H10761

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-10-16-97

Registry No. H-10761

LOCALITY

State Alaska

General Locality Southwest Alaska Peninsula

Sublocality Katmai Reef and Vicinity

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

REGISTER NO.

H-10761

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-10-16-97

State: Alaska

General locality: Southwest Alaska Peninsula

Locality: Katmai Reef and Vicinity

Scale: 1:10,000 Date of survey: July 10 - August 2, 1997

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

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

Chief of party: CAPT Alan D. Anderson, NOAA

Surveyed by: NOAA Ship RAINIER Personnel

Soundings taken by echo sounder, ~~hand lead, pole~~: Knudsen 320M, DSF 6000N

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

Evaluation by: L. Deodato Automated plot by: HP Design Jet 650C

~~Protracted by~~

Verification by: M. Bigelow, D. Doles, R. Mayor, L. Deodato

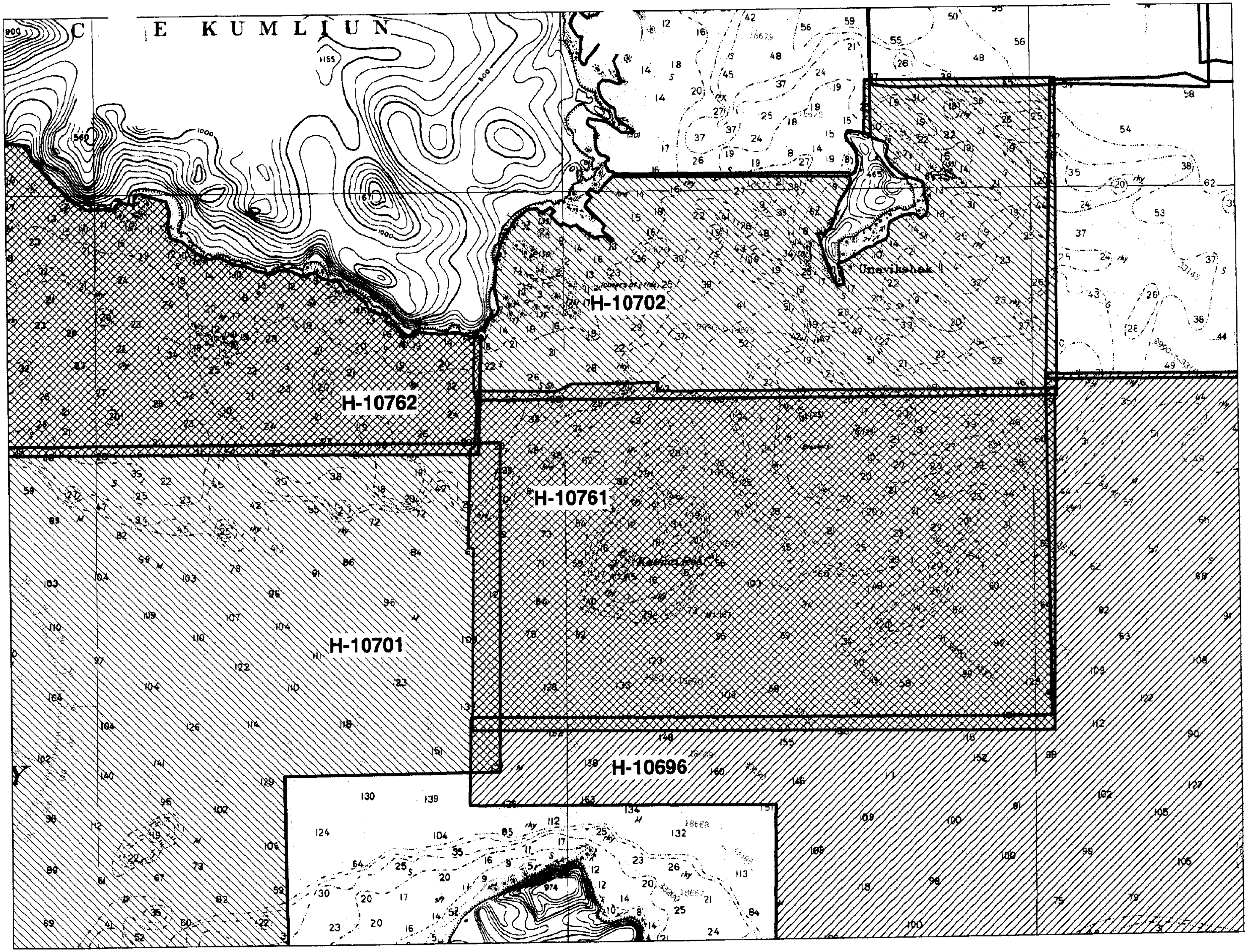
Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW and tenths

REMARKS: All times 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.

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

Awois/Surf 6/17/98 mSR

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


C E KUMLIUN
H-10702
H-10762
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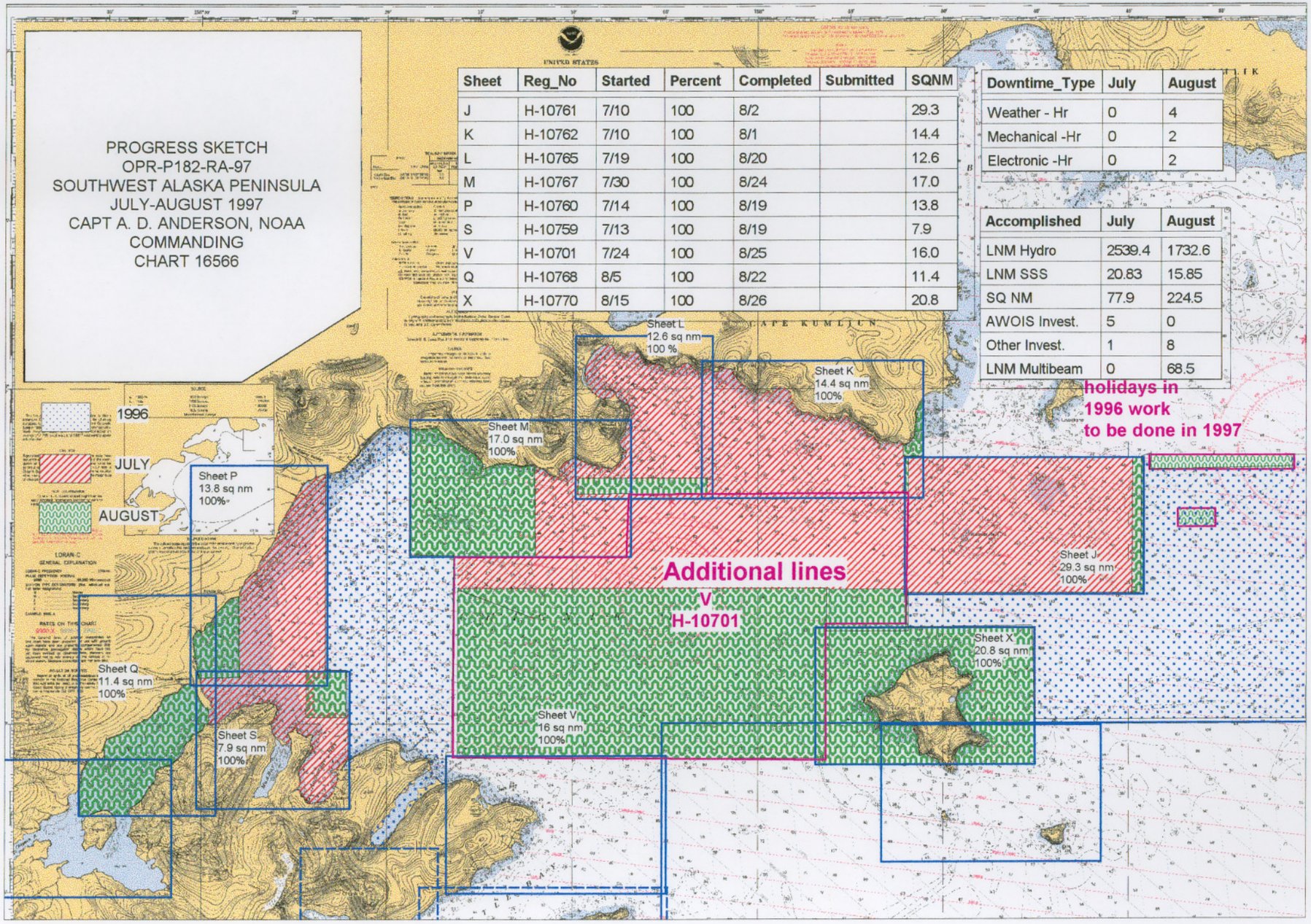


Sheet	Reg_No	Started	Percent	Completed	Submitted	SQNM
J	H-10761	7/10	100	8/2		29.3
K	H-10762	7/10	100	8/1		14.4
L	H-10765	7/19	100	8/20		12.6
M	H-10767	7/30	100	8/24		17.0
P	H-10760	7/14	100	8/19		13.8
S	H-10759	7/13	100	8/19		7.9
V	H-10701	7/24	100	8/25		16.0
Q	H-10768	8/5	100	8/22		11.4
X	H-10770	8/15	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	2539.4	1732.6
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

Descriptive Report to Accompany Hydrographic Survey H-10761

Field Number RA-10-16-97
Scale 1:10,000
July 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 ~~December 20~~ May 15, 1996, and Change No. 1 to Project Instructions OPR-P182-RA dated June 3, 1997. Survey H-10761 is shown as sheet J in the sheet layout. This survey provides contemporary hydrographic data to update National Ocean Service (NOS) nautical chart 16566, resolves ~~two~~ one Automated Wreck and Obstruction Information System (AWOIS) sounding, 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, ten miles southeast of Cape Kumliun, in the vicinity of Katmai Reef. Approximate survey limits are longitude 157 ° 39' 30" W (to the east), longitude 157 ° ~~39~~ 52 0" W (to the west), latitude 56° 27' 39" N (to the north), and latitude 56° 2~~4~~ 3' 40" N (to the south). Data acquisition was conducted between July 10 and August ~~1~~ 2, 1997 (DNs 191-213). The survey bathymetry varies from offshore reefs and islets to over 250 meters deep, with a generally radial structure to the submarine ridges. The area is distinguished by two significant features; a charted (but unnamed) reef formation with two rocky islets and Katmai Reef, a small but dangerous charted reef.

C. SURVEY VESSELS ✓

Data were acquired by RAINIER and her survey launches as noted in the Survey Information Summary. (attached)

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 soundings and contours were generated using MapInfo (Version 4.1) and MapBasic software developed by N/CS32 and modified by RAINIER personnel. A digitized shoreline file was provided in AutoCAD DXF format by N/CS34 and imported into MapInfo as the manuscript. A complete listing of software for HDAPS is included in Appendix VI.*

E. SONAR EQUIPMENT ✓

No side scan sonar operations or multibeam operations were conducted on this survey concur.

F. SOUNDING EQUIPMENT ✓

For this survey, Raytheon DSF-6000N echosounders and a Knudsen 320M echosounder were used for all launch hydrography, and an Odom DF3200 Mark II echosounder was used aboard RAINIER for bottom sampling. These echosounders operate on dual frequencies of 112 kHz and 24 kHz, recording digitally and on paper. Both high and low frequency digitized soundings, acquired in meters, were recorded in HDAPS. High frequency soundings were used for selected soundings, unless noted otherwise in the daily echograms. Echosounder serial numbers are found on the headers of the daily Raw Master Printouts.* The Odom fathometer did not automatically mark selected soundings coincident with the HDAPS sounding, but a

* Filed with the hydrographic data.

manual fix mark was created simultaneously with the HDAPS detached position for the bottom samples. All echosounders functioned within specifications and all un-rejected echogram records were judged acceptable

G. CORRECTIONS TO ECHOSOUNDINGS ✓

Sound velocity correctors are based on sound velocity profile (SVP) casts taken on DN 192 and DN 205. Refer to the Survey Information Summary (attached) for position and depth of the cast. Note that the cast on DN 192 was not quite deep enough for the deepest soundings collected on this survey, thus it needs to be extrapolated beyond the 30% allowed by the FPM. The hydrographer recommends using a corrector of –5.7 meters for depths between 286.6 meters and 304 meters. This corrector was not applied to the field data.

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".

Static transducer depths for all launches were determined in the spring of 1997 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 launches 2121, 2122, and 2123 were determined from observations in Shilshole Bay, Washington during the spring of 1997. Correctors for launches 2124 and 2126 were determined from observations in Shilshole Bay taken in the spring of 1996. Correctors for launch 2125 were determined from observations made near Scull Island, Alaska in March 1997.

Offsets for GPS antennae, static draft, and settlement and squat correctors were tabulated in the HDAPS Offset Tables.* Offset tables 1 through 6 are numbered to correspond to the last digit of the launch number. Offset tables are included with project data for OPR-P182-RA.

Launches were not equipped with heave, roll and pitch (HRP) sensors for this survey.

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). 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)

The subordinate control station for this survey's tidal datum determination was installed on 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 January 5, 1998 is attached

H. CONTROL STATIONS ✓ See Evel Rpt, 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.

* Filed with the hydrographic data.

** Copy attached to this report.

I. HYDROGRAPHIC POSITION CONTROL ✓ See Evel Rpt., Section I

All soundings were positioned using differential GPS (DGPS). Primary control was from the RAINIER-installed VHF differential reference stations on Unavikshak Island (SHAK, 1920) and on Anguvik Island (ANG, 1920). The USCG DGPS Beacons in Kodiak, Alaska (KODIAK) and Cold Bay, Alaska (COLD BAY) served as alternate control. All differential stations were monitored, and results were sent to N/CS31 per Project Instructions. Launch-to-launch DGPS performance checks were performed in accordance with Section 3.4.4 of the FPM. These performance checks were position comparisons made with the RAINIER DGPS reference stations and the USCG DGPS Beacons. 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 ✓ See Evel Rpt., Section J

No shoreline manuscript for this survey was available during times of shoreline verification. Shoreline details were transferred to field sheets using a 1:10,000 scale MapInfo plot of the NOS Chart 16566 (8th Ed. Aug3/96) raster file (16566_1.kap) because the project instructions specified that the photogrammetric manuscript had already been applied to this edition of the chart.

Digital files in AutoCAD DXF format for Coastal Mapping Survey CM-8309 (Cape Kumlik to Jack Point, Alaska) were received from the Pacific Hydrographic Branch (N/CS34) on July 23, 1997 (DN 204). The topographic sheets from CM-8309 that include the survey area are TP-00909SE and TP-00914.* However, only the DXF file TP-00909SE.DXF contains shoreline applicable to this survey. Since the TP-00909SE.DXF file was not registered in any geodetic coordinates, it could only be imported and transformed into MapInfo with limited accuracy (up to approximately 10 meters of error per MapInfo documentation) in the OPR-P182-RA-97 project parameters. It appears to accurately portray features found by the hydrographer within this precision. Concur

* TP-00914 does not apply to this survey.

Limited shoreline verification was conducted near low water in accordance with the Project Instructions. For this survey the general limit of safe navigation of a survey launch is 5-50 meters offshore of apparent low tide. Also, all charted features were verified in the field except for the following:

Charted Feature	Geographic Position		Observed Feature	
	Latitude	Longitude	Description	
Rock *	56° 25' 43" N	157° 48' 37" W	Disproved. Position 30852	Concur
Rock	56° 25' 40" N	157° 48' 44" W	Disproved. Position 30853, 30448	Part of Katmai Reef
Rock	56° 25' 35" N	157° 48' 47" W	Disproved. Position 30851, 30447	Same as above
Rock *	56° 25' 29" N	157° 48' 52" W	Disproved. Position 30850, 30446	Concur
Rock	56° 26' 24" N	157° 44' 29" W	Near TP Rock. Disproved by Positions 40778, 40779	Part of Reef shown on smooth sheet

* These sunken rock symbols are from prior survey H 4309 and were used to describe the shoal rocky nature of Katmai Reef.

The charted danger blue-tint area (inshore of the approximate charted 10-fathom curve) around the reef and islets centered at latitude 56°27'00"N and longitude 157°44'30"W was surveyed and found to be navigable up to a heavy kelp area. This kelp area was delimited with detached positions and designated "foul with kelp"; see the MapInfo table "kelp limit." In several cases, hydrography was run inshore of this foul limit at higher stages of tide. As noted on the chart, breakers were observed on these reefs on most days. The charted rocks shown on the chart around the reefs and islets were ledge or reef high points. Although the reefs and islets do not appear exactly as shown on the chart, they are adequately represented and correctly located at the chart scale. Notation Foul with kelp and breakers has been shown on the smooth sheet

Shoreline features from TP-909SE were carefully compared to the shoreline verification field notes and the charted shoreline details. Discrepancies between charted and field shoreline should be resolved using the manuscript shoreline and field features as recorded in the MapInfo workspace "Final J DP plot." Data was analyzed during office processing and shown on the smooth sheet as warranted.

K. CROSSLINES ✓

Crossline and mainscheme hydrography soundings were generally within one-meter difference, except in areas of steep bathymetry. Crosslines comprised 11.3% of the mainscheme mileage as shown in the Survey Summary printout attached to this report.

L. JUNCTIONS ✓ See Eval Report, Section L.

The following contemporary surveys junction with survey H-10761.

Junctions *to the...*	*with* Survey	Year	Scale
North	H-10702	1996	1:10,000
Northeast	H-10697 *	1996	1:10,000
South & East	H-10696	1996	1:20,000
West	H-10701	1996	1:20,000
Northwest	H-10762	1997	1:10,000

Soundings on these surveys were compared in the field using predicted tide-corrected digital data from 1996 and 1997, and were found to be in good agreement. Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after reduction to final vertical datum.

* H-10697 falls northeast of present survey and does not junction. H-10702 / H-10696 are controlling junctional survey in this area.

M. COMPARISON WITH PRIOR SURVEYS ✓ See Eval Report, Section M

The prior survey covering this survey area is:

Prior Survey	Scale	Date
H-4509	1:60,000	1926
H-4506	1:60,000	1925

Soundings on H-4509 were found to be in fair agreement, 1-4 fathoms, with those from the current survey given the difference in scales between these surveys. Differences between the current survey and prior can be attributed to improved modern 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 ✓

There was one AWOIS item for survey H-10761: Concur

AWOIS # : 52051	**DN:** 202-203
CHART #:16566 (1:77,477, 8th Edition, 8/3/96)	**VESNO:** 2124, 2125
ITEM DESCRIPTION: Shoal	
SOURCE: CL948/91 – NOAA Ship MILLER FREEMAN – Coast Pilot Report identifies position of a new shoal with observed depths of 35 and 41 meters. Soundings are shown on the chart as 19 and 22 fathoms with the notation 'Rep 1991' and a contour line.	

GEOGRAPHIC POSITION

	LATITUDE	LONGITUDE	POSITION #
CHARTED:	56° 24' 11" N	157° 46' 01" W	"center of soundings"
OBSERVED:	56° 24' 11" N	157° 46' 01" W	
POSITIONED BY:	DGPS	**DATUM:**	MLLW (NAD 83)
METHOD OF INVESTIGATION: Ten-meter and 25-meter dual-frequency echosounder development to determine extent and least depth of the shoal area.			
FINDINGS: Least depths on the extensive shoal area were found to be 17-19 fathoms.* The shoal area extends along a long ridge trending northeast from the vicinity of the AWOIS soundings. *concur*			

* 18.2 - 20 Fathoms after application of approved tides.

CHARTING RECOMMENDATIONS

The hydrographer recommends removing the 19 and 22 fathom soundings, the special contour surrounding these soundings, and the notation "Rep 1991" from the chart. Least depths from this survey should be charted, along with a revised 20-fathom contour. *concur*

O. COMPARISON WITH THE CHART ✓ See Eval Report, Section O

This survey was compared in the field to features portrayed on NOS Chart 16566 (8th Ed. Aug 3, 1996, NAD83 horizontal datum). Charted soundings are representative of the prior survey soundings compared in section M, except for the AWOIS soundings in section N and the 24* fathom sounding at latitude 56° 27'19.84" N, longitude 157° 46' 13.11" W. This sounding west of the 'breakers' area is misplaced offshore of the prior survey position, and should be removed during revision. Charted contours should be revised to reflect the complexity of the bathymetry as shown on this survey. Non-sounding features are discussed in Section J. Final sounding comparisons will be made at PHB after reduction to final vertical datum.

* 24 Fathom Sounding was Charted incorrectly from H-4506. The prior survey shows a 54 Fm depth at this location. Present Survey results similar depths (52-56 fms)

Dangers to Navigation

One danger to navigation was reported to the Seventeenth Coast Guard District on August 29, 1997. *concur*
Copy attached to this report.

P. ADEQUACY OF SURVEY ✓ See Eval Report, Section P

Survey H-10761 is complete and adequate to supersede prior soundings and features in their common areas. *concur*

Q. AIDS TO NAVIGATION ✓

No aids to navigation are located near survey H-10761. *concur*

R. STATISTICS ✓

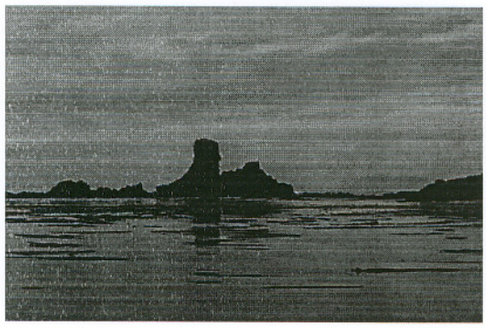
Statistics are listed in the Survey Information Summary included with this report. There are 28,879 selected soundings on this survey.

S. MISCELLANEOUS ✓

Bottom samples were collected and sent to the Smithsonian in accordance with Project Instructions. The tidal currents generally flood north-northeast at about a knot, and go slack on the ebb in the vicinity of this survey. Secchi disk observations indicate approximately 10 meters of visibility in this region.

T. RECOMMENDATIONS

The hydrographer recommends naming the islet located at latitude 56° 27'19.59" N, longitude 157° 44'55.44" W after the historic control station "FLAT TOP" located on its top. Due to the proximity of this feature to the already-charted Katmai reef. it is possible for the mariner entering Chignik Bay from the east to mistake "FLAT TOP" for the reef, which is invisible at all but the lowest waters, and thus put the vessel in danger. The name of the station is quite descriptive of the feature, as shown in this photograph. Recommend this name be considered by the Chief Geographer for submission to Board of Geographical Names.



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	October 1997	N/CS34
OPR-P182-RA 1997 Coast Pilot Report	October 1997	N/CS26
Project related data for OPR-P182-RA	September 1997	N/CS34
Secchi Disk Observations for OPR-P182-RA	October 1997	N/CS31

Respectfully Submitted,

Guy T. Noll
Lieutenant, NOAA

Approved and Forwarded,

Alan D. Anderson
Captain, NOAA
Commanding Officer

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: J **Registry Number:** H-10761

Sheet Number: RA-10-16-97

Survey Title: VICINITY OF KATMAI REEF

Data Acquisition Dates: **From:** 10-Jul-97 191 **To:** 02-Aug-97 214

Vessel Usage Summary

VESNO	MS	SPLITS	DEV	XL	S/L	DP	BS	DIVE
2120							1	
2121	3	4	3	3	2	3		
2123	3	3	3	1		2		
2124	6	4	3	3		2		
2125	2		2				3	
2126	3	3						

Sound Velocity Cast Information

Launch Table #	Ship Table #	Cast DN	Max Depth	Position	Applicable DN
3	13	205	165	56/26/57	203-213
				158/02/56	
1	0	192	287	56/25/15	FSD-203
				157/51/28	

Tide Zone Information

Zone #	Time Corr.	Height Corr.
SAP11	000 hr 00 min	X0.97

Tide Gage Information

Tide Gage #	Gage Name	Installed	Removed
945-8762	UNAVIKSHAK IS	7/9/97	8/27/97

Statistics Summary

Type	Total:
BS	68
DEV	99.46
DP	107
MS	382.24
S/L	0
SPLIT	165.45
XL	43.37

Percent XL:	11.3%
SQNM:	29.3

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

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
August 28, 1997

ADVANCE INFORMATION

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

Dear Sir:

The following dangers to navigation should be included in the Local Notice to Mariners. They were positioned by the NOAA Ship RAINIER while a conducting hydrographic surveys in the vicinity of Chignik Bay, Alaska. The dangers are shown on the three pages of attached chartlet and affect chart 16566, 8TH ED., 96/08, 1:77,477, NAD 83. Depths of features are referenced to Mean Lower Low Water using predicted tides.

FEATURE	DEPTH (Fathoms)	LATITUDE (N)	LONGITUDE (W)	POSITION	Depth (Meters)	Survey Number
Shoal	8 ¾	56:21:02.864	157:47:54.013	"10511+3"	16.1	H-10770
Shoal	4 ¾	56:20:56.574	157:54:28.371	"20031+6"	8.9	""
Shoal	3 ¼	56:21:03.582	157:48:16.931	"10521+4"	6.2	""
Shoal	7 ¾	56:20:14.131	158:23:47.644	"20999+4"	14.3	H-10759
Rock	5 ¾	56:21:45.730	158:25:05.943	"60000+0"	10.8	H-10760
Rock	5 ¾	56:22:36.980	158:23:54.010	"60479+0"	10.8	""
Rock	5 ½	56:22:13.660	158:25:48.307	"60480+0"	10.3	""
Rock	2 ½	56:24:49.525	158:24:13.456	"60514+0"	4.8	""
Rock	1 ¾	56:23:35.287	158:26:00.622	"60515+0"	3.4	""
Rock	1 ½	56:26:12.124	158:24:02.193	"60482+0"	3.1	""
Shoal	3	56:25:51.506	158:14:57.358	"10563+6"	5.5	H-10767
Shoal	4	56:30:20.082	158:02:56.410	"30303+6"	7.8	H-10765
Shoal	8 ~~7¾~~	56:26:07.352	157:48:41.918	"10082+1"	14.6	H-10761

This is advance information subject to office review. Questions concerning this letter should be directed to the Chief, Pacific Hydrographic Branch, (206) 526-6835. Refer to survey project OPR-P182-RA-97 and Danger to Navigation message RA-5-97. More information on current RAINIER survey projects may be obtained by e-mail; contact the Field Operations Officer at FOO.RAINIER@NOAA.GOV.

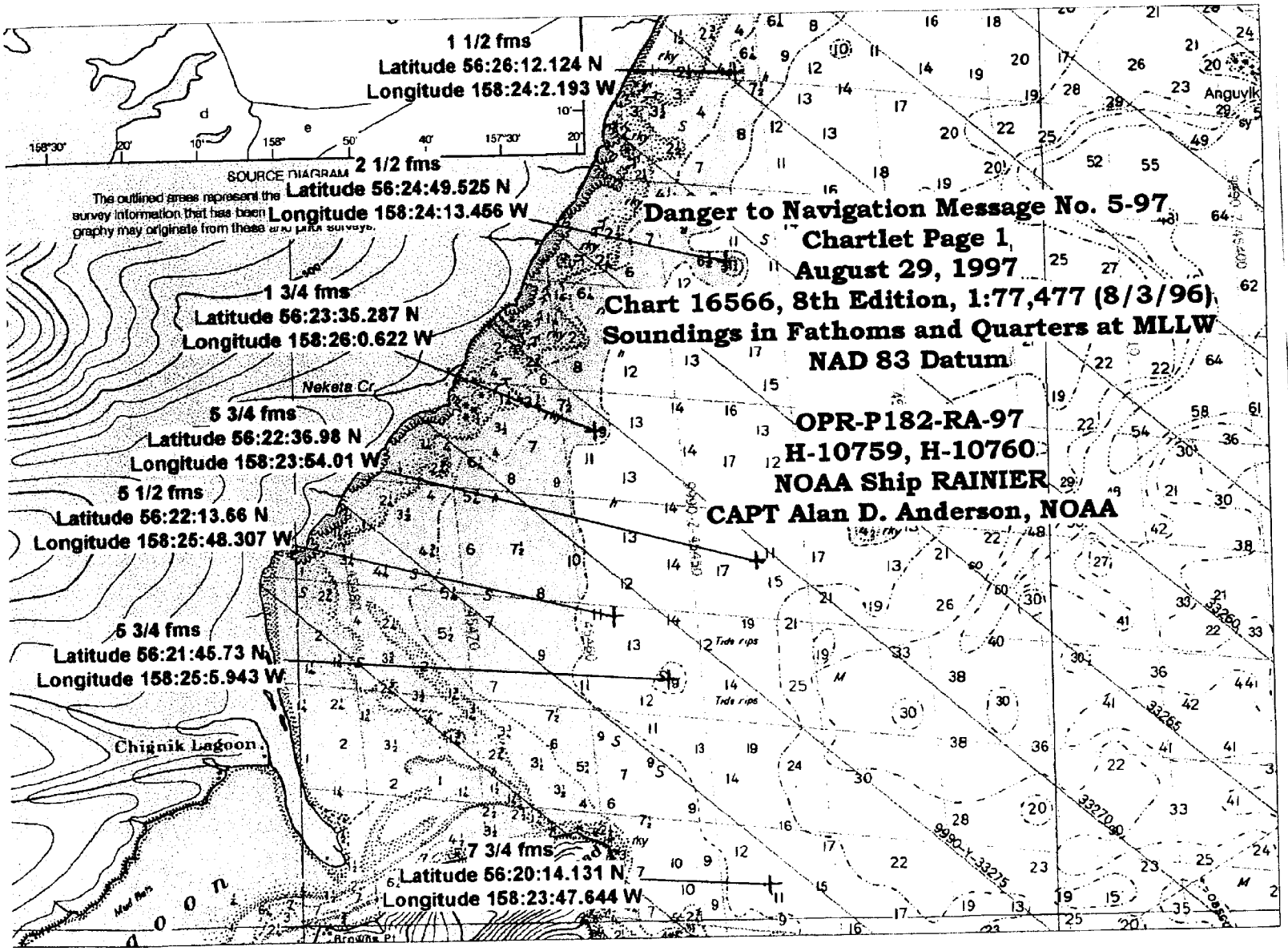
Sincerely,

Alan D. Anderson

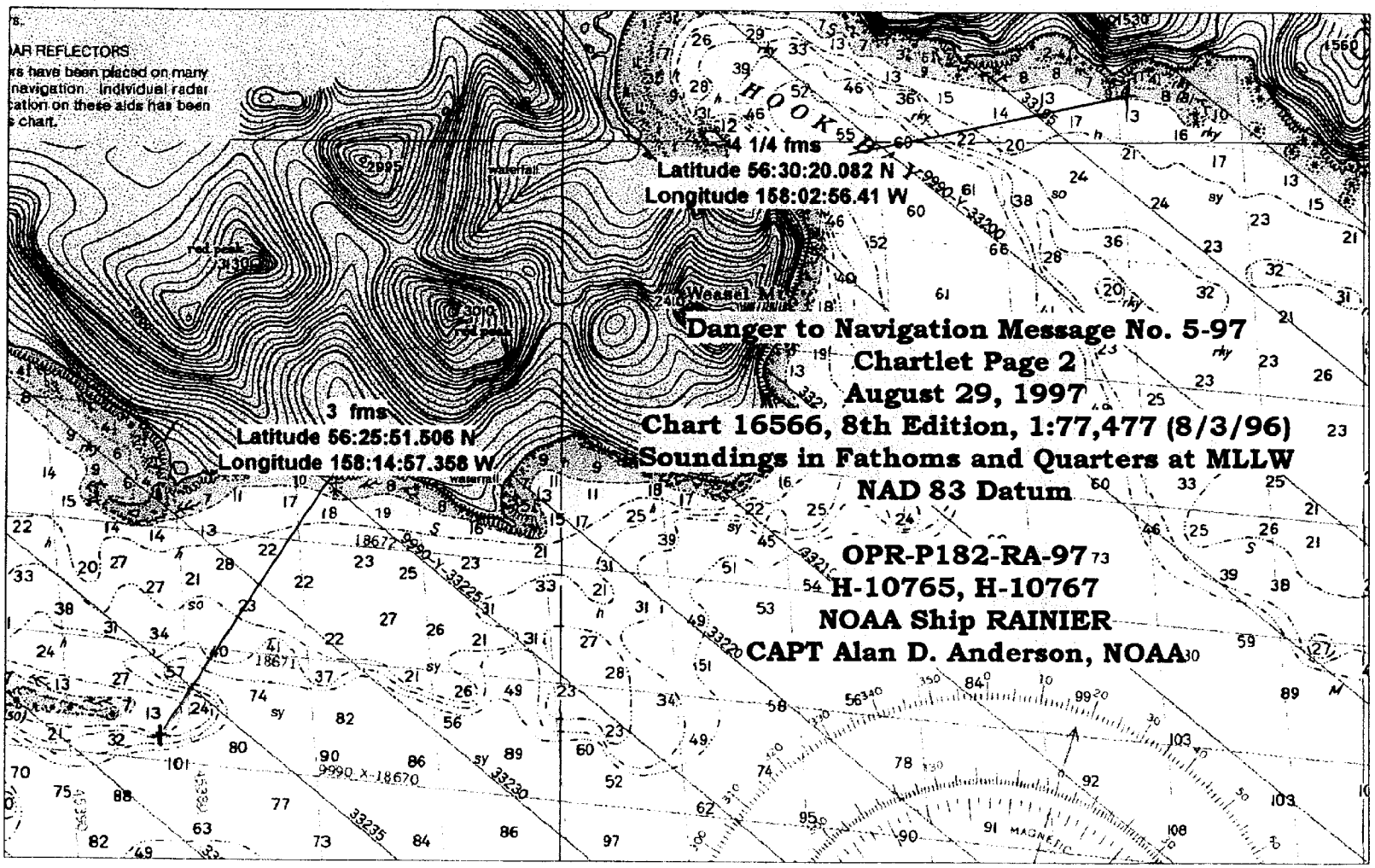
Alan D. Anderson
Captain, NOAA
Commanding Officer

Attachment

cc: NIMA
PMC
N/CS261
N/CS34

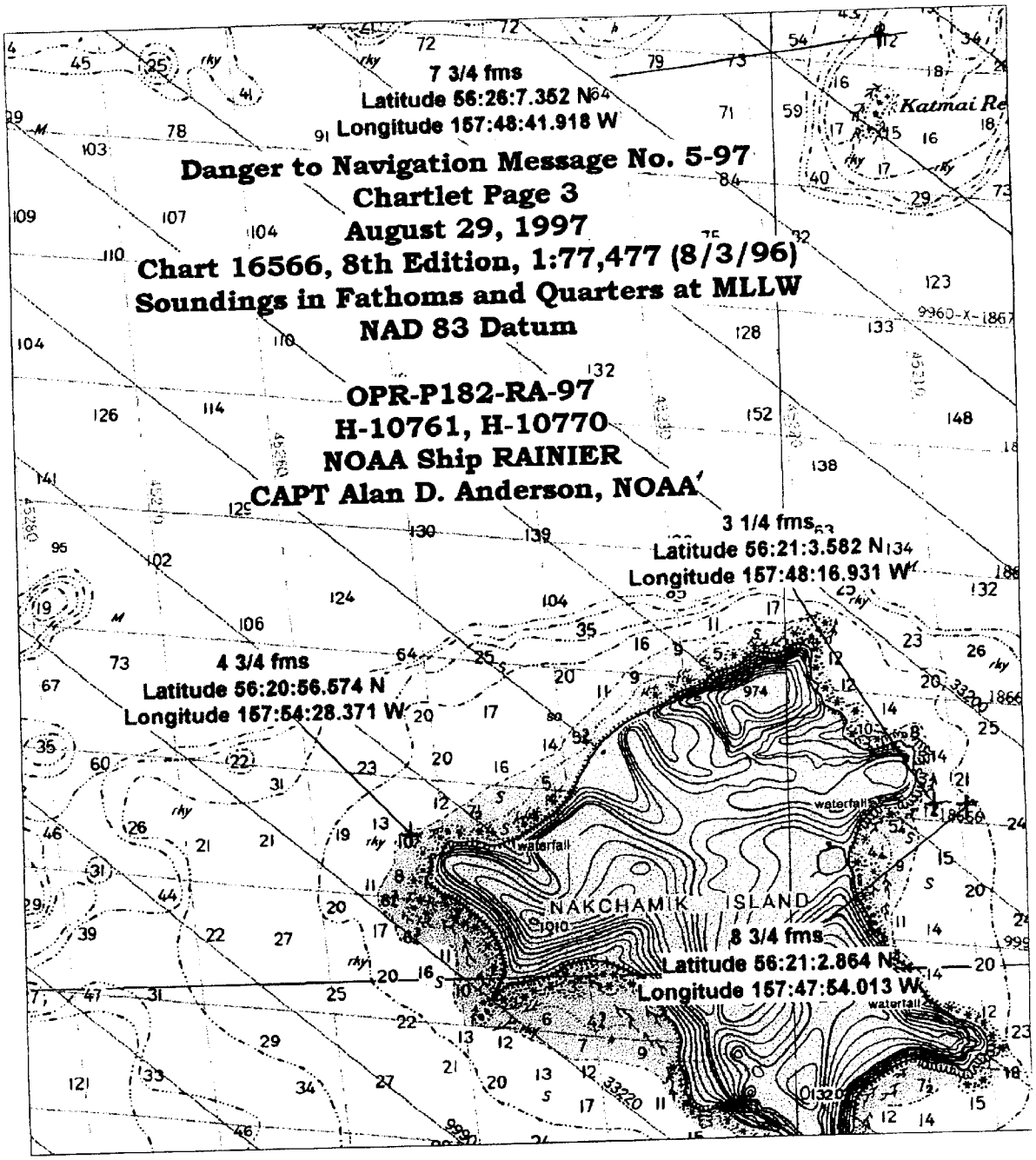


ADVANCE INFORMATION



ADVANCE INFORMATION

ADVANCE
INFORMATION



ADVANCE
INFORMATION

Lotus cc:Mail for FOO Rainier

Author: FOO Rainier at Rainier
Date: 9/1/97 14:47
Priority: Normal
TO: akcgnav@alaska.net at RDC, dhill@pachydro.noaa.gov at RDC,
ktimmons@pachydro.noaa.gov at RDC, navinfonet@nima.mil at RDC
CC: CO Rainier, Chief Survey Technician Rainier, Larry [OPS-PMC] Mordock at RDC
Subject: DTON message for USCG/NIMA/PHB/Chart Section

The following dangers to navigation should be included in the Local Notice to Mariners. They were positioned by the NOAA Ship RAINIER while a conducting hydrographic surveys in the vicinity of Chignik Bay, Alaska. The dangers are digitally rendered in the attached MapInfo file (ver 4.1, zipped). They affect chart 16566, 8TH ED., 96/08, 1:77,477, NAD 83.

FEATURE	DEPTH (Fathoms)	LATITUDE (N)	LONGITUDE (W)	POSITION Number	Depth (Meters)	Survey Number
Shoal	8 3/4	56:21:02.864	157:47:54.013	"10511+3"	16.1	H-10770
Shoal	4 3/4	56:20:56.574	157:54:28.371	"20031+6"	8.9	""
Shoal	3 1/4	56:21:03.582	157:48:16.931	"10521+4"	6.2	""
Shoal	7 3/4	56:20:14.131	158:23:47.644	"20999+4"	14.3	H-10759
Rock	5 3/4	56:21:45.730	158:25:05.943	"60000+0"	10.8	H-10760
Rock	5 3/4	56:22:36.980	158:23:54.010	"60479+0"	10.8	""
Rock	5 1/2	56:22:13.660	158:25:48.307	"60480+0"	10.3	""
Rock	2 1/2	56:24:49.525	158:24:13.456	"60514+0"	4.8	""
Rock	1 3/4	56:23:35.287	158:26:00.622	"60515+0"	3.4	""
Rock	1 1/2	56:26:12.124	158:24:02.193	"60482+0"	3.1	""
Shoal	3	56:25:51.506	158:14:57.358	"10563+6"	5.5	H-10767
Shoal	4 1/4	56:30:20.082	158:02:56.410	"30303+6"	7.8	H-10765
Shoal	~~8 3/4~~	56:26:07.352	157:48:41.918	"10082+1"	4.6	H-10761

This is advance information subject to office review. Questions concerning this letter should be directed to the Chief, Pacific Hydrographic Branch, (206) 526-6835. Refer to survey project OPR-P182-RA-97 and Danger to Navigation message RA-5-97. More information on current RAINIER survey projects may be obtained by e-mail; contact the Field Operations Officer at FOO.RAINIER@NOAA.GOV.

/S/ Captain Alan D. Anderson, NOAA

APPROVAL SHEET

For

H-10761

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 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: September 24, 1997

Approved and Forwarded,

Alan D. Anderson

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

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-10761

LOCALITY: Southwest Alaska Peninsula

TIME PERIOD: Jul 10 - Aug 2, 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: SAP11
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.

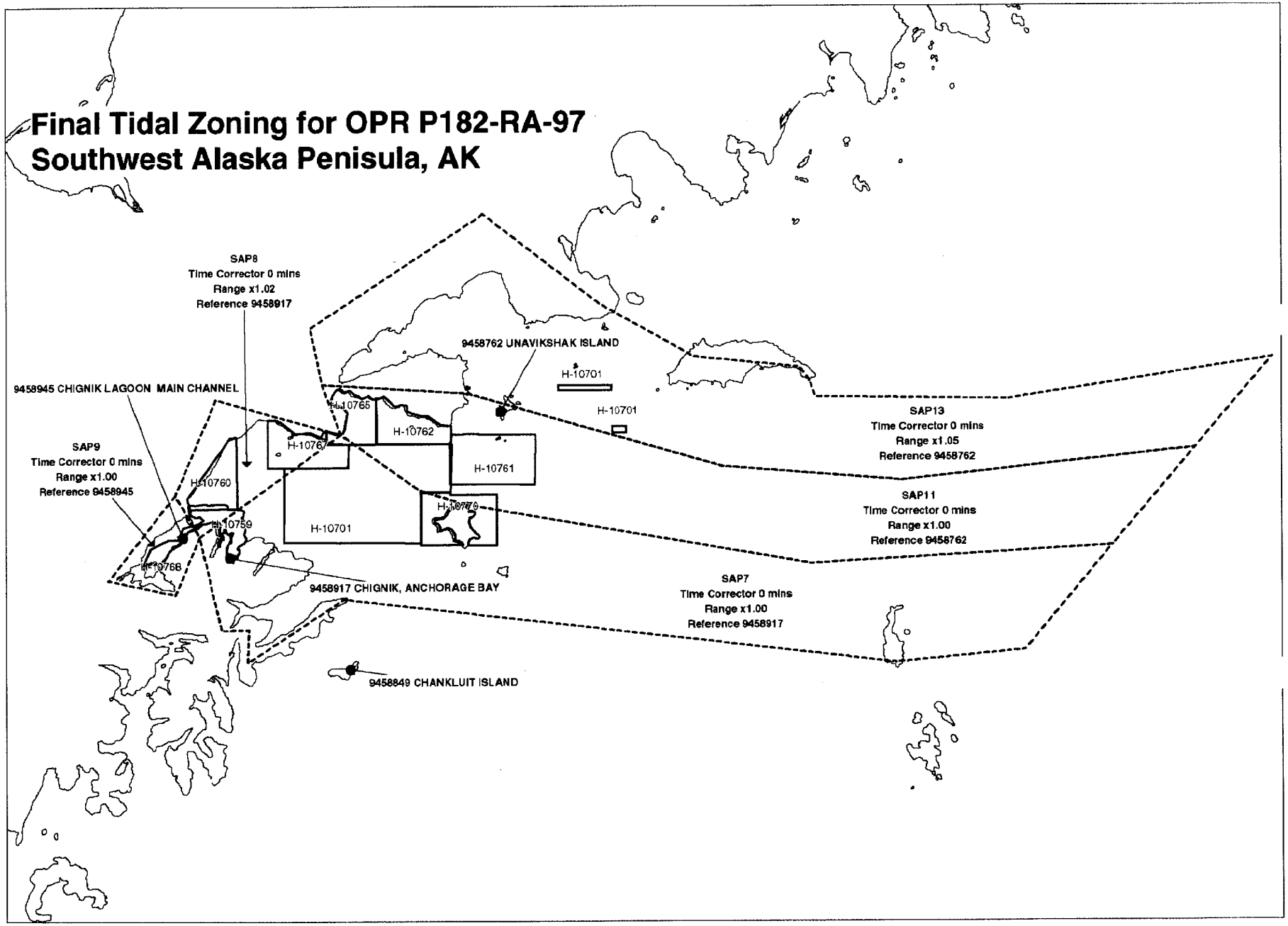
Note 2: Use tide data from the appropriate station for each zone according to the order in which they are listed in the "Tidezone" corrector files. For example, tide station one (TS1) would be the first choice for an applicable zone followed by TS2, etc. when data are not available. All zones within a survey sheet may not have the same order of applicable tide stations.

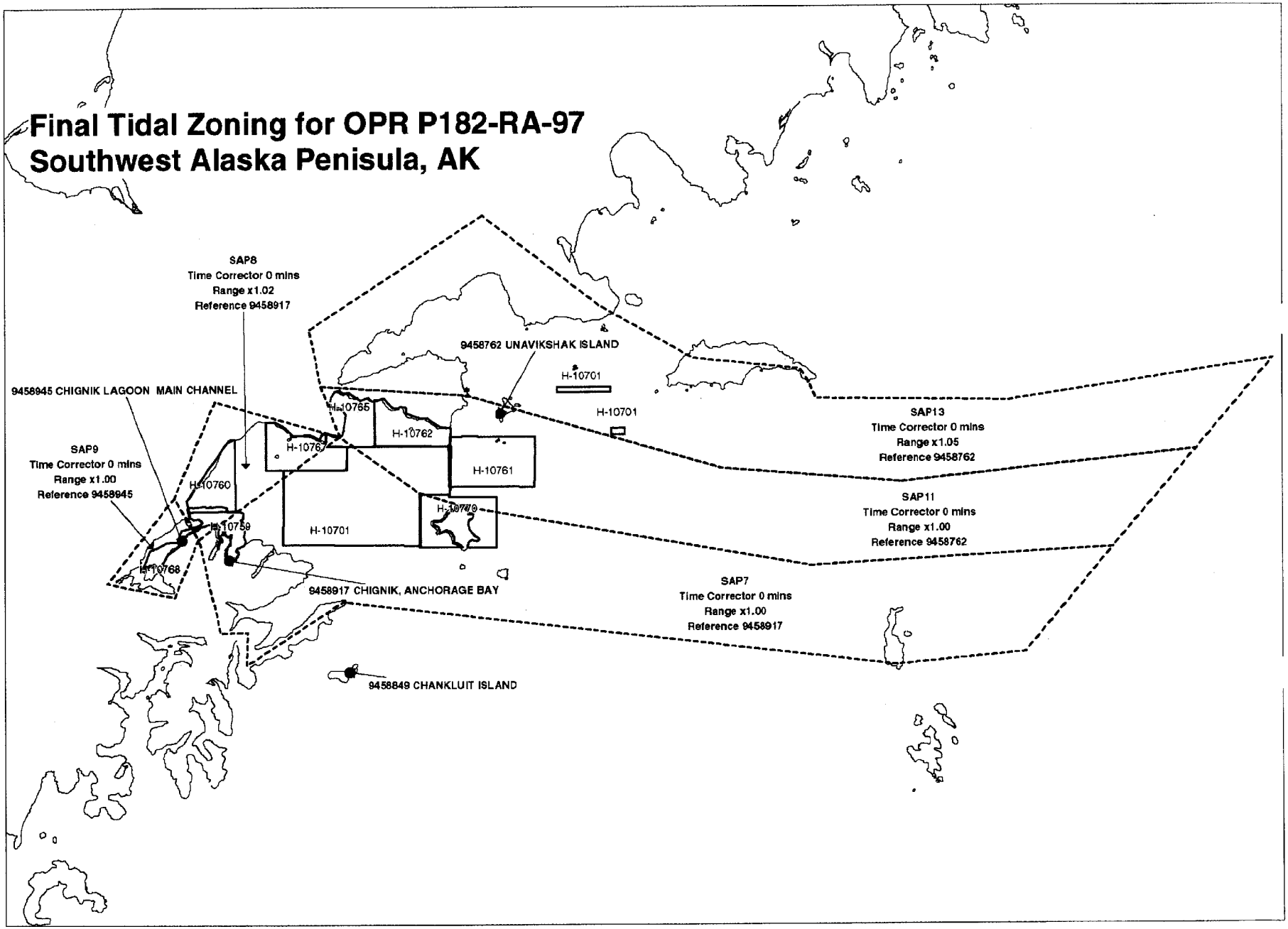
CHIEF, OPERATIONAL ANALYSIS BRANCH

Final tide zone node point locations for OPR P182-RA-97,
Sheet H-10761.

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

	Tide Station Order	AVG Time Correction	Range Correction
Zone 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			


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
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
9458917 CHIGNIK, ANCHORAGE BAY
9458849 CHANKLUIT ISLAND
H-10765
H-10767
H-10762
H-10761
H-10760
H-10759
H-10766
H-10701
H-10701
H-10701


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
H-10701
9458945 CHIGNIK LAGOON MAIN CHANNEL
H-10765
H-10762
H-10701
SAP13
Time Corrector 0 mins
Range x1.05
Reference 9458762
H-10767
SAP9
Time Corrector 0 mins
Range x1.00
Reference 9458945
H-10760
H-10761
H-10759
H-10701
H-10769
SAP11
Time Corrector 0 mins
Range x1.00
Reference 9458762
H-10768
9458917 CHIGNIK, ANCHORAGE BAY
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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10761

Name on Survey	A ON CHART NO. 16566, 16011, 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)										1
ALASKA PENINSULA (title)										2
KATMAI REEF	X		X							3
NORTH PACIFIC OCEAN	X		X							4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
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										19
										20
										21
										22
										23
										24
										25

Approved:

Dennis L. Romberg

Chief Cartographer

NOV 25 1997

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-10761

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

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

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	2			1		
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List): TP-00909

PHOTOBATHYMETRIC MAPS (List): NA

NOTES TO THE HYDROGRAPHER (List): NA

SPECIAL REPORTS (List): NA

NAUTICAL CHARTS (List): Chart 16566 8th Edition, August 3, 1996

OFFICE PROCESSING ACTIVITIES

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

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

	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION	8		8
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS			
VERIFICATION OF SOUNDINGS			
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	118		118
COMPARISON WITH PRIOR SURVEYS AND CHARTS		10	10
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		24	24
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	126	34	160

Pre-processing Examination by: M. Bigelow	*Beginning Date*: 10/1/97	*Ending Date*: 10/2/97
Verification of Field Data by: M. Bigelow, D. Doles, R. Mayor, L. Deodato	*Time (Hours)*: 126	*Ending Date*: 3/27/98
Verification Check by: B. Olmstead	*Time (Hours)*: 6	*Ending Date*: 4/7/98
Evaluation and Analysis by: L. Deodato	*Time (Hours)*: 34	*Ending Date*: 4/6/98
Inspection by: B. Olmstead	*Time (Hours)*: 9	*Ending Date*: 4/30/98

EVALUATION REPORT

H-10761

A. PROJECT

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

B. AREA SURVEYED

The survey area is adequately discussed in the hydrographer's report. Depths generally range from 1.3 to 162 fathoms. The bottom consists primarily of sand, mud, and pebble.

The hydrographer has determined the survey limits in accordance with the approved sheet layout and project limits created in MapInfo. A page size chartlet of the survey area indicating the limits of supersession is included in this report as Attachment A.

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), AutoCad (Version 12.0), 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. Data base records forwarded are in the Internal Data Format(IDF) and are in compliance with specifications in existence at the time of survey processing.

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

The 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 1:10,000 scale sheet.

E. SONAR EQUIPMENT

Sonar equipment was not used on survey H-10761.

F. SOUNDING EQUIPMENT

Sounding equipment has been adequately addressed 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 an actual tide, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with NOS specifications.

Predicted tides were used for reduction of soundings during field processing. During office processing, tide reductions were derived from approved hourly heights zoned direct from the following tide gages: Unavikshak Island, Alaska, gage 945-8762. Chankluit Island, Alaska, gage 945-8849 and Chignik, Anchorage Bay, Alaska, gage 945-8917 listed in the Tide Note were not used.

H. CONTROL STATIONS

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

The positions of horizontal control stations used during hydrographic operations are field 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 NAD27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude:	-2.754 seconds	(-85.180 meters)
Longitude:	7.349 seconds	(125.972 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. DGPS performance checks were conducted in the field and found adequate.

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

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

J. SHORELINE

Shoreline for this survey was digitized using AutoCad from mylar 1:10,000 scale enlargements of 1:20,000 scale Class III registered shoreline manuscript TP-00909 on NAD 83. The digitized shoreline was converted to MicroStation dgn (extension) and then referenced and copied to the survey during MicroStation processing.

There were no MHW revisions on this survey.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10761 junctions with the following surveys.

Survey	Year	Scale	Area
H-10696	1996	1:20,000	Eastern and Southern Limits
H-10701	1996	1:20,000	Western Limits
H-10702	1996	1:10,000	Northern Limits
H-10762	1997	1:10,000	Western Limits

The junction with survey H-10762 is complete. A "Joins" note has been added to the smooth sheet. The junctions with surveys H-10696, H-10701, and H-10702 were not formally completed since these surveys were previously processed and forwarded for charting. Soundings and depth curves are in adequate agreement. The standard depth curves portrayed on the present survey within the common areas of the 1996 survey which considered both data sets should supersede within the common areas of the 1996 survey work. A few depths from the junctional surveys have been transferred to the present survey to better portray the bottom configuration. "Adjoins" notes have been added to the smooth sheet.

M. COMPARISON WITH PRIOR SURVEYS

H-4506 (1925) 1:60,000
H-4509 (1925) 1:60,000

The prior surveys listed above cover the entire area of the present survey. Sounding agreement is good with the present survey depths shoaler between 0 and 3 fathoms. A more thorough bottom ensonification by the present survey has shown this area to contain many newly discovered shoal areas not found in 1924-25. These appears to be consistent pattern of either shoaling or an increase in depths since 1925. However there are a few prior depths considerably shoaler by 3 fathoms than depths found by the present survey. Many can be within a distance of 100 meters of present depth. Depth curves and shoreline reveal little or no change since the prior survey work.

These differences may be attributed to greater sounding coverage, improved positioning and sounding methods and relative accuracy of the data acquisition techniques. H-10761 is adequate to supersede the prior surveys within the common area.

N. ITEM INVESTIGATIONS

AWOIS # 52051 was assigned to this survey. It is adequately addressed in the hydrographer's report, section N.

O. COMPARISON WITH CHART

Survey H-10761 was compared with the following chart.

Chart	Edition	Date	Scale	Datum
16566	8th	Aug. 3, 1996	1:77,477	NAD83

a. Hydrography

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

Charted soundings and features originating with miscellaneous source data have been satisfactorily addressed during survey operations.

The following islets should be retained as charted.

Features	Latitude N	Longitude W
islet	56/27/09	157/43/45
islet	56/27/20	157/44/54
islet	56/27/06	157/45/13
islet	56/27/26	157/44/57
islet	56/27/11	157/43/49
islet	56/27/12	157/43/42

The application of this survey to charts of a scale greater than 1:40,000 may require the generalization of features such as ledges and reefs. The recommended charting disposition of specific ledges or reefs is their depiction as isolated rocks. The application of this survey to charts of a scale less than 1:40,000 may be accomplished without generalization of features.

Survey H-10761 is adequate to supersede charted hydrography within the common area.

b. Dangers to navigation

One danger to navigation was discovered during survey operations. No additional dangers to navigation were found during office processing.

P. ADEQUACY OF SURVEY

Hydrography contained on survey H-10761 is adequate to:

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

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

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

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

In the event that the field units submission of survey data will exceed four weeks from the completion of 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-10761 was completed on August 2, 1997 but not transmitted for office processing until October 1, 1997.

Q. AIDS TO NAVIGATION

There are no fixed or floating aids to navigation within the survey area.

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

R. STATISTICS

Statistics are itemized in the hydrographer's report.

S. MISCELLANEOUS

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

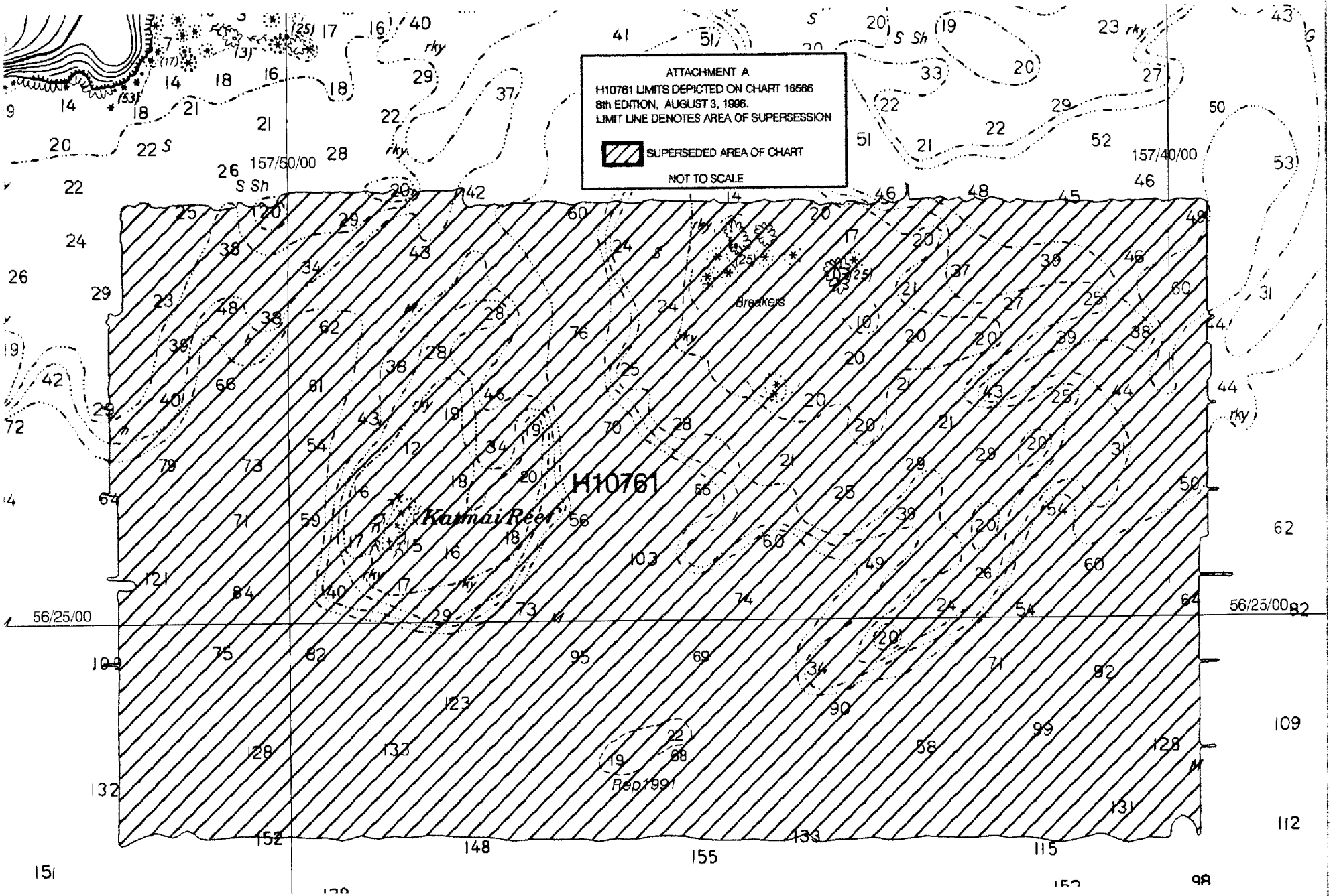
T. RECOMMENDATIONS

This is a good hydrographic survey. No additional work is recommended. See section T of the hydrographer's report for a new geographic name in the survey area.

U. REFERRAL TO REPORTS

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

Leonardo T. Deodato
Cartographer


ATTACHMENT A
H10761 LIMITS DEPICTED ON CHART 18566
8th EDITION, AUGUST 3, 1996.
LIMIT LINE DENOTES AREA OF SUPERSESSION
SUPERSEDED AREA OF CHART
NOT TO SCALE
H10761
Kaimai Reef
Breakers
Rep1991
157/50/00
157/40/00
56/25/00
56/25/00

APPROVAL SHEET
H-10761

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: 5/4/98
Bruce A. Olmstead
Senior Cartographer, Cartographic Section
Pacific Hydrographic Branch

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

Kathy Timmons Date: 5/13/98
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

****

Final Approval

Approved:

Andrew A. Armstrong III Date: July 1, 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-10761

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	4/1/98	Ann T. Merchant	~~Full Part Before~~ After Marine Center Approval Signed Via
			Drawing No. Full application of soundings and features from smooth sheet.
16566	7/30/98	[signature]	Full Part Before After Marine Center Approval Signed Via Full application
			Drawing No. of BP-165234 to chart
16013	8/7/98	[signature]	Full Part Before After Marine Center Approval Signed Via
			Drawing No. exam NC scale
16011	8/11/98	[signature]	Full Part Before After Marine Center Approval Signed Via
			Drawing No. exam NC scale
16006	8/17/98	[signature]	Full Part Before After Marine Center Approval Signed Via
			Drawing No. exam NC scale
			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.