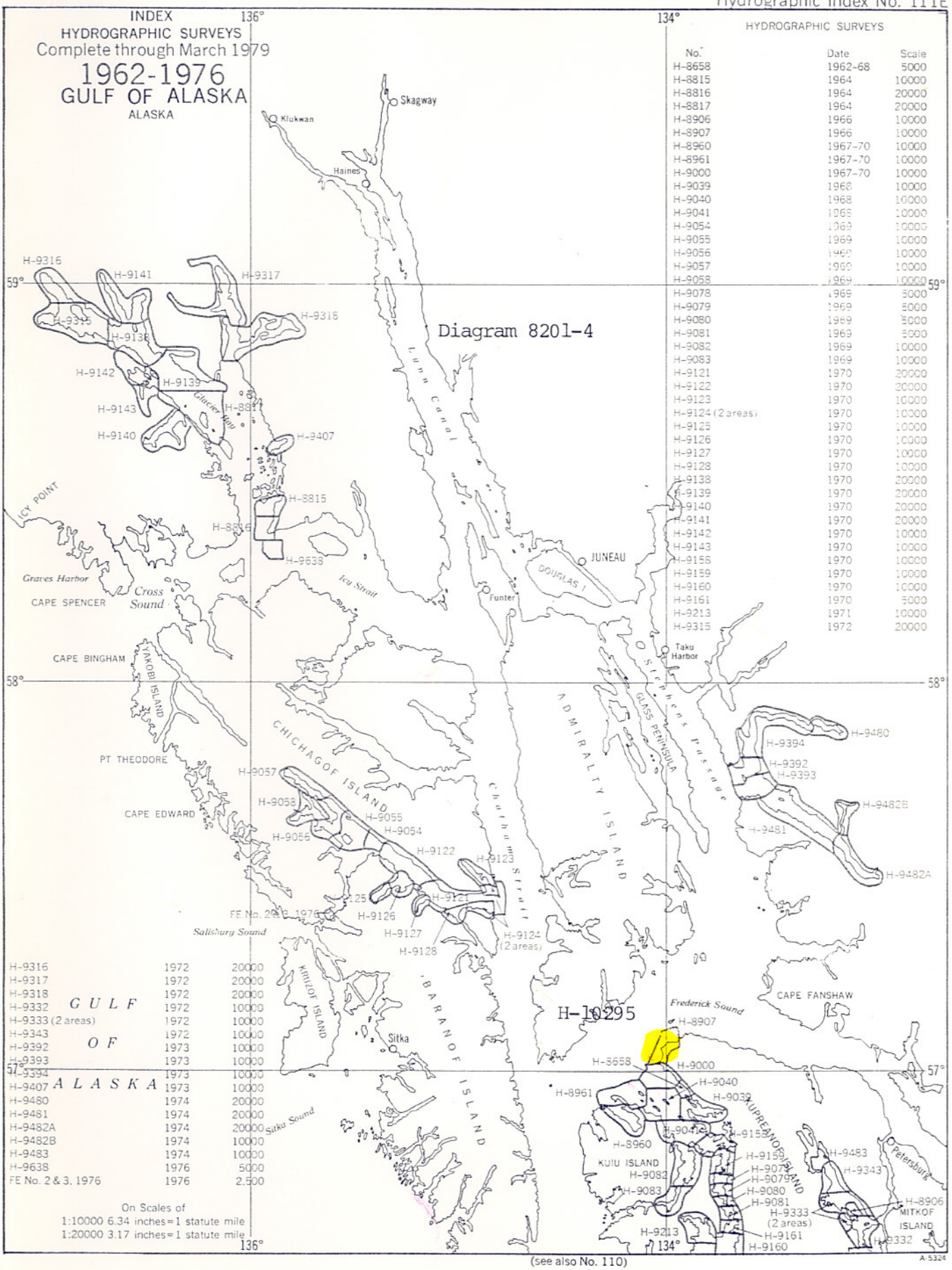
Final Approval:

Approved: Wesley V. Hull Date: 6/12/90
Wesley V. Hull, RADM, NOAA
Director, Charting and
Geodetic Services

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

Hydrographic Index No. 111E



HYDROGRAPHIC SURVEYS

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

GULF OF ALASKA

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

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

(see also No. 110)

A-5324

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-10295

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
17320	10/25/90	Dana Slack	Full (Part) Before After Marine Center Approval Signed Via Drawing No. 24 Ex. for Cultural correction
531	1/9/91	Eliot B. Dominguez	Full Part Before After Marine Center Approval Signed Via ~~Examined,~~ No Sndgs or Drawing No. Corrections applied.
530	1/9/91	Eliot B. Dominguez	Full Part Before After Marine Center Approval Signed Via Examined, No Sndgs Drawing No. or corrections Applied.
500	1/14/91	Eliot B. Dominguez	Full Part Before After Marine Center Approval Signed Via Examined, No Sndgs Drawing No. Corrections Applied.
17368	1/22/91	Eliot B. Dominguez	~~Full Part Before~~ After Marine Center Approval Signed Via Full application Drawing No. of Sndgs from SS.
17360	1/25/91	Eliot B. Dominguez	Full ~~Part Before~~ After Marine Center Approval Signed Via Full application Drawing No. of Sndgs from SS.
17320	2/12/91	Arnaccen	Full Part Before After Marine Center Approval Signed Via Full application of Drawing No. sndgs. from SS thru 17320.
531	7/5/95	RElliott	Full Part Before After Marine Center Approval Signed Via Drawing No. 21 NO CORRS ~~THRU~~
			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