10419

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-10-1-92

Registry No. H-10419

LOCALITY

State Alaska

General Locality Cross Sound

Sublocality North Inian Pass

1992

CHIEF OF PARTY
CAPT T.W. Richards

LIBRARY & ARCHIVES

DATE September 15, 1993

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10419

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H-10419

HYDROGRAPHIC TITLE SHEET

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-10-1-92

State Alaska

General locality Cross Sound

Locality North Inian Pass

Scale 1:10,000 Date of survey March 30 - May 6, 1992

Instructions dated February 18, 1992 Project No. OPR-0106-RA

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

Chief of party CAPT Thomas W. Richards

Surveyed by LT J. Waddell, LT J. Griffin, LTJG S. Lemke, LTJG H. Johnson, ENS J. Klay, ENS R. Ramos

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

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Verification by: E. Domingo Automated plot by PMC Xynetics Plotter

Evaluation by: C.R. Davies

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

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

AWOIS & SURF
10/14/93 MCR

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

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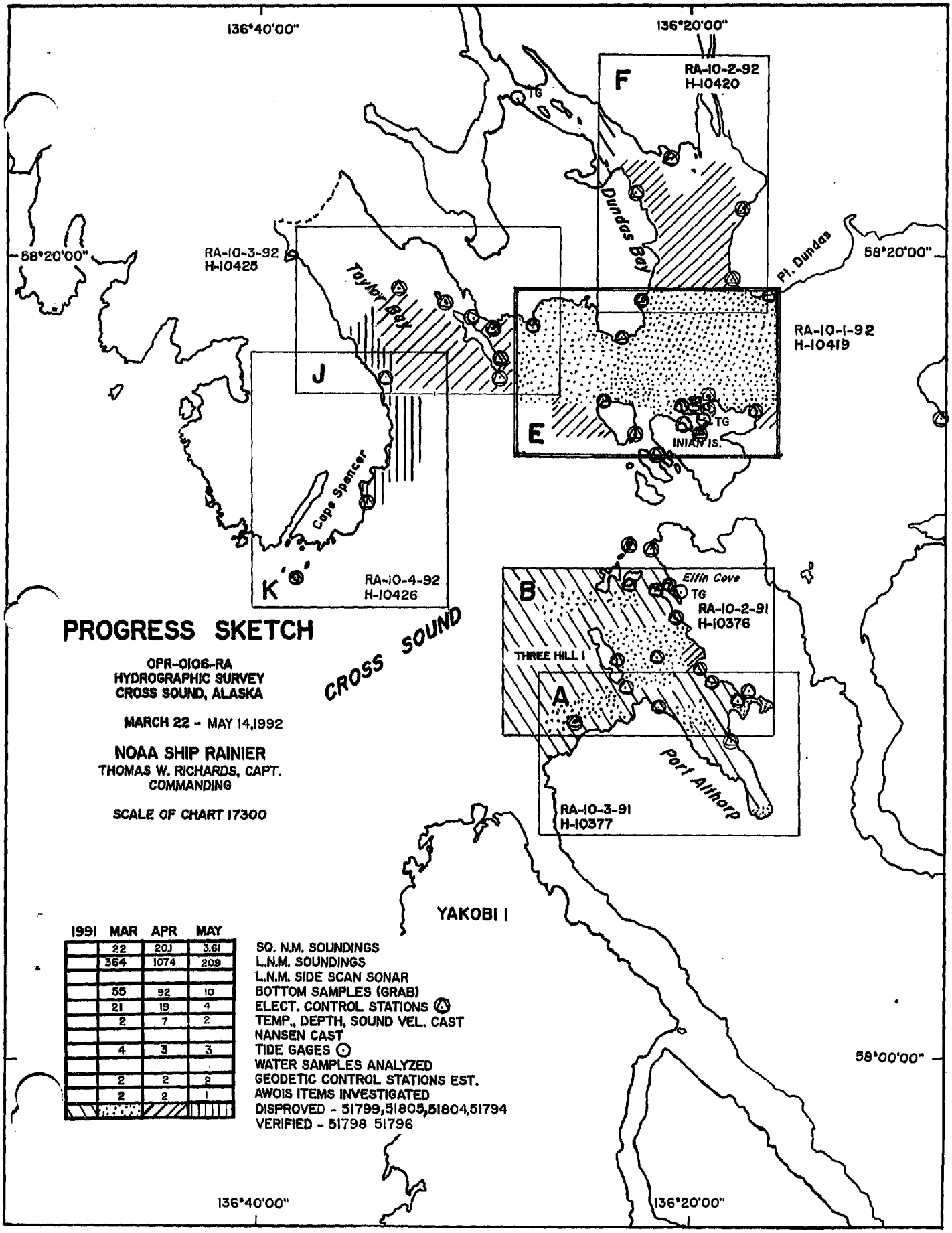


PROGRESS SKETCH

OPR-0106-RA
HYDROGRAPHIC SURVEY
CROSS SOUND, ALASKA

MARCH 22 - MAY 14,1992

NOAA SHIP RAINIER
THOMAS W. RICHARDS, CAPT.
COMMANDING

SCALE OF CHART 17300

1991	MAR	APR	MAY
	22	20.1	3.61
	364	1074	209
	55	92	10
	21	19	4
	2	7	2
	4	3	3
	2	2	2
	2	2	1

SQ. N.M. SOUNDINGS
L.N.M. SOUNDINGS
L.N.M. SIDE SCAN SONAR
BOTTOM SAMPLES (GRAB)
ELECT. CONTROL STATIONS △
TEMP., DEPTH, SOUND VEL. CAST
NANSEN CAST
TIDE GAGES ⊙
WATER SAMPLES ANALYZED
GEODETIC CONTROL STATIONS EST.
AWOIS ITEMS INVESTIGATED
DISPROVED - 51799,51805,51804,51794
VERIFIED - 51798 51796

Descriptive Report to Accompany Hydrographic Survey H-10419

Field Number RA-10-1-92
Scale 1:10,000
March-May 1992

NOAA Ship RAINIER
Chief of Party: Captain Thomas W. Richards

A. PROJECT

This basic hydrographic survey was completed in Cross Sound, southeastern Alaska, as specified by Project Instructions OPR-O106-RA dated February 18, 1992. This survey is designated Sheet E on the sheet layout dated June 1, 1990.

This survey is one in a series that will provide contemporary hydrographic data for updating existing nautical charts and planned larger scale chart coverage of the Cross Sound area. There have been numerous reports of shoals, rocks, and inaccurately charted depths and landmarks from the Southeastern Alaska Pilots' Association and NOAA field personnel. In 1959, the U.S. Coast and Geodetic Survey Ship PATTON reported that survey investigations in several areas revealed depths significantly shoaler than those charted. Troller fisherman have requested a detailed survey to aid in preventing the loss of trolling gear.

B. AREA SURVEYED

The survey, located in southeastern Alaska, 60 NM west of Juneau, encompasses North Inian Pass. North Inian Pass is the major northern gateway for deep draft vessel and barge traffic entering and exiting the Alaskan Inside Passage. The survey's northern boundary is along 58°18'12"N and between 136°31'16"W and 136°31'30"W. The survey's southern boundary is along 58°15'00"N and between the noted east-west boundaries. Data acquisition was conducted from March 30 through May 06, 1992 (DN 090 to 127).

See Evnt. Report, Section I

C. SURVEY VESSELS

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

Vessel	EDP No.	Operation
RAINIER	2120	Velocity Cast Bottom Samples
RA-3	2123	Sounding Operations Shoreline Verification
RA-4	2124	Sounding Operations Shoreline Verification

RA-5	2125	Sounding Operations Shoreline Verification Velocity Cast Bottom Samples
RA-6	2126	Sounding Operations Shoreline Verification Bottom Sample Dive Operations

In addition to the survey vessels listed above, two 17' Boston Whalers, a 19' MonArk, and a 12' Zodiac were used to support operations for horizontal control, tide station installation and maintenance, range/azimuth hydrography, and dive operations.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

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

Program Name	Version	Date Installed
SURVEY	6.10 / 6.11	9 Mar 92 / 15 Apr 92
POSTSUR	5.20 / 5.21	9 Mar 92 / 15 Apr 92
PLOTALL	2.01 / 2.02	9 Mar 92 / 15 Apr 92
POINT	2.04	9 Mar 92
BACKUP	2.00	20 Mar 91
CONVERT	3.02	9 Mar 92
PRINTOUT	3.00	9 Mar 92
DIAGNOSTIC	3.00	9 Mar 92
INVERSE	1.51	9 Mar 92
INSTALL	3.00	9 Mar 92
BASELINE	1.11 / 1.12	9 Mar 92 / 15 Apr 92
QUICK	1.10	20 Mar 91
LISTAWOIS	2.00 / 2.01	9 Mar 92 / 15 Apr 92
LOADNEW	1.50	9 Mar 92
REJECT	1.05	9 Mar 92
CARTO	2.01 / 2.02	9 Mar 92 / 15 Apr 92
Vers	NA	9 Mar 92 / 15 Apr 92
BACKOLD	1.12	9 Mar 92
NEWCONT	1.17	9 Mar 92
DISC_UTIL	1.00	20 Mar 91
MB	1.00	9 Mar 92
HJ	1.00	9 Mar 92
AUTOST	2.00	9 Mar 92
GLOBAL	1.12	9 Mar 92
MAKEFIX	1.02	9 Mar 92
BIGABST	1.60 / 2.00	9 Mar 92 / 15 Apr 92
REAPPLY	1.33	9 Mar 92
PREDICT	1.11	9 Mar 92
READPROJS	1.08	9 Mar 92
SOFTCHECK	1.12 / 1.13	9 Mar 92 / 15 Apr 92

HPRAZ	1.24	9 Mar 92
FILESYS	2.16	9 Mar 92
DP	1.12 / 2.00	9 Mar 92 / 15 Apr 92
MANU_DATA	1.12	9 Mar 92
RAMSAVER	1.00	20 Mar 91
GRAPHEDIT	NA	20 Mar 91
ZOOMEDIT	1.10	9 Mar 92
EXCESS	3.03 / 3.04	9 Mar 92 / 15 Apr 92
RECOMP	2.00	9 Mar 92
COPRINTOUT	1.00	9 Mar 92
DAS_SURV	6.20 / 6.21	9 Mar 92 / 15 Apr 92
UNIXSYS	2.00	15 Apr 92
SYMBOLS	1.00	15 Apr 92
CARTOTRANS	1.00	15 Apr 92

During spring of 1992, RAINIER personnel made necessary changes to SURVEY, MAKEFIX, and PLOTALL programs. The HDAPS office was notified of all changes, and written copies of the changes were forwarded to the HDAPS office.

On April 20, 1992, RAINIER launch OIC's began to have problems booting the survey program with correct C-O correctors and performing critical systems checks. The raw master printout (RMPO) showed the correct station number with the correct code, but the C-O corrector had not updated to the current code's value. Notification of the problem and sample data sets were sent to the HDAPS Office. On April 21, 1992, a new set of C-O tables were created for all launches and no further problems have been identified. On May 4, HDAPS Office identified the problem as having exceeded the maximum allowable entries in the C-O tables. HDAPS only recognized 60 entries and RAINIER's tables had as many as 72 entries. The creation of new C-O tables alleviated the problem. The data sets affected are addressed in Section I.

Velocity corrections were determined using:

Program Name	Version	Date Installed
VELOCITY	1.11	09 Mar 1990

E. SONAR EQUIPMENT✓

Side scan sonar was not used during this survey.

F. SOUNDING EQUIPMENT✓

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 Field Procedures Manual for Hydrographic Surveying (FPM).

Raytheon DSF-6000N Echo Sounders

Vessel	Serial No.	DN
2120	A119N	94
2123	A114N	90-91
	B044N	105-127
2124	E0148	91
	B039N	105-107
	A103N	108-109
2125	B048N	90-120
2126	A117N	90-124

The echo sounders were continuously monitored during data acquisition. All sounding data were scanned at least two times, to ensure all significant peaks were inserted, and 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. *See Evnl Report, Section 4.*

G. CORRECTIONS TO ECHO SOUNDINGS ✓

Corrections to echo soundings were determined for static draft, velocity of sound through water, settlement and squat. Predicted tides were used for all plots. 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 are included in the Spring 1992 Corrections to Echo Sounding Data Package for OPR-O106-RA.

Offset Tables

Vessel	Offset Table No.
2123	2
2124	7
2125	8
2126	9

Sound Velocity✓

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

Velocity Table No.	Cast No.	Deepest Depth (m)	Applicable DN	Cast Position	Day
N/A	2A	267.0	N/A	58°17'09"N 136°22'22"W	094
10	2B	263.9	089-101	58°17'09"N 136°22'22"W	094
N/A	3	181.2	N/A	58°21'10"N 136°19'15"W	095 CAST #3 was taken outside the survey limits.
N/A	5	251.3	N/A	58°17'07"N 136°22'14"W	107
12	7	226.3	104-115	58°17'46"N 136°20'56"W	113
16	11	265.0	117-132	58°17'03"N 136°26'12"W	119

Sound velocity casts numbers 2B, 3, 5, 7, and 11 were acquired with a SBE SEACAT Profiler, S/N 811, which was calibrated at the Northwest Regional Calibration Center (NRCC) in Bellevue, WA, on March 3, 1992. Sound velocity cast number 2A was acquired with the AML SVP Profiler, S/N 3042, which was calibrated at NRCC on December 18, 1991. Casts 2A and 2B performed simultaneously for comparative purposes. It was decided to use cast number 2B to determine the velocity correctors. Cast numbers 3 and 5 were in close agreement with 2B, therefore they were not used.

Velocity correctors were computed using the PC program VELOCITY in accordance with Hydrographic Survey Guideline (HSG) #69. A printout of the Sound Velocity Corrector Tables used in the HDAPS Post Survey program are included in the Spring 1992 Corrections to Echo Sounding Data Package for OPR-O106-RA.

Static Draft ✓

For all launches, the distance from the transducer face to the gunwale was measured with a large metal square. Static draft measurements were then determined by dropping a lead line from the gunwale to the water and subtracting this distance from the distance measured with the square. The measurements from the gunwale to the waterline were conducted with the fuel tanks averaging 3/4 full and three people aboard. A transducer depth of 0.6 meter was determined for launches 2123, 2124, 2125, and 2126 on March 21-22, 1992. Transducer housings were replaced on launches 2123, 2124, and 2126; no significant change to static draft was noted.

Settlement and Squat ✓

Settlement and squat correctors were determined in Shilshole Bay, WA, for launches 2123 on March 11, 2124 on March 16, and 2125 and 2126 on March 18, 1992. Tests were conducted over a hard bottom in depths well exceeding 7 times the vessels' drafts. Both sea and wind were calm. Observations were made through a Zeiss Ni2 leveling instrument, S/N 103453, to a rod held vertically on deck, directly over the transducer. Correctors were computed in accordance with Hydrographic Manual 4.9.4.2., using FPM Fig. 2.2 and 2.3, and are included in the Spring 1992 Corrections to Echo Sounding Data Package for OPR-O106-RA.

Heave ✓

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

Pneumatic Depth Gage ✓

The 3D Instrument, Inc. Depth Gauge S/N 8504192N was calibrated by Pacific Operations Section on February 25, 1992. The depth gauge was calibrated against a Digiquartz 0-45 PSI Transducer #1107. In addition, field systems checks were performed via comparison with diver depth gages each time the pneumatic depth gage was used. Calibration data and correctors are included in the Spring 1992 Corrections to Echo Sounding Package for OPR-O106-RA.

Bar Check and Lead Lines ✓

Bar check and lead lines were calibrated by RAINIER personnel on February 19, 1992 at PMC. Calibration forms are included in the Spring 1992 Corrections to Echo Sounding Data Package for OPR-O106-RA.

Tide Correctors ✓

Tidal zoning and correctors applicable to predicted tides for the Sitka, Alaska, reference station (945-1600) were provided in the Project Instructions. The time corrector for Sheet E(E) is +0 hr. 10 min., while the range ratio is x1.27. The time corrector for Sheet E(W) is +0 hr. 05 min., while the range ration is x1.20.

HDAPS listings of the data used in generating tide corrector tables are included in Appendix V of this report.*

Tide gages were installed and maintained by RAINIER personnel at Inian Cove, Inian Island (945-2629). The control station was Sitka, Alaska (945-1600). Opening levels were completed by RAINIER personnel on March 27, 1992. Closing levels will be completed by Pacific Operations Section during summer 1992.

The station descriptions, field tide records, and Field Tide Notes have been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. Requests for approved tides have been forwarded to N/OES2. Copies of the Field Tide Notes and the request for approved tides are included in Appendix V.* The approved tide note has been attached to this report.

* Filed with the hydrographic data.

H. CONTROL STATIONS See Eval Report, section 2

Geographic positions for all control stations are based on the North American Datum of 1983 (NAD83) and the Geodetic Reference System 1980 Ellipsoid.

A listing of the geodetic stations used to control this survey is included in ~~Appendix III~~ this report.

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 were positioned via traverse methods to meet third-order class I standards. Further information can be found in the Spring 1991, Fall 1991, and Spring 1992 Horizontal Control Reports for OPR-O106-RA.

I. HYDROGRAPHIC POSITION CONTROL

Method of Sounding Position Control

Soundings, bottom samples, and detached positions were positioned using the Motorola Mini Ranger Falcon 484 microwave system in multi-range and range-azimuth modes.

Accuracy Requirements/Problems

Accuracy requirements specified in the Hydrographic Manual and in FPM 3.1.3.1 were generally met. When maximum residuals exceeded the specified limits, OIC's deselected the station(s) with the highest residual value and continued hydrography. Occasionally, ECR's and maximum residuals exceeded the specified limits. When this happened, the data were usually rejected and the area re-run with different control. If maximum residuals exceeded tolerances, they were flagged and reviewed. Data between adjacent good positions were smoothed when maximum residuals showed unusual accelerations off the expected track.

The loss of one or more LOP's frequently occurred when collecting data close inshore. If this loss generated high ECR's and/or maximum residuals, the OIC's annotated the raw master printout (RMPO). If the data plotted on track and sounding intervals appeared correct based upon time and course steered, the data were retained. Some data were acquired with only two LOP's because stations were blocked or deselected. When this occurred, critical system checks using multiple LOP hydrography were acquired when ECRs and maximum residuals fell within survey specifications.

Range-azimuth accuracy requirements were met in accordance with Section 4.4.4 of the Hydrographic Manual. The R/T unit of the sounding vessel was the target for observed azimuths. All angles were read to the nearest minute of arc or better for a positional accuracy of 0.5 mm at this survey scale.

Equipment

A Wild T-2 theodolite was used for range-azimuth observations. Serial numbers for R/T units and RPU's are annotated on the RMPO for each day of hydrography. Lists of all electronic equipment serial numbers are included in the Electronic

Control Data Package (Spring 1992).

Calibrations & Systems Check Methods ✓

Baseline calibrations were conducted in accordance with FPM 3.1.2.1 and 3.1.3.2. On February 13-14, 1992 (DN 44-DN 45), and on February 25-26, 1992 (DN 56-DN 57) calibrations were conducted at the SANDPOINT BASELINE over a published distance of 1058.1876 m. Calibration data and a description of the baseline is included in the Spring 1992 Electronic Control Data Package.

In accordance with FPM 3.1.3.3, formal system checks were not documented for multiple LOP hydrography. Data collected with two LOP's were always bracketed by multiple LOP data acquired with ECR's and maximum residuals within acceptable limits to serve as critical system checks. Static critical systems checks were performed in accordance with Section 3.1.3.3. of the Field Procedures Manual when multiple LOP system checks were not possible. In addition, azimuth checks from range-azimuth hydrography were performed by sighting on another third-order control station. The check was considered satisfactory if the azimuth difference before and after hydrography was less than 30 seconds of arc.

Other Factors ✓

Antenna offset and layback correctors were applied via HDAPS offset tables, and are found in the separates included with the survey data.

Incorrect C-O values were called up in the HDAPS survey program on 2 days. No critical features were positioned with these incorrect C-O values. On DN 105, four 50 m split lines (Pos. 2347-2364) were run with a C-O value of -5.98 m instead of -13.35 m on code #7. On DN 112, six lines (2914-2939) were run with a C-O of 0.00 instead of -13.65 on code #5. These positions have not been recomputed. *These positions were recomputed during office processing and appear consistent with the surrounding data.*

J. SHORELINE *See Eval Report, section 2*

The shoreline maps (T-sheets) used to transfer shoreline detail to the final field sheets were 1:10,000-scale enlargements of TP-01330 (June 1985-photography, 1:20,000; NAD27) and TP-01328 (June 1985-photography, 1:20,000; NAD27). Chart 17302 (1:10,000 enlargement, 1989) was used to augment the existing registered shoreline manuscripts. *Chart 17302 was not used as a shoreline source.*

Shoreline verification was conducted near predicted mean lower low water (MLLW) in accordance with FPM 7.1. Shoreline verification was accomplished by assigning sequential reference numbers and taking detached positions (DPs).

Inshore hydrography shows that photogrammetric and hydrographic positioning are in excellent agreement. *concur*

Shoreline and T-sheet features verified via visual inspection were assigned sequential reference numbers. They were recorded in the field using sounding volumes and corresponding 1:10,000 scale photocopies of the T-sheet. Reference numbers, descriptions and heights, corrected to predicted MLLW, were recorded in the sounding volumes. Corresponding notes were annotated on the photocopies of

the T-sheet. The annotated photocopies of the T-sheet were attached to the sounding volumes which are included with the survey data.

DPs taken during shoreline verification were recorded on the master printouts and indicate significant features, features not found on the T-sheet, and locations of disprovals. Where possible, positions of some T-sheet features were verified during inshore mainscheme hydrography and annotated on the master printouts.

Some T-sheet rocks were found to be isolated boulders, reefs, high points of boulder beaches, or ledges in the intertidal zone. The high point of these features was recorded in the sounding volume along with a description of the area. These posed no danger to navigation. T-sheet features which were verified were retained and shown on the final field sheets (FFS). Verified shoreline and new features are shown in black on the FFS, and changes to shoreline are shown in red. Kelp symbols are shown on the FFS in areas where surface kelp was visible.

Detailed 1:10,000-scale paper plots showing all DPs and reference numbers and notes relating to each feature are included with the sheets submitted with this survey. All DPs were plotted using the "+" symbol because the majority of DPs describe features that are offset slightly from the DP. To accurately depict features, the offset and bearing of the feature from the DP were applied and the feature drawn by hand. Position numbers for all DPs are plotted on the two DP overlays along with a brief description of the DP. Heights are recorded in meters and are corrected to predicted MLLW.

Disprovals

The following disprovals were conducted near predicted lower low water. A visual and echosounder search was conducted for each item lasting an average of ten minutes. Positioning was accomplished via Range/Azimuth or by using two or more ranges from Falcon Mini-Rangers with ECRs and maximum residuals within acceptable limits for a 1:10,000 scale survey.

The vicinity of the T-sheet rock at 58°18'17"N, 136°22'08"W was inspected (Pos. No. 2631) and the rock not seen. The shoreline is a boulder beach. The search radius was 50 m from the DP. Water visibility was 1 m. Significant kelp was observed in the area. Kelp symbol added to the smooth sheet. Chart according to smooth sheet.

The vicinity of the T-sheet rock at 58°18'34"N, 136°24'47"W was inspected (Pos. No. 4623) and no indications of the rock seen on the echo sounding trace. Water visibility was 1 m. The search radius was 100 m from the DP. WATER depths range from 20 meters to 25 meters in the area. Chart according to smooth sheet.

The vicinity of the T-sheet rock at 58°15'53"N, 136°21'49"W was inspected (Pos. No. 2810) and the rock not seen. The shoreline is a gently sloping gravel beach. Significant kelp was observed in the area. Water visibility was 2 m. The search radius was 15 m from the DP. Kelp symbol added to smooth sheet. Depths range from 1 meter to 2 meters.

The vicinities of three submerged T-sheet rocks at 58°16'12"N, 136°22'34"W, 58°16'14"N, 136°22'37"W, and 58°16'15"N, 136°22'39"W were inspected (Pos. Nos. 8867-8869) and the rocks were not seen. Water visibility was 5 m. Hydrography was conducted (Pos. Nos. 2888-2913) with 10 m line spacing and the average depth was 50-80 m. The T-sheet positions lie approximately 400 m from shore in an area with a steep sloping bottom. The search radius was 100 m from each DP. Depths range from 56 meters to 70 meters. Chart according to smooth sheet.

The vicinity of the T-sheet rock at 58°15'56"N, 136°16'~~50~~49"W was inspected (Pos. No. 4479) and the rock not seen. The water visibility was 1.5 m. The shoreline is a boulder beach with significant kelp in the area. The search radius was 15 m from the DP. Chart according to smooth sheet.

The vicinity of two T-sheet rocks at 58°18'55"N, 136°16'55"W and 58°18'55"N, 136°16'52"W was inspected (Pos. No. 7019) and no indication of the rocks seen on the echo sounding trace. Water visibility was 1 m. The search radius was 75 m from the DP. Depths range between 2.8 meters to 5 meters. Chart according to the smooth sheet.

The vicinity of 15 T-sheet rocks on the north shore of Inian Island between 136°17'26"W and 136°17'51"W was inspected (Pos. Nos. 4480-83) and the rocks not seen. The shoreline is a sand/gravel beach with no distinguishable rocks. Mainscheme hydrography (50 m spacing) was run over the area and no rocks were seen. Significant kelp was observed in the area. Water visibility was 3.0 m and the average depth 2.0 m. The bottom was visible from the launch at all times during the search. The search area was within the area defined by the DP's. Chart according to the smooth sheet.

The vicinity of the T-sheet rock at 58°16'12"N, 136°19'~~18~~17"W was inspected (Pos. No. 4490) and no indication of the rock seen on the echo sounding trace. Water visbility was 2 m. The shoreline is a sandy shoal cove with no significant rocks. Significant kelp was observed in the area. The search radius was 20 m from the DP. Depths range from 0.2 meters to 1 meters. Chart according to the smooth sheet.

The vicinity of the T-sheet rock at 58°16'~~11~~17"N, 136°19'~~20~~10"W was inspected (Pos. No. 4491) and no indication of the rock seen on the echo sounding trace. Water visibility was 2 m. The shoreline is a sandy shoal cove with no significant rocks. Significant kelp was observed in the area. The search radius was 20 m from the DP. Depths range from 5 meters to 8 meters. Chart according to the smooth sheet.

The vicinity of the T-sheet rock at 58°16'~~21~~22"N, 136°20'00"W was inspected (Pos. No. 8721) and the rock not seen. Water visibility was 2 m. The search radius was 15 m from the DP. Depths range from 1.3 meters to 2 meters. Chart according to the smooth sheet.

The vicinity of the T-sheet rock at 58°16'22"N, 136°20'17"W was inspected (Pos. No. 8719) and the rock not seen. Water visibility was 2 m. Hydrography was conducted (Pos. Nos. 2815-2848) using 5 m line spacing and no indications of rocks seen on the echo sounding trace. The search radius was 20 m from the DP. Depths range from 20 meters to 25 meters. Chart according to the smooth sheet.

The vicinity of the T-sheet rock at 58°16'~~15~~13"N, 136°~~19'59~~20'09"W was inspected (Pos. Nos. 2958-2979) by echosounder and the rock not seen. Hydrography was conducted with 5 m line spacing and no indication of the rock seen on the echo sounding trace. Depths range between 10 meters to 11 meters. Chart according to smooth sheet.

The vicinity of the T-sheet rock at 58°15'52"N, 136°20'18"W was inspected by divers (Pos. No. 8874) and the rock not seen. The divers conducted a 50 m circle search from the DP. Water visibility was 2 m and search time was 20 minutes. The general terrain is flat. An item investigation report was submitted with the survey data. Depths in the area range from 11 meters to 11.7 meters. Chart according to the smooth sheet.

The vicinity of the charted rock at 58°18'59"N, 136°16'07"W was inspected (Pos. No. 7017) and the rock was not seen. Water visibility was 1 m. The shoreline is a boulder beach with many rocks 0.5-1.0 m in diameter. The search radius was 50 m from the DP. A rock with a height of 2.1 meters was transferred from junction survey H-10338 at lat. 58/18/59N, long. 136/16/07W.

The vicinity of the charted rock at 58°16'21"N, 136°20'30"W was inspected (Pos. No. 2751) and no indication of the rock seen on the echo sounding trace. Water visibility was 1-2 m. The search radius was 15 m from the DP. Remove charted rock, chart according to the smooth sheet.

The vicinity of the charted islet at 58°15'52"N, 136°20'56"W was inspected (Pos. No. 2812) and the islet was not seen. Water visibility was 2 m. The shoreline is a gravel beach. The search radius was 20 m from the DP. Remove charted islet, chart according to the smooth sheet.

The vicinity of the charted islet at 58°15'54"N, 136°21'00"W was inspected (Pos. No. 2811) and the islet was not seen. Water visibility was 2 m. The hydrographer believes that the charted rock is T-sheet rock, R3-9. The search radius was 20 m from the DP. Remove chart islet and chart rock at lat. 58/15/54 N, long. 136/21/03W. *

The vicinity of the charted rock at 58°16'07"N, 136°20'27"W was inspected (Pos. No. 2814) and the rock was not seen. Water visibility was 2 m. The shoreline is rocky with many high ledges. The hydrographer believes that the charted rock is T-sheet rock, R3-15. The search radius was 20 m from the DP. T-sheet rock was confirmed at lat. 58/16/07 N, long. 136/20/26 W. Chart according to smooth sheet.

The vicinity of two charted islets at 58°18'46"N, 136°25'36"W and 58°18'49"N, 136°25'33"W was inspected (Pos. No. 2804) and the islets were not seen. Water visibility was 2 m. The southern islet search radius was 20 m from the DP. No indications were seen of the islet on the echo sounding trace. The northern charted islet position was above the HWL. The launch was unable to approach the northern islet's charted position because of shoaling and swell. The shoreline is a gravel beach with no significant rocks. Depths range from 1.4 meters to 10 meters, chart according to this smooth sheet.

The vicinity of the charted rock at 58°15'53"N, 136°21'53"W was inspected (Pos. No. 2809) and no indication of the rock seen on the echo sounding trace. Water visibility was 2 m. The shoreline is a gravel beach. The hydrographer believes that the charted rock is T-sheet rock, R6-39. The search radius was 15 m from the DP. Remove charted rock and chart at lat. 58/15/51 N, long. 136/21/50W.

The vicinity of the charted rock at 58°16'09"N, 136°24'21"W was inspected (Pos. No. 2807) and the rock not seen. Water visibility was 2 m. The hydrographer believes that the charted rock is T-sheet rock, R6-21. The search radius was 15 m from the DP. A ledge was found on this survey. Remove charted rock and chart the above ledge.

The vicinity of the charted islet at 58°18'31"N, 136°24'28"W was inspected (Pos. No. 2803) and the islet not seen. Water visibility was 2 m. The hydrographer believes that the charted islet is T-sheet rock, R4-27. The search radius was 20 m from the DP. T-sheet rock located at lat. 58/18/30N, long. 136/24/28W, height of 3.4 meters at mcw. Remove charted rock and chart the above rock.

The vicinity of the charted islet at 58°18'44"N, 136°26'05"W was inspected (Pos. No. 2805) and no indication of the islet seen on the echo sounding trace. Water visibility was 2 m. The hydrographer believes that the charted islet is T-sheet ~~rock~~ islet, R6-44. The search radius was 15 m from the DP. This T-sheet Islet is located at lat. 58/18/45.5N, long. 136/26/05 W. Chart according to this survey. Remove charted Islet. *

The vicinity of the charted islet at 58°15'43"N, 136°19'24"W was inspected during mainscheme hydrography (25 m spacing) and the islet not seen. Soundings from the present survey suggest that the area around the islet has risen, and is now attached to the shoreline. Chart according to this survey. Remove charted islet.

Recommendation: The hydrographer recommends that details seaward of the HWL from this survey be used to supersede TP-01330 and TP-01328 in the common area. Concur

The following three pages address AWOIS items assigned to this survey.

* Hydrographer did not account for datum shift and offset between the shoreline map and the chart. Feature(s) exist as charted but have been located using better positioning methods.

ITEM INVESTIGATION REPORT

AWOIS #: 51796 **Date:** Apr 14, 1992

Chart #: 17302 **Vessel:** 2126

Item Description: Rock

Source: H2558/01, CL796/59

****

Charted Position: 58/16/27N, 136/19/34W (NAD27)

Observed Position: 58/16/33.19N, 136/19/43.96W; Pos. No. 8717 EAST END of Reef
58/16/33.22N, 136/19/45.12W; Pos. No. 8718 WEST END OF REEF

Position Determined By: Falcon Mini-Ranger MLOP

Time of Observation: 003602

Method of Investigation: The ~~rock~~ Reef was found by visual observation, and the east/west limits positioned. The ~~rock~~ Reef is ~~0.2~~ 1.2 m above MLLW.

****

Charting Recommendation: Add rock symbol to chart Concur

ITEM INVESTIGATION REPORT

AWOIS #: 51805 **Date:** Apr 3, 1992

Chart #: 17302 **Vessel:** 2126

Item Description: Mooring Buoy

Source: CL586/59

****

Charted Position: 58/15/51N, 136/19/48W (NAD27)

DP Disproval #: Pos. No. 8374

Position Determined By: Range/Azimuth from Station SHAKE

Time of DP: 223920

Method of Investigation: The area was searched visually and the mooring buoy not found. The DP was taken at the charted position.

****

Charting Recommendation: Delete mooring buoy from chart. Concur

ITEM INVESTIGATION REPORT

AWOIS #: 51804

Date: Apr 03, 1992
Apr 08, 1992
Apr 17, 1992

Chart #: 17302

Vessel: 2124
2125
2126

Item Description: 2 Dolphins

Source: CL586/59

****

Charted Position: 58/15/45N, 136/19/57W (NAD27)

Hydrography Positioned By: Range/Azimuth from Station SHAKE

Times/Positions of Hydrography:

Date	Vessel	Time	Positions
Apr 03 1992	2126	183916-211046	8245-8312
Apr 03 1992	2126	225550-010159	8376-8516
Apr 08 1992	2125	215246-224928	6745-6811
Apr 17 1992	2124	222242-225600	4569-4618

Method of Investigation: The area was searched visually and by echosounder and the dolphins not seen. Hydrography was run over the search radius using 5 m line spacing. The bottom was flat with no significant features.

****

Charting Recommendation: Delete dolphins from chart.

Concur

K. CROSSLINES ✓

A total of 42.9 nautical miles of crosslines were run perpendicular or at a 45° angle to mainscheme lines, representing 15.3% of the mainscheme hydrography. Crossline soundings agree to within 2 meters with mainscheme soundings, except in areas of steep bottom topography where the agreement is to within 5 m. The vessel acquiring crossline data did not always collect the corresponding mainscheme data. Agreement between soundings acquired by different echo sounders in a common area is as stated above.

L. JUNCTIONS See Evaluation Report, section 5

This survey junctions with H-10338 (1:10,000; 1990) to the east, H-10374 (1:20,000; 1991) to the southwest, H-10371 (1:10,000; 1991) to the south, H-10420 (1:10,000; 1992) to the north, and H-10423 (1:10,000; 1992) to the west. No irregularities were found when comparing soundings and depth contours. Agreement between overlapping soundings is excellent, with all junction soundings agreeing to within 2 meters.

M. COMPARISON WITH PRIOR SURVEYS See Evaluation Report, section 6

This survey was compared with five prior surveys. In general, the present survey compares well with the prior surveys. Shallower soundings from the present survey disproved a majority of prior survey least depths. In cases where depths from the prior survey were shallower, the present survey has similar or shoaler depths in close proximity. The most likely reason for general shoaling throughout the area is isostatic rebound and inaccuracies in the sounding or positioning techniques used on the prior surveys. Concur

The following prior surveys were compared to the present survey:

H-2558 (1:40,000; 1901):

Overall agreement with the present survey is good, with agreement to within 4 m. Discrepancies between the present survey and H-2558 are likely due to the wide line spacing used on H-2558 and isostatic rebound.

Recommendation: The hydrographer recommends the soundings and least depths acquired from the present survey be used to supersede those of H-2558 within their common areas. concur

H-2559 (1:20,000; 1901):

Overall agreement with the present survey is good, with agreement to within 2 m. Discrepancies between the present survey and H-2559 are likely due to the wide line spacing used on H-2559 and isostatic rebound.

Recommendation: The hydrographer recommends the soundings and least depths acquired from the present survey be used to supersede those of H-2559 within their common areas. concur

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

Overall agreement with the present survey is good, with agreement to within 4 m. Discrepancies between the present survey and H-2618 are likely due to the wide line spacing used on H-2618 and isostatic rebound.

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

H-4318WD (1:40,000; 1922):

Four soundings from H-4318WD, close to the eastern shoreline of Inian Island, were within the limits of this survey. The present survey revealed soundings significantly shallower in the same area.

Recommendation: The hydrographer recommends the soundings and least depths acquired from this survey be used to supersede those of H-4318WD within their common areas. Concur

H-2558b (1:5,000; 1901):

Overall agreement with the present survey is good, with agreement to within 4 m. A comparison of soundings indicates a general shoaling of 2-4 m in Inian Cove. This is reinforced by the fact that Inian Cove and Earl Cove are no longer connected by water as shown on H-2618. The most likely reason for the shoaling is isostatic rebound.

Recommendation: The hydrographer recommends the soundings and least depths acquired from the present survey be used to supersede those of H-2558b for charting purposes within their common areas. Concur

N. COMPARISON WITH THE CHART See Final Report, section 7

All charted soundings originate from the prior surveys discussed in Section M. Concur

Comparison of Sounding Features

Not Applicable.

Comparison of Non-Sounding Features

All disproved charted non-sounding features are discussed in Section J. Charted features which were verified are shown on the FFS in black.

Dangers to Navigation

Four dangers to navigation 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 included in ~~Appendix I of~~ this report. Position numbers associated with each reported danger are included on the copy of the radio message.

O. ADEQUACY OF SURVEY

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

P. AIDS TO NAVIGATION

One fixed aid to navigation lies within the limits of the survey. The field position was reported in Spring 1991 to the U.S. Coast Guard in accordance with the Project Instructions Section 4.2.1.2. ~~(See Appendix VI)~~ see attached letter, dated May 10, 1991

The light characteristics of North Inian Pass Light were observed in the field and agree with the charted and Light List characteristics. The light adequately serves the apparent purpose for which it was established. concur

There are no floating aids to navigation, bridges, overhead cables or submerged pipelines. The Alaska State Ferry transits through Port Althorp and South Inian Pass.

Q. STATISTICS

Vessel:	2120	2123	2124	2125	2126	Total
# of Pos	9	1105	629	1034	970	~~3747~~ 3418
NM Hydro	0	128.4	93.5	115.4	79.3	416.6

NM^2 Hydrography	14.86	Velocity Casts	6
Detached Positions	104	Tide Stations	1
Reference Numbers	135	Current/Magnetic Stations	0
Bottom Samples	34		

R. MISCELLANEOUS

On April 17, 1992, two dives were conducted on shoal depths (Pos. Nos. 8231+1, 8247+3) in Inian Cove and no significant features found. Item investigation reports were submitted with the survey data.

Loran C comparisons were sent to DMAHTC and U.S. Coast Guard in accordance with the project instructions.

All bottom samples were submitted to the Smithsonian Institution.

S. RECOMMENDATIONS

The hydrographer recommends that future charts of the area between the eastern shore of Lemesurier Island and Cape Spencer be no smaller than 1:50,000 due to the complexity of the area.

T. REFERRAL TO REPORTS ✓

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

Title	Date Sent to N/CG245
Spring 1992 Horizontal Control Report for OPR-O106-RA	June 1992
Spring 1992 Electronic Control Data Package for OPR-O106-RA	June 1992
Spring 1992 Corrections to Echo Soundings Data Package for OPR-O106-RA	June 1992
Spring 1992 Coast Pilot Report for OPR-O106-RA	June 1992
Spring 1992 User Evaluation Report for OPR-O106-RA	July 1992

Respectfully Submitted,

for Heidi L. Johnson
Lieutenant(jg), NOAA

Approved and Forwarded,

Thomas W. Richards
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 5 Jun 1992

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name	Quad Nos.
123	F	058:21:36.578	136:22:40.132	4	250	0.0	0.0	5	04/22/92	DELTA 1985	581362
~~112~~	~~F~~	~~058:11:41.777~~	~~136:20:55.983~~	~~3~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~WHARF~~	
~~158~~	~~F~~	~~058:22:45.029~~	~~136:24:36.049~~	~~4~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~CONIC(ADJ)~~	
135	F	058:11:51.574	136:30:27.489	16	250	0.0	0.0	1	03/22/92	CAPE 1925	581363
188	F	058:16:48.210	136:34:30.689	8	250	0.0	0.0	6	04/22/92	MORAIN 1985	581363
153	F	058:08:18.190	136:25:21.164	27	250	0.0	0.0	4	04/23/92	RAIN 1991	581362
~~187~~	~~F~~	~~058:10:58.916~~	~~136:20:46.250~~	~~7~~	~~250~~	~~0.0~~	~~0.0~~	~~7~~	~~04/22/92~~	~~ISLE NO 1 1930~~	
~~165~~	~~F~~	~~058:23:11.968~~	~~136:24:59.403~~	~~3~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~LEG(ADJ)~~	
~~166~~	~~F~~	~~058:23:50.735~~	~~136:25:25.253~~	~~2~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~MIRE(ADJ)~~	
~~167~~	~~F~~	~~058:22:07.672~~	~~136:23:53.456~~	~~3~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~NEEDLE(ADJ)~~	
~~189~~	~~F~~	~~058:08:49.315~~	~~136:17:34.409~~	~~5~~	~~250~~	~~0.0~~	~~0.0~~	~~0~~	~~04/07/92~~	~~HIP 1992~~	
190	F	058:17:51.075	136:27:03.058	9	250	0.0	0.0	0	04/15/92	LUMBER 1991	581362
~~204~~	~~Z~~	~~058:08:52.207~~	~~136:17:35.478~~	~~7~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~POCKET(R/AZ)~~	
~~217~~	~~Z~~	~~058:09:16.155~~	~~136:19:07.423~~	~~5~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~BOW(R/AZ)~~	
173	F	058:22:11.340	136:21:07.733	5	250	0.0	0.0	A	04/22/92	MUCK 1991	581362
191	F	058:16:20.937	136:24:00.922	18	250	0.0	0.0	B	04/30/92	ACHE 1901	581362
~~175~~	~~F~~	~~058:21:48.038~~	~~136:23:58.304~~	~~2~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~HOOK 1991(ADJ)~~	
192	F	058:19:03.968	136:15:34.968	6	250	0.0	0.0	2	04/14/92	AID 1901	581362
193	F	058:17:50.935	136:23:07.344	27	250	0.0	0.0	7	05/08/92	BALD 1901	581362
194	F	058:16:08.427	136:16:52.405	8	250	0.0	0.0	7	04/30/92	INIAN 1990	581362
195	F	058:18:48.354	136:22:09.805	7	250	0.0	0.0	7	03/30/92	JAB 1991	581362
196	F	058:16:04.118	136:20:28.242	10	250	0.0	0.0	B	05/08/92	NATTY 1991	581362
100	F	058:15:48.046	136:07:57.536	8	250	0.0	0.0	4	04/16/92	YAK 1901	581362
~~223~~	~~Z~~	~~058:21:36.578~~	~~136:22:40.132~~	~~4~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~DELTA(R/AZ)~~	
197	F	058:16:21.417	136:19:13.944	6	250	0.0	0.0	7	04/30/92	BAIL 1991	581362
~~259~~	~~Z~~	~~058:22:45.029~~	~~136:24:36.049~~	~~4~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~CONIC(R/AZ)~~	
115	F	058:20:02.107	136:18:17.253	8	250	0.0	0.0	1	05/05/92	BAN 1901	581362
198	F	058:16:12.143	136:20:05.798	5	250	0.0	0.0	4	04/21/92	LOUT 1991	581362
199	F	058:15:31.561	136:19:34.548	6	250	0.0	0.0	6	04/17/92	SHAKE 1992	581362
400	F	058:15:47.821	136:19:32.367	2	250	0.0	0.0		00/00/00	INIAN COVE B 1964	581362
~~265~~	~~Z~~	~~058:23:11.968~~	~~136:24:59.403~~	~~5~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~LEG(R/AZ)~~	
~~266~~	~~Z~~	~~058:23:50.735~~	~~136:25:25.253~~	~~4~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~MIRE(R/AZ)~~	
~~267~~	~~Z~~	~~058:22:07.672~~	~~136:23:53.456~~	~~5~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~NEEDLE(R/AZ)~~	
122	F	058:21:04.673	136:17:37.174	8	250	0.0	0.0	4	04/22/92	DEED 1901-1966	581362
401	F	058:15:45.433	136:20:28.213	6	250	0.0	0.0	A	04/08/92	BAKE 1991	581362
402	Z	058:15:45.433	136:20:28.213	6	250	0.0	0.0		00/00/00	BAKE(R/AZ)	581362
403	Z	058:15:31.561	136:19:34.548	6	250	0.0	0.0		00/00/00	SHAKE(R/AZ)	581362
~~273~~	~~Z~~	~~058:22:11.340~~	~~136:21:07.733~~	~~5~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~MUCK(R/AZ)~~	
404	Z	058:15:47.821	136:19:32.367	4	250	0.0	0.0		00/00/00	INIAN COVE B 1964(R/AZ)	581362
~~275~~	~~Z~~	~~058:21:48.038~~	~~136:23:58.304~~	~~4~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~HOOK 1991(R/AZ)~~	
~~209~~	~~Z~~	~~058:08:49.315~~	~~136:17:34.409~~	~~5~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~HIP(R/AZ)~~	
405	Z	058:16:12.143	136:20:05.798	5	250	0.0	0.0		00/00/00	LOUT(R/AZ)	581362
406	Z	058:16:11.778	136:19:08.839	4	250	0.0	0.0		00/00/00	JUJU(R/AZ)	581362
~~407~~	~~F~~	~~058:16:11.778~~	~~136:19:08.839~~	~~4~~	~~250~~	~~0.0~~	~~0.0~~	~~A~~	~~05/01/92~~	~~JUJU 1992~~	
408	Z	058:20:02.107	136:18:17.253	8	250	0.0	0.0		04/14/92	BAN 1901	581362
409	Z	058:18:48.354	136:22:09.805	7	250	0.0	0.0		00/00/00	JAB(R/AZ)	581362
~~410~~	~~Z~~	~~058:17:50.935~~	~~136:23:07.344~~	~~27~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~BALD(R/AZ)~~	
411	Z	058:16:21.417	136:19:13.944	6	250	0.0	0.0		00/00/00	BAIL(R/AZ)	581362
412	F	058:15:38.643	136:22:27.396	7	250	0.0	0.0	A	05/01/92	HYENA 1991	581362
~~413~~	~~F~~	~~058:16:55.103~~	~~136:20:47.710~~	~~20~~	~~250~~	~~0.0~~	~~0.0~~		~~04/19/92~~	~~END 2~~	
414	F	058:18:41.982	136:31:10.409	13	250	0.0	0.0	2	04/22/92	TAYLOR 1985	581363
~~415~~	~~F~~	~~058:18:31.239~~	~~136:30:34.884~~	~~5~~	~~250~~	~~0.0~~	~~0.0~~	~~A~~	~~04/29/92~~	~~LOBO 1991~~	
416	F	058:12:43.819	136:22:51.081	9	250	0.0	0.0	5	04/23/92	ADZE 1901	581362
~~417~~	~~F~~	~~058:17:59.613~~	~~136:29:08.752~~	~~2~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~DEPT~~	
~~418~~	~~Z~~	~~058:18:31.239~~	~~136:30:34.884~~	~~5~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~LOBO(R/AZ)~~	
~~419~~	~~F~~	~~058:15:04.557~~	~~136:21:48.256~~	~~3~~	~~250~~	~~0.0~~	~~0.0~~	~~A~~	~~05/01/92~~	~~CAMP 1991~~	
~~106~~	~~F~~	~~058:11:41.367~~	~~136:21:06.313~~	~~7~~	~~250~~	~~0.0~~	~~0.0~~	~~7~~	~~03/22/92~~	~~FINN 1930~~	
~~107~~	~~F~~	~~058:11:29.612~~	~~136:20:36.949~~	~~4~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~CHICH~~	
~~108~~	~~F~~	~~058:11:18.609~~	~~136:20:21.268~~	~~4~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~KUFF NO 1~~	
~~419~~	~~F~~	~~058:15:02.304~~	~~136:21:10.505~~	~~4~~	~~250~~	~~0.0~~	~~0.0~~		~~00/00/00~~	~~CAMP~~	

135	F	058:15:15.230	136:23:02.253	13	250	0.0	0.0	00/00/00	SUB	
136	F	058:11:49.673	136:20:50.459	4	250	0.0	0.0	00/00/00	SKY	
141	F	058:14:14.254	136:21:47.070	1	250	0.0	0.0	00/00/00	URSA	
206	Z	058:11:41.367	136:21:06.317	7	250	0.0	0.0	00/00/00	FINN(R/AZ)	
207	Z	058:11:29.612	136:20:36.949	6	250	0.0	0.0	00/00/00	CHIEH(R/AZ)	
208	Z	058:11:18.689	136:20:21.260	6	250	0.0	0.0	00/00/00	KOFF NB 1(R/AZ)	
217	Z	058:15:02.304	136:21:10.505	6	250	0.0	0.0	00/00/00	CANAL(R/AZ)	
235	Z	058:15:15.230	136:23:02.253	15	250	0.0	0.0	00/00/00	SUB(R/AZ)	
236	Z	058:11:49.673	136:20:50.459	6	250	0.0	0.0	00/00/00	SKY(R/AZ)	
241	Z	058:14:14.254	136:21:47.070	3	250	0.0	0.0	00/00/00	URSA(R/AZ)	
420	Z	058:15:04.557	136:21:40.256	3	250	0.0	0.0	00/00/00	EMBU(R/AZ)	
421	Z	058:15:30.643	136:22:27.396	7	250	0.0	0.0	00/00/00	HYENA(R/AZ)	
117	F	058:09:16.155	136:19:07.423	5	250	0.0	0.0	6 04/20/92	BOW 1942	
134	F	058:07:28.094	136:18:51.778	3	250	0.0	0.0	00/00/00	TOWN 1942	
139	F	058:09:58.282	136:21:33.910	7	250	0.0	0.0	6 04/22/92	DALI 1991	
170	F	058:08:31.134	136:20:53.813	5	250	0.0	0.0	8 04/04/92	ZEN 1991	
128	F	058:11:43.986	136:22:37.906	9	250	0.0	0.0	8 03/22/92	CRON 1938	
129	F	058:12:08.803	136:21:21.384	5	250	0.0	0.0	00/00/00	HOLE	
131	F	058:11:39.817	136:21:29.942	10	250	0.0	0.0	8 04/04/92	NITE 1938	
137	F	058:12:36.107	136:21:47.754	19	250	0.0	0.0	6 04/22/92	BUNK NB 2 1938	
152	F	058:09:57.989	136:23:25.066	6	250	0.0	0.0	4 04/20/92	RUDE 2 1991	
154	F	058:09:12.755	136:23:04.548	20	250	0.0	0.0	4 04/21/92	DREAD 1991	
155	F	058:11:30.436	136:23:48.166	0	250	0.0	0.0	00/00/00	WEST	
156	F	058:11:51.099	136:23:28.690	0	250	0.0	0.0	00/00/00	DALE	
157	F	058:07:39.977	136:17:50.319	3	250	0.0	0.0	1 05/04/92	LLAMA 1991	
103	F	058:06:17.744	136:16:23.124	1	250	0.0	0.0	00/00/00	BUZZ	
104	F	058:08:52.207	136:17:35.470	7	250	0.0	0.0	A 04/07/92	POCKET 1991	
105	F	058:08:52.900	136:16:22.959	4	250	0.0	0.0	00/00/00	CLAM	
106	F	058:09:41.099	136:19:39.784	7	250	0.0	0.0	6 04/04/92	INIAN 1970	
234	Z	058:07:28.094	136:18:51.778	5	250	0.0	0.0	00/00/00	TOWN(R/AZ)	
257	Z	058:07:39.977	136:17:50.319	3	250	0.0	0.0	00/00/00	LLAMA(R/AZ)	
203	Z	058:06:17.744	136:16:23.124	3	250	0.0	0.0	00/00/00	BUZZ(R/AZ)	
270	Z	058:08:31.134	136:20:53.813	7	250	0.0	0.0	00/00/00	ZEN(R/AZ)	
239	Z	058:09:58.282	136:21:33.910	7	250	0.0	0.0	00/00/00	DALI(R/AZ)	
422	F	058:13:37.890	136:35:00.197	13	250	0.0	0.0	7 05/02/92	APAIL 1992	
423	F	058:17:24.870	136:20:55.119	5	250	0.0	0.0	A 05/02/92	FERN 1992	581362
424	F	058:19:04.579	136:33:30.093	7	250	0.0	0.0	A 05/07/92	SPIT TP 1992	
425	F	058:16:11.116	136:24:18.155	12	250	0.0	0.0	8 05/07/92	EX 1991	
323	Z	058:17:24.870	136:20:55.119	5	250	0.0	0.0	00/00/00	FERN(R/AZ)	
517	Z	058:17:59.613	136:29:08.752	4	250	0.0	0.0	00/00/00	DEPT(R/AZ)	
390	Z	058:17:51.075	136:27:03.050	9	250	0.0	0.0	00/00/00	LUMBER(R/AZ)	
316	Z	058:12:43.819	136:22:51.081	9	250	0.0	0.0	00/00/00	ADZE(R/AZ)	
214	Z	058:10:41.982	136:31:10.409	13	250	0.0	0.0	00/00/00	TAYLOR 1985(R/AZ)	
317	Z	058:17:59.613	136:29:08.752	4	250	0.0	0.0	00/00/00	DEPT(R/AZ)	
113	F	058:12:43.819	136:22:51.081	7	250	0.0	0.0	00/00/00	ADZE 1991	
116	F	058:12:07.020	136:22:15.121	8	250	0.0	0.0	00/00/00	BEER	
142	F	058:08:31.134	136:20:53.813	4	250	0.0	0.0	00/00/00	ZEN 1991	

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Rockville, MD 20852-3019

OFFICE OF NOAA CORPS OPERATIONS
Office of NOAA Corps Operations
NOAA Ship RAINIER
1801 Fairview Avenue East
Seattle, Washington 98102-3767

10 May 1991

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

Dear Sir:

In conjunction with survey operations in Cross Sound, Alaska, personnel from NOAA Ship RAINIER have determined the positions of Althorp Rock Light 3, Cape Spencer Light, Elfin Cove Daybeacon 5, Elfin Cove Entrance Light 2, Elfin Cove Outer Light, George Island Light 2, North Inian Pass Light, Point Lavinia Light and Three Hill Island Light. All positions meet Third-order, Class I specifications and are based on the North American Datum of 1983 and the GRS Ellipsoid of 1980. The positions listed below are field positions and are not adjusted:

Navigation Aid	Latitude(N)	Longitude(W)	1990 Light List No.
ALTHORP ROCK LIGHT 3	58°09'58.431"	136°21'33.556"	24275
CAPE SPENCER LIGHT	58°11'56.358"	136°38'25.437"	24240
ELFIN COVE DAY-BEACON 5	58°11'39.554"	136°20'56.542"	24260
ELFIN COVE ENTRANCE LIGHT 2	58°11'41.049"	136°21'06.378"	24245
ELFIN COVE OUTER LIGHT	58°11'48.882"	136°21'04.243"	24250
GEORGE ISLAND LIGHT 2	58°12'42.425"	136°22'52.678"	24230
NORTH INIAN PASS LIGHT	58°16'19.815"	136°24'07.799"	24235
POINT LAVINIA LIGHT	58°13'23.996"	136°21'15.011"	24225
THREE HILL ISLAND LIGHT	58°09'12.879"	136°23'03.432"	24280

Questions concerning these data may be directed to: Commanding Officer, NOAA Ship RAINIER, 1801 Fairview Avenue East, Seattle, Washington 98102-3767, telephone (206) 553-4794.

10 May 1991

Sincerely,

Thomas W. Richards
Captain, NOAA
Commanding Officer

18:13, Thursday, 2 April 1992
tPostOUT : Blackburn

TWR
FOO
CST
LTJG JOHNSON
Pls return to FOO

R 021735Z APR 92
FM NOAAS RAINIER
TO NOAAMOP SEATTLE WA
BT
UNCLAS
RA-PMC-118-111
PASS TO PMC1X2
PLEASE INQUIRE TO N/CG241 ABOUT THE FOLLOWING AWOIS ITEMS:
1. AWOIS 51796 REFERENCES A "ROCK WITH 1/2 FATHOM LEAST DEPTH FOUND IN LAT 58/16/26.7N. LONG 136/19/34.3W (SCALED FROM SURVEY AT 1:40,000-SCALE USING NAD27 TICKS)." RAINIER SCALED THIS SAME FEATURE FROM A COPY OF SURVEY H-2558 AND FOUND ITS POSITION TO BE 58/16/34.8N. 136/19/26.4W (NAD27). PLEASE REVIEW THIS POSITION AND INFORM US IF THE PUBLISHED NAD27 AWOIS POSITION IS CORRECT.
2. AWOIS 51804 REQUIRES A 200 METER RADIUS SEARCH FOR TWO PILES CHARTED AT 58/15/45N. 136/19/57W (NAD27). THIS SEARCH RADIUS ENCOMPASSES THE MEAN HIGH WATER LINE. REQUEST THAT A SMALLER RADIUS SEARCH BE CONSIDERED FOR THIS ITEM INVESTIGATION.
BT

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

APR 3 1992

TO: NOAA Ship RAINIER via PMC1X2, PMC Operations DAC

FROM: N/CG241, Hydrographic Operations Section JDW

SUBJECT: AWOIS items 51796 and 51804 for OPR-0106-RA

As requested by NOAA Ship RAINIER, N/CG241 is responding to the following two AWOIS items:

1. AWOIS 51796: Upon further review, the datum adjustment ticks on prior survey H-2558 are for a S.E. Alaska datum, not NAD 27 as published in AWOIS 51796 and reported by the RAINIER. Rescaling the rock with a least depth of 0.5 fathoms, from H-2558 and converting to NAD 27, positions the rock in lat 58°16'33.5"N, long 136°19'36.5"W. The NAD 83 position is lat 58°16'32.2"N, long 136°19'43.1"W (NAD 83). The AWOIS position will be updated to reflect this change. Please annotate AWOIS listings accordingly.

2. AWOIS 51804: Reduce search radius to 100 meters. Annotate AWOIS listing accordingly.

0:24, Saturday, 4 April 1992
tPostIN : Blackburn

:
:
R 300Z APR 92
FM AAMOP SEATTLE WA
TO NOAAS RAINIER
BT
UNCLAS
PMC-RA-118-124-117-122/PMC1X2/PMC1X1
SUBJ: AWOIS 51796, 51804
REF: A. UR 021735Z APR 92
1. N/CG241 (WILDER) RESPONDS AS FOLLOWS:
AWOIS 51796: UPON FURTHER REVIEW, THE DATUM ADJUSTMENT TICKS ON PRIOR SURVEY H-2558 ARE FOR A S. E. ALASKA DATUM, NOT NAD 27 AS PUBLISHED IN AWOIS 51796 AND REPORTED BY RAINIER. RESCALING THE ROCK WITH A LEAST DEPTH OF 0.5 FATHOMS FROM H-2558 AND CONVERTING TO NAD 27, POSITIONS THE ROCK IN LAT 58-16-33.5N, LON 136-19-36.5W. THE NAD 83 POSITION IS LAT 58-16-32.2N, LON 136-19-43.1W (NAD83). THE AWOIS POSITION WILL BE UPDATED TO REFLECT THIS CHANGE. PLEASE ANNOTATE AWOIS LISTINGS ACCORDINGLY.
2. AWOIS 51804: REDUCE SEARCH RADIUS TO 100 METERS. ANNOTATE AWOIS LISTING ACCORDINGLY.
3. RESPONSE MEMO FORWARDED WITH NEXT MAIL.
BT

TWR FOOD JOHNSON LTJG CST

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

NOAA Ship RAINIER

June 9, 1992

Director
DMAHTC
Attn: MCNM
6500 Brookes Lane
Washington, DC 20315-0030

ADVANCE INFORMATION

Dear Sir:

While conducting hydrographic survey operations in Cross Sound, Alaska, NOAA Ship RAINIER discovered four dangers to navigation. They have been reported to DMAHTCNAVWARN and the Seventeenth Coast Guard District. A copy of the correspondence describing the dangers is enclosed.

Sincerely,

Thomas W. Richards
Captain, NOAA
Commanding Officer

Enclosures

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

NOAA Ship RAINIER

June 9, 1992

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

ADVANCE INFORMATION

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. A copy of the chart showing the areas in which the dangers exist is also attached.

Sincerely,

Thomas W. Richards
Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
PMC

P 261703Z MAY 92
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCNAVWARN WASHINGTON DC//MCNM//
INFO NOAAMOP SEATTLE WA
ACCT CM-VCAA

ADVANCE INFORMATION

BT
UNCLAS
NOAA SHIP RAINIER HAS FOUND 4 DANGERS TO NAVIGATION IN CROSS SOUND, ALASKA (PROJECT OPR-0106-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY H-10419, NORTH INIAN PASS.

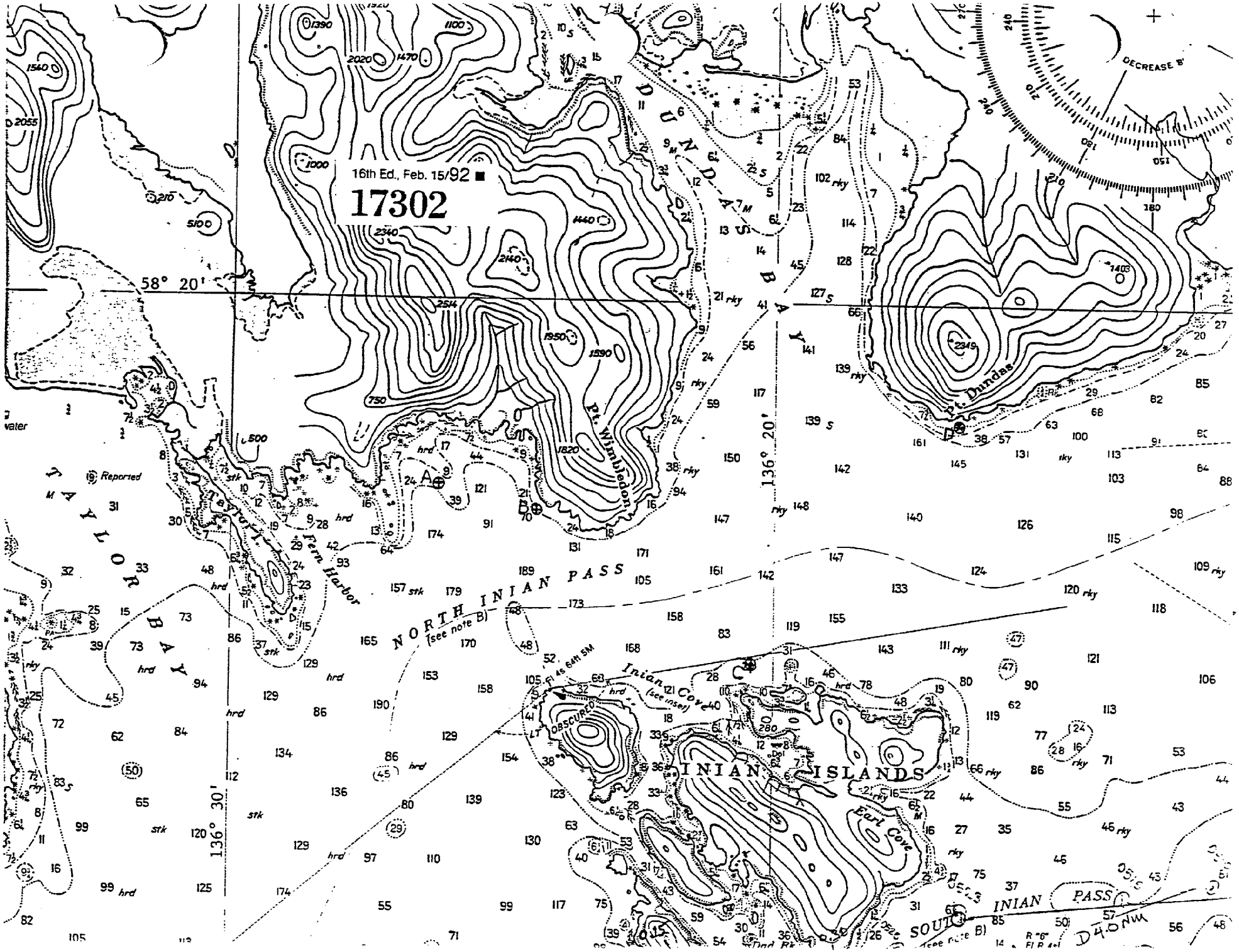
THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

CHARTS AFFECTED: 17302 16TH ED FEB 15/92 1:80,000 NAD83
17300 25TH ED APR 29/89 1:209,978 NAD 83

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

ITEM	DANGER	CHART	DEPTH	DATUM	LATITUDE	LONGITUDE
A.	SHOAL	17302	4 1/2 fm	NAD 83	58/18/14.64N	136/26/12.70W
B.	ROCK COVERS	17302	1/4 fm	NAD 83	58/18/02.20N	136/24/25.12W
C.	SHOAL	17302 17300	7 fm	NAD 83	58/16/36.37N	136/20/24.70W
D.	ROCK UNCOVERS	17302	8 ft	NAD 83	58/18/52.58N	136/16/39.61W

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


16th Ed., Feb. 15/92
17302
58° 20'
136° 20'
136° 30'
DUNDAS BAY
Pt. Dundas
Pt. Wimbledon
TAYLOR BAY
Fern Harbor
NORTH INIAN PASS
(see note B)
Inian Cove
(see inset)
INIAN ISLANDS
Earl Cove
SOUTH INIAN PASS
OBSCURED
Fl 4s 64ft 5M
DECREASE 8'
Reported

APPROVAL SHEET

for

H-10419

(RA-10-1-92)

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

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

Thomas W. Richards
Captain, NOAA
Commanding Officer

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Rockville, Maryland 20852

TIDE NOTE FOR HYDROGRAPHIC SURVEY

ORIGINAL

DATE: September 15, 1992

MARINE CENTER: Pacific

OPR: 0106-RA

HYDROGRAPHIC SHEET: H-10419

LOCALITY: North Inian Pass, Cross Sound, Alaska

TIME PERIOD: March 30 - May 6, 1992

TIDE STATIONS USED: 945-2629 (945-2630) Inian Cove, Alaska
Lat. 58° 15.8′N Lon. 136° 19.5′W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 10.05 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 10.8 ft.

REMARKS: RECOMMENDED ZONING

1. West of 136° 24.5′, apply a -6 minute time correction and a x0.91 range ratio to Inian Cove.
2. East of 136° 24.5′ and west of 136° 21.5′, apply a -6 minute time correction and a x0.92 range ratio to Inian Cove.
3. East of 136° 21.5′ and west of 136° 17.5′, times and heights are direct on Inian Cove.
4. East of 136° 17.5′ and west of 136° 14.5′, apply a +6 minute time correction and a x1.02 range ratio to Inian Cove.

Notes: Inian Cove station # is 945-2629, however, the data is in file # 945-2630.

Times are tabulated in Greenwich Mean Time.

CHIEF, DATUMS SECTION

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10419

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO.	C ON SHORELINE MANUSCRIPTS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H	U.S. LIGHT LIST K	
ALASKA (title)	X		01328 01330							1
CROSS SOUND	X		01330							2
DUNDAS BAY	X		01328							3
DUNDAS, POINT	X		01328							4
EARL COVE	X		01330							5
INIAN COVE	X		01330							6
INIAN ISLANDS	X		01330							7
NORTH INIAN PASS	X		01330 01328							8
NORTH PASSAGE	X		01328							9
WIMBLEDON, POINT	X		01328							10
										11
										12
										13
										14
										15
					Approved:					16
										17
					Charles E. Barrington					18
					Chief Geographer - N/CG2x5					19
					NOV 23 1992					20
										21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H) (9-83) | U.S. DEPARTMENT OF COMMERCE | REGISTRY NUMBER

HYDROGRAPHIC SURVEY STATISTICS

H-10419

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	5
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	5

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	3					
ENVELOPES						
VOLUMES	4					
CAHIERS						
BOXES				1		

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS VERIFICATION	AMOUNTS EVALUATION	AMOUNTS TOTALS
POSITIONS ON SHEET			3747
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS VERIFICATION	TIME-HOURS EVALUATION	TIME-HOURS TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	213.5		213.5
VERIFICATION OF SOUNDINGS	157		157
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	140.5		140.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		18	18
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		24	
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	511	42	553

Pre-processing Examination by J. Griffin	*Beginning Date* 6/22/92	*Ending Date* 7/22/92
Verification of Field Data by E. Domingo	*Time (Hours)* 511	*Ending Date* 8/20/93
Verification Check by J. Stringham	*Time (Hours)* 42.5	*Ending Date* 4/6/93
Evaluation and Analysis by R. Davies	*Time (Hours)* 42	*Ending Date* 8/10/93
Inspection by B. Olmstead	*Time (Hours)* 38	*Ending Date* 8/27/93

EVALUATION REPORT

H-10419

1. INTRODUCTION

Survey H-10419 is a basic hydrographic survey accomplished by the NOAA Ship RAINIER under the following Project Instructions.

OPR-O106-RA, dated February 18, 1992

This survey was conducted in Cross Sound, Alaska and covers North Inian Pass. Included in the survey area are the Inian Islands, Inian Cove, and the entrance to Dundas Bay. The surveyed area extends from latitude 58/15/25N to latitude 58/19/05N, and from longitude 136/15/47W to longitude 136/26/48W. The shoreline in the area is characterized by rocks, rock ledges, and many submerged rocks and islets near shore. The bottom consists of sand, mud and pebbles. Depths range from zero to 288 meters.

Predicted tides for Sitka, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned from Inian Cove, Alaska, gage 945-2629 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. NAD 83 is used as the horizontal datum for plotting and position computation. The TRA and sound velocity correctors are adequate. The C-O correctors (horizontal correctors) were reapplied during office processing to correct the application of the baseline values for Dn 105 and 112, vessel 2123. 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 Guidelines No. 52, Standard Digital Data Exchange Format, April 15, 1986. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Sections H and I of the hydrographer's report and the Spring 1992 Horizontal and Electronic Control Reports for OPR-O106-RA, contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are 1992 field and published values based on NAD 83. These values were used during office processing for the computation of positions. The smooth sheet and accompanying overlays are annotated with NAD 27

adjustment ticks based on values determined with NGS program NADCON. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: -1.310 seconds (-40.531 meters)
Longitude: 6.638 seconds (108.173 meters)

The year of establishment of control stations shown on the smooth sheet originates with the NGS listing and the previously mentioned horizontal control report.

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

The following shoreline maps apply to this survey.

	Photo Date	Class
TP-01328	June 1985	III
TP-01330	June 1985	III

The following shoreline changes are depicted on the smooth sheet with a solid red line, and were transferred from the final field sheet with positional information. These revisions are considered adequate to supersede the common photogrammetrically delineated shoreline.

Feature	Latitude(N)	Longitude(W)
Island	58/15/42	136/23/58
Island	58/15/40	136/23/51
Island	58/18/57.5	136/17/05.5
HWL	58/16/16.5	136/24/14

3. HYDROGRAPHY

Hydrography is adequate to:

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

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

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

Some anomalous soundings were acquired during this survey. They originate from the poor performance of the echo sounder on steep slopes which were surveyed at excessive vessel speed. The hydrographer attempted to correct the problem by editing the raw sounding data, however, the quality of the echo sounder trace is so poor in some areas that the edits are most likely based

on judgment rather than quantifiable data. Office review of the problem has determined that, with the exception of obviously erroneous depths, further editing is not reasonable since no corrective action can be taken to improve the quality of the trace. The judgment of the hydrographer has been accepted and generally the data was not altered during office processing. The affected depths are deep, in excess of 80 meters, and will have little negative effect on the quality of nautical charts if compiled at scales smaller than 1:20,000.

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, March 1992 Edition, except for the following.

On steep or irregular bottoms as in North Inian Pass, the echo sounder had a very hard time tracking the bottom while running main scheme hydrography. Numerous soundings were scanned incorrectly and inserted into the digital record where there was no trace or the trace was miss digitized. Care has to be taken in scanning of the echograms and in reducing the speed of the vessel on steep sloping bottoms.

5. JUNCTIONS

Survey H-10419 junctions with the following surveys.

Survey	Year	Scale	Area
H-10338	1990	10,000	East
H-10371	1991	10,000	South
H-10374	1991	20000	Southwest
H-10420	1992	10,000	North
H-10425	1992	10000	West

The junctions with surveys H-10420 and H-10425 are complete.

The junctions with surveys H-10338, H-10371 and H-10374 and the present survey were not completed because the surveys were previously submitted for charting. These comparisons were made with a copy. Portions of the depth curves on these surveys should be adjusted to conform with those on this survey. Some soundings have been transferred to survey H-10419 to better portray the bottom in the common area and to provide depth coverage where warranted.

6. COMPARISON WITH PRIOR SURVEYS

H-2558(1901) 1:40000
H-2558b(1901) 1:5,000
H-2559(1901) 1:20,000
H-2618(1902) 1:40,000

Surveys H-2558, H-2558b, H-2559 and H-2618 cover the entire area of the present survey. The shoreline in the common area has remained relatively stable throughout the years. There is an average difference in depths throughout the survey area of 9 meters, with an extreme difference of 39 meters. This extreme difference was found in the center of North Inian Pass. The prior surveys soundings on the most part were found to be deeper. This area has experienced earthquakes, possible isostatic rebound and natural accretion and erosional processes. These processes, the different horizontal datums, and the greater sounding accuracy of the data acquisition techniques account for the differences between the present soundings and the prior survey.

Survey H-10419 is adequate to supersede the prior surveys within the common area.

H-4318WD(1922) 1:40,000

Survey H-4318 covers the entire area of the present survey. There were no wire drag (hang) depths found within the common area. However, there are four soundings in the extreme eastern portion of this survey that are common with the present survey. These soundings compare within 1 meter.

AWOIS item 51796 originates with prior survey H-2558. The disposition of this item is adequately discussed by the hydrographer in section N.

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

7. COMPARISON WITH CHART

Chart 17302, 16th edition, dated February 15, 1992; scale 1:80000

a. Hydrography

Charted hydrography originates with prior surveys mentioned in section 6 and miscellaneous sources and needs no further discussion.

Survey H-10419 is adequate to supersede charted hydrography within the common area.

b. AWOIS

AWOIS items 51804 and 51805 originate from miscellaneous sources. The dispositions of these items are adequately discussed by the hydrographer in sections J and N.

c. Controlling Depths

There are no controlling depths found within the survey area.

d. Aids to Navigation

There is one aid to navigation within the survey area. This aid was located and serves its intended purpose.

e. Geographic Names

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

f. Dangers to Navigation

The hydrographer reported four dangers to navigation to the Seventeenth District of the United States Coast Guard, Juneau, Alaska. A copy of the message is attached. No additional dangers were reported during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10419 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

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

Charles R. Davies

C. R. Davies
Cartographer

APPROVAL SHEET
H-10419

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.

for Bruce Alan Olmstead Date: 9/2/93
Dennis J. Hill
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

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

Douglas G. Hennick Date: 9/3/93
Commander Douglas G. Hennick, NOAA
Chief, Pacific Hydrographic Section

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Final Approval

Approved:

for Rear Admiral Richard Date: 12-6-94
J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

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-10419

INSTRUCTIONS

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

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

CHART	DATE	CARTOGRAPHER	REMARKS
17302	5/96	[illegible]	Full ~~Part Before~~ After Marine Center Approval Signed Via
	8/96	[illegible]	Drawing No. 19 17th Ed. AUG 14/93
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED