

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-10-6-96
Registry No. H-10680

LOCALITY

State Alaska
General Locality Northern Stephens Passage
Sublocality Favorite Channel from
Gull Island to Eagle Reef

19 96

CHIEF OF PARTY

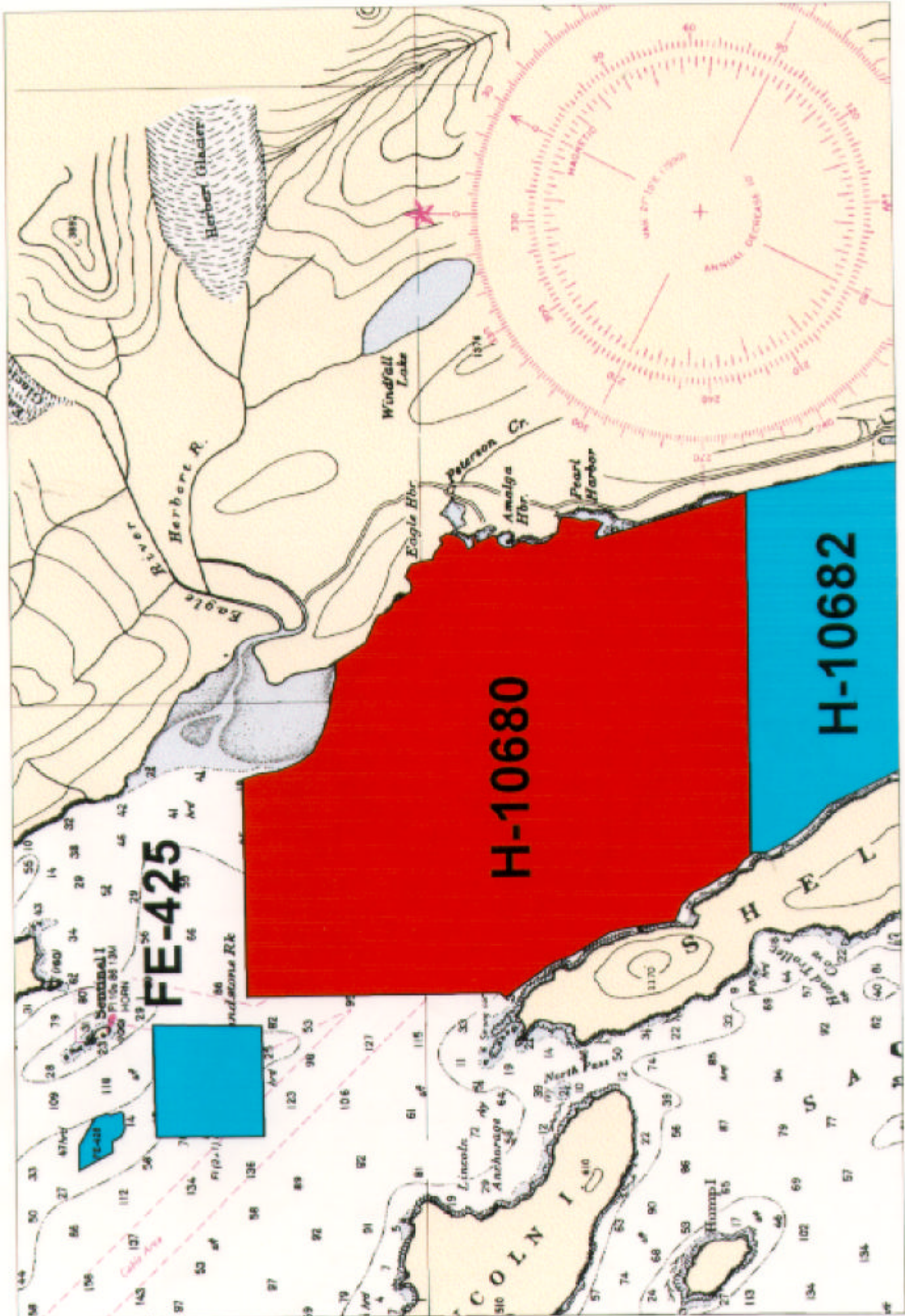
CAPT Dean R. Seidel, NOAA

LIBRARY & ARCHIVES

DATE JAN 14 1997

H10680

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTER NO. H-10680
HYDROGRAPHIC TITLE SHEET		
INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.		FIELD NO. RA-10-6-96
<p>State <u>Alaska</u></p> <p>General locality <u>Northern Stephens Passage</u></p> <p>Locality <u>Favorite Channel from Gull Island to Eagle Reef</u></p> <p>Scale <u>1:10,000</u> Date of survey <u>May 7, 1996 to May 22, 1996</u></p> <p>Instructions dated <u>3/29/96</u> Project No. <u>OPR-0328-RA</u></p> <p>Vessel <u>RA-3(2123), RA-4(2124), RA-5(2125), RA-6(2126)</u></p> <p>Chief of party <u>CAPT Dean R. Seidel, NOAA</u></p> <p>Surveyed by <u>CAPT D. Seidel, LT M. Larsen, LT G. Noll, LT S. Lemke, LT S. Meador, LTJG M. Harrison, ENS E. Christensen</u></p> <p>Soundings taken by <u>echo sounder, hand lead, pole</u> <u>DSF-6000N</u></p> <p>Graphic record scaled by <u>RAINIER Personnel</u></p> <p>Graphic record checked by <u>RAINIER Personnel</u></p> <p>Evaluation by: <u>R.A. Shipley</u> Automated plot by <u>HP Design Jet 650C</u></p> <p>Processed by: <u>R.A. Shipley</u></p> <p>Verification by <u>R.A. Shipley</u></p> <p>Soundings in fathoms 6500 at MEW MLLW and tenths</p>		
<p>REMARKS: <u>Time in UTC, revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.</u></p> <p><u>All depths listed in this report are referenced to mean lower low water unless otherwise noted</u></p> <p><u>SL-14-97 AWOIS & SURF - 1/97 RWD</u></p>		

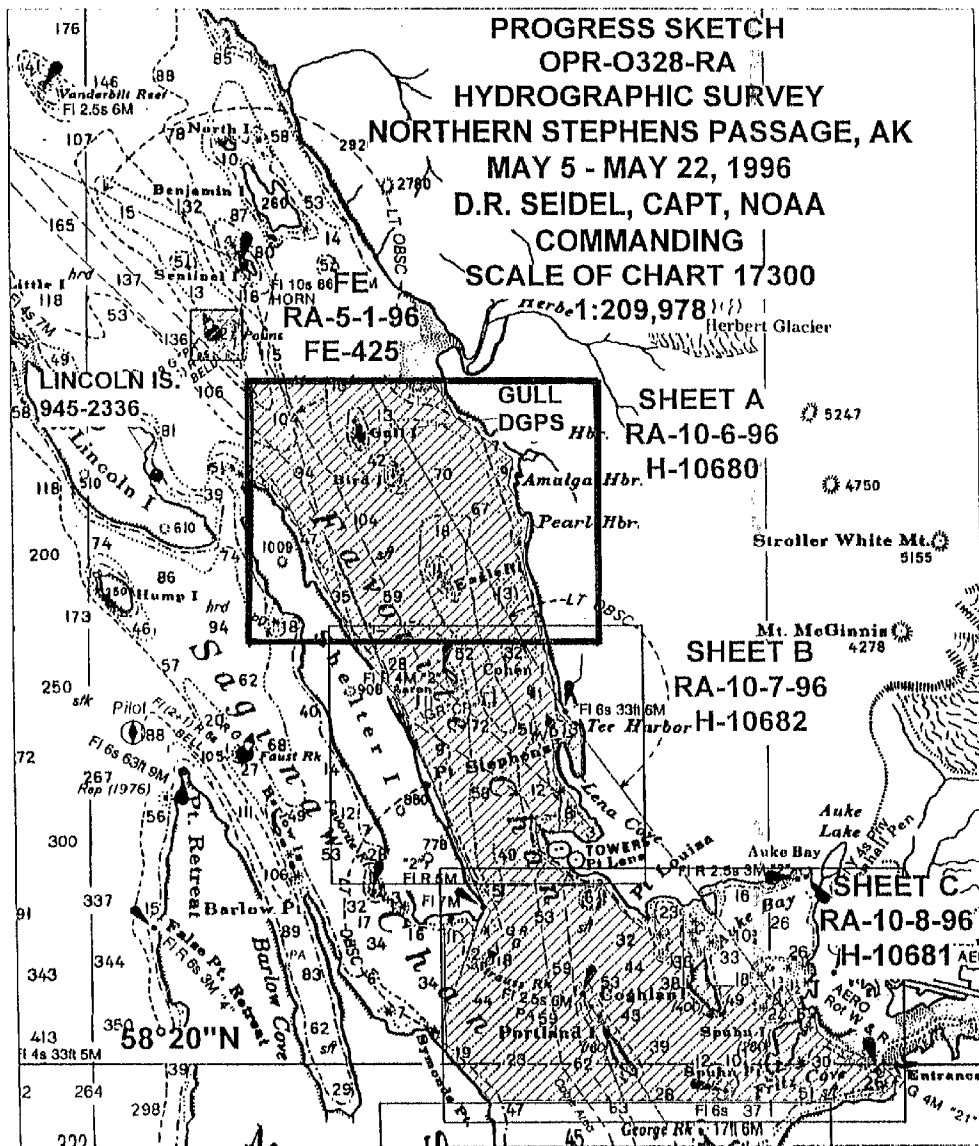


FE-425

H-10680

H-10682





	MAY		MAY
SQ. NM SOUNDINGS	39.6	C.T.D. CASTS	6
L.N.M. SOUNDINGS	1080	GEODETTIC CONTROL STATIONS	2
L.N.M. SIDE SCAN SONAR	0	TIDE GAGES	1
BOTTOM SAMPLES (GRAB)	111	AWOIS ITEMS INVESTIGATED	12
ELECT. CONTROL STATIONS	1		

Descriptive Report to Accompany Hydrographic Survey H-10680

Field Number RA-10-06-96
Scale 1:10,000
May 1996
NOAA Ship RAINIER
Chief of Party: Captain Dean R. Seidel, NOAA

A. PROJECT ✓

This basic hydrographic survey was completed in Favorite Channel, Alaska, as specified by Project Instructions OPR-O328-RA dated March 29, 1996. Survey H-10680 corresponds to sheet A as defined in the sheet layout included in the Project Instructions.

This survey will provide contemporary hydrographic survey data for updating existing nautical charts in Southeast Alaska. Requests for hydrographic surveys and updated charts have been received from the United States Coast Guard, the Southeastern Alaska Pilot's Association, and the Alaska Department of Transportation to support the cruise, logging and commercial fishing industries.

B. AREA SURVEYED ✓ SEE EVAL REPORT, SECTION B

The survey area is in Favorite Channel, Alaska, extending from Gull Island south to Eagle ~~Rock~~^{REEF}. The survey's northern limit is 58° 31' 42" N, and its southern limit is 58° 27' 07" N joining survey H-10682. Its western limit is 134° 54' 48" W and the eastern shore of Shelter Island; its eastern limit is the shoreline North of Point Lena. Data acquisition was conducted from May 8, 1996 (DN 129) to May 22, 1996 (DN 143).

C. SURVEY VESSELS ✓

Data were acquired by RAINIER survey launches as noted below:

Vessel	EDP #	Operation
RA-3	2123	Hydrography Shoreline Verification
RA-4	2124	Hydrography
RA-5	2125	Hydrography Shoreline Verification Sound Velocity Casts Bottom Samples
RA-6	2126	Hydrography Shoreline Verification

D. AUTOMATED DATA ACQUISITION AND PROCESSING

All data were acquired and processed with HDAPS. A complete listing of software for HDAPS is included in Appendix VI. *

E. SONAR EQUIPMENT ✓

Sonar equipment was not used on H-10680. *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 problems which affect survey data were encountered. All DSF-6000N soundings were acquired using the High + Low, high frequency digitized setting.

G. CORRECTIONS TO ECHO SOUNDINGS ✓

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

Velocity Table #	Cast #	DN	Cast Position	Deepest Depth (m)	Applicable DN
1	1	128	59° 29' 08" N 134° 52' 08" W	193.1	128-143

The sound velocity cast was acquired with SBE SEACAT Profiler (S/N 219), calibrated January 16, 1996. Velocity correctors were computed using the PC programs SEACAT and VELOCITY, version 2.11 (1995), 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". *

Static Draft

A transducer depth was determined using FPM Fig 2.2 for vessels 2123-2126 in the spring of 1996. These values were entered into the offset tables for each survey platform.

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-O328-RA. The data for vessels 2123-2126 were collected in Shilshole Bay, Washington in the Spring of 1996.

* FILED WITH THE SURVEY RECORDS

Offset Tables ✓

Offset tables* contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 3-6 correspond to the last digit of the vessel number. The offset tables are contained in the "Separates to be Included with Survey Data".*

Heave ✓

The launches are not equipped with heave, roll and pitch sensors.

Bar Check and Lead Lines ✓

Bar check lines were calibrated by RAINIER personnel during Spring 1996. Calibration forms are included with project data for OPR-0328-RA. Bar checks were performed weekly and served as a functional check of the DSF-6000N.

Tide Correctors ✓

Predicted tides for the project were provided on diskette by N/OES334 through N/CG241 for the Juneau, Alaska reference station (945-2210). As per the Project Instructions provided by N/OES231 for H-10680 dated March 26, 1996, the tidal time and heights for this project correspond to Zone 2 based on 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.~~

Juneau, Alaska (945-2210) was used as the primary control station for datum determination at all subordinate stations.

RAINIER personnel installed one 8200 digital gage for this survey at Lincoln Island (945-2336) on May 6, 1996. The gage was removed on May 22, 1996. The tide staff was connected to five bench marks during opening and closing level runs. The tide gage functioned without problems during data acquisition.

The station descriptions, field tide records, preliminary field tide notes, and data (Appendix V)* have been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. A request for approved tides was forwarded to N/OES23 in accordance with FPM 4.2.3. **APPROVED TIDE NOTE DATED SEPT. 12, 1996 IS ATTACHED.**

H. CONTROL STATIONS ✓ SEE EVALUATION REPORT, SECTION H.

The horizontal datum for this project is NAD 83. First Order station GULL on Gull Island was the basis for control for this project. Reference mark measurements at GULL confirmed that it had not been disturbed since its last recovery. A static GPS vector from GPS order A station 2210 A TIDAL was used to check station GULL on DN 139 to 1:123,400. The control stations are listed in ~~Appendix H.~~ ^{THIS REPORT} See the OPR-0328-RA-96 Horizontal Control Report for more information.

* FILED WITH THE SURVEY RECORDS

I. HYDROGRAPHIC POSITION CONTROL ✓ SEE EVALUATION REPORT, SECTION I.

Method of Position Control ✓

All soundings and features were positioned using differential GPS. Serial numbers for vessel GPS equipment are annotated on the raw data printouts. *A VHF differential reference station was established at GULL. The differences between the computed locations and the published positions were recorded by the MONITOR 3.0 program on DN 127 with approximately a 1 meter offset between the Ashtech sensor and the reference GPS station. No multi-path or other systemic error was indicated. The United States Coast Guard Differential GPS reference station GUSTAVUS was also checked from station GULL on DN 141. A sensor was set up 0.3 meter east of GULL due to simultaneous use of GULL as a VHF "fly away" setup. No multi-path or other systemic error was indicated. The MONITOR 3.0 results for GULL and GUSTAVUS are in the OPR-0328-RA-96 Horizontal Control Report.

Calibrations & Systems Check Methods ✓

Launch-to-launch DGPS performance checks were performed in accordance with Section 3.4.4 of the FPM. Six observations of position were made from two DGPS base stations (GULL and GUSTAVUS) while the launches were rafted together with their GPS antennae within 2 meters of each other. RAINIER used SHIPDIM, version 2.2R for periodic performance checks between station GULL and station GUSTAVUS. Some outliers were noted, but none indicated systematic or continuous errors in the GUSTAVUS beacon. Performance checks were performed periodically using SHIPDIM while the beacon was in use. The SHIPDIM OUTLIER.SUM results are included in the project data for OPR-0328-RA. *Data was analyzed during office processing and found to contain no significant problems.*

Problems ✓

None.

J. SHORELINE ✓ SEE EVALUATION REPORT, SECTION J.

J. Shoreline ✓

Photogrammetric survey CM-8904 was provided in digital format ^(DN-1004) by N/NGS3 through the Pacific Hydrographic Branch. No shoreline data exists for the western portion of H-10680. In accordance with the project instructions, the Pacific Hydrographic Branch (N/CS34) provided the ship with USGS quads Juneau B-3 and C-3 in DXF format. This shoreline is plotted in brown on the final field sheets ^{and smooth sheet} for orientation purposes only.

CM-8904 was supplied in Standard Digital Data Exchange Format (SDDEF). The digital file ^(DN-1004) was projected to the survey grid with OPR-0328-RA geodetic parameters using program SHORE version 2.0 (provided by N/CS32) and stored in HDAPS format. Shoreline was plotted at survey scale on boat sheets and processing sheets from HDAPS.

* Filed with the hydrographic data

Method of Shoreline Verification SEE EVALUATION REPORT, SECTION B.

Limited shoreline verification was conducted in accordance with the Project Instructions. For this survey the general limit of safe navigation of a survey launch was 30 meters offshore of apparent low tide, or approximately 3 to 5 meters of depth at Mean Lower Low Water. This NALL (Navigational Area Limit Line) varied in distance from shore and depth of water based on the apparent usefulness of the nearshore waters for navigation in the judgement of the hydrographer. See the Shoreline Flow Chart and Limited Shoreline Verification "New Rules" memoranda in Appendix XII for more information regarding the NALL.

The manuscript high water line was the seaward extent of flora in most areas of the survey, with a sand, gravel, and rock beach fronting this foliage. Detached positions and foul limit lines were acquired on manuscript features offshore of the NALL line to verify positions and determine extent of reefs, kelp, and connecting ledges which were not fully represented on the manuscript. New features and revisions offshore of the NALL line have been shown on the smooth sheet as warranted.

Shoreline notes describing offshore features found and the nature of the foreshore are in the detached position folders and portrayed on the Detached Position and Bottom Sample final plot submitted with this survey. Field cartographic codes were assigned to detached positions; until their heights can be reduced in final processing, rocks have been assigned code 089 if near vertical datum and code 165 if submerged. Heights are recorded in meters and decimeters and are corrected to predicted MLLW. All shoreline positions offshore of the NALL are plotted on the final field sheet and shown on the smooth sheet as warranted.

* Heights have been shown on the smooth sheet in feet as applicable. In general, heights of rocks plotting along the shoreline were not determined during survey operations. There were no revisions to the mean high water line.

Charted Features

Survey data was compared to Chart 17316, 16th Edition, January 5, 1991, 1:80,000 (NAD 83).

A floating fish pen in Eagle Harbor is identified on the final field sheet from the boatsheet notes. A boat ramp in Eagle Harbor was positioned (DN142/Fix # 30899) on the offshore end. Both features are identified as new. THE U.S.G.S TOPOGRAPHIC SHORELINE IS SHOWN IN BROWN ON THE SMOOTH SHEET FOR ORIENTATION ONLY. THE FISH HARBOR PEN K. CROSSLINES AND BOAT RAMP HAVE BEEN SHOWN ON THE SMOOTH SHEET AS FOUND DURING SURVEY OPERATIONS.

(0.5 fm)

Crosslines agreed within 1 meter with mainscheme hydrography. Total mileage, including the bufferline (NALL), was 29.3 nautical miles or 10% of total mainscheme hydrography.

L. JUNCTIONS ✓ SEE EVALUATION REPORT, SECTION L.

This survey junctions with surveys H-10682, RA-10-07-96, 1:10,000, at the southern limit. There is good agreement between soundings at the survey junction. Final comparison will be made at the Pacific Hydrographic Branch (PHB).

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

One prior survey covers this project area: H-2056 (1:40,000, 1890).

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

This survey was compared in the field to NOS chart 17316, 16th Edition, dated January 5, 1991, 1:80,000 scale, (NAD 83).

In general, charted soundings were found to be in good agreement with those from the current survey. Least depths from this survey were often shoaler due to the use of modern positioning and sounding equipment. Comparisons to the chart were complicated by the fact that the shoreline of the chart did not consistently match that of the current survey. Areas in which charted soundings appear shoaler than those from this survey have been adequately sounded and probably arise from positioning and scaling errors from the older surveys.

Non-sounding features are discussed in Section J. Final comparisons will be made at PHB after application of real tide correctors.

Dangers to Navigation ✓

Ten dangers to navigation within the limits of H-10680 were reported to the Seventeenth Coast Guard District, May 30, 1996. Copies of the correspondence can be found in ~~Appendix F~~ of this report.

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

Survey H-10680 is complete and adequate to supersede prior soundings and features in their common areas. CONCUR

Q. AIDS TO NAVIGATION ✓

None

R. STATISTICS ✓

NM Hydrography	290.9
Velocity Casts	1
Detached Positions	7
Selected Soundings	11188
Bottom Samples	54
Tide Stations	1
NM ² Hydrography	13.5
Dives	0

S. MISCELLANEOUS ✓

Bottom samples were collected and sent to the Smithsonian Institution in accordance with Project Instructions. No unusual tidal currents were found during the time of this survey.

Secchi disk observations were performed during hydrographic data operations, and results will be forwarded upon completion of this project. General water visibility was 5-10 meters, which is common in this area before the spring plankton blooms, which usually occur in late May.

T. RECOMMENDATIONS ✓

None

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>
Spring 1996 Horizontal Control Report for OPR-O328-RA.	June, 1996	N/CS34
Spring 1996 Coast Pilot Report for OPR-O328-RA.	June, 1996	N/CS26
Project related data for OPR-O328-RA.	Incremental	N/CS34
Secchi Disk Observations for OPR-O328-RA	June, 1996	N/CS31

Respectfully Submitted,



Matthew J. Harrison
Lieutenant Junior Grade, NOAA

Approved and Forwarded,



Dean R. Seidel
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 2 Dec 1999

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	03/01/92	ROUNDSTONE LIGHTHOUSE
* 2	F	058°31'42.800	134°56'03.000	0	0	0.0	0.0	03/01/92	03/01/92	ROUNDSTONE HEADS
3	F	058°30'16.042	134°52'09.349	2	250	0.0	0.0	03/20/96		GULL, 1917

* USED FOR CALIBRATION ONLY,



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

**ADVANCE
INFORMATION**

May 28, 1996

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

Dear Sir:

During the processing of hydrographic survey H-10680, in Northern Stephens Passage ten dangers to navigation have been discovered. 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

It is recommended that these dangers to navigation be included in the Local Notice to Mariners.

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

Sincerely,

Dean R. Seidel
Captain, NOAA
Commanding Officer
NOAA Ship RAINIER

Enclosure

cc: DMA/HTC
PMC
N/CS262



**ADVANCE
INFORMATION**

P 291645Z MAY 96
FM NOAA S RAINIER

TO CCGDSEVENTEEN JUNEAU AK
DMAHTCCNAVWARN WASHINGTON DC//MCNM//
INFO NOAAAMOP SEATTLE WA
BT
UNCLAS

NOAA SHIP RAINIER HAS LOCATED 10 DANGERS TO NAVIGATION IN
NORTHERN STEPHENS PASSAGE (PROJECT: OPR-0328-RA) WITHIN THE
LIMITS OF HYDROGRAPHIC SURVEY H-10680.

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

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

AFFECTED CHARTS:

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

ALL CHART DATUM ARE NAD83

ITEM	DANGER	DEPTH	LATITUDE (N)	LONGITUDE (W)
A	ROCK	COVERS 1/4 FM	058:27:54.411	134:49:42.860
B	ROCK	COVERS 1/4 FM	058:27:32.996	134:49:33.927
C	SHOAL	COVERS 7 1/4 FM	058:28:03.936	134:49:22.585
D	SHOAL	COVERS 6 1/2 FM	058:29:08.318	134:47:50.751
E	SHOAL	COVERS 6 3/4 FM	058:29:15.439	134:47:57.422
F*	SHOAL	COVERS 7 FM (7 1/4)	058:28:39.161	134:47:25.539
G	ROCK	COVERS 1/2 FM	058:28:29.156	134:47:19.410
H*	ROCK	AWASH (Covered 2 Feet)	058:29:41.954	134:47:49.708
I	SHOAL	COVERS 7 1/2 FM	058:30:08.861	134:52:23.150
J*	SHOAL	COVERS 9 FM (8 3/4)	058:29:40.016	134:51:50.192

* Items F, H, and J have been revised to reflect application of approved tides and graphic depiction on the Smith sheet.
THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW. QUESTIONS
CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE CHIEF, PACIFIC
HYDROGRAPHIC BRANCH AT (206) 526-6835. A LETTER WITH ATTACHED

**ADVANCE
INFORMATION**

DANGERS TO NAVIGATION

OPR-0328-RA

NORTHERN STEPHENS PASSAGE

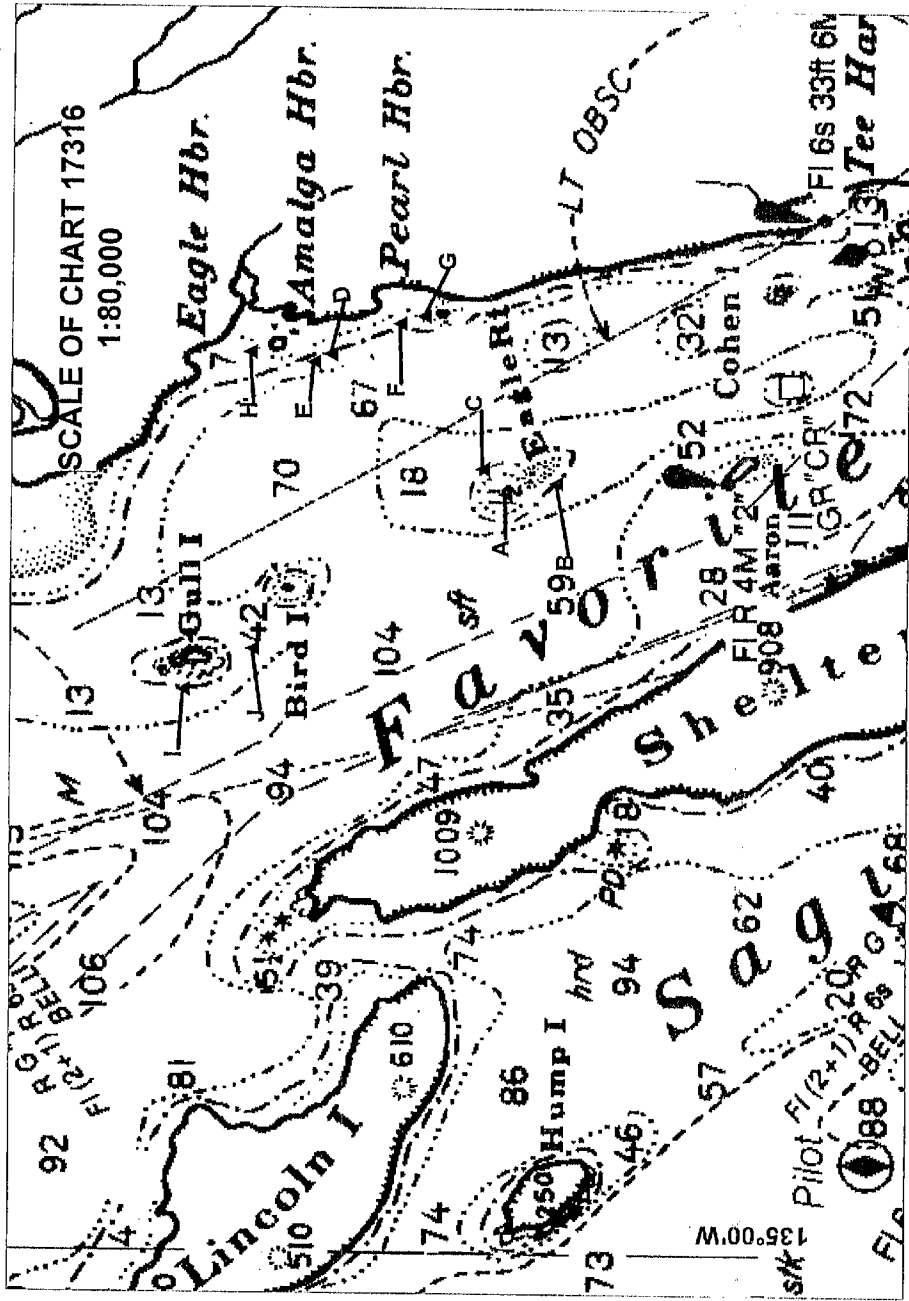
REGISTRY NUMBER H-10680

<u>AFFECTED CHARTS:</u>	<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

<u>ITEM</u>	<u>DANGER</u>	<u>DEPTH</u>	<u>LATITUDE (N)</u>	<u>LONGITUDE (W)</u>
A	ROCK	COVERS 1/4 FM	058:27:54.411	134:49:42.860
B	ROCK	COVERS 1/4 FM	058:27:32.996	134:49:33.927
C	SHOAL	COVERS 7 1/4 FM	058:28:03.936	134:49:22.585
D	SHOAL	COVERS 6 1/2 FM	058:29:08.318	134:47:50.751
E	SHOAL	COVERS 6 3/4 FM	058:29:15.439	134:47:57.422
F*	SHOAL	COVERS 7 FM (7 1/4)	058:28:39.161	134:47:25.539
G	ROCK	COVERS 1/2 FM	058:28:29.156	134:47:19.410
H*	ROCK	AWASH (Covered 2 1/4)	058:29:41.954	134:47:49.708
I	SHOAL	COVERS 7 1/2 FM	058:30:08.861	134:52:23.150
J*	SHOAL	COVERS 9 FM (8 3/4)	058:29:40.016	134:51:50.192

Items F, H, and J have been revised to reflect application of approved tides and graphic depiction on the smooth sheet.

ADVANCE
INFORMATION



APPROVAL SHEET

for

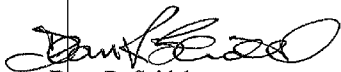
SURVEY H-10680

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 29, 1996



Dean R. Seidel
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
Rockville, Maryland 20852

TIDE NOTE FOR HYDROGRAPHIC SURVEY

ORIGINAL

DATE: September 12, 1996

HYDROGRAPHIC BRANCH: Pacific

HYDROGRAPHIC PROJECT: OPR-0328-RA

HYDROGRAPHIC SHEET: H-10680

LOCALITY: Favorite Channel, from Gull Island to Eagle Rock,
Northern Stephens Passage, Alaska

TIME PERIOD: May 7 - 22, 1996

TIDE STATION USED: 945-2336 Lincoln Island, AK

Lat. 58° 29.9'N Lon. 134° 57.9'W

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

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.595 meters

TIDE STATION USED: 945-2210 Juneau, AK

Lat. 58° 17.9'N Lon. 134° 24.7'W

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

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.675 meters



REMARKS: RECOMMENDED ZONING

Zone SEA3 - bounded by the polygon points:

LONGITUDE (W)	LATITUDE (N)
-135.270539	58.649457
-134.858495	58.655566
-134.710781	58.382241
-134.673853	58.297194
-134.269583	58.196589
-134.215162	58.212147
-134.164629	58.213184
-134.234985	58.121934
-134.651985	58.110941
-134.770999	58.224961
-134.891071	58.314673
-134.942379	58.387689
-135.133243	58.426392
-135.270539	58.649457

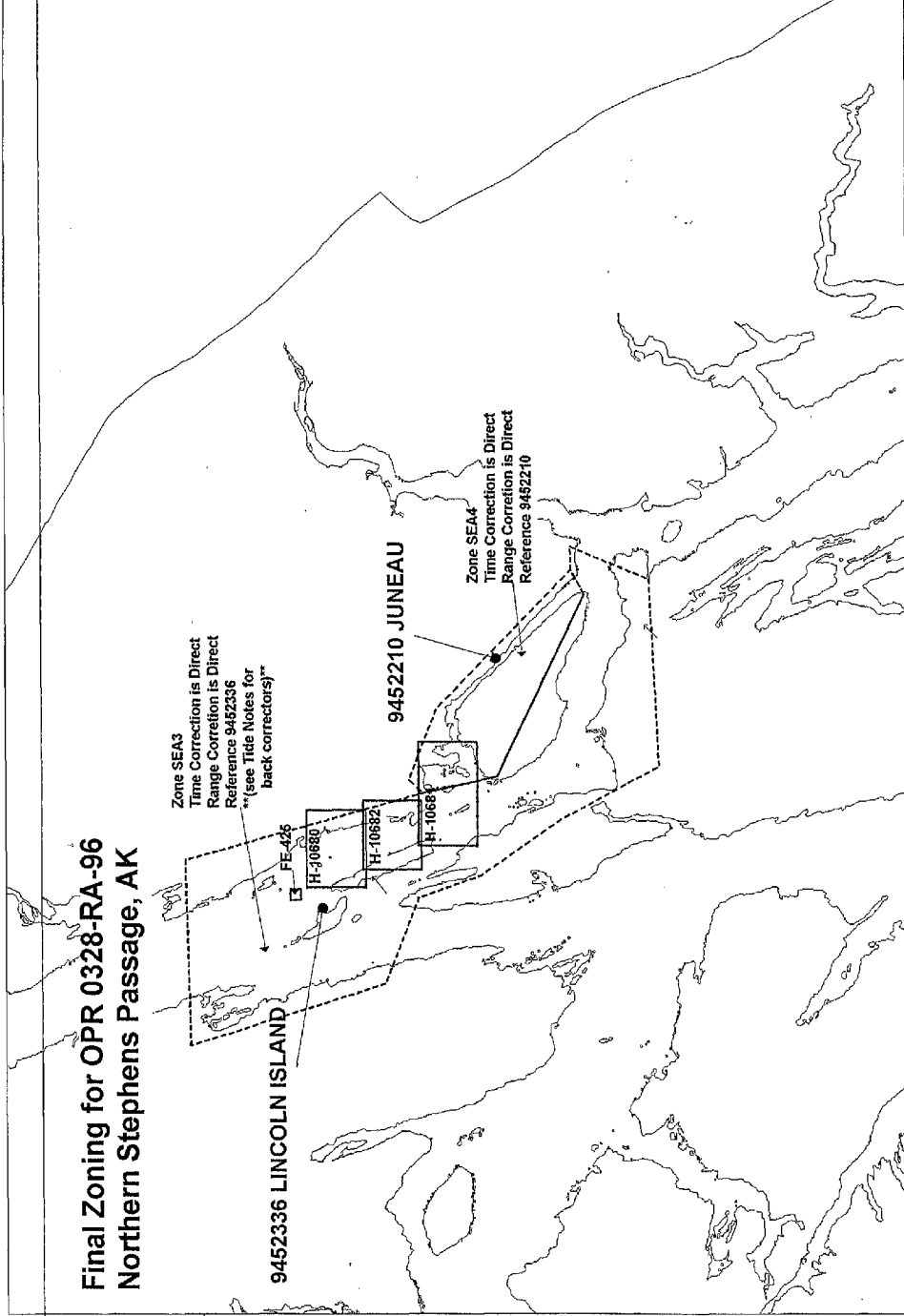
Times and heights are direct using Lincoln Island, AK (945-2336).

Where data are not available for Lincoln Island, AK, times are direct, and apply a X0.98 range ratio to heights using Juneau, AK (945-2210).

Note: Times are tabulated in Greenwich Mean Time.

William M. Hobbs
CHIEF, DATUMS SECTION

**Final Zoning for OPR 0328-RA-96
Northern Stephens Passage, AK**



GEOGRAPHIC NAMES

H-10680

Name on Survey	A 99-START 12316-19300 B ON PREVIOUS SURVEY NO. C ON U.S. QUADRANGLE MAPS D FROM LOCAL INFORMATION E ON LOCAL MAPS F P.O. GUIDE OR MAP G RANG MCNALLY ATLAS H U.S. LIGHT LIST K										
	ALASKA (title)	X		X							
AMALGA HARBOR	X		X								2
BIRD ISLAND	X		X								3
EAGLE HARBOR	X		X								4
EAGLE REEF	X		X								5
FAVORITE CHANNEL	X		X								6
GULL ISLAND	X		X								7
HALIBUT COVE	X		X								8
HUFFMAN HARBOR			X								9
FISHBROCK ISLAND			X								10
PEARL HARBOR	X		X								11
SHELTER ISLAND	X		X								12
STEPHENS PASSAGE (title)	X		X								13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved:

Christa C. Long
Chief Geographer

AUG 12 1996

NOAA FORM 77-27(H) (9-83)		U.S. DEPARTMENT OF COMMERCE			REGISTRY NUMBER		
HYDROGRAPHIC SURVEY STATISTICS					H-10680		
RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.							
RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1		SMOOTH OVERLAYS: POS., ARC, EXCESS		NA	
DESCRIPTIVE REPORT		1		FIELD SHEETS AND OTHER OVERLAYS		NA	
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							
PHOTOBATHYMETRIC MAPS (List): NA							
NOTES TO THE HYDROGRAPHER (List): NA							
SPECIAL REPORTS (List): NA							
NAUTICAL CHARTS (List): 17316 16th ED 1/5/91, 17300 27th ED 8/14/93							
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				160		160	
COMPARISON WITH PRIOR SURVEYS AND CHARTS							
EVALUATION OF SIDE SCAN SONAR RECORDS							
EVALUATION OF WIRE DRAGS AND SWEEPS							
EVALUATION REPORT					40	40	
GEOGRAPHIC NAMES							
OTHER							
*USE OTHER SIDE OF FORM FOR REMARKS				TOTALS	160	40	200
Pre-processing Examination by J. Stringham				Beginning Date 6/4/96	Ending Date 6/7/96		
Verification of Field Data by D. Doles, R. Mayor, R. Shipley				Time (Hours) 160	Ending Date 11/21/96		
Verification Check by B. Olmstead				Time (Hours) 3	Ending Date 11/23/96		
Evaluation and Analysis by R. Shipley				Time (Hours) 40	Ending Date 11/25/96		
Inspection by B. Olmstead				Time (Hours) 10	Ending Date 11/26/96		

**EVALUATION REPORT
H-10680**

A. PROJECT

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

B. AREA SURVEYED

This survey was conducted in Northern Stephens Passage, Alaska. Specifically, the area is centered in Favorite Channel from Gull Island to Eagle Reef.

The hydrographer has determined the inshore limits of safe navigation by defining a Navigable Area Limit 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.

Depths range from 0 to 118 fathoms. The bottom consists primarily of mud.

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 AutoCad, Versions 12 and 13.

At the time of the survey certification the format for the transmission of digital data had not been finally approved. In the interim, digital data for this survey exists in the standard HPS format which is a database format using the .dbf extension. In addition, the sounding plot, created with the .dbf data and enhanced using the AutoCad system, is filed both in the AutoCad drawing format, i.e., .dwg; and in the more universally recognized graphics transfer format, .dxf. Copies of these data files will be retained at PHB until data transfer protocols are developed and approved.

The drawing files necessarily contain information which is not part of the HPS data set such as geographic name text, line-type, 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 Guidelines No. 75 and No. 35.

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

E. SONAR EQUIPMENT

Side scan sonar was not used on survey H-10680.

F. SOUNDING EQUIPMENT

Sounding equipment is discussed in the hydrographer's report.

G. CORRECTIONS TO SOUNDINGS

The sounding data have been reduced to Mean Lower Low Water (MLLW). The reducers include corrections for actual tides, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with NOS specifications. Actual tide reductions are derived from the Lincoln Island, Alaska, gage 945-2336 and Juneau, Alaska, gage 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 the horizontal control stations used during hydrography are published values based on NAD 83. The smooth sheet is annotated with a NAD 27 adjustment tick based on values determined with NGS program NADCON. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: -1.185 seconds (-36.660 meters)
Longitude: 6.462 seconds (104.697 meters)

The year of establishment of the control station originates 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. There are a few positions where the maximum allowable horizontal dilution of precision (HDOP) limits of 3.75 have been exceeded during this survey. A review of the data, however, shows that the positioning of soundings located by these fixes is consistent with the surrounding information and is considered acceptable. None of these survey positions are used to locate dangers to navigation.

J. SHORELINE

Shoreline drawn on the smooth sheet originates with one digital cartographic feature file (CFE), DM-10046 and U.S. Geological Survey Quadrangles, Juneau B-3 (NW and NE) and Juneau C-3 (SW and SE). Shoreline originating with the USGS Quads is drawn in brown on the smooth sheet for orientation purposes only.

The shoreline from the above sources have been digitized during office processing and merged with the survey file during ACAD processing. Changes to alongshore and offshore features shown on the shoreline maps were verified and revised as warranted during survey operations. These changes have been shown on the smooth sheet.

K. CROSSLINES

Crosslines are adequately discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10680 junctions with the following survey.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10682	1996	10,000	South

The junction with H-10682 is complete. Soundings and depth curves are in satisfactory agreement within the common areas.

M. COMPARISON WITH PRIOR SURVEYS

H-2056(1890) 1:40,000

Survey H-2056 covers the entire area of the present survey. Comparison with the present survey generally reveals differences of 1-5 fathoms between survey depths. There appears to be no consistent pattern of shoaling or an increase of depths. These differences can be attributed to greater sounding coverage and relative accuracy of the data acquisition techniques. All critical depths originating from the prior survey were adequately addressed during survey operations.

Survey H-10680 is adequate to supersede the prior survey data within the common area.

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

H-3985 WD (1917) 1:20,000

Wire-drag surveys H-3986WD and H-3985WD cover the entire area of the present survey.

Three depths originating from these surveys are currently charted and were investigated during survey operations. The positions and depths of these prior soundings are listed below. The present survey found the same or shoaler depths in the vicinity of the prior depths and are shown below in bold notation.

<u>Prior Survey</u>	<u>Depth</u>	<u>Lat (N)</u>	<u>Long (W)</u>
H-3985WD	13FM (11.6FM)	58/30/22 (58/30/22)	134/51/15 (134/51/11)
H-3985WD	13FM (11.1FM)	58/30/51 (58/30/51)	134/52/30 (134/52/24)
H-3986WD	13FM (13.1)	58/27/39 (58/27/41)	134/47/54 (134/47/59)

There are no other charted items which originate from these wire-drag surveys. Survey H-10680 is adequate to supersede the prior wire drag depths within the common area.

T-3680(1917) 1:20,000

Prior shoreline map T-3680 covers the entire area common to survey H-10680 and comprises the alongshore ledges, reefs and rocks within the survey area. This prior data largely falls within the NALL line of the present survey and has not been superseded. The evaluator recommends that the charted information originating from T-3680 be retained.

N. ITEM INVESTIGATIONS

There is one AWOIS item within the survey area. It is adequately addressed in the hydrographer's report, section N.

O. COMPARISON WITH CHART

Survey H-10680 was compared with the following charts.

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
17316	16th	January 5, 1991	1:80,000	NAD 83
17300	2nd	August 14, 1993	1:209,978	NAD 83

a. Hydrography

Charted hydrography originates with the prior surveys mentioned in section M. The prior surveys are adequately addressed and require no further discussion.

Survey H-10680 is adequate to supersede charted hydrography within the common area.

b. Dangers to Navigation

Ten dangers to navigation were reported to the Seventeenth Coast Guard District, DMA/HTC, PMC and N/CS 262 on May 28, 1996. A copy of the report is attached. No additional dangers to navigation were found during office processing.

P. ADEQUACY OF SURVEY

Hydrography is adequate:

- a. delineate the bottom configuration, determine least depth, and draw the standard curves;
- b. reveal there are no significant discrepancies or anomalies requiring further investigations; 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.

Q. AIDS TO NAVIGATION

There are no fixed or floating aids to navigation located within the survey area. There are 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 found in the hydrographer's report. There were no additional miscellaneous items noted during office processing.

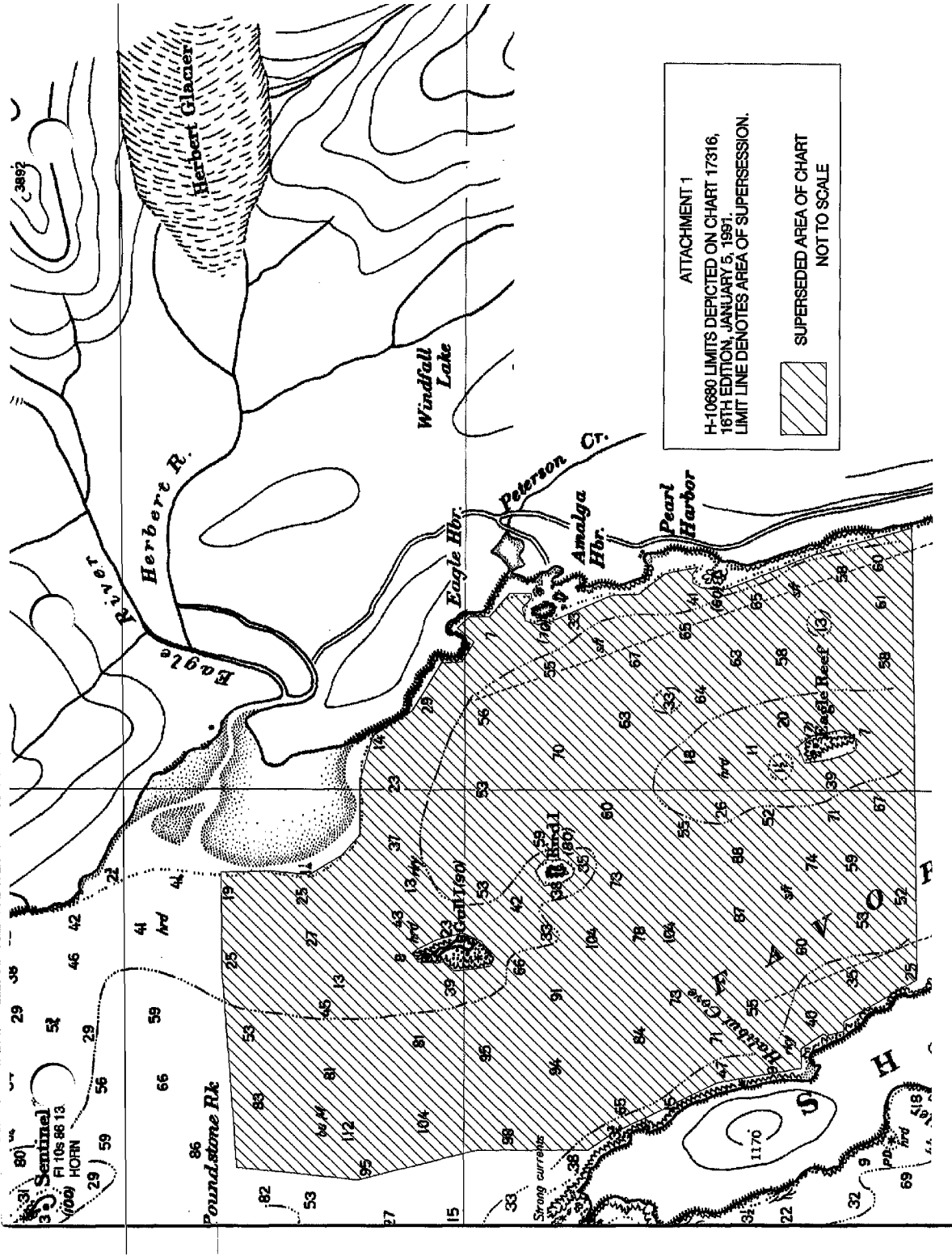
T. RECOMMENDATIONS

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

U. REFERRAL TO REPORTS


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

Bruce A. Overland
for Richard A. Shipley
Cartographer



ATTACHMENT 1

H-10680 LIMITS DEPICTED ON CHART 17316,
16TH EDITION, JANUARY 5, 1991.
LIMIT LINE DENOTES AREA OF SUPERSESSION.



SUPERSEDED AREA OF CHART
NOT TO SCALE

APPROVAL SHEET
H-10680

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

Bruce A. Olmstead Date: 11/26/96
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: 11/27/96
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

Final Approval

Approved:

Andrew A. Armstrong III Date: Jan 13, 1997
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-10680

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
17316	11-11-96	Rick Shipley	Full Part Before After Marine Center Approval Signed Via <i>Full Application</i> Drawing No. <i>of suds from smooth sheet</i>
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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