H10697a

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-10-36-97

Registry No.: H-10697a

LOCALITY

State: Alaska

General Locality: Southwest Alaska Peninsula

Sublocality: Eight Miles Southwest of Cape Kumlik

1997

CHIEF OF PARTY
CAPT Alan D. Anderson, NOAA

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.: H-10697a

FIELD NO.: RA-10-36-97

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State: Alaska

General locality: Southwest Alaska Peninsula

Locality: Eight Miles Southwest of Cape Kumlik

Scale: 1:10,000 Date of survey: August 7, 1997

Instructions dated: 5/15/96, Change #1 6/3/97 Project No.: OPR-P182-RA

Vessel: NOAA Ship RAINIER

Chief of party: CAPT Alan D. Anderson, NOAA

Surveyed by: CAPT A. Anderson, LT G. Noll

Soundings taken by ~~echo~~ sounder, hand lead, pole: DSF-6000N, Multibeam IDSSS

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

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

Verification by: M. Bigelow, D. Doles, R. Mayor, R. Shipley

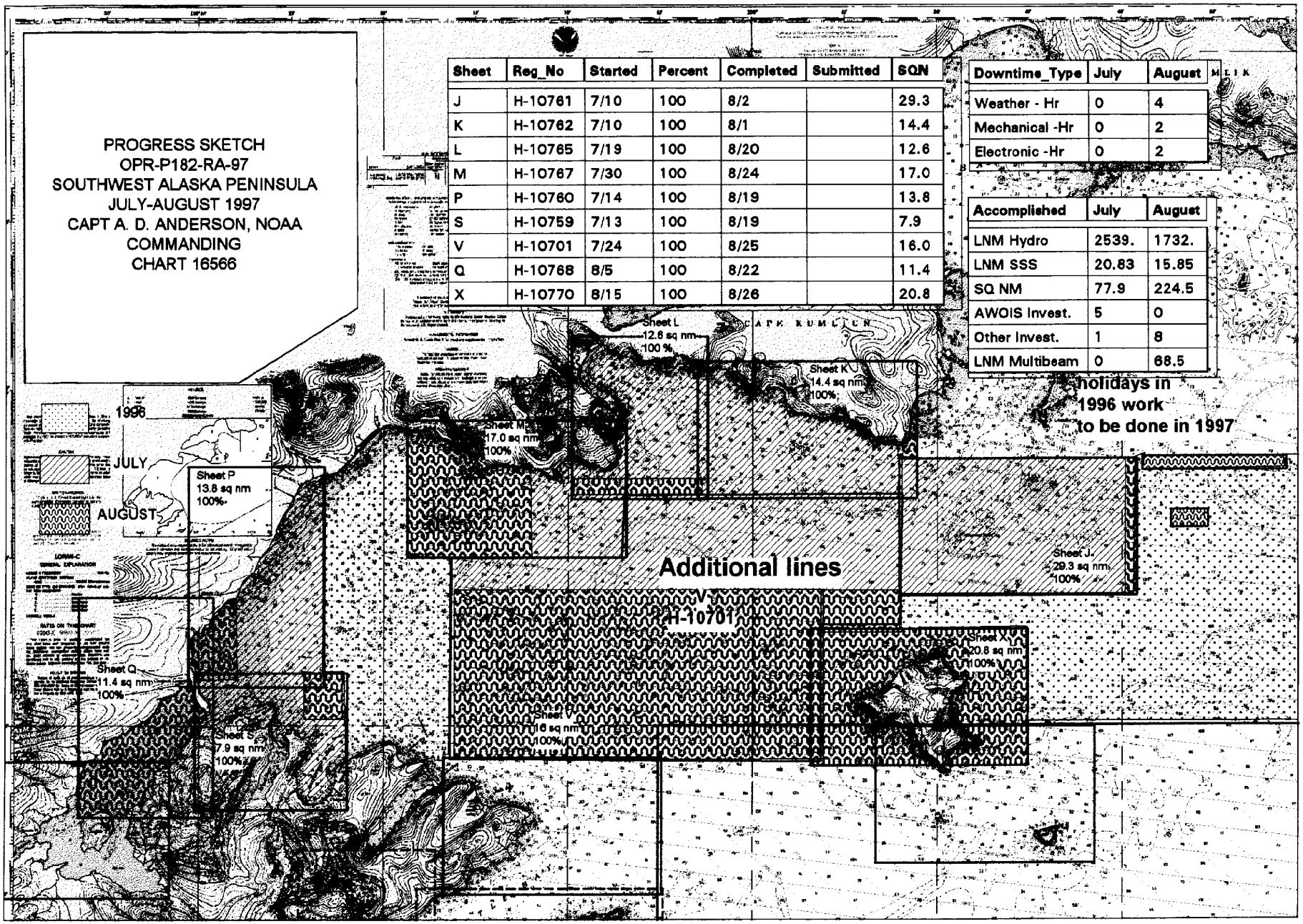
Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW and tenths

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

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

AWOIS & SURF 11/13/98
MCR

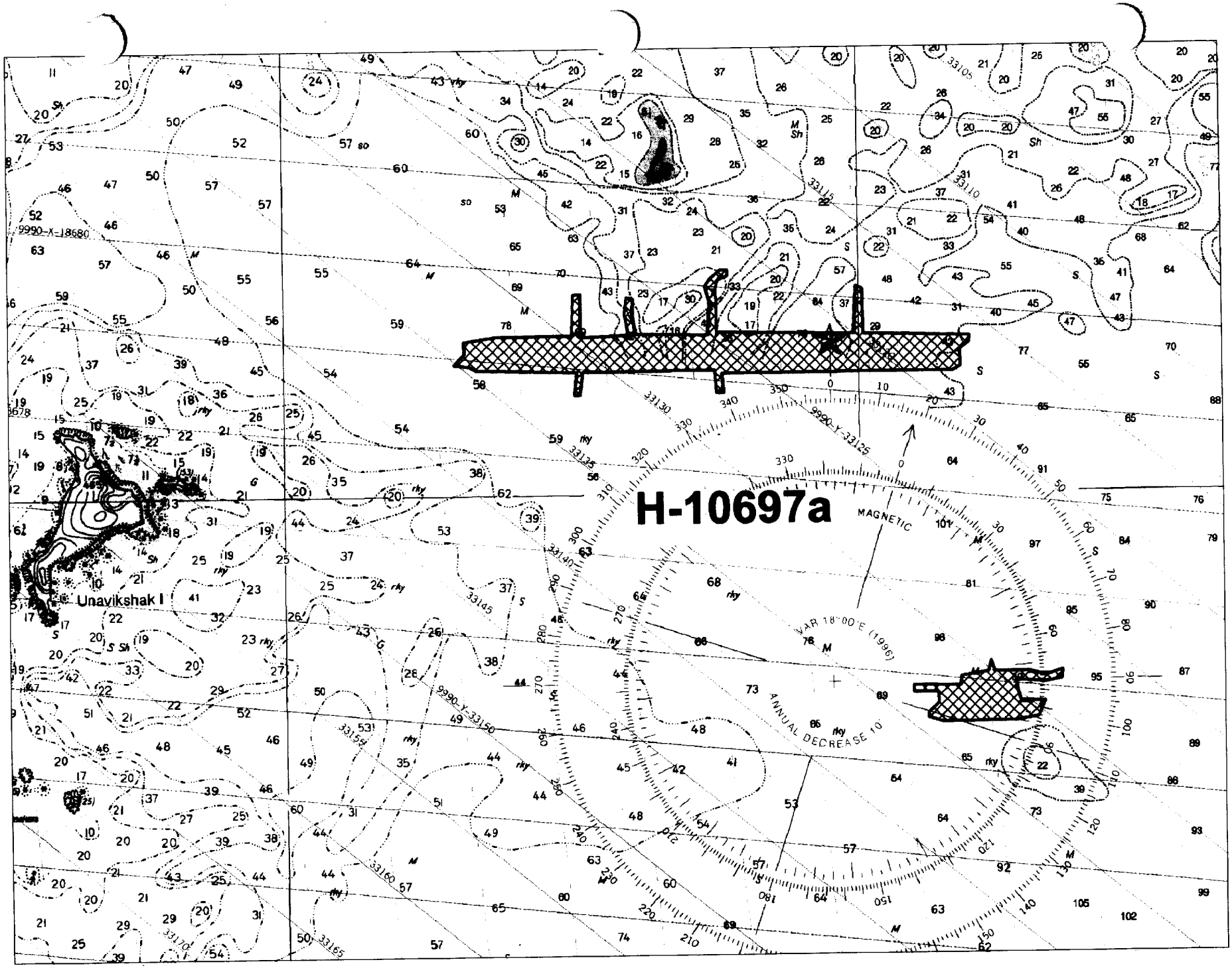
U.S. GOVERNMENT PRINTING OFFICE: 1986 - 652-007/41215



Sheet	Reg_No	Started	Percent	Completed	Submitted	SQN
J	H-10761	7/10	100	8/2		29.3
K	H-10762	7/10	100	8/1		14.4
L	H-10765	7/19	100	8/20		12.6
M	H-10767	7/30	100	8/24		17.0
P	H-10760	7/14	100	8/19		13.8
S	H-10759	7/13	100	8/19		7.9
V	H-10701	7/24	100	8/25		16.0
Q	H-10768	8/5	100	8/22		11.4
X	H-10770	8/15	100	8/26		20.8

Downtime_Type	July	August
Weather - Hr	0	4
Mechanical -Hr	0	2
Electronic -Hr	0	2

Accomplished	July	August
LNM Hydro	2539.	1732.
LNM SSS	20.83	15.85
SQ NM	77.9	224.5
AWOIS Invest.	5	0
Other Invest.	1	8
LNM Multibeam	0	68.5


H-10697a
Unavikshak I
MAGNETIC
VAR 18°00'E (1996)
ANNUAL DECREASE 10
9990-X-18680
9990-Y-33125
9990-Y-33150
33105
33110
33115
33130
33135
33140
33145
33155
33160
33165
33170

Descriptive Report to Accompany Hydrographic Survey H-10697a

Field Number RA-10-36-97
(Additional work)
Scale 1:10,000
August 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-P182-RA dated May 15, 1996, and Change No. 1 to Project Instructions OPR-P182-RA dated June 3, 1997. In addition a memorandum with the subject *OPR-P182-RA Additional Work* dated May 6, 1997 was received from the Pacific Hydrographic Branch detailing areas in need of additional soundings. Survey H-10697 (Additional work) is shown as "*holidays in 1996 work to be done in 1997*" in the sheet layout. This survey provides contemporary hydrographic data to update National Ocean Service (NOS) nautical charts, and responds to requests from the domestic commercial fishing industry, the U.S. Coast Guard (USCG), and two U.S. Legislators.

B. AREA SURVEYED ✓ SEE EVAL REPORT, SECTION B

The survey area lies off the Southwest Alaska Peninsula, eight miles south of Cape Kumlik. The limits of the northern gap lie approximately at longitude 157° 36' 45" W (to the west), longitude 157° 28' 15" W (to the east), latitude 56° 31' 30" N (to the north), and latitude 56° 31' 12" N (to the south). The limits of the southern gap lie approximately at longitude 157° 28' 30" W (to the west), longitude 157° 27' 00" W (to the east), latitude 56° 28' 20" N (to the north), and latitude 56° 27' 45" N (to the south). Data acquisition was conducted on DN 219, August 7, 1997. The survey bathymetry varies from irregular submarine ridges on the northern gap and a gentle slope from 10 to 95 fathoms deep on the southern gap.

C. SURVEY VESSELS ✓

Data were acquired by RAINIER as noted in the Survey Information Summary (attached)

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

Both single beam and swath data were simultaneously collected by the RAINIER to attain bottom coverage while maintaining shoal depth ability. Single beam data were acquired and processed using the Hydrographic Data Acquisition and Processing System (HDAPS.) Swath data were acquired and processed using Intermediate Depth Swath Survey System (IDSSS) and Hydrochart II (Seabeam Inc.) programs. The final field sheet soundings and contours from both acquisition systems were combined using MapInfo (Version 4.1) and MapBasic software developed by N/CS32 and modified by RAINIER personnel. A complete listing of software for HDAPS is included in Appendix VI. *

* FILED WITH SURVEY RECORDS

E. SONAR EQUIPMENT ✓

No side scan sonar operations were conducted on this survey. CONCUR

F. SOUNDING EQUIPMENT ✓

The RAINIER is equipped with a Raytheon DSF-6000N echo sounder. 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.* All DSF-6000N soundings were acquired in meters using the High + Low, high frequency digitized setting. Both high and low frequency digitized soundings were recorded into HDAPS. High frequency soundings were used for selected soundings, unless noted otherwise in the daily echograms. The echo sounder functioned within specifications and all un-rejected echogram records were judged acceptable. FINAL PLOTTED SOUNDINGS HAVE BEEN SHOWN ON THE SMOOTH SHEET IN FATHOMS,

The IDSSS configuration consisted of a data acquisition system (DAS). The DAS consisted of a Digital Equipment Corporation's (DEC) VAX Station 4000-90 computer system interfaced with a Seabeam Instruments Inc. Hydrochart II sonar system, Datawell heave-roll-pitch sensor (HIPPY), Sperry gyrocompass, a Trimble P-code GPS system, and Ashtech DGPS system. Hydrochart II is a multibeam sonar system that uses two transducer arrays to produce an athwartship swath of bathymetric data approximately 2.5 times the water depth.

The DEC VAX Station 4000-90 computer collected input from the Hydrochart II, HIPPY, gyrocompass, and the navigation system. It also provided guidance to the helmsman and plotted a near real time contour map. The DAS consisted of the following equipment:

DAS EQUIPMENT
Hydrochart II Sonar System
DEC Server DSRVW-7C
DEC VAX Station 4000-90 (DAS)
TTi 8212 Tape Drive
Sperry MK 227 Gyrocompass
DATAWELL Hippy
ZETA 24" Plotter
DEC monitor

Data processing was also controlled on the DAS system. The DEC VAX Station 4000-90 computer was used to process the data and create corrected merge files, selected sounding files, and processing sheets.

A comparison between HDAPS and IDSSS soundings showed very good agreement. Differences between the soundings obtained on the two systems were 1 meter or less. Concur

Problems ✓

On DN 218 (DN 219 GMT) the DAS system began to display multiple error messages (VP RESET COMPLETE and GPGGA QUAL LOW). Dataset 97219-0202 in particular required many bad sections of data to be manually edited out by Survey personnel.

* FILED WITH SURVEY RECORDS

G. CORRECTIONS TO ECHOSOUNDINGS ✓

Sound velocity correctors are based on a sound velocity profile (SVP) cast taken on DN 218. This cast (97218170.RA) was taken prior to the collection of data and automatically extended down to 189.3 meters by the program VELOCITY. A 20-point profile extending further, to 200 meters was then generated for use by the IDSSS acquisition system with the program VELOCITY. The program VELOCITY was also used to generate a table (HPAPS table #13) for use by the ship's HDAPS system for application to single beam data. Refer to the Survey Information Summary. ATTACHED TO THIS REPORT

A SBE SEACAT Profiler (S/N 219), calibrated December 15, 1996 was used for the SVP cast. Velocity correctors were computed using the PC programs SEACAT and VELOCITY (version 3.3, 1996), 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".*

RAINIER'S static transducer depth was determined during dry-dock in 1995 using the form in Field Procedures Manual (FPM) Fig. 2.2.

Settlement and squat correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2, using the form in FPM Fig. 2.3 and are included with project data for OPR-P182-RA. Correctors for the RAINIER were determined from observations in King's Bay, Alaska during the fall of 1997.

Offsets for GPS antennae, static draft, and settlement and squat correctors were tabulated in the HDAPS Offset Tables.* Offset table #7 was used for the RAINIER. Printouts of these tables are included with project data for OPR-P182-RA.

The primary tide control station used for datum determination is Sand Point, Alaska (945-9450).

Predicted tides for this survey were based on the reference station at West End - Sutwik Island, Alaska (945-8665). Zone SAP13 was selected for the tidal zoning of this survey since the areas of hydro fell entirely within the bounds of this zone. The Coastal and Estuarine Oceanography Branch (N/OES334), through N/CS31, provided predicted tides on diskette. The HDAPS Tide Corrector Table is included in Appendix V* of this report. The zone correctors used during data acquisition are shown in the Survey Information Summary. Attached to this report.

The hydrographer recommends that the subordinate control station for this survey's tidal datum determination be Unavikshak Island, Alaska (945-8762). RAINIER personnel installed a Sutron 8200 digital bubbler tide gage on Unavikshak Island on July 9, 1997. This gage performed well during the period of this survey, but suffered a break in the orifice tubing on July 21. This was repaired within the three-day limit. Refer to the Field Tide Notes and supporting data in Appendix V* for level closure and station description. This information has been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. A request for approved tides was forwarded to N/OES23 on September 12, 1997.

APPROVED TIDE NOTE DATED JAN. 5, 1998 IS ATTACHED. See Eval Rpt., Section G.

H. CONTROL STATIONS SEE EVAL REPORT, SECTION H.

The horizontal datum for this project is NAD 83. Control stations used for hydrography on this survey are listed in Appendix III* and section I. Refer to the OPR-P182-RA-97 Horizontal Control Report for site descriptions, monitor results, and closure information. THE CONTROL STATIONS USED FOR THIS SURVEY ARE ATTACHED.

* FILED WITH SURVEY RECORDS

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

All soundings were positioned using differential GPS (DGPS). Primary control was from the USCG DGPS Beacons in Kodiak, Alaska (KODIAK) and Cold Bay, Alaska (COLD BAY). All differential stations were monitored, and results were sent to N/CS31 per Project Instructions. DGPS performance was frequently monitored aboard RAINIER using the program SHIPDIM, version 2.2R (April 1996) with a Trimble Centurion P-code receiver and an Ashtech OEM sensor (both differentially-corrected). Some outliers were noted, but none indicate systematic or continuous errors in any of the reference stations or beacons. The SHIPDIM output file, OUTLIER.SUM, is included in the project data for OPR-P182-RA.

J. SHORELINE ✓

There was no shoreline associated with this survey. CONCUR

K. CROSSLINES ✓

Crossline with mainscheme hydrography comparisons were within 1-2 meters. There was a total of 2.9 nautical miles of crosslines, comprising 8.9% of mainscheme hydrography.

L. JUNCTIONS SEE EVAL REPORT, SECTION L.

The following contemporary surveys junction with the northern gap of survey H-10697a.

Junctions *to the*...	***with* Survey**	**Field Number**	**Scale**
North	H-10557	RA-10-12-94	1:10,000
South	H-10697	RA-10-13-96	1:10,000
West	H-10694	RA-10-11-96	1:10,000
East	H-10545	RA-10-6-94	1:10,000

The following contemporary surveys junction with the southern gap of survey H-10697a.

Junctions *to the*...	***with* Survey**	**Field Number**	**Scale**
North	H-10545	RA-10-6-94	1:10,000
South	H-10696	RA-20-1-96	1:20,000
West	H-10697	RA-10-13-96	1:10,000
East	H-10554	RA-40-1-94	1:40,000

Soundings between this survey and the six adjacent surveys were found to be within 4 meters, based on CONCUR predicted tides. Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after reduction to final vertical datum.

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

Prior surveys covering this survey area are as follows:

Prior Survey	Scale	Date
H-4506	1:60,000	1925

Although prior survey soundings were sparse; they were found to be in good agreement with those from the current survey. Least depths from the current survey were more shoal or in agreement with prior surveys. CONCUR Differences between the current survey and priors can most probably be attributed to improved positioning and sounding equipment. Final comparisons will be done at PHB after reduction to final sounding datum using tidal information collected concurrently with this survey.

N. ITEM INVESTIGATIONS ✓

No AWOIS items were assigned to this survey. CONCUR

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

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

Chart	Scale	Edition Number	Date	Datum
16566	1:77,477	8th *	August 3, 1996	NAD 83

* Comparison with 9th Edition dated 3/1/98 was used during office processing.

Comparison of charted soundings with the survey is described in Section L, Junctions & Section M, Comparison with Prior Surveys, and requires no further discussion. Final sounding comparisons will be made at PHB after reduction to final vertical datum.

Dangers to Navigation ✓

No dangers to navigation were reported to the Seventeenth Coast Guard District for H-10697a. CONCUR

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

Survey H-10697a is complete and adequate to supersede prior soundings and features in their common areas. CONCUR

Q. AIDS TO NAVIGATION ✓

No aids to navigation are present on survey H-10697a. CONCUR

R. STATISTICS ✓

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

 * FILED WITH SURVEY RECORDS

S. MISCELLANEOUS ✓

There were no bottom samples collected on survey H-10697a. No unusual tidal currents were found during this survey. concur

T. RECOMMENDATIONS ✓

None.

U. REFERRAL TO REPORTS ✓

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

Title	Date Sent	Office
OPR-P182-RA Horizontal Control Report	September 1997	N/CS34
OPR-P182-RA 1997 Coast Pilot Report	September 1997	N/CS26
Project related data for OPR-P182-RA	September 1997	N/CS34
Secchi Disk Observations for OPR-P182-RA	September 1997	N/CS31

Respectfully Submitted,

James B Jacobson

James B. Jacobson
Senior Survey Tech., NOAA

Approved and Forwarded,

Alan D. Anderson

Alan D. Anderson
Captain, NOAA
Commanding Officer

APPROVAL SHEET

for

H-10697a

RA-10-36-97

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Guidelines; and the 1994 version of the Field Procedures Manual in producing this survey. The data were examined daily during data acquisition and processing.

The field sheet and accompanying records have been reviewed by me and 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,

Alan D. Anderson

Alan D. Anderson
Captain, NOAA
Commanding Officer
NOAA Ship RAINIER

CONTROL STATIONS as of 9 Oct 1997 ✓

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
001	G	056:30:09.724	157:43:12.024	162	250	0.0	0.0		00/00/97	SHAK
002	G	056:26:06.935	158:17:01.986	33	250	0.0	0.0		00/00/97	ANG
100	G	057:37:07.800	152:11:21.000	0	250	0.0	0.0	A	03/01/96	KODIAK 313 KHZ USCG DGPS
101	G	055:05:30.000	162:31:54.000	0	250	0.0	0.0	B	06/25/96	COLD BAY 289 KHZ USCG DGPS
003	G	056:21:50.308	157:50:26.735	310	250	0.0	0.0		00/00/97	NAK
004	G	056:18:34.550	158:23:01.380	24	0	0.0	0.0		00/00/97	CHIGNIK LT

Survey Information Summary

Project: OPR-P182-97 **Project Name:** SW ALASKA PENINSULA - YEAR 2

Instructions Dated: 5/15/96 **Project Change Info:**

Change #	Dated
1	6/3/97

Sheet Letter: RV **Registry Number:** H-10697

Sheet Number: RA-10-36-97

Survey Title: Ten Miles Southwest of Cape Kumlik

Data Acquisition Dates: **From:** ~~06~~ 07-Aug-97 218 **To:** ~~06~~ 07-Aug-97 218

Vessel Usage Summary

VESNO	MS	SPLITS	DEV	XL	S/L	DP	BS	DIVE
2120	3	1		2				

Sound Velocity Cast Information

Launch Table #	Ship Table #	Cast DN	Max Depth	Position	Applicable DN
0	13	218	189.3	56/31/39 157/36/03	DN 218

Tide Zone Information

Zone #	Time Corr.	Height Corr.
SAP13	000 hr 00 min	X1.01

Tide Gage Information

Tide Gage #	Gage Name	Installed	Removed
945-8762	UNAVIKSHAK IS	7/9/97	8/27/97
945-9450	SAND POINT, AK	1/1/90	12/31/99

Statistics Summary

Type	Total:	Percent XL:	8.9%
MS	32.5	SQNM:	1.7
SPLIT	6.7		
XL	2.9		

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: January 5, 1998

HYDROGRAPHIC BRANCH: Pacific

HYDROGRAPHIC PROJECT: OPR-P182-RA
HYDROGRAPHIC SHEET: H-10701[a] and H-10697[a]

LOCALITY: Southwest Alaska Peninsula

TIME PERIOD: Jul 24 - Aug 26, 1997

TIDE STATION USED: 945-8762 Unavikshak Island, AK.
Lat. 56° 29.5'N Lon. 157° 44.4'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.519 meters

TIDE STATION USED: 945-8849 Chankluit Island, AK.
Lat. 56° 08.8'N Lon. 158° 06.4'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.367 meters

TIDE STATION USED: 945-8917 Chignik, Anchorage Bay, AK.
Lat. 56° 17.8'N Lon. 158° 24.0'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.486 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SAP7, SAP8, SAP11 & SAP13
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: Use tide data from the appropriate station for each zone according to the order in which they are listed in the "Tidezone" corrector files. For example, tide station one (TS1) would be the first choice for an applicable zone followed by TS2, etc. when data are not available. All zones within a survey sheet may not have the same order of applicable tide stations.

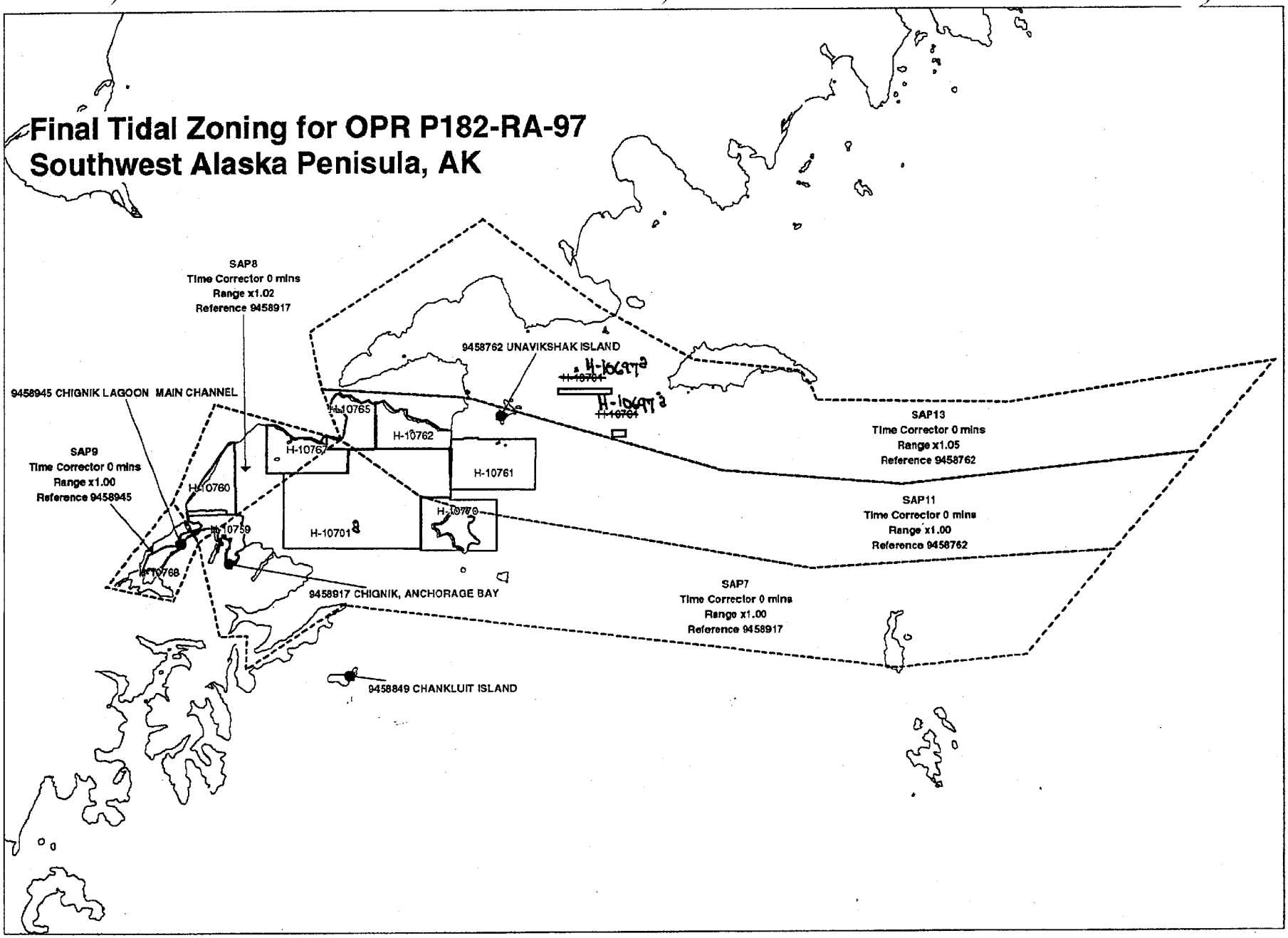
CHIEF, OPERATIONAL ANALYSIS BRANCH

Final tide zone node point locations for OPR P182-RA-97,
Sheet H-10701.

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

	Tide Station Order	AVG Time Correction	Range Correction
ZoneSAP7			
-158.130628 56.461475	945-8917	0	1.00
-158.474563 56.325022	945-8762	0	0.98
-158.422005 56.199729	945-8849	0	1.05
-158.355785 56.200309			
-158.358075 56.156015			
-158.122839 56.241028			
-156.778131 56.154977			
-156.465239 56.171892			
-156.253456 56.311786			
-156.986771 56.288084			
-157.826885 56.36808			
-157.940076 56.386887			
-158.130628 56.461475			
Zone SAP8			
-158.474563 56.325022	945-8917	0	1.02
-158.130628 56.461475	945-8762	0	1.00
-158.435831 56.508574	945-8849	0	1.08
-158.534417 56.380701			
-158.474563 56.325022			
Zone SAP11			
-158.17548 56.528131	9458762	0	1.00
-158.130628 56.461475	9458917	0	1.03
-157.940076 56.386887	9458849	0	1.09
-157.826885 56.36808			
-156.986771 56.288084			
-156.253456 56.311786			
-156.052556 56.44225			
-156.765615 56.399588			
-157.202448 56.418381			
-157.821992 56.516328			
-158.17548 56.528131			
Zone SAP13			
-157.784139 56.754504	945-8762	0	1.05

-158.205035 56.604023	945-8917	0	1.07
-158.17548 56.528131	945-8849	0	1.13
-157.821992 56.516328			
-157.202448 56.418381			
-156.765615 56.399588			
-156.052556 56.44225			
-155.865614 56.562087			
-156.50579 56.508002			
-156.974332 56.511196			
-156.989667 56.533217			
-157.013216 56.550903			
-157.271989 56.564698			
-157.500459 56.63578			
-157.784139 56.754504			


Final Tidal Zoning for OPR P182-RA-97
Southwest Alaska Penisula, AK
SAP8
Time Corrector 0 mins
Range x1.02
Reference 9458917
9458762 UNAVIKSHAK ISLAND
9458945 CHIGNIK LAGOON MAIN CHANNEL
SAP9
Time Corrector 0 mins
Range x1.00
Reference 9458945
H-10765
H-10762
H-10767
H-10761
H-10760
H-10759
H-10701a
H-10768
9458917 CHIGNIK, ANCHORAGE BAY
SAP13
Time Corrector 0 mins
Range x1.05
Reference 9458762
SAP11
Time Corrector 0 mins
Range x1.00
Reference 9458762
SAP7
Time Corrector 0 mins
Range x1.00
Reference 9458917
9458849 CHANKLUIT ISLAND

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10697A

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 16566, 16013	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ALASKA (title)	X		X							1
ALASKA PENINSULA (title)	X		X							2
KUMLIK, CAPE (title)	X		X							3
NORTH PACIFIC OCEAN	X		X							4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

Approved:

Chief Geographer JUL 8 2008

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H) (9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10697a

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

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

SHORELINE DATA

SHORELINE MAPS (List): NA

PHOTOBATHYMETRIC MAPS (List): NA

NOTES TO THE HYDROGRAPHER (List): NA

SPECIAL REPORTS (List): NA

NAUTICAL CHARTS (List): Chart 16566 9th Edition, March 7, 1998

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS VERIFICATION	AMOUNTS EVALUATION	AMOUNTS TOTALS
POSITIONS ON SHEET			
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			

	TIME-HOURS VERIFICATION	TIME-HOURS EVALUATION	TIME-HOURS TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS			
VERIFICATION OF SOUNDINGS			
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	85		85
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		35	35
GEOGRAPHIC NAMES			
OTHER* CHART COMPILATION		38	38
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	85	73	158

Pre-processing Examination by Pacific Hydrographic Branch	*Beginning Date* 1/23/98	*Ending Date* 2/13/98
Verification of Field Data by M. Bigelow, G. Nelson, R. Mayor, R. Shipley	*Time (Hours)* 85	*Ending Date* 8/7/98
Verification Check by B. Olmstead	*Time (Hours)* 4	*Ending Date* 9/17/98
Evaluation and Analysis by R. Shipley , G. Nelson	*Time (Hours)* 35	*Ending Date* 9/22/98
Inspection by B. Olmstead	*Time (Hours)* 3	*Ending Date* 9/24/98

EVALUATION REPORT

H-10697a

A. PROJECT

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

B. AREA SURVEYED

The survey area is adequately described in the hydrographer's report.

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

Depths range from 16 to 109 fathoms. No bottom samples were taken on this survey.

C. SURVEY VESSELS

The hydrographer's report contains adequate 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 and the MicroVax processing system used by the hydrographer, the Hydrographic Processing System (HPS), and MicroStation 95.

Processed digital data for this survey exists in the standard HPS format, that is a database format using the .dbf extension. In addition, the smooth sheet drawing is filed in the MicroStation format, i.e., dgn extension. Copies of these files have been forwarded to the Hydrographic Surveys Division and a backup copy will be retained at PHB. 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 name text, line-type data, and symbolization. Cartographic codes used to describe the digital data are those authorized by Hydrographic Survey Guideline No. 35 and No. 75.

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

E. SONAR EQUIPMENT

Sonar equipment has been adequately addressed in the hydrographer's report.

F. SOUNDING EQUIPMENT

Sounding equipment has been adequately addressed in the hydrographer's report.

G. CORRECTIONS TO SOUNDINGS

Soundings and elevations below Mean High Water (MHW) 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 Unavikshak Island, AK, tide gauge 945-8762. Chankluit Island, AK. tide gauge 945-8849 and Chignik, Anchorage Bay, AK. tide gauge 945-8917 listed on the approved tide note were not used.

The original tide note for hydrographic survey H-10697a was labeled as H-10701. This tide note was meant to encompass the 1998 survey work for H-10701a and H-10697a. The survey limit for H-10697a was also mislabeled in the final tidal zoning graphic as H-10701. Corrections have been made to these documents.

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 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:	-2.730 seconds	(-84.442 meters)
Longitude:	7.336 seconds	(125.507 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 twelve positions exceeds limits in terms HDOP. These positions are isolated and occur randomly throughout the survey area. The soundings located by these fixes are consistent with the surrounding information. These fixes are considered acceptable. DGPS performance checks were conducted in the field and found adequate.

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

Additional information concerning specific control system type, 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 has been adequately addressed in the hydrographer's report.

K. CROSSLINES

Crosslines are adequately discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10697a junctions with the following surveys.

Northern Portion

Survey	Year	Scale	Area
H-10557	1994	1:10,000	North
H-10697	1996	1:10,000	South
H-10694	1996	1:10,000	West
H-10545	1994	1:10,000	East

Southern Portion

H-10545	1994	1:10,000	North
H-10696	1996	1:20,000	South
H-10697	1996	1:10,000	West
H-10554	1994	1:40,000	East

The junctions with surveys H-10694, ~~H-10695~~, H-10696 and H-10697 were not formally completed since these surveys were processed previously. Soundings from the 1996 work generally agree within 0.5 to 1 fathom and depth curves are in good agreement. Surveys H-10545, H-10554 and H-10557 are metric surveys with units in meters. Converting metric soundings to fathoms show present survey depths generally agree with the 1994 surveys within one fathom. However, depth curves depicted on the 1994 surveys could not be drawn in coincidence with the present survey because the depth curve values are not the same.

Depth curves on the present survey have been drawn considering the sounding data from the junctional surveys and should be used within the common areas. Several soundings from the junctional surveys have been transferred to the smooth sheet in color to better delineate the bottom. Adjoins notes have been added to the smooth sheet in the junctional areas.

The bottom characteristic sand (S) at latitude 56/28/21 N, longitude 152/27/50 W, has been transferred in color from H-10545 and should be used to supersede the charted mud (M) notation at latitude 56/28/18 N, longitude 157/29/00 W. See evaluation report, section O.

M. COMPARISON WITH PRIOR SURVEYS

Survey	Year	Scale
H-4506	1925	1:60,000

Prior survey H-4506 covers the entire area of the present survey. Comparison with this prior survey is considered satisfactory. A few isolated shoal areas not found in the 1925 surveys were located during this survey. The present survey is generally shoaler by about 1.0 to 5.0 fathoms. These differences may be attributed to greater sounding coverage, improved positioning and sounding methods and relative accuracy of the data acquisition techniques. All charted data originating from survey H-4506 has been adequately addressed during the present survey work.

Survey H-10697a is adequate to supersede the prior survey in its entirety.

N. ITEM INVESTIGATIONS

There were no AWOIS items assigned to this survey.

O. COMPARISON WITH CHART

Survey H-10697a was compared with the following chart:

Chart	Edition	Date	Scale	Datum
16566	9th	March 7, 1998	1:77,477	NAD83

a. Hydrography

Charted hydrography originates with the previously discussed prior survey. The prior survey has been adequately addressed in section M and requires no further discussion.

The bottom characteristic mud (M), charted at latitude 56/28/18 N, longitude 157/28/00 W, appears to have originated from H-10545 (1994) but may have been applied to the chart with the wrong characteristic. Revise the mud (M) to sand (S) at that location as shown on survey H-10697a. There were no other surveys with which to associate this charted feature.

Survey H-10697a is adequate to supersede charted hydrography within the common area.

b. Dangers To Navigation

No dangers to navigation were discovered during survey operations.

P. ADEQUACY OF SURVEY

Hydrography contained on survey H-10697a is adequate to:

a. Delineate the bottom configuration, determine least depths, and draw the required depth curves;

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

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

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, April 1994 Edition with the following exception.

In the event that the field units submission of survey data will exceed four weeks from the completion of field work, the Chief of Party will submit a written explanation for the delay indicating the anticipated transmittal date to the Chief of the appropriate processing section. Marine Center ships will forward their explanation through the Marine Center Director. Fieldwork for survey H-10697a was completed August 8, 1997 but not transmitted for office processing until January 23, 1998.

Q. AIDS TO NAVIGATION

Fixed and floating aids to navigation are adequately addressed in the hydrographer's report.

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

R. STATISTICS

Statistics are adequately itemized in the hydrographer's report.

S. MISCELLANEOUS

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

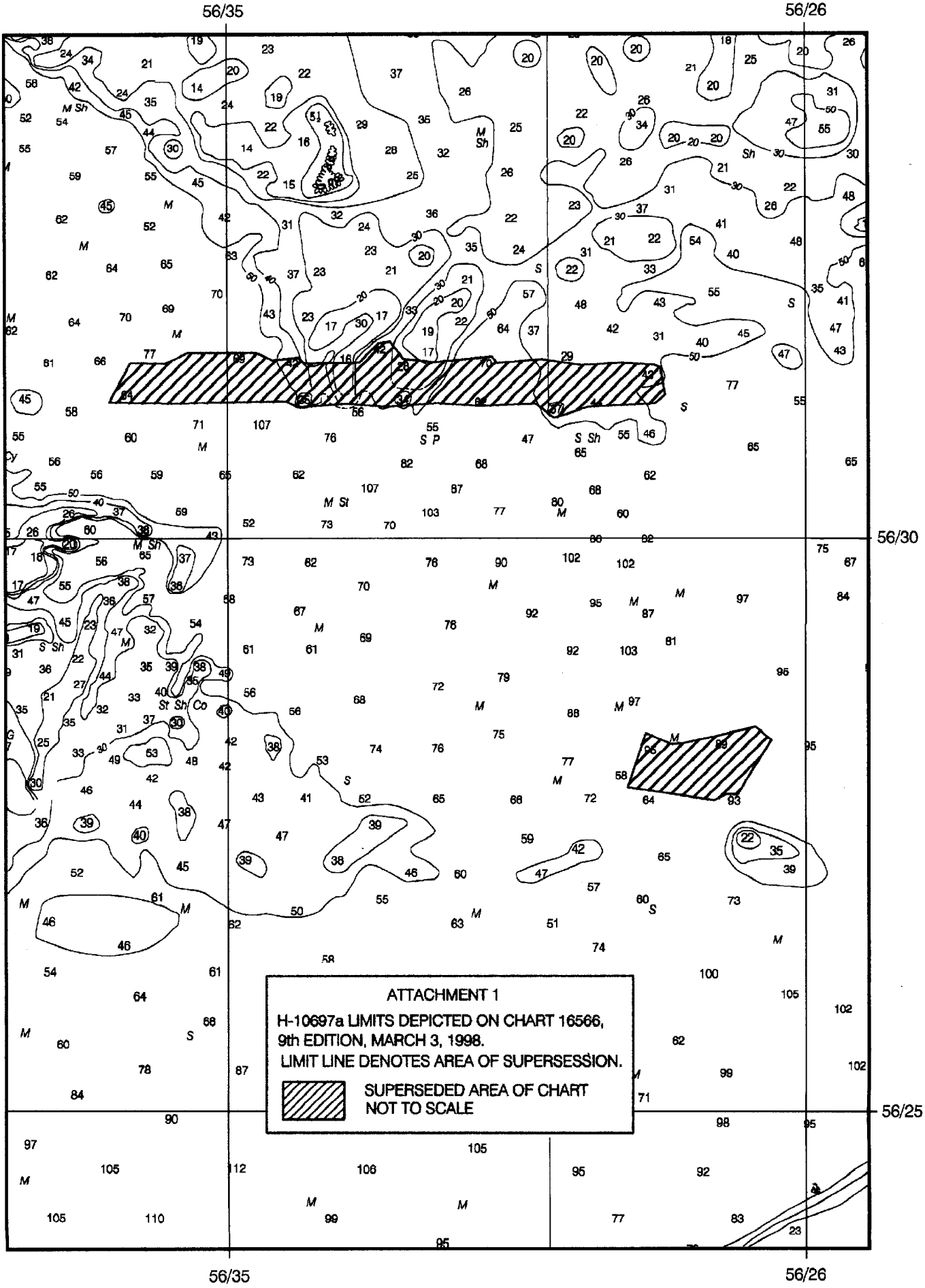
T. RECOMMENDATIONS

Additional work as specified in the attached memorandum for OPR-182-RA, dated May 6, 1997, was completed. No additional fieldwork is recommended.

U. REFERRAL TO REPORTS

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

Rick Shipley
Cartographer


56/35
56/26
56/30
56/25
56/35
56/26
ATTACHMENT 1
H-10697a LIMITS DEPICTED ON CHART 16566,
9th EDITION, MARCH 3, 1998.
LIMIT LINE DENOTES AREA OF SUPERSESSION.
SUPERSEDED AREA OF CHART
NOT TO SCALE

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

May 6, 1997

MEMORANDUM FOR: Captain Andy Armstrong, NOAA
Chief, Hydrographic Surveys Division

FROM: Commander Kathy Timmons, NOAA
Chief, Pacific Hydrographic Branch

SUBJECT: OPR-P182-RA Additional Work

After reviewing the hydrographic surveys H-10697 and H-10701 from OPR-P182-RA, I strongly recommend that the RAINIER return to these areas during the 1997 field season and perform additional work. The work performed by the RAINIER was not sufficient such that holidays exist and least depth developments were not conducted.

The areas that need additional soundings are:

H-10697 - A junctional holiday exists on the northern edge of H-10697 with the contemporary survey H-10557. A second junctional holiday exists on the eastern boundary of H-10697 where it meets H-10545 and H-10554. (Refer to attachment #1)

H-10701 - Only a minor amount of development work was done on this survey. As a result, over 100 additional sounding lines should be completed as indicated on the attached sheet. Basically, this calls for splitting almost every main scheme line west of longitude 158/10/00 W; splitting most lines south of latitude 56/23/00 N; and then a few additional lines throughout the remaining area. Also, two holidays in the sounding lines exist and are located at approximately 56/24/00N, 158/12/00W and 56/19/50N, 158/13/09W. (Refer to attachment #2)

COPY

cc: PMC - Albright
PMC-RA - Anderson

APPROVAL SHEET
H-10697a

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: 9/24/98
Bruce A. Olmstead
Senior Cartographer, Cartographic Section
Pacific Hydrographic Branch

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

James C. Gardner Date: 10/29/98
James C.Gardner
Commander, NOAA
Chief, Pacific Hydrographic Branch

****

Final Approval

Approved:

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

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10697

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
16566	8/26/98	[signature]	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. Full application of soundings and features from
			smooth sheet.
			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.
			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.
			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.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.