

H110732

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-10-1-97
Registry No. H-10732

LOCALITY

State Alaska
General Locality Northern Stephens Passage
Sublocality Piling Point to Colt Island
and Vicinity

1997

CHIEF OF PARTY
CAPT Alan D. Anderson, NOAA

LIBRARY & ARCHIVES

DATE MAY 13 1998

HYDROGRAPHIC TITLE SHEET

H-10732

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-10-1-97

State Alaska

General locality Northern Stephens Passage

Locality Piling Point to Colt Island and Vicinity

Scale 1:10,000 Date of survey March 20 to April 8, 1997

Instructions dated 12/20/96, Change #1 4/3/97 Project No. OPR-0328-RA

Vessel RA-1(2121), RA-2(2122), RA-3(2123), RA-4(2124), RA-5(2125), RA-6(2126)

Chief of party CAPT Alan D. Anderson, NOAA

Surveyed by CAPT A. Anderson, LT G. Noll, LT S. LaBossiere, LT M. Larsen, LT S. Lemke,
CST J. Fleischmann, SST J. Jacobson, ST S. Baum, ST K. Callahan, ST Brown

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

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

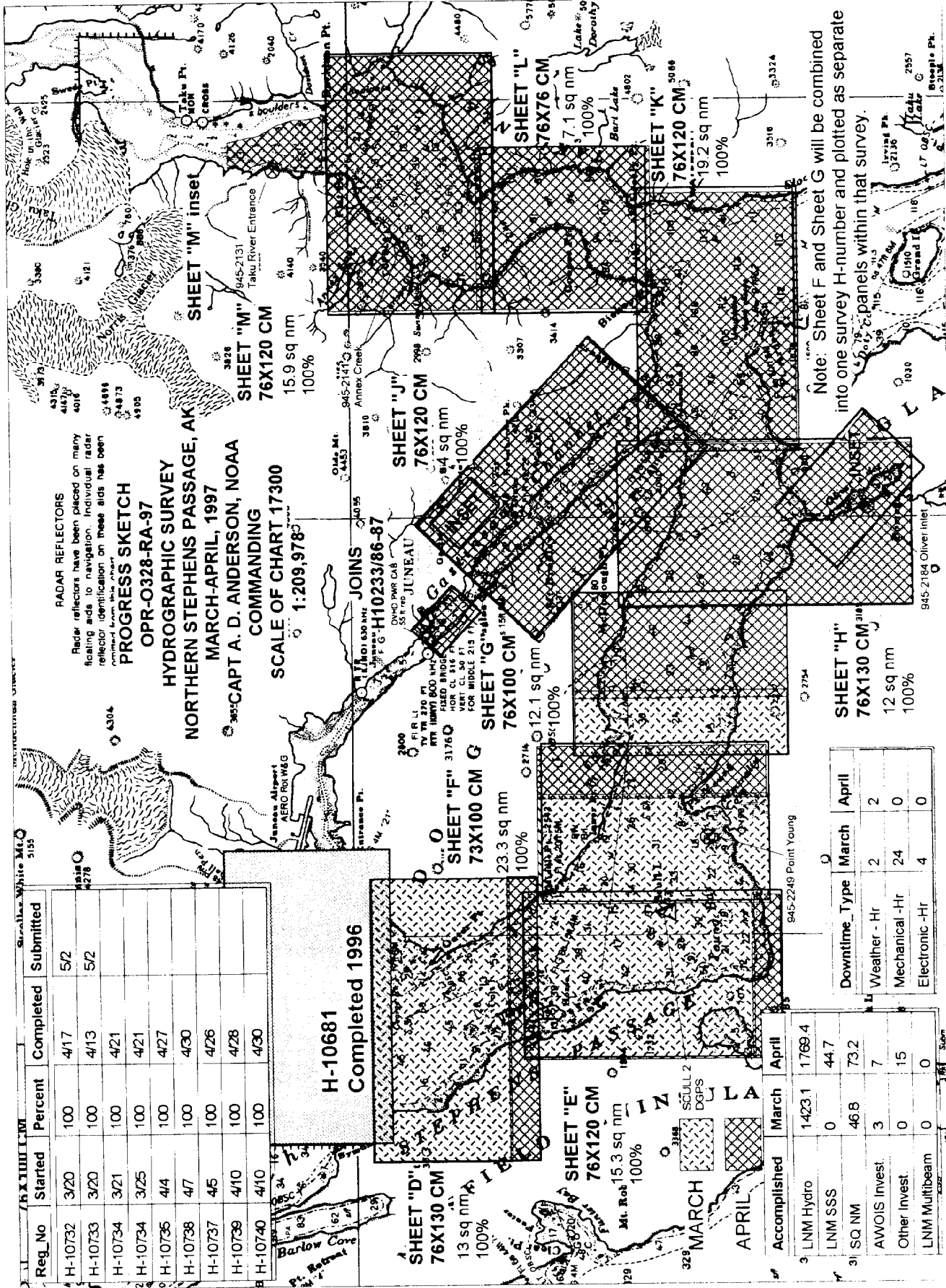
Evaluation by: Rick Shipley Automated plot by HP Design Jet 650C

Verification by M. Bigelow, D. Doles, R. Mayor, E. Domingo

Soundings in fathoms ~~feet~~ at ~~MHW~~ MLLW and tenths

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.
All depths listed in this report are referenced to mean lower low
water unless otherwise noted.

Awois and SURE ✓ TWD 4/98



RADAR REFLECTORS
 Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been printed in red on this chart.

PROGRESS SKETCH
 OPR-0328-RA-97

HYDROGRAPHIC SURVEY
 NORTHERN STEPHENS PASSAGE, AK
 MARCH-APRIL, 1997

COMMANDING
 CAPT A. D. ANDERSON, NOAA

SCALE OF CHART 17300
 1:209,978

Reg. No	Started	Percent	Completed	Submitted
H-10732	3/20	100	4/17	5/2
H-10733	3/20	100	4/13	5/2
H-10734	3/21	100	4/21	
H-10734	3/25	100	4/21	
H-10736	4/4	100	4/27	
H-10738	4/7	100	4/30	
H-10737	4/5	100	4/26	
H-10739	4/10	100	4/28	
H-10740	4/10	100	4/30	

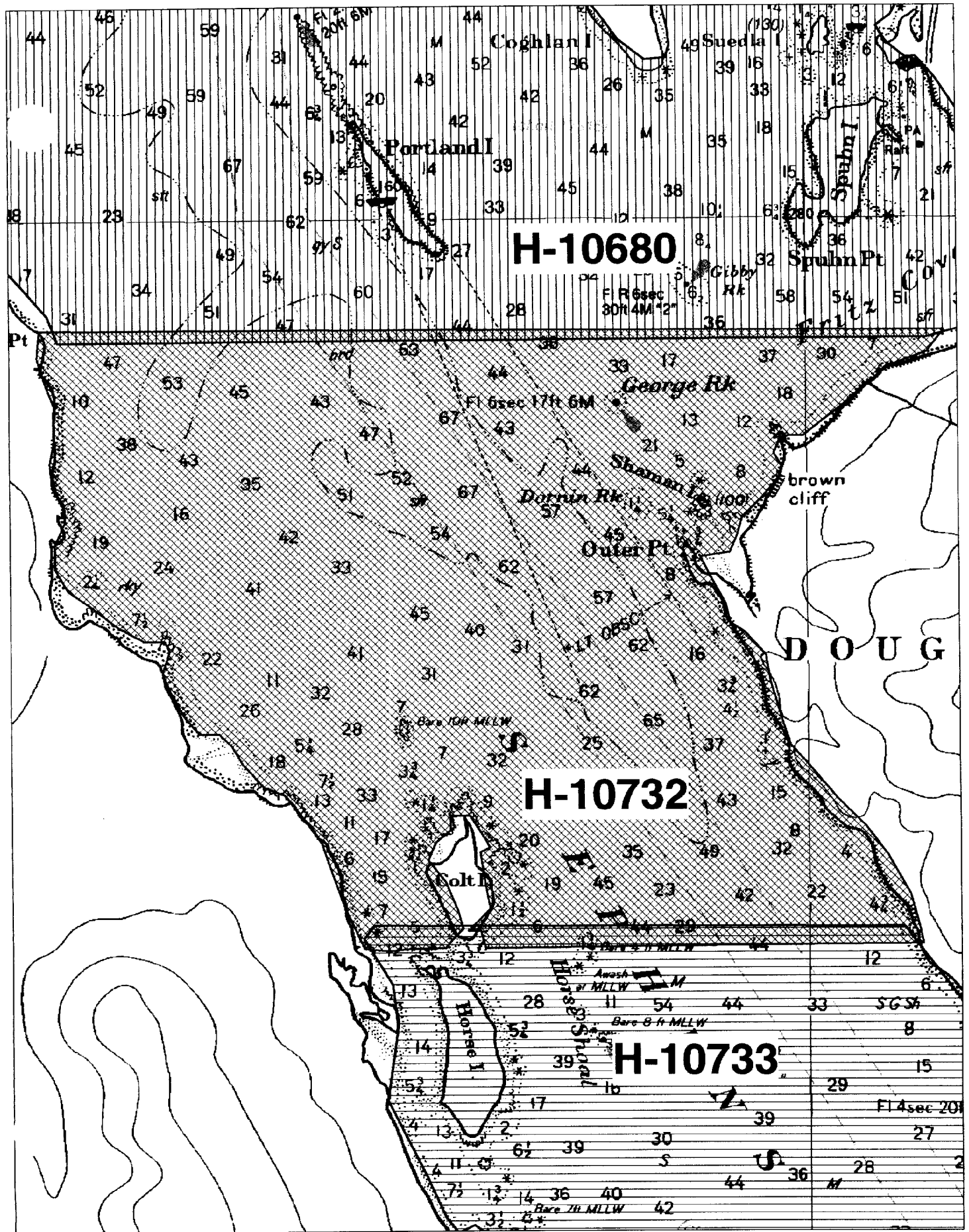
H-10681
 Completed 1996

Note: Sheet F and Sheet G will be combined into one survey H-number and plotted as separate 1/2 panels within that survey.

Downtime Type	March	April
Weather - Hr	2	2
Mechanical -Hr	24	0
Electronic -Hr	4	0

Accomplished	March	April
LNM Hydro	1423.1	1769.4
LNM SSS	0	44.7
31 SQ NM	46.8	73.2
AWOIS Invest	3	7
Other Invest	0	15
LNM Multibeam	0	0

161



H-10680

H-10732

H-10733

DOUG

Fl 4sec 20ft

27

28

2

M

2

2

2

2

Descriptive Report to Accompany Hydrographic Survey H-10732

Field Number RA-10-1-97

Scale 1:10,000

March - April 1997

NOAA Ship RAINIER

Chief of Party: Captain Alan D. Anderson, NOAA

A. PROJECT ✓

This hydrographic survey was completed as specified by Project Instructions OPR-0328-RA dated December 20, 1996, and change number 1 dated April 3, 1997. Survey H-10732 corresponds to sheet D as defined in the sheet layout. This survey will provide contemporary hydrographic survey data as part of a continuing program to improve chart coverage of the Inside Passage in southeast Alaska. Requests for hydrographic surveys and updated charts in this area have been received from the United States Coast Guard (USCG), Southeastern Alaska Pilot's Association (SEAPA), the Alaska Department of Transportation, and the Alaska Department of Environment and Conservation in support of cruise line, commercial fishing, mining, and logging industries.

B. AREA SURVEYED ✓ SEE EVAL REPORT, SECTION B

The survey area is in Northern Stephens Passage from Dornin Rock to Horse Shoals. The survey's northern limit is latitude 58° 19' 15" N. The survey's southern limit is 58° 15' 48" N, and is bound by Douglas Island to the east and the Mansfield Peninsula to the west. Data acquisition was conducted from March 20 to April 8, 1997 (DN 079-098).

C. SURVEY VESSELS ✓

Data were acquired by RAINIER and her survey launches as noted in the Survey Information Summary* included with this report.

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

All data were acquired and processed using the Hydrographic Data Acquisition and Processing System (HDAPS.) The final field sheet was generated using MapInfo (Version 4.1) and MapBasic software developed by N/CS32 and modified by Rainier personnel. A complete listing of software for HDAPS and MapBasic is included in Appendix VI.

E. SONAR EQUIPMENT ✓

Neither Side Scan Sonar nor multi-beam echo sounder equipment were used on this survey. CONCUR

F. SOUNDING EQUIPMENT ✓

The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echo sounder. Serial numbers are included on the headers of the daily Raw Master Printouts.* No new problems that affect survey data were encountered. All DSF-6000N soundings were acquired in meters using the High + Low, high frequency digitized setting.

G. CORRECTIONS TO ECHO SOUNDINGS ✓

Two sound velocity casts were used for this survey. Information on the casts is included in the Survey Information Summary* report.

The sound velocity casts were acquired with SBE SEACAT Profiler (S/N 219), calibrated December 15, 1996. Velocity correctors were computed using the PC programs SEACAT and VELOCITY, version 3.3 (1997), in accordance with Hydrographic Survey Guideline (HSG) No. 69. A printout of the Sound Velocity Corrector Table used in the HDAPS Post Survey program is included in the "Separates to be Included with Survey Data, IV. Sounding Equipment Calibrations and Corrections". *

A static transducer depth was determined using the Field Procedures Manual (FPM) Fig 2.2 for vessels 2121-2126 in the spring of 1997. Settlement and squat correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2., using FPM Fig. 2.3, and are included with project data for OPR-0328-RA. The data for vessels 2121, 2122, 2123 were collected in Shilshole Bay, Washington in the Spring of 1997; data for vessels 2124 and 2126 were measured in the same location in Spring of 1996. The data for 2125 was collected near Scull Island, Alaska in March 1997. All offset tables contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 1-6 correspond to the last digit of the vessel number. Offset table 7 is for RAINIER. The offset tables are included with project data for OPR-0328-RA. The launches are not equipped with heave, roll and pitch sensors.

The Coastal and Estuarine Oceanography Branch (N/OES334) through N/CS31 provided predicted tides for the project on diskette for the Juneau, Alaska reference station (945-2210). HDAPS listings of the data used in generating tide corrector tables are included in Appendix V of this report. Tidal correctors as provided in the project instructions for H-10732 are in the Survey Information Summary included with this report.

Juneau, Alaska (945-2210) and Ketchikan, Alaska (945-0460) are the primary control stations for datum determination at all subordinate stations. RAINIER personnel installed a Sutron 8200 tide gage at Point Young (945-2249) on March 19, 1997. Refer to the Field Tide Notes and supporting data in Appendix V for individual gage performance and level closure information. This information has been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. A request for approved tides was forwarded at the completion of the project to N/OES23.

APPROVED TIDE NOTE DATED SEPTEMBER 11, 1997 (attached to report)
H. CONTROL STATIONS SEE EVALUATION REPORT, SECTION H.

The horizontal datum for this project is NAD 83. Station SCULL2 on Scull Island was recovered and used as primary hydrographic positioning control for the survey. The control stations used for this survey are listed in Appendix III. See the OPR-0328-RA-97 Horizontal Control Report for more information.
THIS REPORT CONTROL STATION LIST IS APPENDED TO THIS REPORT.

I. HYDROGRAPHIC POSITION CONTROL SEE EVAL. REPORT, SECTION I.

All soundings were positioned using differential GPS. Primary control was the VHF differential reference station at SCULL 2. The US Coast Guard Beacon at GUSTAVUS was used as a backup. Launch-to-launch DGPS performance checks were performed in accordance with Section 3.4.4 of the FPM. Two observations of position were made from two different DGPS base stations, SCULL 2 and GUSTAVUS, while the launches were rafted together with their GPS antennae within 2-3 meters of each other. RAINIER also used SHIPDIM, version 2.2R (April 1996) with a Trimble Centurion P-code receiver and an Ashtech sensor (both differentially-corrected) to monitor the performance of the reference stations. SCULL 2 was compared to GUSTAVUS at least once a week while installed. Some outliers were noted, but none indicated systematic or continuous errors in either the GUSTAVUS beacon or the VHF station at SCULL 2. The SHIPDIM OUTLIER.SUM results are included in the project data for OPR-0328-RA.

SERIAL NUMBERS FOR VESSEL GPS EQUIPMENT ARE ANNOTATED ON THE RAW DATA PRINTOUTS

* FILED WITH THE SURVEY RECORDS

J. SHORELINE ✓ SEE EVAL. REPORT, SECTION J.

The shoreline manuscript from Coastal Mapping survey CM-8904 was supplied by N/CS341 in Standard Digital Data Exchange Format (SDDEF). The digital files from DM-10046 through DM-10051 were projected to the survey grid with OPR-O328-RA-97 geodetic parameters using program Shore version 2.0, provided by N/CS32, and plotted on the survey using HDAPS.

Limited shoreline verification was conducted in accordance with the Project Instructions. For this survey the general limit of safe navigation of a survey launch is 5-50 meters offshore of apparent low tide, generally 3-5 meters of depth at Mean Lower Low Water. Features shown on the SHORELINE NOTES layer in the MapInfo workspace inshore of hydrography are the hydrographer's representation of the shoreline while slowly transiting along the shore, and are intended to aid chart compilation.

Shoreline manuscript and field features were compared to an enlargement of charts 17315 and 17316, plotted at survey scale by RAINIER personnel. There was general agreement between the charted shoreline and what the hydrographer found on this survey.

Discrepancies between the photogrammetric shoreline and the hydrographer's fieldwork indicate, again, that the compilation of shoreline features seaward of Mean High Water would save many man-hours in hydrographic data collection. Rocks on the shoreline manuscript were found to be the high points of ledges or large reefs. FEATURES PORTRAYED ON THE DETACHED POSITION PLOT WERE ANALYZED DURING OFFICE PROCESSING AND SHOWN ON THE SMOOTH SHEET AS WARRANTED.

K. CROSSLINES ✓

Crosslines agreed within 1 meter with mainscheme hydrography, except in areas of steep bathymetry. There was a total of 19.3 nautical miles of crosslines, comprising 8.6% of mainscheme hydrography.

L. JUNCTIONS ✓ SEE EVAL. REPORT, SECTION L.

This survey junctions with H-10681, 1:10,000, 1996 on the north, and H-10733, 1:10,000, 1997 on the south. Soundings on these surveys were found to be in good agreement. Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after reduction to final vertical datum.

M. COMPARISON WITH PRIOR SURVEYS ✓ SEE EVAL. REPORT, SECTION M.

Prior surveys covering this survey area are as follows:

Prior Survey	Scale	Date
H-6269	1:10,000	1937
H-6273	1:20,000	1937
H-3986WD	1:20,000	1917
H-3987WD	1:20,000	1917

Prior survey H-6269 covers the southwest portion of the survey in the vicinity of Colt and Horse Islands. H-6273 covers the central portion of this survey. Two wire drag surveys cover the common area of H-10732, they are H-3986WD and H-3987WD. There was general agreement between this survey and prior surveys.

A charted 5-fm (9.1 m) clearance depth at latitude 58° 18' 34" N, longitude 134° 41' 22" W originated from H-3986WD. This was investigated with 10-meter development lines (Fixes 21220-21279, DN 090, VN 2122), and a dive investigation (Fix 69696+0, DN 097, VN 2126). The least depth was determined to be 3¹/₂ fm (Rk) (5.8 m) at latitude 58° 18' 34.483" N, longitude 134° 41' 20.857" W. This was reported as a danger to navigation. Concur Chart 3 Rk. This charted depth is noted as Item #7 on the Pre-Survey Review Markup.

A charted 13-fm (23.8 m) clearance depth at latitude 58° 16' 45" N, longitude 134° 42' 09" W originated from H-3987WD. This was investigated with 50, 25 and 12-meter splits (Fixes 20589-20622, DN 082, VN 2122), and with skewed lines along the feature (Fixes 60233-60238, DN 086, VN 2126). The least depth was determined to be 11²/₄ fm (20.8 m) at latitude 58° 16' 45.880" N, longitude 134° 42' 09.133" W (Fix 20613+1, DN 082, VN 2122). Concur Chart 11 Fm Sounding. Add rky from H-3987 WD (1917) Reference Item #6 Pre-survey Review Markup.

N. ITEM INVESTIGATIONS ✓

Two AWOIS items were located within H-10732 survey area. They item investigations are summarized in the following table.

Item	AWOIS Number	Status	Charting Recommendation
N1	52279	Resolved	Chart 2 fm submerged rock.
N2	52280	Resolved	Chart 1 ¼ fm submerged rock

ITEM INVESTIGATION N1 ✓

AWOIS # : 52279	DN: 082/086
CHART #: 17315 (1:40,000, 21st Edition, 8/3/91)	VESNO: 2122/2126
ITEM DESCRIPTION: Obstruction (submerged Rock)	
<p>SOURCE: T3681/1917- Rock (subm 8ft at MLLW), position scaled from chart in lat 56/16/55 N, long 134/40/30 W (NAD83). Kelp is shown at the feature. An unidentifiable feature (probably charted rock to the ENE) is shown approx. 100m ENE.</p> <p>H3986WD/1917 – A danger curve is also shown on the area and depth sheet of this survey in the position of the unidentifiable feature.</p> <p>H6273/1937 – Field report states that the subm rock 8ft at MLLW, from T3681, was not found but undoubtedly exists. A 3-1/6 fm depth was located in that area. The review survey indicates that the submerged rock close inshore from T3681, is part of the submerged rocky ledge running parallel with the shore.</p>	

GEOGRAPHIC POSITION

	LATITUDE	LONGITUDE	POSITION #
CHARTED:	58° 16' 55.00" N	134° 40' 30.00" W	
OBSERVED:	58° 16' 55.494 " N	134° 40' 28.832" W	69902+0 (Dive)
	58° 16' 54.227" N	134° 40' 24.763" W	60168+0
POSITIONED BY:	DGPS	DATUM:	MLLW (NAD 83)
METHOD OF INVESTIGATION: The area was developed with an echo sounder drift search, detached positions, and a dive investigation.			
FINDINGS: The 8ft submerged rock was investigated by dive investigation on DN 093 (Fix 69902+0). A least depth of 3.7-m (2 fm) was located at latitude 58° 16' 55.494 " N, longitude 134° 40' 28.832" W.			
A rock awash was positioned during shoreline verification at low water (Fix 60168+0 Lat. 58° 16' 54.227" N, Long. 134° 40' 24.763" W). This feature is approximately 60 meters southwest of the unknown feature, there was no other feature visible in the vicinity.			

CHARTING RECOMMENDATIONS

The hydrographer recommends removing the submerged rock symbol and the unknown feature to the ENE from the charted positions. The hydrographer recommends charting a submerged rock at latitude 58° 16' 55.494 " N, longitude 134° 40' 28.832" W with a depth of 3.7-m (2 fm), and a rock awash at latitude 58° 16' 54.227" N, longitude 134° 40' 24.763" W. *Concur with Clarification. Show rock awash if at chart scale. 2 RK cannot be shown due to chart scale.*

ITEM INVESTIGATION N2 ✓

AWOIS # : 52280	DN: 085/093
CHART #: 17315 (1:40,000, 21st Edition, 8/3/91)	VESNO: 2124/2126
ITEM DESCRIPTION: Obstruction	
SOURCE: CL936/79 – NOAA Ship RAINIER – special investigation; Dornin Rock (1.2 fm) based on predicted tides was located in the following position given in lat 58/18/20.4 N, long 134/41/43.49 W (NAD27).	

GEOGRAPHIC POSITION

	LATITUDE	LONGITUDE	POSITION #
CHARTED:	58° 18' 19.28" N	134° 41' 49.91" W	
OBSERVED:	58° 19' 19.077" N	134° 41' 49.917" W	40613+2/69905+0
POSITIONED BY:	DGPS	DATUM:	MLLW (NAD 83)
METHOD OF INVESTIGATION: Ten-meter echosounder development followed by a dive investigation.			
FINDINGS: A least depth of 1 ² / ₈ fm (2.2 m) was determined during the ten-meter development on DN 085. This depth was confirmed by dive investigation on DN 093 (2.1 m).			

CHARTING RECOMMENDATIONS

The hydrographer recommends removing the rock at the charted position and charting a submerged rock at latitude 58° 19' 19.077" N, longitude 134° 41' 49.917" W with a depth of 1 ¹/₄ fm. Chart 1, Rk.
8

O. COMPARISON WITH THE CHART ✓ SEE EVAL. REPORT, SECTION O.

This survey was compared in the field to features portrayed on the following charts:

Chart	Scale	Edition Number	Date	Datum
17315	1:40,000	21 st	August 3, 1991	NAD 83
17316	1:80,000	16 th	January 5, 1991	NAD 83

Comparison of soundings is described in Section M. Non-sounding features are discussed in Section J. Final sounding comparisons will be made at PHB after reduction to final vertical datum.

There were two areas of this survey that did not agree well with the chart. One is the blue tinted area between Colt Island and the reef north of the island near latitude 58° 16' 36" N, longitude 134° 44' 18" W. This area is generally shoaler than depicted on chart 17315. The other area is generally between George Rock and Douglas Island near latitude 58° 19' 02" N, longitude 134° 41' 23" W. This area is generally between one and five fathoms shoaler than is charted. *CONCUR*

Dangers to Navigation ✓ See Eval Rpt., Section O.

Nine dangers to navigation were reported to the 17th Coast Guard District on April 18, 1997. A copy of the message is included with this report. *CONCUR*

P. ADEQUACY OF SURVEY ✓ SEE EVAL. REPORT, SECTION P.

Survey H-10732 is complete and adequate to supersede prior soundings and features in their common areas. *CONCUR*

Q. AIDS TO NAVIGATION ✓

Colt Island Reef and George Rock Lights were positioned using static GPS methods from station SCULL2. See the attached Section Q insert for detailed comparison of this position to the charted and Light List positions. These positions were also sent to the Aids to Navigation office at USCG District 17 headquarters in Juneau, Alaska.

R. STATISTICS ✓

Statistics are listed in the Survey Information Summary^{*} included with this report.

S. MISCELLANEOUS ✓

Bottom samples were collected and sent to the Smithsonian in accordance with Project Instructions. No unusual tidal currents or magnetic variations were found during this survey.

T. RECOMMENDATIONS ✓

The hydrographer recommends removal of the wire drag green tint from the charts common to this survey. This survey has superseded prior survey soundings and features seaward of the NALL by investigating, with 100% echosounder coverage or visual investigation, all shoals and features that may pose a hazard to navigation. *CONCUR*

* Filed with the Survey records.

U. REFERRAL TO REPORTS ✓

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

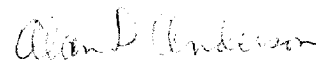
<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
OPR-O328-RA Horizontal Control Report	May 1997	N/CS34
OPR-O328-RA 1997 Coast Pilot Report	May 1997	N/CS26
Project related data for OPR-O328-RA	May 1997	N/CS34
Secchi Disk Observations for OPR-O328-RA	May 1997	N/CS31

Respectfully Submitted,



Mark S. Larsen
Lieutenant, NOAA

Approved and Forwarded,



Alan D. Anderson
Captain, NOAA
Commanding Officer

Replaces C&GS Form 667

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

REPORTING UNIT
(Field Party, Ship or Office)
RAINIER

STATE
ALASKA

LOCALITY
Vicinity of Outer Point
Northern Stephens Passage

DATE
5-Apr-97

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

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

The following objects
OPR PROJECT NO.
OPR-0328-RA

HAVE HAVE NOT been inspected from seaward to determine their value as landmarks.
JOB NUMBER
H-10732

DATUM

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

DESCRIPTION

L.L.#
23792

Colt Island Light
FIW 4s

L.L.#
23795

George Rk Light
FIW 6s

POSITION

LATITUDE		LONGITUDE	
D.M.	Meters	D.M.	Meters
58 17	2.73	134 44	24.94
	400		399
58 18	55.64	134 42	2.61
	1722		42

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

OFFICE

FIELD

CHARTS
AFFECTED

17300
17315
17316

17300
17315
17316

RESPONSIBLE PERSONNEL	
	ORIGINATOR
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER
POSITIONS DETERMINED AND/OR VERIFIED	Capt. A. D. Anderson
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW	<input type="checkbox"/> FIELD ACTIVITY REPRESENTATIVE <input type="checkbox"/> OFFICE ACTIVITY REPRESENTATIVE <input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
(Consult Photogrammetric Instructions No. 64)

<p>OFFICE</p> <p>1. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E (C) 6042 8 - 12 - 75</p> <p>FIELD</p> <p>1. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified P - Photogrammetric Vis - Visually</p> <p>5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant</p> <p>A. Field positions* require entry of method of location and date of field work. EXAMPLE: F - 2 - 6 - L 8 - 12 - 75</p> <p>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	<p>FIELD (Cont.)</p> <p>B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P - 8 - V 8 - 12 - 75 74L (C) 2982</p> <p>II. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8 - 12 - 75</p> <p>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8 - 12 - 75</p> <p>**PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>
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CONTROL STATIONS as of 24 Apr 1997 ✓

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
1	F	058:31:42.000	134:56:00.000	0	0	0.0	0.0		03/01/92	POUNDSTONE LIGHTLIST
2	F	058:31:42.860	134:56:03.680	0	0	0.0	0.0		03/01/92	POUNDSTONE HDAPS
3	F	058:30:16.042	134:52:09.349	2	250	0.0	0.0		03/20/96	GULL
4	F	058:17:04.466	134:44:25.552	0	0	0.0	0.0		04/05/97	COLT ISLAND LT LL#23792
5	F	058:18:55.499	134:42:02.285	0	0	0.0	0.0		04/05/97	GEORGE RK LT LL#23795
6	F	058:25:06.000	135:41:48.000	0	250	0.0	0.0		03/01/97	GUSTAVUS DGPR ID#892
7	F	058:12:16.867	134:38:44.450	6	250	0.0	0.0		03/01/97	SKULL DGPS
8	F	058:09:29.640	134:10:36.025	0	0	0.0	0.0		03/01/97	PT. ARDEN LT LL#23655
9	F	058:07:12.193	134:04:56.697	0	250	0.0	0.0		03/01/97	CIRCLE DGPS



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

April 18, 1997

**ADVANCE
INFORMATION**

Commander (mon)
Seventeenth Coast Guard District
Post Office Box 25517
Juneau, Alaska 99802-5517

Dear Sir:

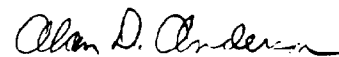
Fifteen dangers to navigation have been discovered by NOAA SHIP RAINIER while conducting hydrographic surveys H-10732 and H-10733 in Northern Stephens Passage. These dangers affect the following charts:

<u>Number</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
17300	27TH ED.	93/08	1:209,978	NAD 83
17316	16TH ED.	91/01	1:80,000	NAD 83
17315	21ST ED.	91/08	1:40,000	NAD 83

It is recommended that these dangers to navigation be included in the Local Notice to Mariners. Chartlets showing the position of these dangers relative to other hydrographic features at the largest charted scale are enclosed along with a listing of the positions and depths of each danger referenced to survey number.

Questions concerning this report should be directed to the Pacific Hydrographic Branch at (206) 526-6835.

Sincerely,


Alan D. Anderson
Captain, NOAA
Commanding Officer

Enclosure

cc: DMA/HTC
PMC
N/CS34



**ADVANCE
INFORMATION**

DANGERS TO NAVIGATION

OPR-O328-97 NORTHERN STEPHENS PASSAGE

MESSAGE #: RA-01-1997

REGISTRY NUMBER: H-10732

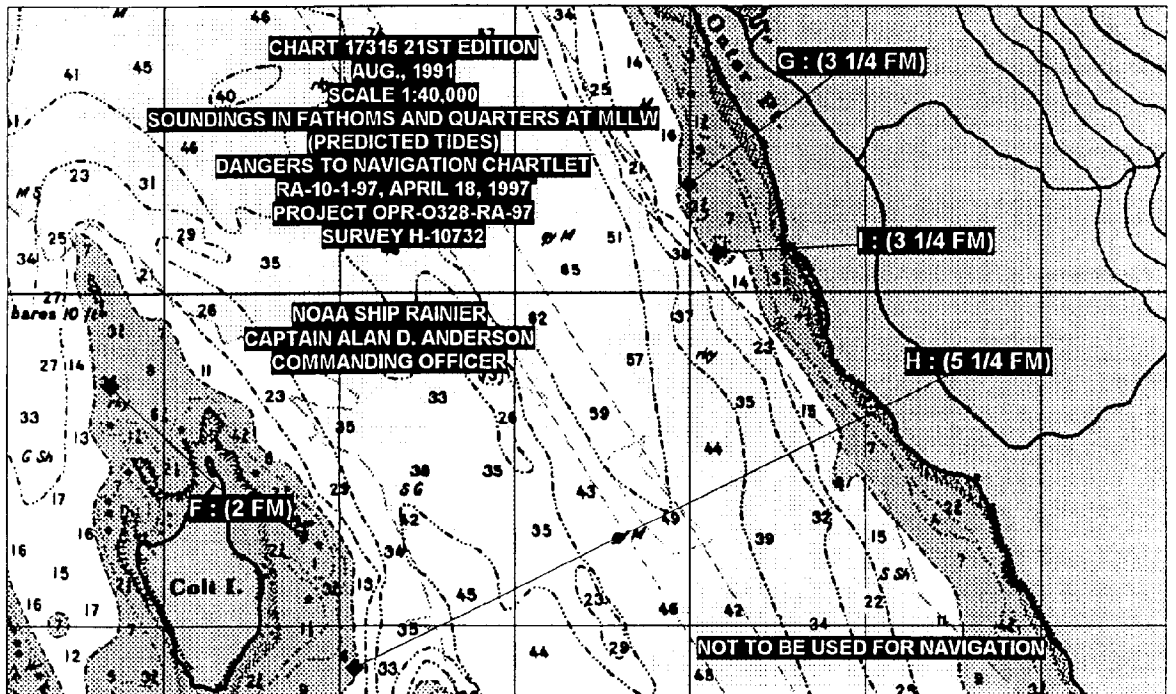
LOCALITY: DORNIN ROCK TO HORSE SHOALS

AFFECTED CHARTS:

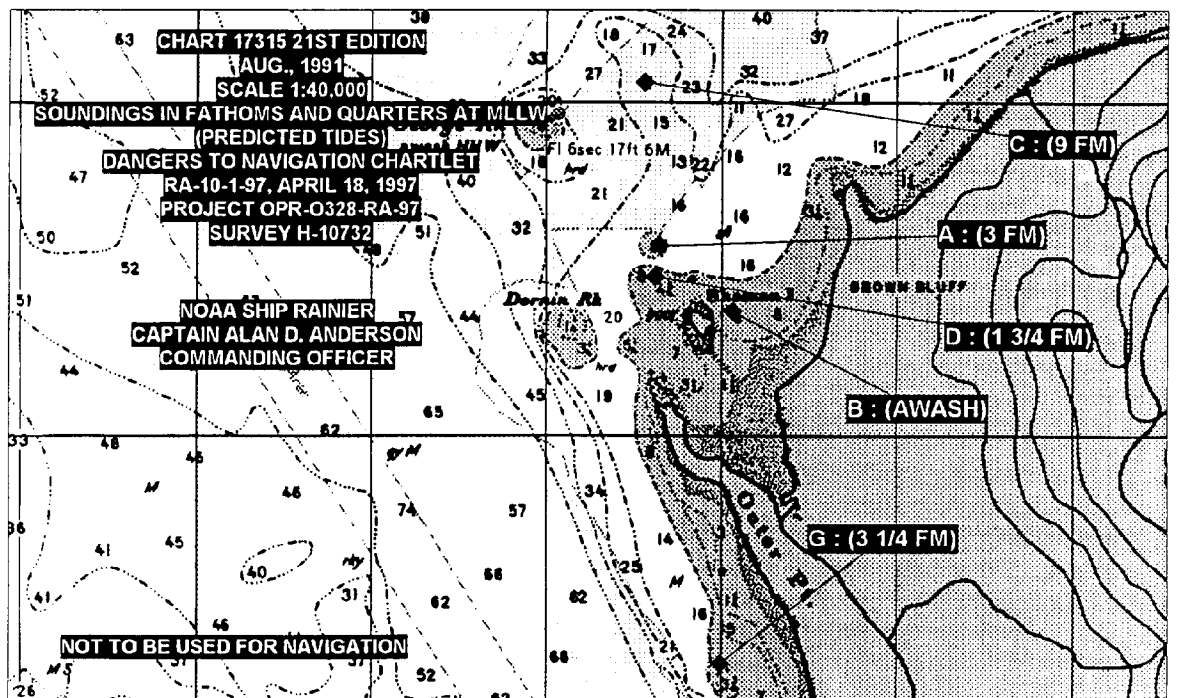
<u>CHART</u>	<u>EDITION NUMBER</u>	<u>DATE</u>	<u>SCALE</u>
17300	27 TH ED.	93/08	1:209,978
17315	21 ST ED.	91/08	1:40,000
17316	16 TH ED.	91/01	1:80,000

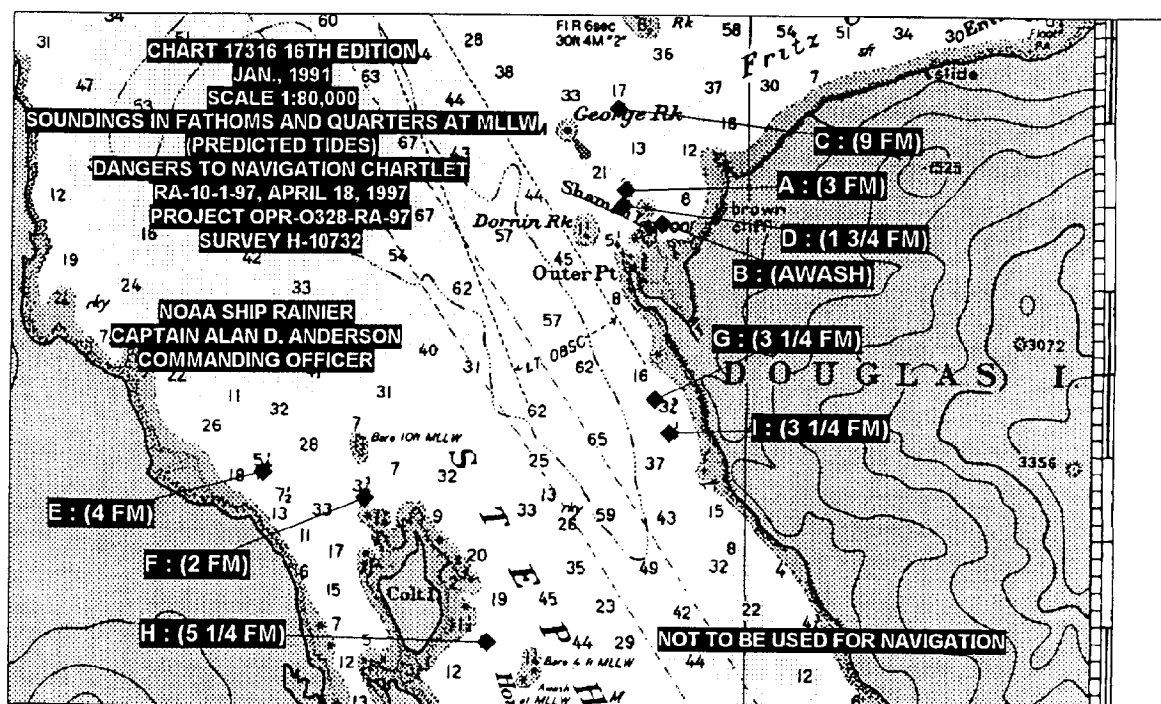
<u>ITEM</u>	<u>FIX #</u>	<u>DANGER</u>	<u>CHART DEPTH</u>	<u>DEPTH (M)</u>	<u>LATITUDE (N)</u>	<u>LONGITUDE (W)</u>
A	69696+0	ROCK	3 FM	5.8	058:18:34.483	134:41:20.857
B	40416+0	ROCK	AWASH	0	058:18:22.622	134:40:55.912
C	21314+3	SHOAL	9 FM	16.7	058:19:03.568	134:41:26.147
D	21228+1	ROCK	1 3/4 FM	3.5	058:18:28.963	134:41:22.621
E	21476+2	ROCK	4 FM	7.3	058:16:52.733	134:45:27.897
F	69900+0	ROCK	2 FM	3.9	058:16:43.491	134:44:18.427
G	20567+8	ROCK	3 1/4 FM	5.9	058:17:19.530	134:41:00.080
H	60364+9	ROCK	5 1/4 FM	9.6	058:15:52.888	134:42:54.807
I	60171+1	ROCK	3 1/4 FM	6	058:17:07.337	134:40:50.229

**ADVANCE
INFORMATION**



ADVANCE
INFORMATION





ADVANCE
INFORMATION

P 182105Z APR 97
FM NOAA S RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCCNAVWASH WASHINGTON
DC//MCNM//
INFO NOAA MOP SEATTLE WA
BT
UNCLAS

DANGER TO NAV #: RA-01-1997

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

NOAA SHIP RAINIER HAS LOCATED 9 DANGERS TO NAVIGATION IN
NORTHERN STEPHENS PASSAGE (PROJECT: OPR-O328-97)
WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY H-10732.

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

AFFECTED CHARTS:

CHART	EDITION	NUMBER	DATE	SCALE
17300	27TH ED.	93/08	1:209,978	
17315	21ST ED.	91/08	1:40,000	
17316	16TH ED.	91/01	1:80,000	

ALL CHART DATUM ARE NAD83.

ITEM	DANGER	DEPTH	LATITUDE (N)	LONGITUDE (W)	FIX NUMBER
A	ROCK	3 FM	58:18:34.483	134:41:20.857	69696+0
B	ROCK	AWASH	58:18:22.622	134:40:55.912	40416+0
C	SHOAL	9 FM	58:19:03.568	134:41:26.147	21314+3
D	ROCK	1 3/4 FM	58:18:28.963	134:41:22.621	21228+1
E	ROCK	4 FM	58:16:52.733	134:45:27.897	21476+2
F	ROCK	2 FM	58:16:43.491	134:44:18.427	69900+0
G	ROCK	3 1/4 FM	58:17:19.530	134:41:00.080	20567+8
H	ROCK	5 1/4 FM	58:15:52.888	134:42:54.807	60364+9
I	ROCK	3 1/4 FM	58:17:07.337	134:40:50.229	60171+1

DANGER TO NAV #: RA-02-1997



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF COAST SURVEY
Pacific Hydrographic Branch
Seattle, Washington 98115-0070

January 21, 1998

Commander
Seventeenth Coast Guard District
Post Office Box 25517
Juneau, Alaska 99802

Dear Sir,

During the office processing of hydrographic survey H-10732 in Alaska, Northern Stephens Passage, Piling Point to Colt Island and Vicinity, a new danger to navigation has been discovered. The danger affects the following charts:

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Datum</u>
17315	21st Edition	Aug. 3, 1991	NAD83

It is recommended that this change in depth and position be included in the Local Notice to Mariners.

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

Sincerely,

Kathryn A. Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

Enclosure

cc: NIMA
N/CS261



Hydrographic Survey Registry Number: H-10732

Survey Title: State: Alaska
 Locality: Northern Stephens Passage
 Sublocality: Piling Point to Colt Island and Vicinity

Project Number: OPR-PO328-RA

Survey Date: March 1997

Features is reduced to Mean Lower Low Water using actual tides.

Affected Nautical Chart:

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Datum</u>
17315	21st Edition	Aug. 3, 1991	NAD83

<u>Danger to Navigation</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
Shoal, 9.5 fm	58/18/52.689	134/40/48.186

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

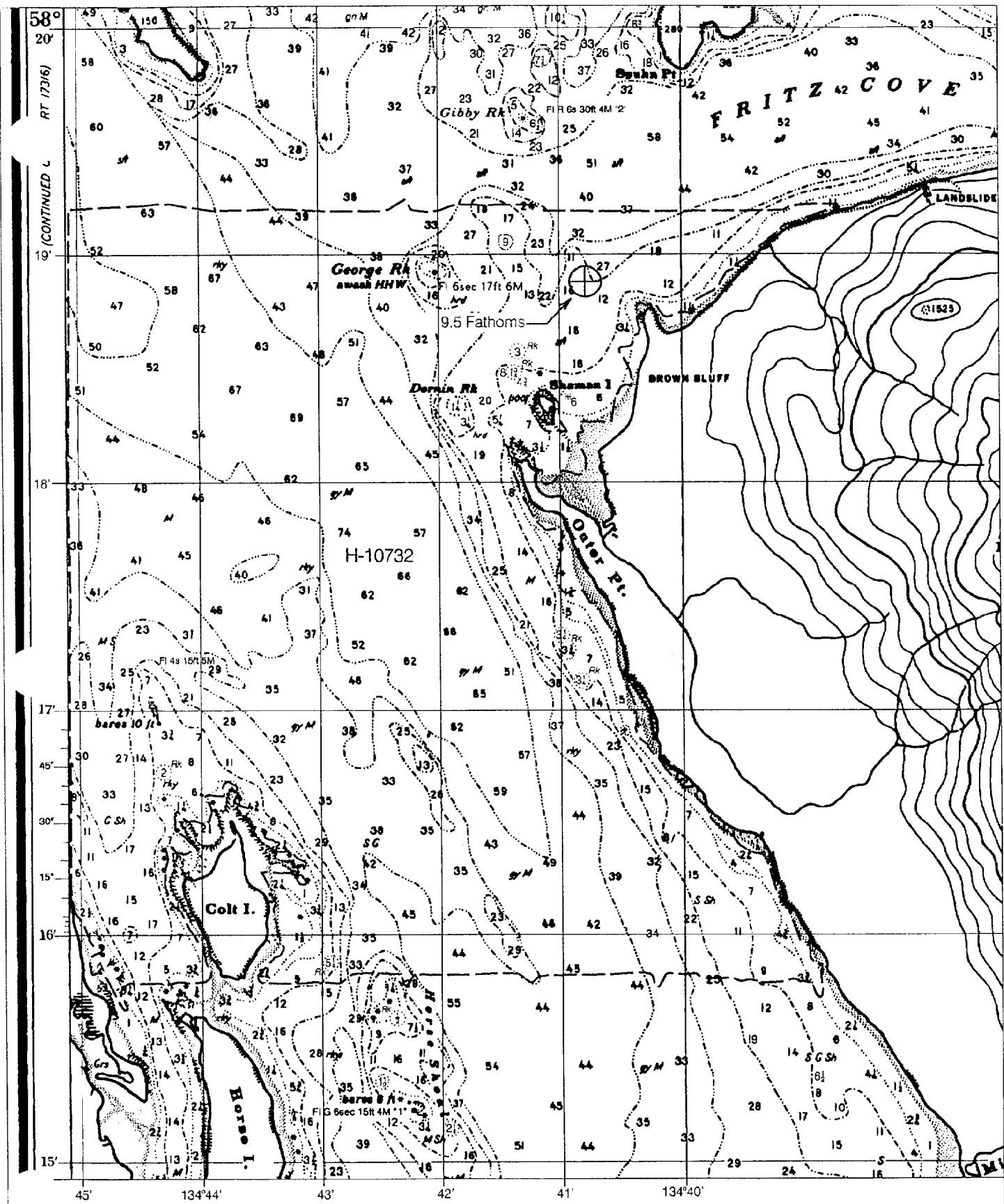


CHART 17315
21st Edition, August 3, 1991, scale 1:40,000

(NOT DRAWN TO SCALE)

Revision in Red from Survey H-10732 (1997)

H-10732
Contact: Pacific Hydrographic Branch
Seattle, Wa. 98115
(206) 526-6836

APPROVAL SHEET

for

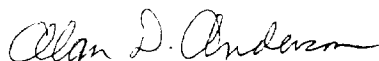
SURVEY H-10732

Standard field surveying and processing procedures were followed in producing this survey in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and the Field Procedures Manual, as updated for 1994. The data were reviewed daily during acquisition and processing.

The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes, and are approved. All records are forwarded for final review and processing to N/CS34, Pacific Hydrographic Branch.

Approved and Forwarded,

DATE: May 1, 1997



Alan D. Anderson

Captain, NOAA

Commanding Officer, NOAA Ship RAINIER



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: September 11, 1997

HYDROGRAPHIC BRANCH: Pacific

HYDROGRAPHIC PROJECT: OPR-0328-RA
HYDROGRAPHIC SHEET: H-10732

LOCALITY: Northern Stephens Passage, AK. (Sheet D)

TIME PERIOD: March 20 - April 8, 1997

TIDE STATION USED: 945-2210 Juneau, AK.
Lat. $58^{\circ} 17.9'N$ Lon. $134^{\circ} 24.7'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.674 meters

TIDE STATION USED: 945-2249 Young Bay, AK.
Lat. $58^{\circ} 11.0'N$ Lon. $134^{\circ} 35.2'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.690 meters


REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: SEA3D, SEA4 & SEA4A
Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units
(Meters), relative to MLLW and on Greenwich Mean Time.

Note 2:

Juneau, AK was used as control for datum determination for all subordinate tide stations for this survey. Relative sea level trends show that the areas of Juneau Alaska are undergoing continual uplift. The relative sea level trend observed at Juneau for the time period 1950 through 1993 is -0.0114 m/yr. with a standard error of 0.0005 m/yr. As a result of high rate of sea level change, the 1960 to 1978 Tidal Epoch value of Mean Lower Low Water (MLLW) used as chart datum and reference datum for NOS tidal predictions does not reflect present conditions. The data are under review to determine an updated value of MLLW. An interim value was computed for Juneau, based on the series of data from 1989 to 1991 and controlled by the 1960-1978 Epoch datums at Ketchikan which is more stable. The provided values adjust the chart datum to a more realistic level and in a direction that is more conservative for navigation purposes.



CHIEF, TIDAL ANALYSIS BRANCH

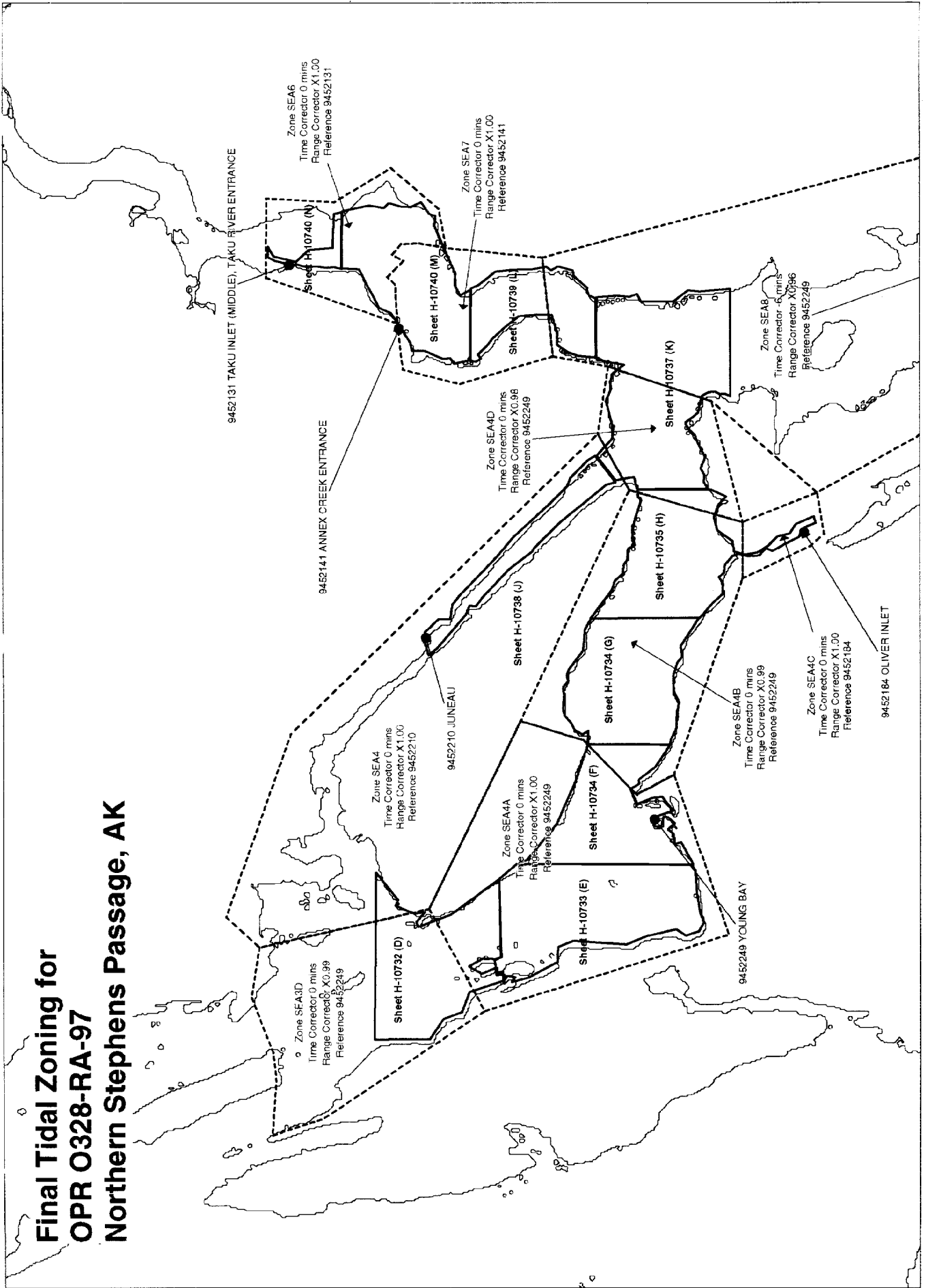


Final tide zone node point locations for OPR O328-RA-97,
 Sheet H-10732 (D).

Format: Longitude in decimal degrees (negative value denotes
 Longitude West),
 Latitude in decimal degrees
 Tide Station (in recommended order of use)
 Average Time Correction (in minutes)
 Range Correction

		Tide Station Order	AVG Time Correction	Range Correction
Zone SEA3D				
-134.673853	58.297194	945-2249	0	0.99
-134.772288	58.269309			
-134.876426	58.350396			
-134.892776	58.375726			
-134.839413	58.373916			
-134.81273	58.375272			
-134.759365	58.386121			
-134.710781	58.382241			
-134.673853	58.297194			
Zone SEA4				
-134.269583	58.196589	945-2210	0	1.00
-134.215162	58.212147			
-134.504596	58.366223			
-134.681627	58.398836			
-134.710781	58.382241			
-134.673853	58.297194			
-134.49203	58.251071			
-134.269583	58.196589			
Zone SEA4A				
-134.673853	58.297194	945-2249	0	1.00
-134.49203	58.251071			
-134.510592	58.219749			
-134.563302	58.193104			
-134.544003	58.174283			
-134.698759	58.146909			
-134.772288	58.269309			
-134.673853	58.297194			

Final Tidal Zoning for OPR 0328-RA-97 Northern Stephens Passage, AK



GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 17315, 17316, 17300		C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP ATLAS	G RAND McNALLY	H U.S. LIGHT LIST	K
	B ON PREVIOUS SURVEY NO.								
ALASKA (title)	X		X						1
COLT ISLAND	X		X						2
DORNIN ROCK	X		X						3
DOUGLAS ISLAND	X		X						4
GEORGE ROCK	X		X						5
HORSE ISLAND	X		X						6
MANSFIELD PENINSULA	X		X						7
OUTER POINT	X		X						8
PILING POINT	X		X						9
SHAMAN ISLAND	X		X						10
STEPHENS PASSAGE	X		X						11
									12
									13
									14
									15
									16
									17
									18
									19
									20
									21
									22
									23
									24
									25

APPROVED:

Clara C. Long
Chief Cartographer

JUN 8 1997

NOAA FORM 77-27(H) (9-83)		U.S. DEPARTMENT OF COMMERCE		REGISTRY NUMBER			
HYDROGRAPHIC SURVEY STATISTICS				H-10732			
RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.							
RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION			
SMOOTH SHEET		1		SMOOTH OVERLAYS: POS., ARC, EXCESS			
DESCRIPTIVE REPORT		1		FIELD SHEETS AND OTHER OVERLAYS			
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS		
ACCORDION FILES	2						
ENVELOPES							
VOLUMES							
CAHIERS							
BOXES							
SHORELINE DATA							
SHORELINE MAPS (List):		DM-10046, DM-10047					
PHOTOBATHYMETRIC MAPS (List):		NA					
NOTES TO THE HYDROGRAPHER (List):		NA					
SPECIAL REPORTS (List):		NA					
NAUTICAL CHARTS (List):		Chart 17315 21st Ed., August 3, 1991					
OFFICE PROCESSING ACTIVITIES <i>The following statistics will be submitted with the cartographer's report on the survey</i>							
PROCESSING ACTIVITY				AMOUNTS			
				VERIFICATION	EVALUATION	TOTALS	
POSITIONS ON SHEET							
POSITIONS REVISED							
SOUNDINGS REVISED							
CONTROL STATIONS REVISED							
				TIME-HOURS			
				VERIFICATION	EVALUATION	TOTALS	
PRE-PROCESSING EXAMINATION							
VERIFICATION OF CONTROL							
VERIFICATION OF POSITIONS							
VERIFICATION OF SOUNDINGS							
VERIFICATION OF JUNCTIONS							
APPLICATION OF PHOTOBATHYMETRY							
SHORELINE APPLICATION VERIFICATION							
COMPILATION OF SMOOTH SHEET				95		95	
COMPARISON WITH PRIOR SURVEYS AND CHARTS					35	35	
EVALUATION OF SIDE SCAN SONAR RECORDS							
EVALUATION OF WIRE DRAGS AND SWEEPS							
EVALUATION REPORT					35	35	
GEOGRAPHIC NAMES							
OTHER*					17	17	
*USE OTHER SIDE OF FORM FOR REMARKS				TOTALS	95	87	182
Pre-processing Examination by Pacific Hydrographic Branch				Beginning Date 5/5/97	Ending Date 9/18/97		
Verification of Field Data by M. Bigelow, R. Mayor, E. Domingo, R. Shipley				Time (Hours) 95	Ending Date 9/25/97		
Verification Check by B. Olmstead				Time (Hours) 4.0	Ending Date 1/8/98		
Evaluation and Analysis by R.A. Shipley				Time (Hours) 87	Ending Date 1/23/98		
Inspection by B. Olmstead				Time (Hours) 7	Ending Date 1/23/98		

EVALUATION REPORT

H-10732

A. PROJECT

The hydrographer's report contains a complete discussion of the Project information.

B. AREA SURVEYED

The limits of hydrography have been adequately described in section B of the hydrographer's report. Depth's range from -0.8 to 76 fathoms. The bottom consists primarily of mud, pebbles and gravel.

The hydrographer has determined the inshore limits of safe navigation by defining a Navigable Area Limit Line throughout the survey area. Charted features and soundings inshore of this limit line have not been specifically addressed during survey operations and should be retained as charted. A page-size plot of the charted area depicting the limits of supersession accompanies this report as Attachment 1.

C. SURVEY VESSELS

The hydrographer's report contains information relating to survey vessels.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data were processed using the same Hydrographic Data Acquisition/Processing System (HDAPS) software used by the hydrographer, the Hydrographic Processing System (HPS), and MicroStation 95.

Digital data for this survey exists in the standard HPS format, that is a database format using the .dbf extension. In addition, the plot is filed both in the MicroStation drawing format, i.e., .dgn (extension), and in the more universally recognized graphics transfer format, .dxf (extension). Copies of these files will be retained at PHB until data forwarded to headquarters has been accepted and approved. Database records forwarded are in the Internal Data Format (IDF) and are in compliance with specifications in existence at the time of survey processing.

The drawing files necessarily contain information, which is not part of the HPS data set such as geographic names text, line-type data, and minor symbolization. In addition, those soundings deleted from the drawing for clarity purposes remain unrevised in the HPS digital files to preserve the integrity of the original hydrographic data set. Cartographic codes used to describe the digital data are those authorized by Hydrographic Survey Guideline No. 35 and No. 75.

The data is plotted using a Modified Transverse Mercator projection and are depicted on a single sheet.

E. SONAR EQUIPMENT

Side Scan Sonar and Multibeam Echo Sounder equipment was not used on survey H-10732.

F. SOUNDING EQUIPMENT

The hydrographer's report contains a discussion on sounding equipment.

G. CORRECTIONS TO SOUNDINGS

The sounding data have been reduced to Mean Lower Low Water (MLLW). The reducers include corrections for an actual tide, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with NOS specifications.

Predicted tides were used for reduction of soundings during field processing. During office processing, tide reductions were derived from approved hourly heights zoned direct from the following tide gages: Juneau, Alaska, gage 945-2210 and Young Bay, Alaska, gage 945-2249.

H. CONTROL STATIONS

Section H and I of the hydrographer's report contain adequate discussions of horizontal control and hydrographic positioning.

The positions of horizontal control stations used during hydrographic operations are published values based on NAD 83. The geographic positions of all survey data are based on NAD 83. The smooth sheet is annotated with an NAD 27 adjustment tick based on values determined with the NGS program NADCON. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections:

Latitude: -1.96 seconds (-36.991 meters)
Longitude: 6.432 seconds (104.780 meters)

The year of establishment of control stations originate with the horizontal control records for this survey.

I. HYDROGRAPHIC POSITION CONTROL

Differential GPS (DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The quality of a few positions exceeds limits in terms of horizontal dilution of precision (HDOP). These positions are isolated and occur randomly throughout the survey area. A review of the data, however, suggests that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with the surrounding information and is considered acceptable. DGPS performance checks were conducted in the field and found adequate.

NAD 83 is used as the horizontal datum for plotting and position computations.

Additional information concerning calibrations and system checks can be found in the hydrographer's report and in the separates related to horizontal position control and corrections to position data.

J. SHORELINE

Shoreline maps DM-10046 and DM-10047, scale 1:20,000 were compiled on NAD 83 and applied to this survey. These manuscripts were supplied in digital form by the Coastal Mapping Program and were merged during MicroStation processing. A small section was obtained from U.S. Geological Survey Quadrangle, Juneau B-3 drawn in brown on the smooth sheet for orientation purposes only.

The inshore limit of safe navigation (Navigable Area Limit Line, NALL) was determined by

the field hydrographer based on depth, bottom topography, dangers to navigation, marine traffic, and area usage within the survey boundaries. Changes to alongshore and offshore features shown on the shoreline map were verified and revised as warranted during survey operations. These changes have been shown on the smooth sheet. There are no revisions to the mean high water line.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10732 junctions with the following surveys:

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10681	1996	1:10,000	Northern Limit
H-10733	1997	1:10,000	Southern Limit

The junction with H-10733 is complete. Soundings and depth curves are in satisfactory agreement within the common area. A "joins" note has been shown on the survey. Survey H-10681 was office processed during 1996 and not available for junction with H-10732. A junction was made using an office copy. Soundings are in good agreement within the common area. However, standard depth curves on the present survey should be used for adequate portrayal. An adjoins note has been shown on the survey.

M. COMPARISON WITH PRIOR SURVEYS

<u>Survey</u>	<u>Year</u>	<u>Scale</u>
H-2056	1890	1:40,000
H-2058	1890	1:20,000
H-6269	1937	1:10,000
H-6273	1937	1:20,000

The above surveys cover the entire area of the present survey. Comparisons with these surveys generally reveal differences of 0-3 fathoms. These differences are likely attributed to greater sounding coverage, improved positioning and sounding methods and relative accuracy of the data acquisition techniques.

Ledges have been transferred to the smooth sheet from prior survey H-6269 in order to support the hydrographer's revisions to portions of these features. The areas are listed below:

<u>Lat. (N)</u>	<u>Long. (W)</u>
58/15/40	134/41/09
58/16/30	134/16/30

Survey H-10732 is adequate to supersede the prior surveys within the common area.

T-3681 (1917) 1: 20,000

The above prior shoreline map covers the entire area common to survey H-10732 and compares

well. Ledges have been transferred to the smooth sheet from the prior T-sheet in order to supplement the hydrographer's revisions to portions of these features. The areas are listed below:

<u>Lat. (N)</u>	<u>Long. (W)</u>
58/17/40	134/47/50
58/17/30	134/46/50
58/18/07	134/41/20
58/18/20	134/41/09

Survey H-10732 is adequate to supersede the prior shoreline map within the common area.

H-3986WD (1917) 1:20,000
 H-3987WD (1917) 1:20,000

The above wire-drag surveys cover the entire area of the present survey. Questions concerning the supersession of the charted green tint denoting the area of sweep coverage arose during this survey. Discussions between the hydrographer and the Hydrographic Surveys Division resulted in an agreement to allow supersession if the common area was covered by acceptable modern hydrography and did not contain hangs or uninvestigated groundings. A review of the prior survey area common to the present survey does not disclose any unusual problems precluding supersession with the exception of the bottom characteristic (rky) transferred at Lat.58/16/47N, Long. 134/42/06W. Accordingly, the wire-drag survey coverage common to the present survey is considered superseded.

Survey H-10732 is adequate to supersede the prior wire-drag surveys within the common area.

N. ITEM INVESTIGATIONS

AWOIS items 52279 and 52280 fall within the survey area and have been adequately addressed in Section N of the hydrographer's report.

Item number 5 on the presurvey review markup was not addressed by the hydrographer and is discussed as follows:

The 8 fm sounding charted at Lat. 58/16/25N, Long. 134/40/10W originates from H-3987 WD (1917). The present survey found a 7.8 fathom sounding at Lat. 58/16/26, Long. 134/40/07W. Chart a 7 fathom 5 foot sounding.

O. COMPARISON WITH CHART

Survey H-10732 was compared with the following charts:

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
17315	21st	Aug. 3, 1991	1:40,000	NAD83
17316	17th	June 14, 1997	1:80,000	NAD83

a. Hydrography

Charted hydrography originates with the previously discussed prior surveys and miscellaneous source data. The prior surveys have been adequately addressed in section M and require no further discussion. Charted miscellaneous source data has been satisfactorily addressed during survey operations.

The charted green tint represents wire-drag areas from surveys conducted in 1917. The evaluator recommends removing the charted green tint based on more modern data acquisition techniques.

Survey H-10732 is adequate to supersede charted hydrography within the common area of coverage.

b. Dangers to Navigation

Nine (9) dangers to navigation were discovered during survey operations and reported to the Seventeenth Coast Guard District, DMA/HTC, PMC and N/CS34 on April 18 1997. One additional danger to navigation was found during office processing. A copy of both reports is attached.

P. ADEQUACY OF SURVEY

Hydrography contained on survey H-10732 is adequate to:

- a. Delineate the bottom configuration, determine least depths, and draw the required 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.

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, April 1994 Edition with the exception of the following item:

Presurvey review item number 5, an 8 fathom sounding, was not specifically addressed by the hydrographer but was adequately surveyed during hydrographic operations.

Q. AIDS TO NAVIGATION

Two fixed aids to navigation exist within the survey area: Colt Island Reef Light and George Rock Light. They were located and adequately mark the features intended. Reference section Q, Descriptive Report insert, and NOAA Form 76-40 (attached) for specific information.

There were no features of landmark value located within the area of this survey.

R. STATISTICS

Statistics are itemized in the hydrographer's report.

S. MISCELLANEOUS

Miscellaneous information is discussed in the hydrographer's report. No additional miscellaneous items were noted during office processing.

T. RECOMMENDATIONS

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

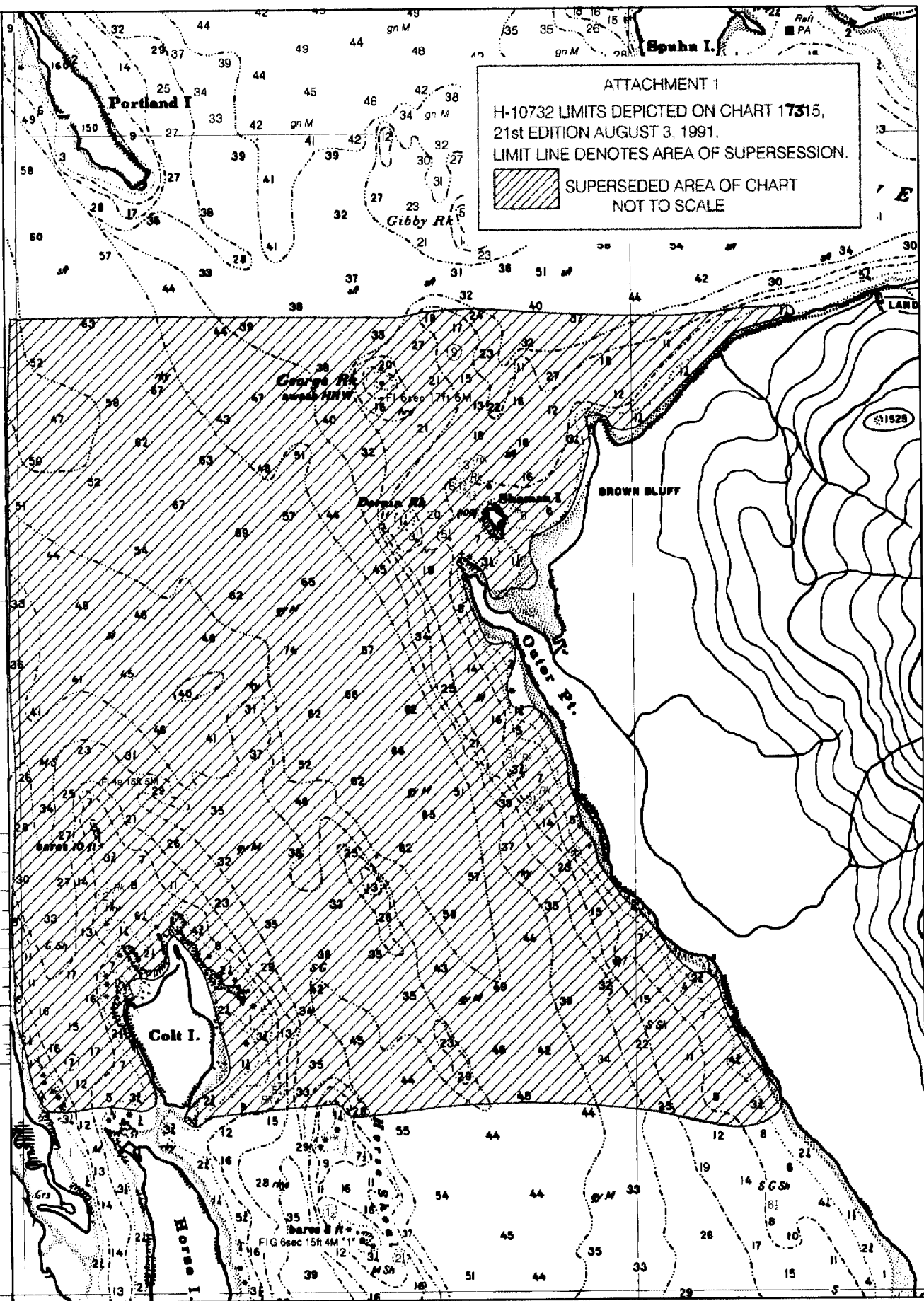
U. REFERRAL TO REPORTS


Referral to reports is discussed in the hydrographer's report.

A handwritten signature in black ink, appearing to read "Richard A. Shipley". The signature is written in a cursive, flowing style with some loops and flourishes.

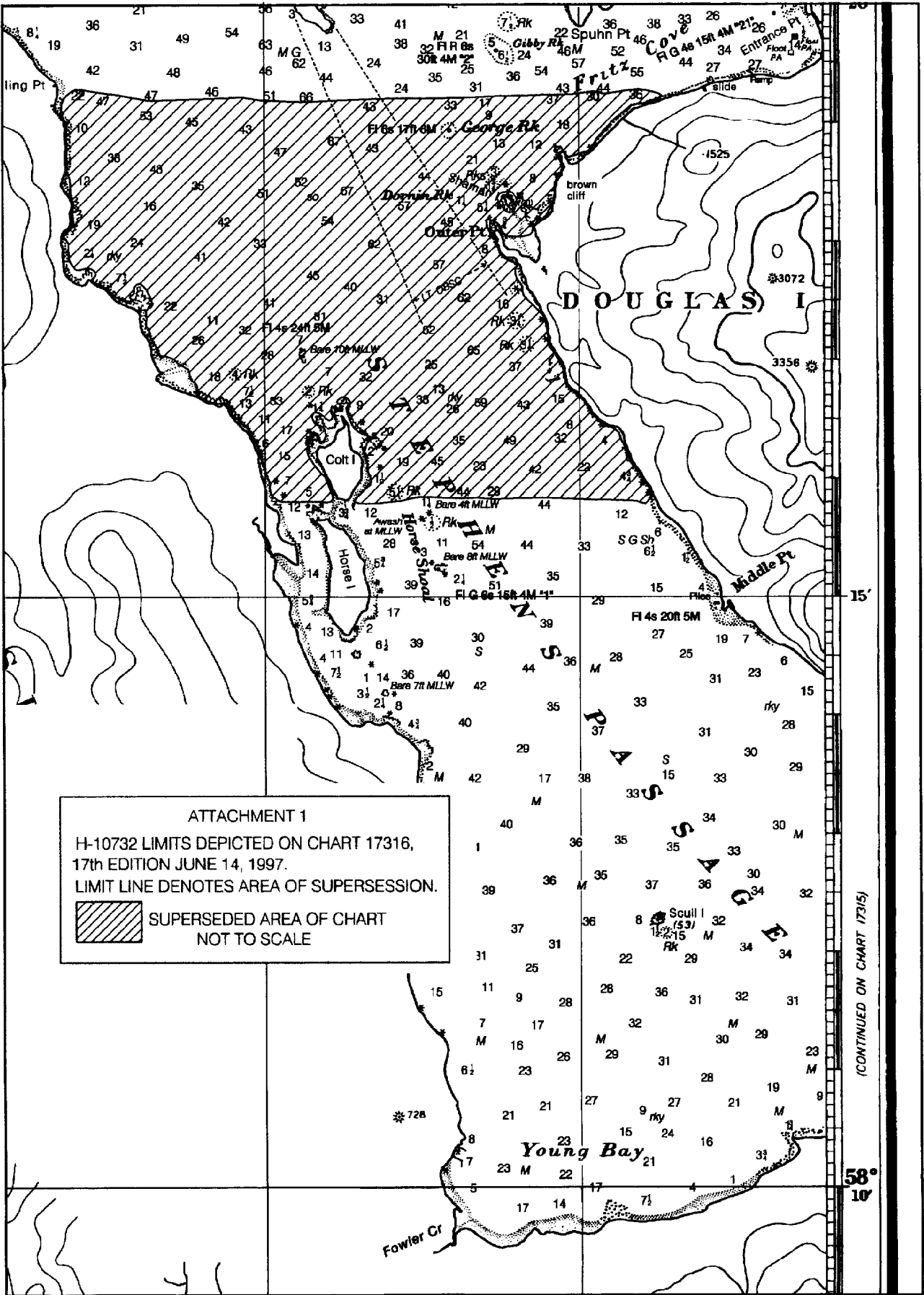
Richard A. Shipley
Cartographer


58° 20'
(CONTINUED ON CHART 17316)



ATTACHMENT 1
H-10732 LIMITS DEPICTED ON CHART 17315,
21st EDITION AUGUST 3, 1991.
LIMIT LINE DENOTES AREA OF SUPERSESION.
 SUPERSEDED AREA OF CHART
NOT TO SCALE

15'



ATTACHMENT 1
 H-10732 LIMITS DEPICTED ON CHART 17316,
 17th EDITION JUNE 14, 1997.
 LIMIT LINE DENOTES AREA OF SUPERSESSON.
 SUPERSEDED AREA OF CHART
 NOT TO SCALE

(CONTINUED ON CHART 17315)

APPROVAL SHEET
H-10732

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 survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Bruce A. Olmstead Date: 1/23/98
Bruce A. Olmstead
Senior Cartographer, Cartographic Section
Pacific Hydrographic Branch

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.

Kathy Timmons Date: 2/2/98
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

Final Approval

Approved:

Andrew A. Armstrong III Date: May 13, 1998
Andrew A. Armstrong III
Captain, NOAA
Chief, Hydrographic Surveys Division

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10732

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
17315	12/12/97	<i>Richard A. Hughes</i>	Full Part Before After Marine Center Approval Signed Via Drawing No. Full application of soundings and features from smooth sheet
17316	2/20/98	<i>Richard A. Hughes</i>	Full Part Before After Marine Center Approval Signed Via Full application of Drawing No. soundings and features from smooth sheet and three Chart 17315.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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