

H110738

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-10-7-97
Registry No. H-10738

LOCALITY

State Alaska
General Locality Northern Stephens Passage
Sublocality Tantalion Point to
Juneau Island

1997

CHIEF OF PARTY
CAPT Alan D. Anderson, NOAA

LIBRARY & ARCHIVES

DATE FEB 17 1998

HYDROGRAPHIC TITLE SHEET

H-10738

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-10-7-97

State Alaska

General locality Northern Stephens Passage

Locality Tantallon Point to Juneau Island

Scale 1:10,000 Date of survey April 7 to May 15, 1997

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

Vessel NOAA Ship RAINIER Launches

Chief of party CAPT Alan D. Anderson, NOAA

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

Soundings taken by echo sounder, hand lead, pole DSF-6000N, MOD III Diver Depth Gauge

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

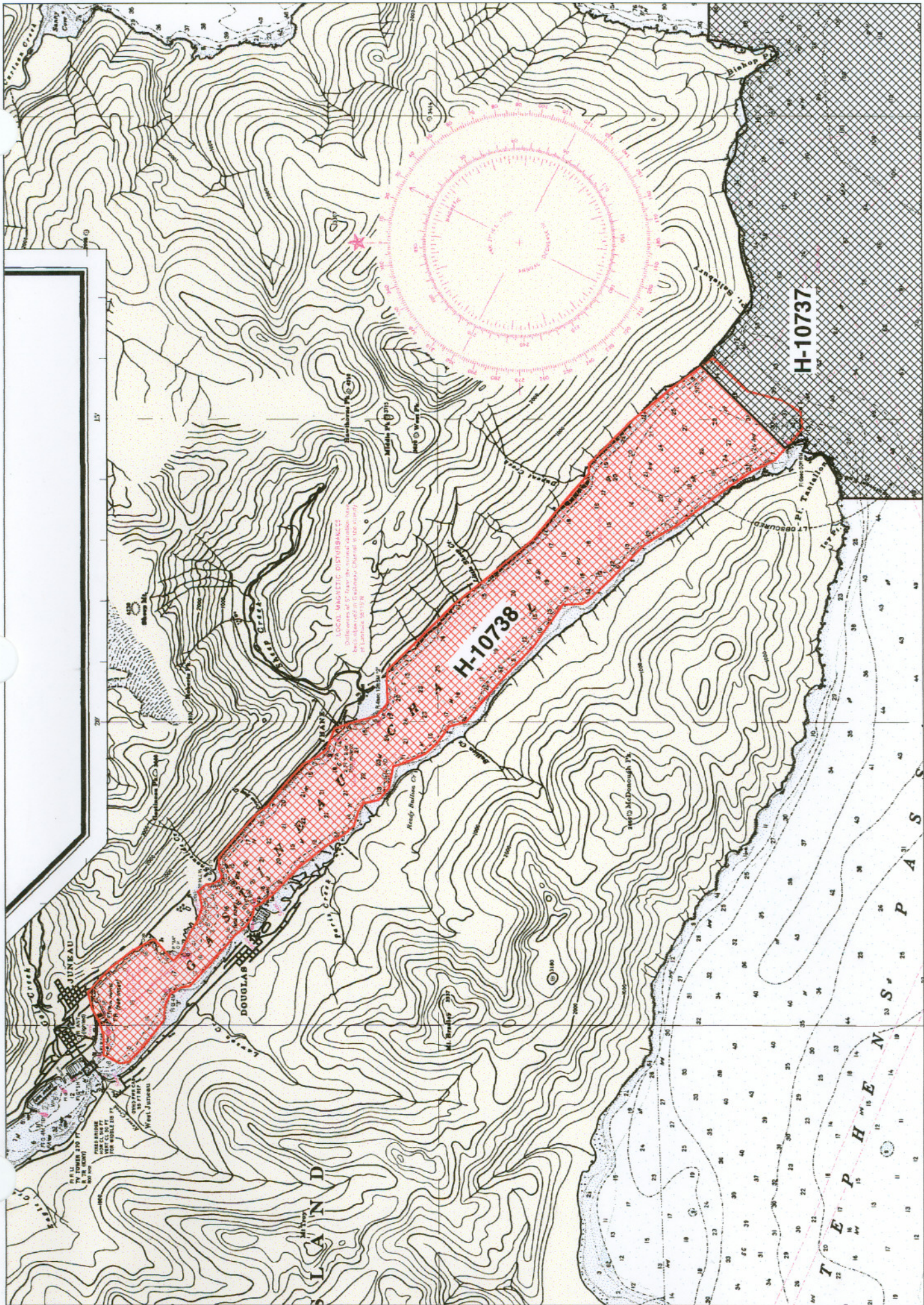
Evaluation by: R. Davies Automated plot by HP Design Jet 650C

Verification by R. Davies

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

REMARKS: Time in UTC, revision 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 on non-sequential.
All depths listed in this report are referenced to mean lower low water unless otherwise noted.

Ando and SURG - RWD 2/98



15

27

LOCAL MAGNETIC DISTURBANCES
Differences of 27 have the normal direction here
Differences of 27 have the normal direction here
Differences of 27 have the normal direction here

H-10738

H-10737

ST. LANDE ISLAND

T E P H E N S

Reg_No	Started	Percent	Completed	Submitted
H-10732	3/20	100	4/17	5/2
H-10733	3/20	100	4/13	5/9
H-10734	3/21	100	4/21	
H-10734	3/25	100	4/21	
H-10735	4/4	100	4/27	
H-10738	4/7	100	4/30	5/21
H-10737	4/5	100	4/26	
H-10739	4/10	100	4/28	
H-10740	4/10	100	4/30	

RADAR REFLECTORS
 Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.
PROGRESS SKETCH
OPR-O328-RA-97
HYDROGRAPHIC SURVEY
NORTHERN STEPHENS PASSAGE, AK
MARCH-APRIL, 1997
CAPT A. D. ANDERSON, NOAA
COMMANDING
SCALE OF CHART 17300
1:209,978

H-10681
Completed 1996

SHEET "M" inset
SHEET "M"
76X120 CM
 15.9 sq nm
 100%

SHEET "D"
76X130 CM
 13 sq nm
 100%

SHEET "F"
73X100 CM
 23.3 sq nm
 100%

SHEET "G"
76X100 CM
 12.1 sq nm
 100%

SHEET "J"
76X120 CM
 14 sq nm
 100%

SHEET "E"
76X120 CM
 15.3 sq nm
 100%

SHEET "L"
76X76 CM
 7.1 sq nm
 100%

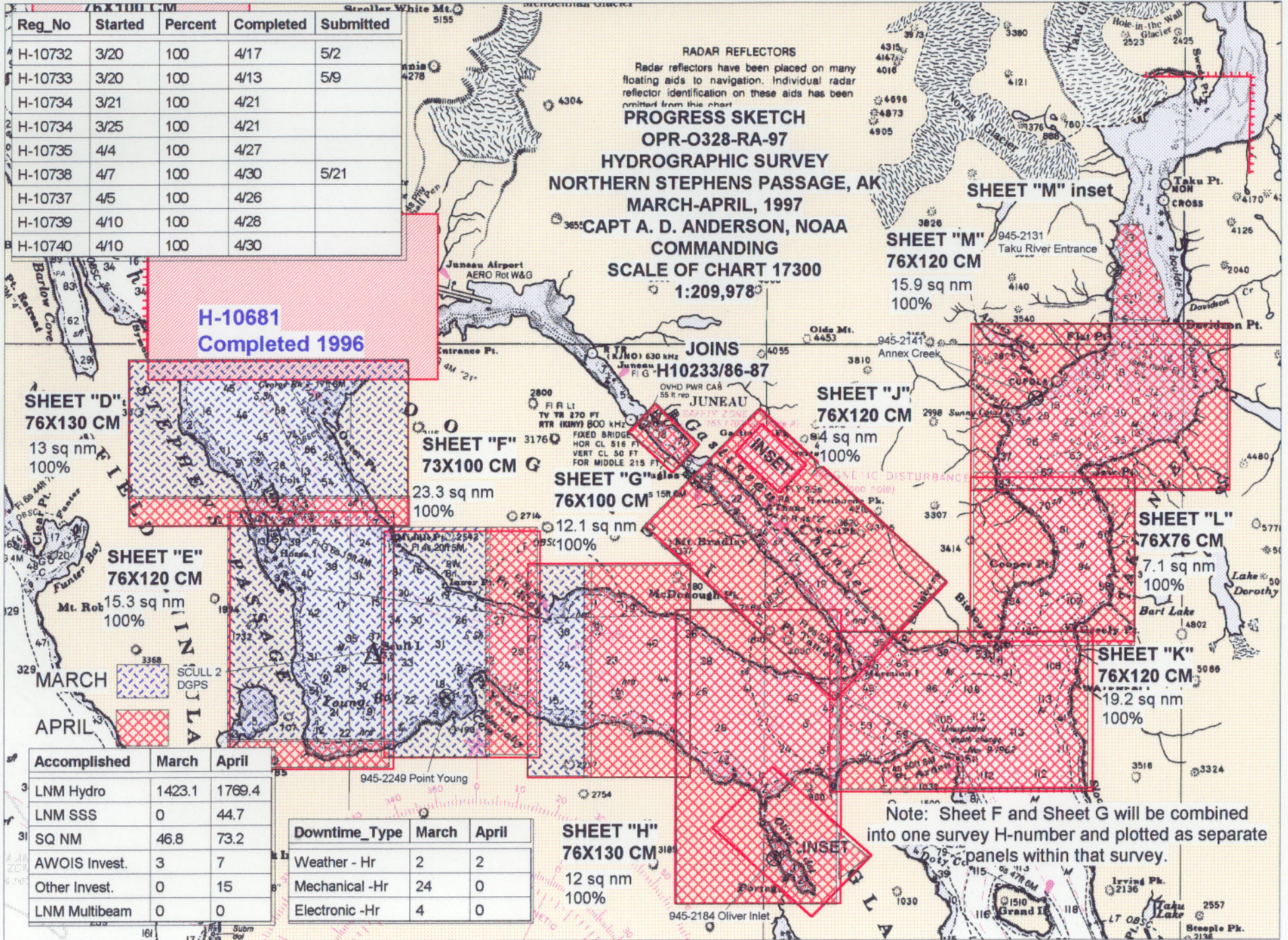
SHEET "K"
76X120 CM
 19.2 sq nm
 100%

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

Downtime_Type	March	April
Weather - Hr	2	2
Mechanical -Hr	24	0
Electronic -Hr	4	0

SHEET "H"
76X130 CM
 12 sq nm
 100%

Note: Sheet F and Sheet G will be combined into one survey H-number and plotted as separate 100m panels within that survey.



Descriptive Report to Accompany Hydrographic Survey H-10738

Field Number RA-10-7-97
Scale 1:10,000 (with 1:5,000 inset)
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-O328-RA dated December 20, 1996, and change number 1 dated April 3, 1997. Survey H-10738 corresponds to sheet J 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 Encl Rpt., section B

The survey area is in Gastineau Channel from Marmion Island at the Southeast extent to light number "4" at the northwestern extent. The survey's southeastern limit is bound by a line from latitude $58^{\circ} 11' 54''$ N, longitude $134^{\circ} 15' 22''$ W to latitude $58^{\circ} 12' 36''$ N, longitude $134^{\circ} 13' 48''$ W. The survey's northwestern limit is bound by a line from latitude $58^{\circ} 17' 50''$ N, longitude $134^{\circ} 25' 27''$ W to latitude $58^{\circ} 17' 44''$ N, longitude $134^{\circ} 25' 36''$ W, and is bound by Douglas Island to the Southwest and the mainland to the northeast. Data acquisition was conducted from April 7 to May 15, 1997 (DN 097-135).

C. SURVEY VESSELS ✓

Data were acquired by RAINIER 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. All data were acquired and processed using 1:10,000 accuracy standards, and does not exceed size limitations for final field sheets. The final detached position (DP) and sounding plots are plotted at 1:15,000 to accommodate the limitations in plotting skewed sheets in MapInfo. A complete listing of software for HDAPS and MapBasic is included in Appendix VI.*
The area of Juneau Harbor has been plotted as an inset to accommodate smooth sheet specifications.

E. SONAR EQUIPMENT ✓

Side scan sonar (SSS) operations were conducted using EG&G model 260 slant-range corrected SSS recorders and EG&G 272-T-dual channel towfish. The towfish were operated on the 100 kHz frequency. The serial numbers of the towfish and recorders used are summarized below:

VESNO	RECORDER S/N	TOWFISH S/N	CABLE LENGTH
2123	0012106	016989	70 meters
2125	0011443	015598	35 meters

The towfish were deployed manually on the starboard quarter of the launches, attached to the aft fall shackle by line and lead around the stern railings. The length of towcables deployed was determined by noting the measured markings on the towfish cable as these markings met the stern railing. The SSS towfish was adjusted to maintain a height off the bottom of 8 to 20 percent of the range scale. The 50 - 100- and 150-meter range scales were used. SSS operations were conducted at or less than 3 knots.

One hundred percent SSS collection was conducted in Juneau harbor and along the shores of Gastineau Channel. In addition, 200% SSS collection was conducted over the two AWOIS items assigned to H-10738, and along the pier faces in Juneau Harbor. Degraded sonograms were rejected and rerun. The recorder gain setting was adjusted for the best return for changing bottom conditions. Rub tests were conducted prior to operating the SSS. *Concur*

Side scan sonograms were manually scanned for significant contacts in accordance with section 7.3.2 of the project instructions, significant contacts were identified and entered into a HDAPS contact tables. Echosounder developments were conducted over the most significant contacts. In most cases they were considerably smaller than the computed heights based on SSS shadow lengths. This is most likely due to the steep slope nearshore, which tend to exaggerate shadow lengths when looking "downslope".

Multi-beam echo sounder equipment was not 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 ✓

One sound velocity cast was used for this survey. Additional casts were taken during the survey, but these showed no difference when compared to the cast used for this survey. Information on the cast 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. 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-10738 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 is attached.*

H. CONTROL STATIONS ✓ *See Eval Rpt., Section H*

The horizontal datum for this project is NAD 83. Stations SCULL2 and CIRCLE were 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-O328-RA-97 Horizontal Control Report for more information.*
this report.

I. HYDROGRAPHIC POSITION CONTROL ✓ *See Eval Rpt., Section I*

All soundings were positioned using differential GPS. Primary control was the VHF differential reference station at CIRCLE. The VHF differential reference station at SCULL2, and the US Coast Guard Beacon at GUSTAVUS were 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, (CIRCLE or 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 and CIRCLE were 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 or at CIRCLE. The SHIPDIM OUTLIER.SUM results are included in the project data for OPR-O328-RA.

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 where possible in areas with steep shoreline and few cultural features, in accordance with the Project Instructions. For this survey, limited shoreline verification was conducted along the northeast shore south of Sheep Creek light, and in the vicinity of Marmion Island at the south end of Gastineau Channel. In these areas, the general limit of safe navigation of a survey launch is 5-20 meters offshore of apparent low tide in generally 3-5 meters of 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. *This data has been analyzed during office processing and shown on the smooth sheet as warranted.*

In areas where there were cultural features and/or shallow sloping beaches, shoreline verification was conducted at apparent low water. Charted and DM (Digital Manuscript) features were visually verified and are shown on the SHORELINE NOTES layer of the MapInfo workspace. DM features that adequately depicted the shoreline were labeled as OK on the shoreline notes.

Charted or new features were visually verified during low water and were positioned with detached positions (DP's) at higher stages of tide when the survey launch could get near the feature.

Shoreline manuscript and field features were compared to an enlargement of chart 1731⁵, plotted at survey scale by RAINIER personnel. With the following exception, there was general agreement between the charted shoreline and what the hydrographer found on this survey. The charted mean high water (MHW) line does not match well with the DM near the southwest limit of the survey, along the shore of Douglas Island. The charted shoreline in this area appears to be up to 50 meters west of the DM. In this area, the hydrographer recommends charting the area as depicted by the DM (Digital Manuscript). *CONCUR*

Discrepancies between the photogrammetric shoreline and the hydrographer's fieldwork indicate that the compilation of shoreline features seaward of Mean High Water would save many hours of work in hydrographic data collection. Rocks on the shoreline manuscript were found to be the high points of ledges or large reefs. Many charted pilings were found that were not on the DM. The survey area contained numerous cultural features, including the addition of several new piers in Juneau harbor. Most of the cultural features were photographed to aid in chart compilation and are included in this report. Additional photographs not included in this report can be found in Miscellaneous Correspondence to aid shoreline and chart compilation.

Several charted sewer outfalls were within the survey area. These were investigated using 200% SSS and visually during shoreline verification. With the exception of one (Fix 40855, VN 2124, DN ,Lat. 58:16:25.973 N, 134:22:48.309 W) none of them were seen on the sonargrams or during shoreline verification.

Retain all charted sewer outfalls except for Fix 40855, update the position for this sewer.
A new fish farm was positioned on DN 99, VN 2124 and 2125 with the following DP's:

FIX	POSITION	DESCRIPTION
40032 ✓	58:15:49.173 N 134:20:14.599 W	SOUTHERN(OFFSHORE) EXTENT OF FISH FARM
40033 ✓	58:15:49.630 N 134:20:13.744 W	SOUTHERN (INSHORE) EXTENT OF FISH FARM
40034 ✓	58:15:52.026 N 134:20:21.541 W	NORTHERN (OFFSHORE) EXTENT OF FISH FARM
40035 ✓	58:15:52.681 N 134:20:21.170 W	NORTHERN (INSHORE) ENXTENT OF FISH FARM
50141 ✓	58:15:50.637 N 134:20:15.193 W	INSHORE (SE) CORNER OF FISH FARM

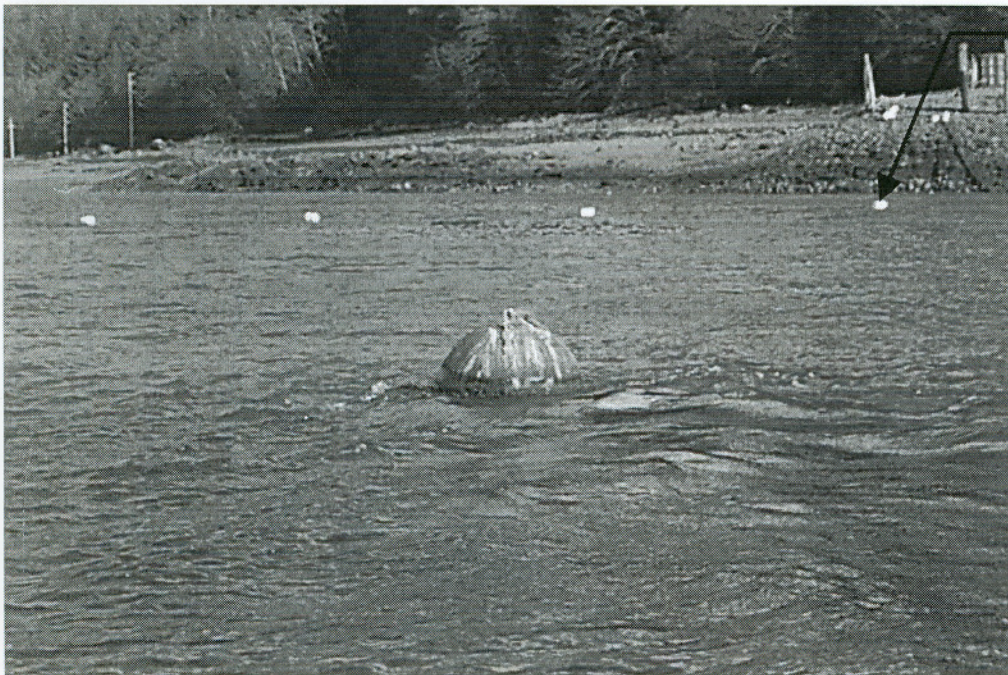


Figure 1: New Fish Farm

Two mooring buoys were positioned on either end of the fish farm.

FIX	POSITION	DESCRIPTION
40029 ✓	58:15:48.004 N 134:20:10.667 W	MOORING BUOY (SOUTHERN OF TWO)
50142 ✓	58:15:53.462 N 134:20:25.086 W	MOORING BUOY (NORTHERN OF TWO)

*man
08*



Note the white floats marking the pipe that runs between the shore and the fish farm

Figure 2: Southern of two mooring buoys, looking north



Figure 3: Fix 40830, RIPRAP BREAKWATER/BOAT RAMP-PRIVATELY MAINTAINED LAT. 58:15:12.046N, LONG. 134:18:48.247 W ✓

Inside Juneau harbor, there were several new docks added. The most significant is the new ship dock completed during the spring of 1996 (See Figure 4).

FIX	REMARK	LATITUDE	LONGITUDE
50317✓	NORTH DOLPHIN OF NEW (1996) CRUISE SHIP PIER	58:17:37.624	134:23:52.551
50318✓	NORTH END OF NEW (1996) SHIP DOCK	58:17:36.075	134:23:51.341
50319✓	SOUTH END OF NEW (1996) SHIP DOCK	58:17:32.396	134:23:46.355
50320✓	SOUTH DOLPHIN OF 3 AT SOUTH END OF NEW PIER	58:17:31.071	134:23:42.817

FIX: 50318

FIX: 50319



Figure 4: New Ship Dock ✓

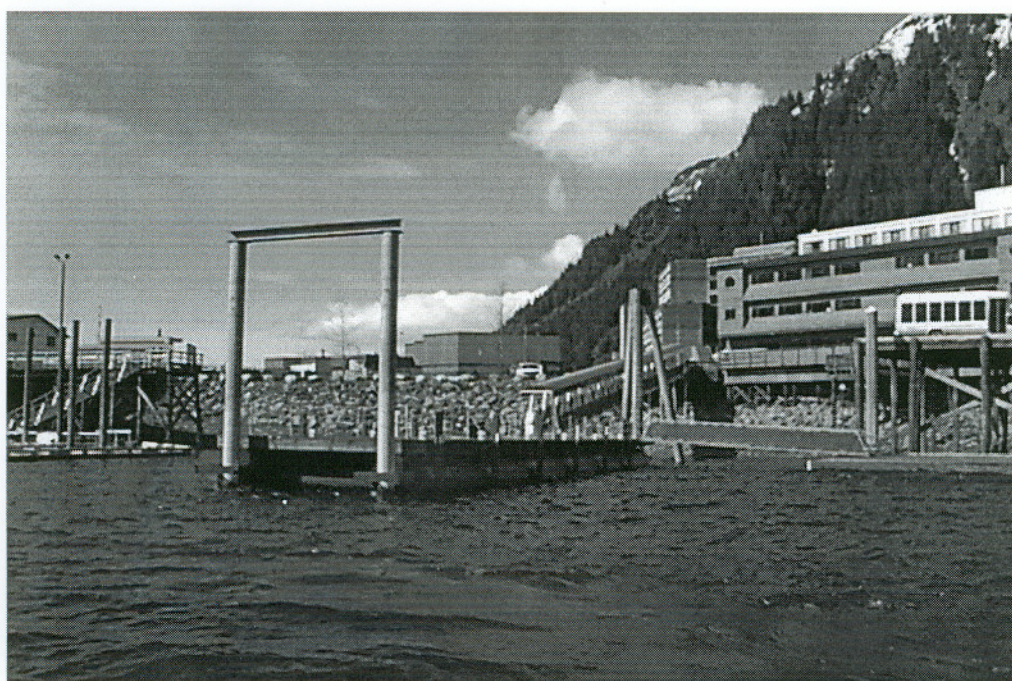


Figure 5: Fix 50307, NEW FLOATING DOCK- WEST END, Lat. 58:17:55.109 N,
Long. 134:24:34.193 W ✓



Figure 6: Fix 50341 TAKU FISHERIES PIER, Lat. 58:17:42.627 N,
Long. 134:24:00.149 W ✓



Figure 7: Fix 50315, SOUTH END OF NEW TAKU FISHERIES FLOATING DOCK, Lat. 58:17:38.498 N,
Long. 134:23:54.421 W ✓

A new AML (Alaska Marine Lines) dock was positioned with the following fixes:

FIX	REMARK	LATITUDE	LONGITUDE
50329 ✓	DOLPHIN NORTH OF AML DOCK	58:17:09.869	134:23:28.107
50330 ✓	NORTH OF 4 DOLS OF AML DOCK	58:17:09.728	134:23:25.905
50331 ✓	SOUTH END OF AML DOCK	58:17:06.925	134:23:25.612

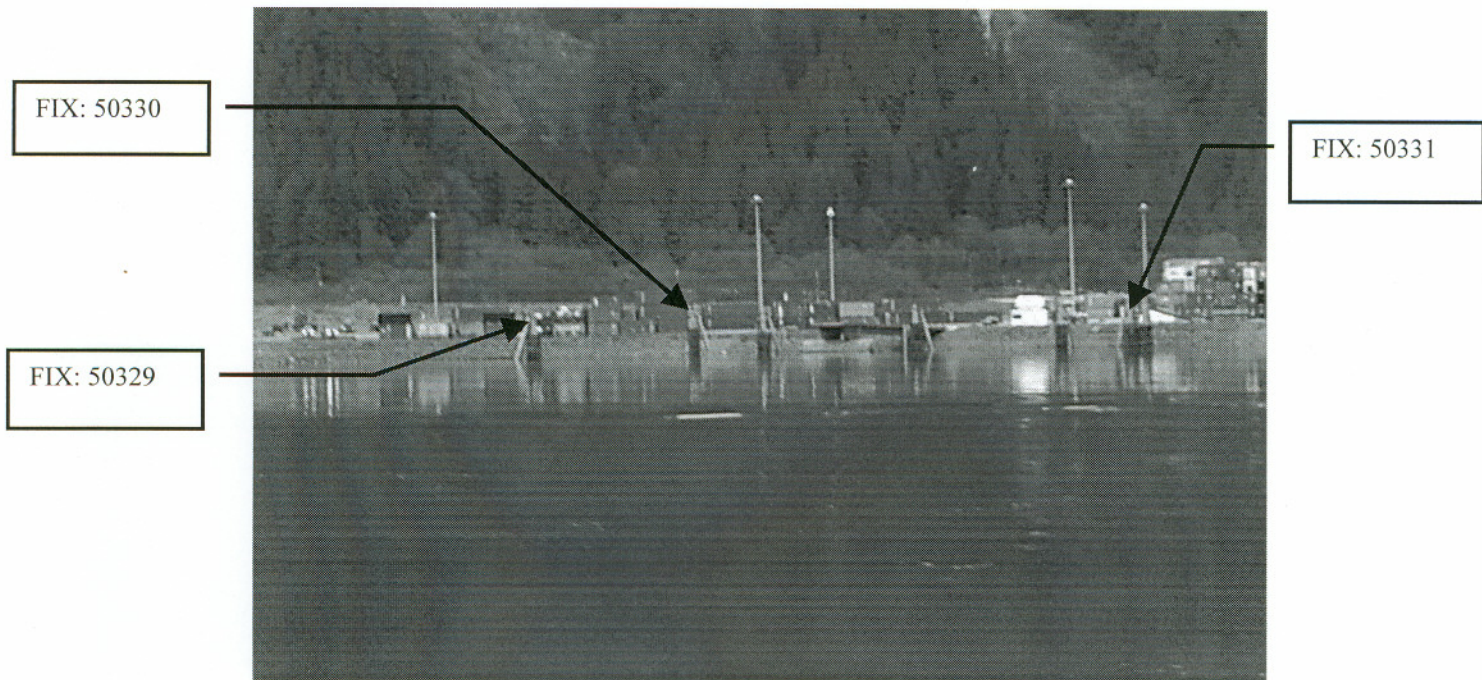


Figure 6: AML barge dock

K. CROSSLINES ✓

Crosslines agreed within 1 meter with mainscheme hydrography. There was a total of 12.5 nautical miles of crosslines, comprising 15.9% of mainscheme hydrography.

L. JUNCTIONS See Eval Rpt., section L

This survey junctions with H-10737, 1:10,000, 1997 on the south and H-10233, 1:5,000, 1986-1987 to the north of H-10738. 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 Rpt., section M

Prior surveys covering this survey area are as follows:

Survey	Scale	Year
H-2058	1:20,000	1890
H-4201WD	1:20,000	1921
H-6177A	1:10,000	1936
H-7961	1:5,000	1952
H-10233	1:5,000	1987

Project Instructions, sections 6.9 and 6.10 specify this survey as a prior and junction.

Prior surveys H-7961 and H-10233 cover the Juneau harbor inset. There was general agreement between the prior surveys and H-10738 with the following exception.

A charted 9-½ fm (17.4 m) at latitude 58° 16' 45" N, longitude 134° 22' 39" which originated from H-7961, was not located. The area was developed with 5 meter development lines run both in the east-west and north-south directions (Fixes 50405 - 50427, DN 135, VN 2125) and a least depth of 11 ¼ fm* (20.7 m) was found at latitude 58° 16' 45.881" N, longitude 134° 22' 39.596" W. * Plots as 11.3 fathoms after application of approved tides.

The hydrographer believes that this sounding was mis-positioned ^(do not concern) as there are similar depths 65 meters north of the 9 1/2 fm sounding. The hydrographer recommends that the charted 9 1/2 fm sounding be removed from the chart and charting soundings from H-10738 in the common area.

The wreck is likely debris that has been dumped from the mining operations conducted in the 1940's and 1950's. This debris is either washed ashore, eroded and or silted over.

N. ITEM INVESTIGATIONS

Three AWOIS items were located within H-10738 survey area. The item investigations are summarized in the following table.

Item	AWOIS Number	Status	Charting Recommendation
N1	52276	Resolved	Do not chart submerged wreck <i>Do not concern</i>
N2	52277	Resolved	Chart soundings from H-10738 <i>concern</i>
N3	52343	Resolved	Do not chart reported visible wreck <i>concern</i>

ITEM INVESTIGATION N1 ✓

AWOIS # : 52276	DN: 97/100/103
CHART #: 17315 (1:40,000, 21st Edition, 8/3/91)	VESNO: 2125/2123/2124
ITEM DESCRIPTION: Submerged Wreck	
SOURCE: LNM28/88—17 th CGD; wreck (PA), position given in lat. 58°12'06" N, long. 134°15'00" W.	

GEOGRAPHIC POSITION

	LATITUDE	LONGITUDE	POSITION #
CHARTED:	58° 12' 04.81" N	134° 15' 06.34" W	
OBSERVED:	58° 12' 02.027" N	134° 15' 23.966" W	40189+0 (Dive)
POSITIONED BY:	DGPS	DATUM:	MLLW (NAD 83)
METHOD OF INVESTIGATION: The area was investigated with 200% side-scan sonar coverage and a dive investigation.			
FINDINGS: The area was searched with the 100- meter range scale and one possible contact was located on two sweeps in the extreme northwestern (nearshore) edge of the search area. The contact was later investigated using the 50-meter range scale, both passes over the area showed with high probability that the contact was a small boat. A least depth of 14.6 meters (8-fm) at position lat. 58° 12' 02.027" N , long. 134° 15' 23.966" W was determined with a dive investigation (Fix 40189+0, VN 2124, DN 103). The divers described the wreck as a small (18-ft) fiberglass boat with outboard still attached.			

CHARTING RECOMMENDATIONS

The hydrographer strongly recommends removing the dangerous wreck symbol from latitude 58° 12' 04.81" N, longitude 134° 15' 06.34" W. The size, location and depth of this wreck is not navigationally significant. It only clutters the chart. *Do not concern, chart subm wk (8 wk)*

ITEM INVESTIGATION N2 ✓

AWOIS # : 52277	DN: 099
CHART #: 17315 (1:40,000, 21st Edition, 8/3/91)	VESNO: 2125
ITEM DESCRIPTION: Obstruction	
SOURCE: LNM44/80—17 th CGD; an 8 foot by 10 foot section of wreckage was reported one half mile west of Sheep Creek light 2 (LLNR 3210). Wreckage shows 3 feet above water at times and is approximately 200 yards off Douglas Island shore. Positions were based on eyeball type locations given by passing vessels.	

GEOGRAPHIC POSITION

	LATITUDE	LONGITUDE	POSITION #
CHARTED:	58° 15' 26.81" N	134° 20' 51.35" W	
OBSERVED:			50063 – 50065 50194 – 50211 (SSS)
POSITIONED BY:	DGPS	DATUM:	MLLW (NAD 83)
METHOD OF INVESTIGATION: The inshore portion of the search area was investigated near MLLW (+0.2 meters). The offshore region was investigated using 200 % SSS coverage using the 100, 75 and 50 meter range scales.			
FINDINGS: Neither the visual search at MLLW, nor the SSS revealed any evidence that this wreckage exists.			

CHARTING RECOMMENDATIONS

Based on the evidence that there were no navigationally significant contacts seen during the SSS, nor was there any evidence of such wreckage during a visual search at low water, the hydrographer strongly recommends removing the charted wreck at latitude 58° 15' 26.81" N, longitude 134° 20' 51.35" W and charting soundings from this survey in the common area. *Concur*

ITEM INVESTIGATION N3 ✓

AWOIS # : 52343	DN: 104/105/132
CHART #: 17315 (1:40,000, 21st Edition, 8/3/91)	VESNO: 2123/2124
ITEM DESCRIPTION: Visible Wreck "Salty"	
SOURCE: LNM33/96—17 th CGD; SALTY (Visible wreck)	

GEOGRAPHIC POSITION

	LATITUDE	LONGITUDE	POSITION #
CHARTED:	58° 17' 59.00" N	134° 25' 42.00" W	
OBSERVED:			30346 – 30348 40650 – 40657 41035 DP
POSITIONED BY:	DGPS	DATUM:	MLLW (NAD 83)
METHOD OF INVESTIGATION: An echosounder search using 5-meter line spacing was done on DN 104 and 105 (VN 2123 and 2124), and a visual search at low water was conducted on DN 132 (VN 2124)			

FINDINGS: Neither the visual search at MLLW, nor the echosounder searches reveal any indication of the wreckage.



Figure 7: Area of reported visible Wreck (North side)



Figure 8: Area of visible wreck (South)

CHARTING RECOMMENDATIONS

Based on echosounder and visual searches at low water, the hydrographer recommends not charting the reported visible wreck.

CMW

O. COMPARISON WITH THE CHART See Exam Report, section O

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

Chart	Scale	Edition Number	Date	Datum
17315	1:40,000	21 st	August 3, 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.

The charted soundings agree well with this survey with the exception of the charted 9 1/2 fm sounding discussed in Section M. Final comparisons will be by the Pacific Hydrographic Branch after smooth tides have been applied.

Dangers to Navigation ✓

There were no dangers to navigation reported for H-10738. Concur

P. ADEQUACY OF SURVEY See Exam Report, section P

Survey H-10738 is complete and adequate to supersede prior soundings and features in their common areas. Do not concur

Q. AIDS TO NAVIGATION

The following lights were positioned using static GPS methods from either station SCULL2 or CIRCLE:

Name	LL Number	Positioned From
Marmion Island Light	23660	CIRCLE
Sheep Creek Light #2	23665	CIRCLE
Douglas boat Hrbr Lt 1D	23680	SCULL2
Juneau Isle Light	23675	SCULL2
Lawson Creek Light #3 ***	23690	SCULL2
Light #4 **	23695	SCULL2

** Gastineau Channel Light 4
 *** Lawson Creek Bar Light 3

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.

Three floating aids to navigation are within the survey area. These were positioned by DGPS and agree with the positions from the light list. The table below lists these lights:

Light	LLNR	Light List Position	Survey Position	Fix Number
Rock Dump Lighted Buoy "2A"	23685	58° 17' 06" N 134° 23' 48" W	58° 17' 08" N 134° 23' 51" W	30198
Sheep Creek Salmon Pen Lights (2)	23670	58° 15' 48" N 134° 20' 18" W	58° 15' 49" N 134° 20' 16" W	40032

58° 15' 52.026
134° 20' 21.541 40034

R. STATISTICS ✓

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

* Filed with the hydrographic data

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. Secchi disk operations were not performed due to early arrival of the annual spring algae and plankton blooms.

T. RECOMMENDATIONS ✓

The hydrographer recommends removal of the wire drag green tint from the charts common to this survey. The wire drag tint without wire depth now confuses the mariner with non-bathymetric information. This information was useful when most soundings were derived from sparse leadline surveys. Modern surveys such as this one supercede wire drag clearances and hangs, prior survey soundings, and features seaward of the launch navigational limit by investigating, with high-percentage echosounder coverage, diver, side scan or visual investigation, all shoals and features that may pose a hazard to navigation.

CONCUR

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

Respectfully Submitted,



Mark S. Larsen
Lieutenant, NOAA

Approved and Forwarded,



Alan D. Anderson
Captain, NOAA
Commanding Officer

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 DGPS 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

Section Q: Descriptive Report Insert

Name of Aid: MARMION ISLAND ✓
LIGHT
Light List #: 23660

Method of Positioning: GPS

Positioning Info

	Latitude N	Longitude W
Charted Pos.	58° 11' 56.3"	134° 15' 26.1"
Survey Pos.	58° 11' 54.96776"	134° 15' 24.05043"

Difference between Survey/Charted position: 53 meters at 320 ° T

Characteristics

Do Characteristics Match Light List? (y/n) YES NO
If NO, what are the characteristics?

Does aid adequately serve its apparent purpose? YES NO
If NO, why not?

New/Uncharted Aids (if info is known or easily obtained)

Date Established:

Maintained By: USCG Private YES NO

Is aid seasonally maintained? YES NO

Frequency of Maintenance:

Purpose: This light marks the southern approach to Gastineau Channel

Section Q: Descriptive Report Insert

Name of Aid: SHEEP CREEK ✓

LIGHT 2

Light List #: 23665

Method of Positioning: GPS

Positioning Info

	Latitude N	Longitude W
Charted Pos.	58° 15' 28.2"	134° 19' 53.2"
Survey Pos.	58° 15' 28.42070"	134° 19' 51.99793"

Difference between Survey/Charted position: 20 meters at 250 ° T

Characteristics

Do Characteristics Match Light List? (y/n) YES NO
If NO, what are the characteristics?

Does aid adequately serve its apparent purpose? YES NO
If NO, why not?

New/Uncharted Aids (if info is known or easily obtained)

Date Established:

Maintained By: USCG Private YES NO

Is aid seasonally maintained? YES NO

Frequency of Maintenance:

Purpose: This light marks the offshore limit of the sand bar off of Sheep Creek

Section Q: Descriptive Report Insert

Name of Aid: JUNEAU ISLE ✓
LIGHT
Light List #: 23675
Method of Positioning: GPS

Positioning Info

	Latitude N	Longitude W
Charted Pos.	58° 16' 35.2"	134° 23' 06.2"
Survey Pos.	58° 16' 34.62499"	134° 23' 3.88963

Difference between Survey/Charted position: 42 meters at 295 ° T

Characteristics

Do Characteristics Match Light List? (y/n) YES NO
If NO, what are the characteristics?

Does aid adequately serve its apparent purpose? YES NO
If NO, why not?

New/Uncharted Aids (if info is known or easily obtained)

Date Established:

Maintained By: USCG Private YES NO

Is aid seasonally maintained? YES NO

Frequency of Maintenance:

Purpose: Marks southern approach to Juneau Harbor.

Section Q: Descriptive Report Insert

Name of Aid: DOUGLAS BOAT
HARBOR LIGHT 1 D ✓
Light List #: 23680
Method of Positioning: GPS

Positioning Info

	Latitude N	Longitude W
Charted Pos.	58° 16' 35.9"	134° 23' 14.5"
Survey Pos.	58° 16' 35.05519"	134° 23' 14.29848"

Difference between Survey/Charted position: 26 meters at 352 °T

Characteristics

Do Characteristics Match Light List? (y/n) YES NO
If NO, what are the characteristics?

Does aid adequately serve its apparent purpose? YES NO
If NO, why not?

New/Uncharted Aids (if info is known or easily obtained)

Date Established:

Maintained By: USCG Private YES NO

Is aid seasonally maintained? YES NO

Frequency of Maintenance:

Purpose: Marks the entrance to the Douglas Boat harbor behind Juneau Isle.

Section Q: Descriptive Report Insert

Name of Aid:

LAWSON CREEK **BAR** ✓
LIGHT #3

Light List #:

23690

Method of Positioning:

GPS

Positioning Info

	Latitude N	Longitude W
Charted Pos.	58° 17' 16.5"	134° 24' 25.9"
Survey Pos.	58° 17' 16.56210"	134° 24' 25.84606"

Difference between Survey/Charted position: 2.1 meters at 204 ° T

Characteristics

Do Characteristics Match Light List? (y/n) **YES** **NO**
If NO, what are the characteristics?

Does aid adequately serve its apparent purpose? **YES** **NO**
If NO, why not?

New/Uncharted Aids (if info is known or easily obtained)

Date Established:

Maintained By: USCG Private **YES** **NO**

Is aid seasonally maintained? **YES** **NO**

Frequency of Maintenance:

Purpose: Marks offshore extent of Lawson Creek sand bar.

Section Q: Descriptive Report Insert

Name of Aid: ~~JUNEAU HARBOR~~ GASTINEAU CHANNEL ✓
LIGHT #4
Light List #: 23695

Method of Positioning: GPS

Positioning Info

	Latitude N	Longitude W
Charted Pos.	58° 17' 49.1"	134° 25' 21.7"
Survey Pos.	58° 17' 49.17172"	134° 25' 21.75373"

Difference between Survey/Charted position: 2 meters at 158 °T

Characteristics

Do Characteristics Match Light List? (y/n) **YES NO**
If NO, what are the characteristics?

Does aid adequately serve its apparent purpose? **YES NO**
If NO, why not?

New/Uncharted Aids (if info is known or easily obtained)

Date Established:

Maintained By: USCG Private **YES NO**

Is aid seasonally maintained? **YES NO**

Frequency of Maintenance:

Purpose: Marks offshore limit of Gold Creek bar.

RESPONSIBLE PERSONNEL	
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	FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW	OFFICE ACTIVITY REPRESENTATIVE <input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

Capt. A. D. Anderson

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64)

OFFICE

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

FIELD

1. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

- F - Field
- L - Located
- V - Verified
- 1 - Triangulation
- 2 - Traverse
- 3 - Intersection
- 4 - Resection
- P - Photogrammetric
- Vis - Visually
- 5 - Field identified
- 6 - Theodolite
- 7 - Planetable
- 8 - Sextant

A. Field positions* require entry of method of location and date of field work.

EXAMPLE: F - 2 - 6 - L
8 - 12 - 75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont.)

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

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

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.
8 - 12 - 75

**PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

APPROVAL SHEET

for


H-10738

Standard field surveying and processing procedures were followed in producing this examination 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.

DATE: May 17, 1997

Approved and Forwarded,


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-10738

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

TIME PERIOD: April 7 - May 15, 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

REMARKS: RECOMMENDED ZONING


Use zone(s) identified as: SEA4

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



GEOGRAPHIC NAMES

H-10738

Name on Survey	CHART NO. 17515, 17500 ON PREVIOUS SURVEY CON U.S. QUADRANGLE MAPS FROM LOCAL INFORMATION ON LOCAL MAPS P.O. GUIDE OR MAP RAND McNALLY ATLAS U.S. LIGHT LIST										
	A	B	C	D	E	F	G	H	K		
ALASKA (title)	X		X							1	
BULLION CREEK	X		X							2	
CROSS BAY CREEK	X		X							3	
DUPONT CREEK	X		X							4	
DOUGLAS ISLAND	X		X							5	
GASTINEAU CHANNEL	X		X							6	
JUNEAU ISLAND * (inset)	X		X							7	
LITTLE SHEEP CREEK	X		X							8	
MARMION ISLAND	X		X							9	
PARIS CREEK	X		X							10	
READY BULLION CREEK	X		X							11	
SHEEP CREEK	X		X							12	
SNOWSLIDE CREEK	X		X							13	
STEPHENS PASSAGE (title)	X		X							14	
TANTALLON POINT	X		X							15	
THANE (pp1)	X		X							16	
										17	
										18	
										19	
										20	
										21	
										22	
										23	
										24	
										25	

Approved:

Christa C. Loy
Chief Geographer

JUL 8 1997

* ~~Juneau Island is beyond the smooth sheet limits~~ Stet

H-10738 (inset)

GEOGRAPHIC NAMES

Name on Survey	CHART NO. 17315, 17300 ON PREVIOUS SURVEY CON U.S. QUADRANGLE MAPS FROM LOCAL INFORMATION ON LOCAL MAPS P.O. GUIDE OR MAP RAND McNALLY ATLAS U.S. LIGHT LIST										
	A	B	C	D	E	F	G	H	K		
ALASKA (title) *	X		X								1
DOUGLAS (ppl)	X		X								2
DOUGLAS ISLAND	X		X								3
GASTINEAU CHANNEL	X		X								4
GOLD CREEK	X		X								5
JUNEAU	X		X								6
JUNEAU HARBOR	X										7
JUNEAU ISLAND	X		X								8
LAWSON CREEK	X		X								9
STEPHENS PASSAGE (title) *	X		X								10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved

Chris C. Coy
Chief Geographer

JUL 8 1997

* ALASKA (title) and STEPHENS PASSAGE (title) is on the main sheet.

NOAA FORM 77-27(H) (9-83)		U.S. DEPARTMENT OF COMMERCE		REGISTRY NUMBER		
HYDROGRAPHIC SURVEY STATISTICS				H-10738		
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	1					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES				1		
SHORELINE DATA						
SHORELINE MAPS (List):		DM-10048, DM-10049, DM-10050				
PHOTOBATHYMETRIC MAPS (List):		NA				
NOTES TO THE HYDROGRAPHER (List):		NA				
SPECIAL REPORTS (List):		NA				
NAUTICAL CHARTS (List):		Chart 17315 21st Ed., Aug. 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				102.5		102.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS						
EVALUATION OF SIDE SCAN SONAR RECORDS						
EVALUATION OF WIRE DRAGS AND SWEEPS						
EVALUATION REPORT					32.0	32.0
GEOGRAPHIC NAMES						
OTHER*						
*USE OTHER SIDE OF FORM FOR REMARKS			TOTALS	102.5	32.0	134.5
Pre-processing Examination by M. Bigelow				Beginning Date 6/9/97	Ending Date 6/12/97	
Verification of Field Data by R. Mayor, R. Davies				Time (Hours) 102.5	Ending Date 11/4/97	
Verification Check by B. Olmstead				Time (Hours) 4	Ending Date 12/16/97	
Evaluation and Analysis by R. Davies				Time (Hours) 32	Ending Date 11/6/97	
Inspection by B. Olmstead				Time (Hours) 10	Ending Date 12/23/97	

EVALUATION REPORT

H-10738

A. PROJECT

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

B. AREA SURVEYED

An adequate discussion of the survey area is found in the hydrographer's report.

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. Two page-size plots of the charted area depicting the limits of supersession accompany this report as Attachment 1.

The bottom consists mainly of mud. Depths range from zero to 39 fathoms

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 that 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 field sheet parameters have been revised to center the hydrography on the office plot. The data is plotted using a Modified Transverse Mercator projection and are depicted on a single sheet.

E. SONAR EQUIPMENT

Side Scan Sonar equipment was used on survey H-10738. Discussion of the equipment and its operation is adequately discussed in the hydrographer's report, section E.

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 Juneau, Alaska gage, gage number 945-2210.

H. CONTROL STATIONS

Sections 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:	-1.184 seconds	(-36.634 meters)
Longitude:	6.352 seconds	(103.650 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 several 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. These fixes are considered acceptable.

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-10048, DM-10049 and DM-10050, scale 1:20,000 were compiled NAD 83 and apply to this survey. Shoreline drawn on the smooth sheet originates from 1:20,000 scale digital files provided by Coastal Mapping Program.

Two Mean High Water Line revisions, centered at latitude 58/17/09N, longitude 134/23/36W and at latitude 58/17/07N, longitude 134/23/23W, were drawn in dashed red on the smooth sheet. There were also numerous revisions to the piers and other attached cultural features in Juneau Harbor. New construction along the waterfront is readily evident on the east side of the harbor at latitude 58/17/45N, longitude 134/24/00W. These changes have been drawn in red on the smooth sheet. All revisions have been depicted on the smooth sheet and are adequate to supersede the photogrammetric shoreline maps.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10738 junctions with the following surveys:

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10233	1986-87	1:5,000	North
H-10737	1997	1:10,000	South

The junction with survey H-10737 is complete, soundings and depth curves are in good agreement within the common area. A "Joins" note has been shown on the survey.

The junction with survey H-10233 was not formally completed since this survey has been previously processed and forwarded for charting. The junction was made using a copy. There is good agreement between depth curves and soundings within the common area. An "Adjoins" note has been shown on the survey.

M. COMPARISON WITH PRIOR SURVEYS

H-2058(1890)	1:20,000
H-6177A(1936)	1:10,000
H-7961(1952)	1:5,000

Prior surveys H-2058, H-6177A and H-7961 cover the entire area of the present survey. Juneau Harbor has undergone an enormous amount of cultural change since 1890 and 1952. Several new piers and other attached cultural features have been built since these prior surveys were conducted. Present survey depths within the common area of prior surveys reveal a general shoaling of 1 to 3 fathoms. These differences may be attributed to greater sounding coverage, improved positioning and sounding methods and relative accuracy of the data acquisition techniques.

Survey H-10738 is adequate to supersede the prior surveys within the common area.

H-10233(1987)	1:5,000
---------------	---------

Prior survey H-10233 covers Juneau Harbor. Comparison with the present survey is excellent (1 fathom) except for the areas along the eastern side of the harbor where there has been new construction. Survey H-10738 will supplement the area of common coverage in all areas except for the area along the pier faces between latitude 58/17/52N, longitude 134/24/51W and latitude 58/17/26N, longitude 134/23/45W. In this area, the present survey will supersede the prior survey.

H-4201WD(1921)	1:20,000
----------------	----------

Wire-drag survey H-4201 covers the entire area of the present survey. All wire-drag soundings and clearance depths were investigated. Adequate sounding development was accomplished to remove all prior soundings in the area of common coverage.

Survey H-10738 is adequate to supersede the prior wire-drag survey within the common area.

N. ITEM INVESTIGATIONS

There were 3 AWOIS items assigned to this survey. These items were adequately addressed in section N of the hydrographer's report.

O. COMPARISON WITH CHART

Survey H-10738 was compared with the following chart:

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
17315	21st	Aug. 3, 1991	1:40,000	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.

With the following exceptions, charted miscellaneous source data has been satisfactorily addressed during survey operations. The following features should be retained as charted.

<u>Features</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>
Sewer PA	58/16/03	134/23/16
Group of six dolphins	58/17/50	134/24/55

The new cruise ship pier with mooring dolphins proposed for construction in the vicinity of Gold Creek (filed as Chart Letter 1203/96) was not built. This was verified by the hydrographer and office personnel, via phone conversation with the Juneau Coast Guard.

The charted green tint represents wire-drag areas from surveys conducted in 1917 – 1922. The evaluator recommends removing the charted green tint based on more modern data acquisition techniques.

All charted cable areas should be retained as charted.

With the exception noted in Section M and this section, survey H-10738 is adequate to supersede charted hydrography within the charted area.

b. Dangers To Navigation

No dangers to navigation were discovered during survey operations or office processing.

P. ADEQUACY OF SURVEY

Except for the area of Juneau Harbor, hydrography contained on survey H-10738 is adequate to:

- Delimit the bottom configuration, determine least depths, and draw the required depth curves;
- Reveal there are no significant discrepancies or anomalies requiring further investigation; and
- Show the survey was properly controlled and soundings are correctly plotted.

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.

Except for the area along the pier faces in Juneau Harbor, mentioned in section M of this report, the present survey was not in compliance with the spacing of sounding lines to determine the least depths and or develop significant shoal areas. As such, the present survey will only supplement prior work (1:5,000) conducted in 1987.

Q. AIDS TO NAVIGATION

Six fixed aids and three floating aids to navigation exist within the survey area. These aids were located and adequately mark the features intended. See the Descriptive Report for a complete listing. In addition, six mooring buoys were located during survey operations and are plotted on the smooth sheet.

Landmarks were not addressed by the hydrographer and should be retained as charted.

R. STATISTICS

Statistics are itemized in the hydrographer's report.

S. MISCELLANEOUS


Miscellaneous information is discussed in the hydrographer's report. Additional miscellaneous items were noted during office processing and are discussed in section O of this report.

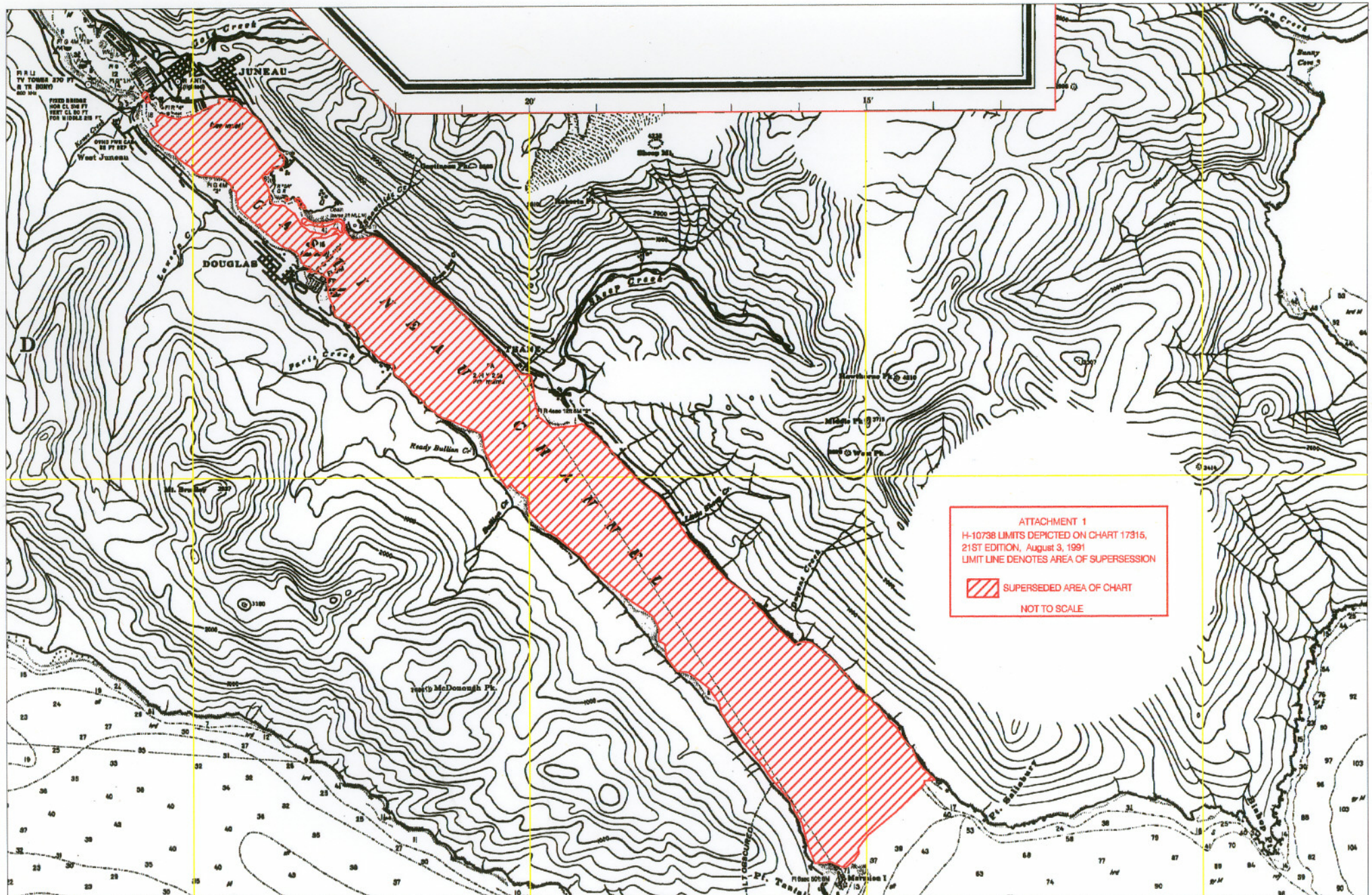
T. RECOMMENDATIONS

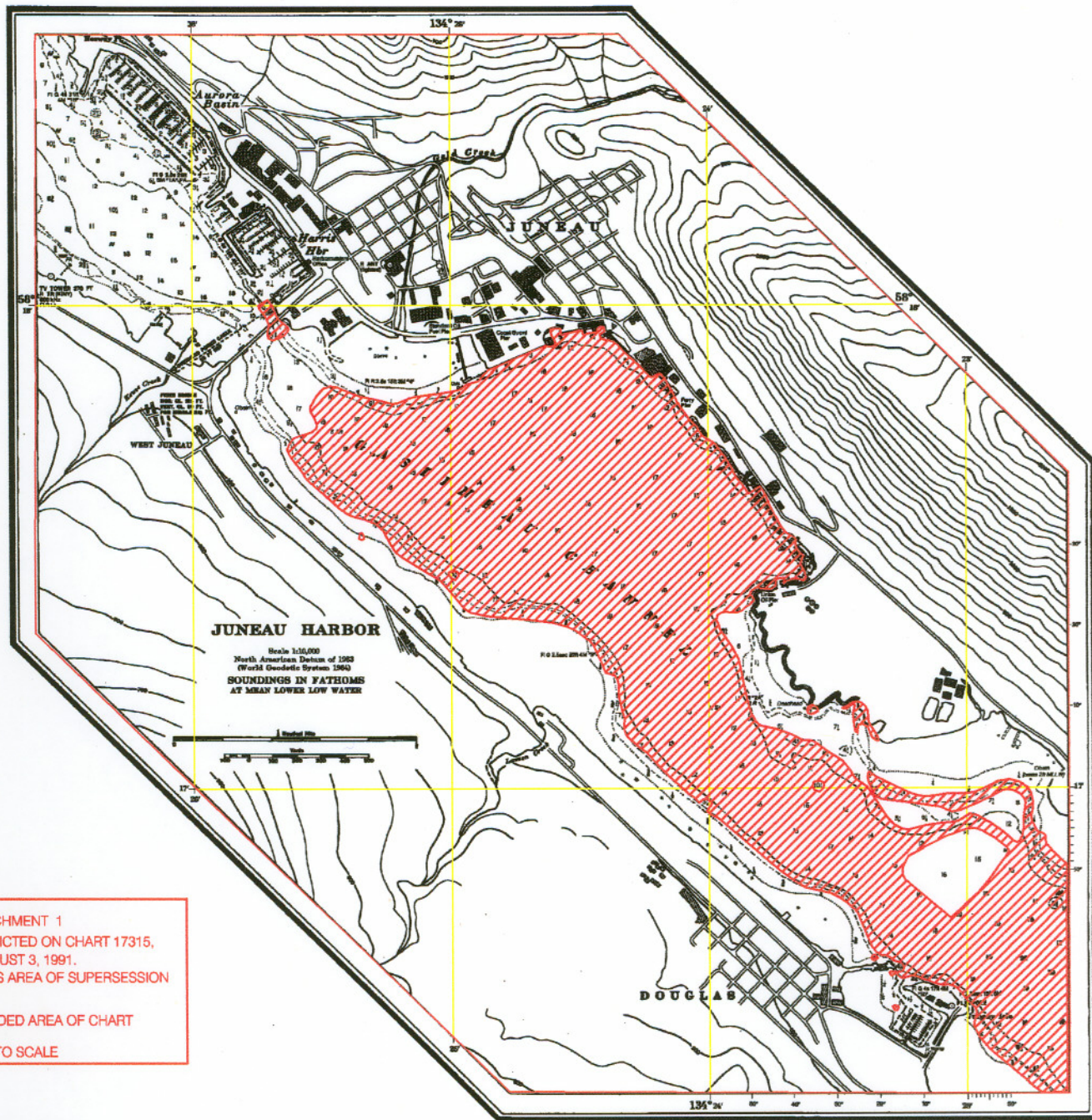
This is an adequate hydrographic survey. Additional work is recommended on a low priority basis to verify or disprove the several features mentioned in section O of this report.

U. REFERRAL TO REPORTS

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


C. R. Davies
Cartographer





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APPROVAL SHEET
H-10738

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: 12/23/97
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: 12/31/97
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

Final Approval

Approved:

Andrew A. Armstrong III Date: Feb 17, 1998
Andrew A. Armstrong III
Captain, NOAA
Chief Hydrographic Surveys Division

