H10694

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-10-11-96

Registery No.: H-10694

LOCALITY

State: Alaska

General Locality: Southwest Alaska Peninsula

Sublocality: Eastern Approaches to Kujulik Bay

1996

CHIEF OF PARTY
CAPT Dean R. Seidel, NOAA

LIBRARY & ARCHIVES

DATE: SEP 8 1997

☆U.S. GOV. PRINTING OFFICE: 1985—566-054

NOAA FORM 77-28 (11-72) | U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION | REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-10694

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-10-11-96

State: Alaska

General locality: Southwest Alaska Peninsula

Locality: Eastern Approaches to Kujulik Bay

Scale: 1:10,000 Date of survey: June 4 - July 23, 1996

Instructions dated: May 15, 1996 Project No.: OPR-P182-RA

Vessel: NOAA Ship RAINIER (2120),RA-2(2122),RA-3(2123),RA-4(2124),RA-5(2125),RA-6(2126)

Chief of party: CAPT Dean R. Seidel, NOAA

Surveyed by: NOAA Ship RAINIER Personnel

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

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

Evaluation by: I. Almacen Automated plot by: HP Design Jet 650C

Verification by: J.Stringham, D.Doles, R.Mayor, E.Domingo

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 8/22/97 mcr

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537

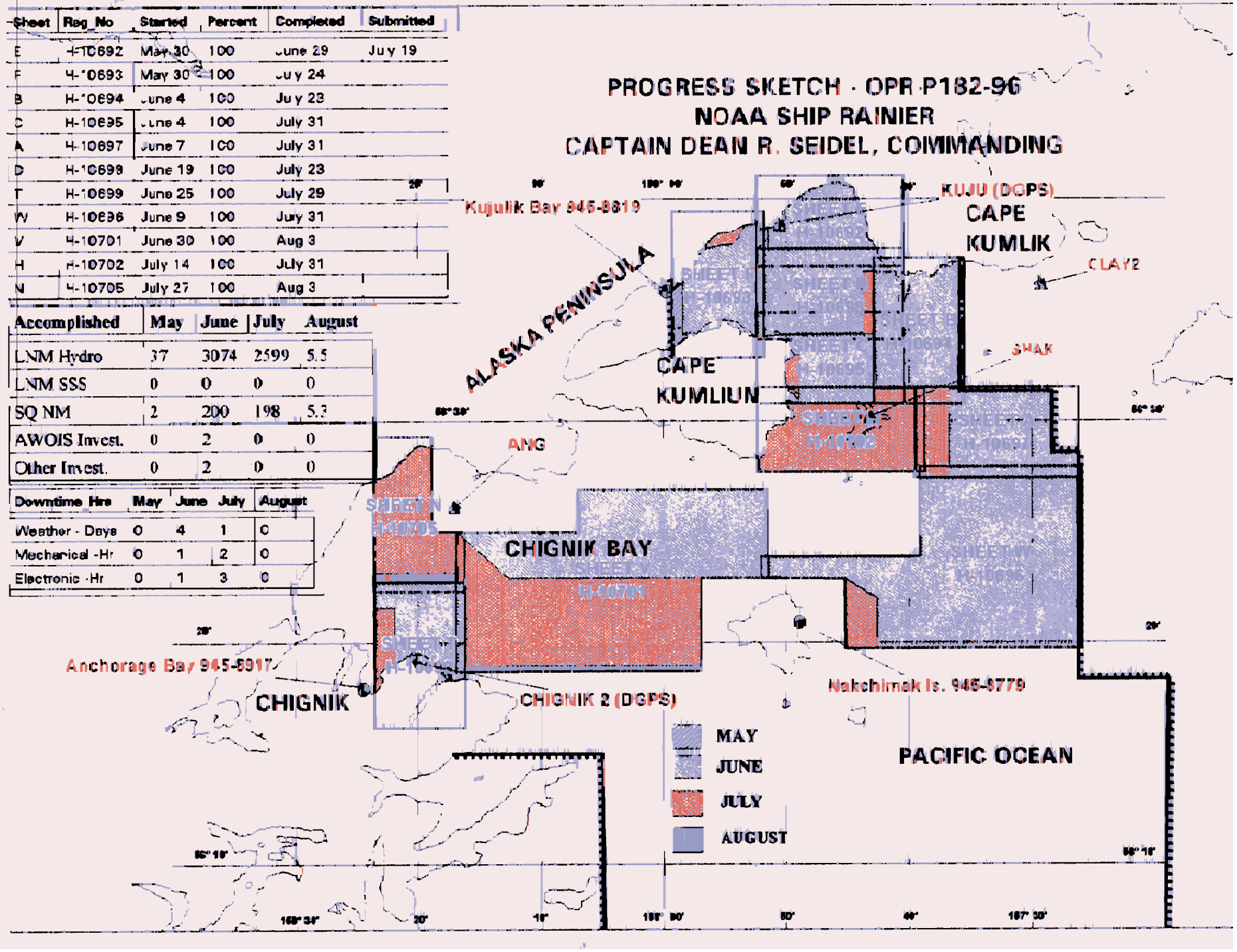
U.S. GOVERNMENT PRINTING OFFICE: 1986 - 652-007/41215

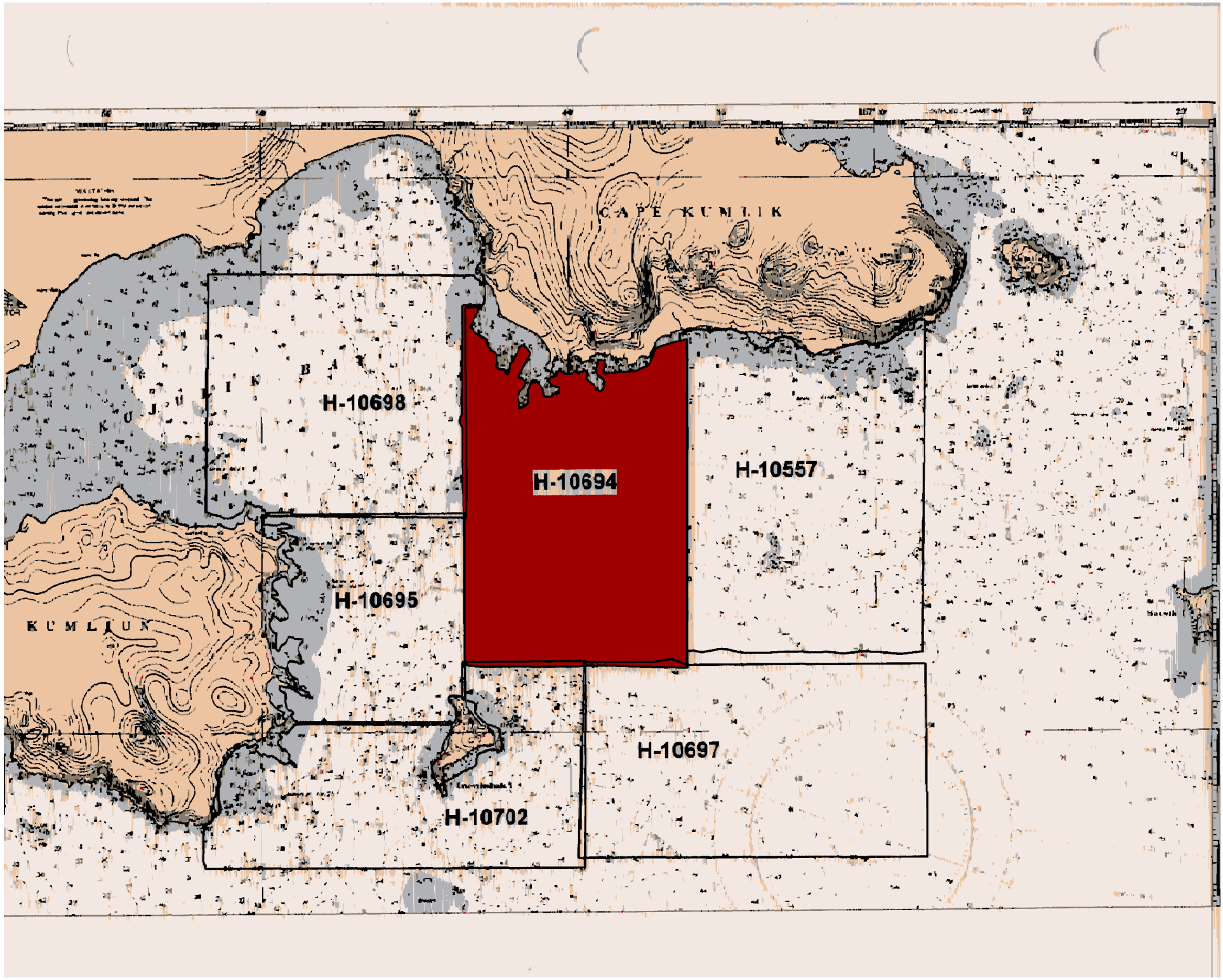
PROGRESS SKETCH - OPR P182-96
NOAA SHIP RAINIER
CAPTAIN DEAN R. SEIDEL, COMMANDING

Sheet	Reg_No	Started	Percent	Completed	Submitted
E	H-10692	May 30	100	June 29	July 19
F	H-10693	May 30	100	July 24	
B	H-10694	June 4	100	July 23	
C	H-10695	June 4	100	July 31	
A	H-10697	June 7	100	July 31	
D	H-10698	June 19	100	July 23	
T	H-10699	June 25	100	July 29	
W	H-10696	June 9	100	July 31	
V	H-10701	June 30	100	Aug 3	
H	H-10702	July 14	100	July 31	
N	H-10705	July 27	100	Aug 3	

Accomplished	May	June	July	August
LNM Hydro	37	3074	2599	5.5
LNM SSS	0	0	0	0
SQ NM	2	200	198	5.3
AWOIS Invest.	0	2	0	0
Other Invest.	0	2	0	0

Downtime Hrs	May	June	July	August
Weather - Days	0	4	1	0
Mechanical -Hr	0	1	2	0
Electronic -Hr	0	1	3	0




CAPE KUMLIK
KUJULIK BAY
KUMLIUN
H-10698
H-10694
H-10557
H-10695
H-10697
H-10702

Descriptive Report to Accompany Hydrographic Survey H-10694

Field Number RA-10-11-96
Scale 1:10,000
June-July 1996
NOAA Ship RAINIER
Chief of Party: Captain Dean R. Seidel, NOAA

A. PROJECT ✓

This basic hydrographic survey was completed as specified by Project Instructions OPR-P182-RA dated May 15, 1996. Survey H-10694 corresponds to sheet B as defined in the sheet layout included in the Project Instructions. This survey will provide data to supercede circa 1925 leadline surveys in the eastern approaches and entrance to Kujulik Bay, Alaska. Requests for hydrographic surveys and updated charts in this area have been received from congressional leaders, commercial fishing interests, the United States Coast Guard, and NOAA. Near-shore navigation and anchorages are a major concern, especially for the fishermen, in this region of the Alaska Peninsula due to the harsh weather and treacherous waters.

B. AREA SURVEYED ✓ See Evel Rpt., Section B

The survey area is located in the northeastern end of the approaches to Kujulik Bay. The survey's northern limit is bounded by latitude 56° 37' 42" N. The survey's southern limit is 56° 31' 15" N, the western limit is 157° 43' 31" W and the eastern limit is 157° 36' 10" W. Data acquisition was conducted from June 4, 1996 (DN 156) to July 23, 1996 (DN 205).

C. SURVEY VESSELS ✓

Data were acquired by RAINIER and her survey launches as noted below:

Vessel	EDP #	Operation
RAINIER	2120	Hydrography
RA-2	2122	Hydrography Shoreline Verification
RA-3	2123	Hydrography Shoreline Verification
RA-4	2124	Hydrography Shoreline Verification
RA-5	2125	Hydrography Bottom Samples
RA-6	2126	Hydrography Shoreline Verification

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

All data were acquired and processed using the Hydrographic Data Acquisition and Processing System (HDAPS.) A complete listing of software for HDAPS is included in Appendix VI.* One HDAPS data file was lost due to an unknown error. These data, for DN 179, VN 2124, positions 40046 to 40151, were mainscheme splits with no inserts requiring manual computation of position. Positions (aka "fixes") and least or deepest depths between numbered positions were entered by hand using the Manual Data Entry program in HDAPS to support mainscheme hydrography and contouring. This program was modified aboard RAINIER to allow selected, non-fix soundings to be entered, and the acquisition program was changed to ensure that the logged data are copied to hard disk as well as to floppy so this will not happen again. Both modifications have been forwarded to the HDAPS Support Office. Data concerning selected non-fix soundings acquired during this survey was analyzed and found acceptable. ✓

E. SONAR EQUIPMENT ✓

Data collected on DN 205, VN 2123 with the standard OCS Side Scan Sonar equipment (EG&G 260 with Model 272T dual-frequency towfish) were not retained for hydrography due to poor conditions. No contact positions were computed.

F. SOUNDING EQUIPMENT ✓

The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echo sounder. Serial numbers are included on the headers of the daily Raw Master Printouts.* No new problems which affect survey data were encountered. All DSF-6000N soundings in meters 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 casts listed below.

Velocity Table #	DN	Cast Position	Deepest Depth (m)	Applicable DN
2	156	56° 32' 10" N 157° 37' 24"W	134	156-158
4	173	56° 33' 08" N 157° 45' 40"W	148	171-181
6	193	56° 34' 20" N 157° 46' 15"W	131	194-205
21	159	56° 28' 24" N 157° 31' 24"W	125	161 Ship hydro
22	162	56° 23' 00" N 157° 46' 54"W	326	160 Ship hydro

✓

* Filed with the hydrographic data.

The sound velocity casts were 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. Casts 4, 6, 21 & 22 were taken outside of the survey area.

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 2122-2126 in the spring of 1996. RAINIER transducer draft was determined during drydock in 1995. 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-P182-RA. The data for vessels 2122-2126 were collected in Shilshole Bay, Washington in the Spring of 1996. Data for RAINIER was acquired in 1994.

Offset Tables ✓

Offset tables* contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 2-6 correspond to the last digit of the vessel number, and RAINIER uses table 1. The offset tables are included with project data for OPR-P182-RA.

Heave ✓

The launches are not equipped with heave, roll and pitch sensors. The Hippy heave sensor aboard RAINIER is not connected to HDAPS.

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-P182-RA. Bar checks were performed periodically as a functional check of the DSF-6000N.

Tide Correctors ✓

Predicted tides for the project were provided on diskette by N/OES334 through N/CS31 for the West End, Sutwik Island, Alaska reference station (945-8665). Tidal correctors as provided in the project instructions for H-10694 are:

* Filed with the hydrographic data.

Zone	Time Correction	Height Correction
6	-0 hr 0 min	X1.00
8	-0 hr 0 min	X1.03

Zone 6 applies to the southern half of the survey, and zone 8 applies to the northern half. HDAPS listings of the data used in generating tide corrector tables are included in Appendix V* of this report.

Sand Point, Alaska (945-9450) is the primary control station for datum determination at all subordinate stations. RAINIER personnel installed Sutron 8200 digital tide gages at Kujulik Bay (945-8819) on May 27, 1996, and Nakchamik Island (945-8779) on June 3, 1996. Each tide staff was connected to five bench marks during the opening and closing level runs. Refer to the Field Tide Notes and supporting data in Appendix V* for individual gage performance and level closure information. This information has been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. A request for approved tides was forwarded to N/OES23 in accordance with FPM 4.2.3. Approved tide note dated November 22, 1996 is attached.

H. CONTROL STATIONS (See EVAL RPT., Sec H)

The horizontal datum for this project is NAD 83. No new control points were established for this survey. The list of control stations used for this survey ~~are listed in Appendix III~~ is attached to this report. See the OPR-P182-RA-96 Horizontal Control Report for more information.

I. HYDROGRAPHIC POSITION CONTROL (See EVAL RPT., Sec I)

Method of Position Control ✓

All soundings and features were positioned using differential GPS. Serial numbers for vessel GPS equipment are annotated on the data printouts.* A VHF differential reference station was established at KUJU. No multi-path or other systemic error was indicated by Monitor, version 3.0. The USCG modulated radio reference station (aka "DGPS beacon") at Kodiak was also monitored and occasionally used for positioning on the northeast corner of the survey when VHF correctors could not be received from KUJU or from the ship's repeater frequency for KUJU.

Calibrations & Systems Check Methods ✓

Launch-to-launch DGPS performance checks were performed in accordance with Section 3.4.4 of the FPM. Some outliers were noted, but none indicated systematic or continuous errors in the stations at KUJU or the Kodiak DGPS beacon. The performance check and Monitor results are included in the project data for OPR-P182-RA.

* Filed with the hydrographic data.

J. SHORELINE (See EVAL RPT., Sec J)

A stable-base enlargement of TP-00904, flown in 1987 and compiled at 1:20,000 in 1990 on NAD83, was used for the shoreline manuscript as supplied by N/CS341. Shoreline was manually transferred at survey scale onto boat sheets and processing sheets. Charted point features were digitized with PC software from the raster chart image supplied by N/CS341, and chart enlargement panels were also provided for shoreline comparison.

Method of Shoreline Verification ✓

Limited shoreline verification was conducted in accordance with the Project Instructions. For this survey the general limit of safe navigation of a survey launch is 10-30 meters offshore of apparent low tide, or approximately 5 to 10 meters of depth at Mean Lower Low Water. This Navigational Area Limit Line (NALL) varied in distance from shore and depth of water based on the navigational safety of the nearshore waters in the judgement of the hydrographer.

Detached positions were acquired on manuscript features offshore of the NALL line to verify positions and to determine the full extent of reefs and connecting ledges for items which were not fully represented on the manuscript; these changes to the manuscript are shown in red on the final plots. Shoreline notes describing offshore features found and the nature of the foreshore are in the detached position folder and portrayed on the Detached Position and Bottom Sample final plot submitted with this survey. Features shown in pencil inshore of the NALL are the hydrographer's representation of the low water shoreline without hydrographic positioning. Manuscript rocks inshore of the NALL in the large foul areas shown on the final plots were the higher points of reefs and ledges. Field cartographic codes were assigned to detached positions based on predicted tides; in particular, rocks were assigned code 089 until their heights can be reduced in final processing. 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 should supercede charted shoreline. The heights of rocks plotting offshore of the NALL line are shown on the smooth sheet in FEET and have been corrected for approved tides. Heights of rocks located along the shoreline/inshore of the NALL line were not determined during survey operations.

Charted Features ✓

Chart 16566, 7th Edition, October 28, 1989, 1:77,477 scale (NAD 83), was enlarged to 1:10,000 for comparison purposes. Some positional differences are attributed to the eight-fold enlargement and some to the difference in projections. All features originate with the 1925 topographic and hydrographic surveys. Charted features inshore of the NALL were not investigated and should therefore remain as charted. *Charted rocks offshore of the NALL were disproved, identified as shoreline manuscript rocks, or positioned as new rocks and shown in red on the final plots. Several rocks near the reef on the west side of the survey were not found at their charted locations. There are kelp patches in the area which could have led the previous surveyors to believe that rocks existed at those positions. The following table summarizes the offshore shoreline feature investigations:

	Fix	(Height) Depth	Latitude	Longitude	Disposition
✓	30620	(1.0)	56° 36' 11.45"N	157° 38' 54.74"W	Charted rock @Ledge limit (3)
✓	30621	19.2	56° 36' 19.48"N	157° 38' 44.98"W	Disproval of charted rock

* The charted rocks falling within the limits of the presently compiled ledges (from TP-00904) were considered part or expansion of the ledges and therefore should be deleted.

✓	20996	1.2	56° 36' 08.75"N	157° 39' 04.42"W	New rock @Ledge limit 0.8 RK
✓	20997	(1.8)	56° 36' 29.41"N	157° 37' 11.06"W	Charted rock (1) } Part of reef as shown on smooth sheet.
✓	20998	(1.4)	56° 36' 27.69"N	157° 37' 06.53"W	Charted rock (1) }
✓	20999	(2.4)	56° 36' 29.72"N	157° 37' 01.63"W	Charted rock (part of reef)
✓	21003-21006	6	56° 36' 20"N	157° 40' 30"W	Disproval of two charted rocks
✓	20610	21.0	56° 35' 52.09"N	157° 41' 58.39"W	Disproval of charted rock
✓	20355	30.9	56° 35' 40.46"N	157° 41' 50.29"W	Disproval of charted rock
✓	20356	23.9	56° 35' 38.15"N	157° 42' 27.70"W	Disproval of charted rock
✓	20358	25.7	56° 35' 14.30"N	157° 42' 17.41"W	Disproval of charted rock
✓	20195	(0.9)	56° 35' 46.47"N	157° 42' 00.89"W	Charted rock (3)
✓	40380-40383	6	56° 35' 51.06"N	157° 42' 09.82"W	Disproval of charted rock
✓	40384-40386	9.1	56° 36' 42.82"N	157° 42' 34.19"W	Disproval of charted rock
✓	40387	27.3	56° 34' 43.43"N	157° 42' 47.75"W	Disproval of charted rock
✓	40388	26.2	56° 34' 35.64"N	157° 42' 52.72"W	Disproval of charted rock
✓	40390	(0.5)	56° 35' 57.54"N	157° 41' 40.78"W	Charted rock (1)
✓	40392-40393	(0.4)	56° 35' 57.31"N	157° 40' 46.17"W	Charted rock (actual position) (1) (2 rocks)

The charted rock at position 56° 36' 31"N, 157° 41' 36"W is the manuscript rock which is located slightly to the east of this position inshore of the NALL. concur.

K. CROSSLINES ✓

Crosslines agreed within 1 meter with mainscheme hydrography. Total crossline mileage was 28.7 nautical miles or 6.1% of total mainscheme hydrography.

L. JUNCTIONS (See EVAL RPT., Sec. L)

This survey junctions with the following 1:10,000 scale surveys: H-10557, 1994 on the east, contemporary surveys H-10702 and H-10697 on the south, and H-10695 and H-10698 on the west. Soundings on the 1996 surveys were found to be in good agreement, but H-10557 was not available for field comparison. Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after reduction to final vertical datum.

M. COMPARISON WITH PRIOR SURVEYS (See EVAL RPT., Sec. M)

Three prior surveys cover different parts of this survey: H-4495, 1:20,000, 1925 inshore near Cape Kumlik; H-4506, 1:60,000, 1925 offshore; and H-4510, 1:20,000, 1925 inside of Kujulik Bay. The soundings from these prior surveys were in agreement with the present survey, except on the numerous shoals where shoaler depths were frequently found during this survey due to modern equipment and larger survey scale. Final comparisons will be done at PHB after reduction to final sounding datum using tidal information collected concurrently with this survey.

N. ITEM INVESTIGATIONS ✓

ITEM NO.:	AWOIS 52053	**CHART NO.:**	16566 (1:77,477)
	Wreck PA	**EDITION:**	7th Edition
		CHART DATE:	October 28, 1989

DESCRIPTION AND SOURCE OF ITEM:
LNM 21/77, 17th District Coast Guard; 86 foot fishing boat Mar Del Plata reported sank on May 18, 1977 in 15 fathoms of water.

SOURCE POSITION: latitude 56° 35' 00" N longitude 157° 43' 00" W (NAD27)

SURVEY REQUIREMENTS: 200% Side Scan Sonar, Echo Sounder, Diver Search

METHOD OF INVESTIGATION:
Disproval required Side Scan Sonar in depths from 18 to 37 meters. Wreck not disproved, but not observed on shallow reef at current charted position. One rock investigated on DN 207 with VN 2123 using Side Scan Sonar (rejected data) was outside the search radius but had the fathometer signature of a wreck; narrow profile, broken trace, etc. and was in the correct depth. ✓

RESULTS OF INVESTIGATION:
The wreck position is in the middle of a large foul area which is part of a larger reef extending southwest from Cape Kumlik. There are depths in the range of 10 to 35 meters within the search radius, but surrounding rocky areas are more significant to navigation than a twenty year-old wreck which has likely been destroyed by the ferocious swell activity of this reef. ✓

COMPARISON WITH THE CHART AND CHARTING RECOMMENDATIONS:
Features found on this survey are more significant to navigation than this wreck, if it exists. Therefore, the hydrographer recommends removing the "PA" wreck from the chart. *Do not concur. The wreck was not disproved during this survey and should be retained as charted*

O. COMPARISON WITH THE CHART *(See EVAL RPT., Sec. O)* OK LJ

This survey was compared in the field to NOS chart 16566, 7th Edition, October 28, 1989, 1:77,477 scale, (NAD 83). The charted soundings were found to be in good agreement, though the complexity of the northern half and inshore sections of the survey area was not reflected in the charted contours or soundings. Least depths from this survey were often shoaler due to modern survey equipment. The hydrographer recommends that the charted contours be modified to enhance small craft navigation around the reef into Kujulik Bay and to depict the shoals between 20 and 30 fathoms by using the 5- and 25-fathom contours,* respectively. Non-sounding features are discussed in Section J. Final sounding comparisons will be made at PHB after reduction to final vertical datum. *

Dangers to Navigation ✓

Five dangers to navigation within the limits of H-10694 were reported to the Seventeenth Coast Guard District, July 31, 1996. Copies of the correspondence ~~can be found in Appendix I of~~ are attached to this report.

P. ADEQUACY OF SURVEY ✓

Survey H-10694 is complete and adequate to supersede prior soundings and features in their common areas. Concur

* *The present survey information reflects the bottom complexity and additional shoal information which will be used to update the next chart edition. This data will more accurately portray the charted depth curves and provide a better graphic portrayal to the users in navigating these areas.*

edition. This provide a better

UNDERLINED SMEARED ON ORIGINAL DOCUMENT

Q. AIDS TO NAVIGATION ✓

No Aids to Navigation exist within the survey area. Concur.

R. STATISTICS ✓

NM Hydrography	582
Velocity Casts	5
Detached Positions	16
Selected Soundings	22,870
AWOIS Items	1
Bottom Samples	52
Tide Stations	2
NM^2 Hydrography	25.3
Dives	0

S. MISCELLANEOUS ✓

Bottom samples were collected and sent to the Smithsonian in accordance with Project Instructions. No unusual tidal currents or magnetic variations were found during this survey. Secchi disk observations were not performed in this survey area. Water visibility was 3-5 meters during the time of this survey, and was best when the sky was mostly cloudy.

T. RECOMMENDATIONS ✓

The hydrographer recommends that minimum bottom sample spacing on surveys be increased to twenty centimeters at the scale of the survey unless the hydrographer needs denser spacing to show variability of characteristics or to delimit anchorage areas. Concur.

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	August, 1996	N/CS34
OPR-P182-RA 1996 Coast Pilot Report	August, 1996	N/CS26
Project related data for OPR-P182-RA	Incremental	N/CS34
Secchi Disk Observations for OPR-P182-RA	August, 1996	N/CS31

Respectfully Submitted,

Guy T. Noll
Lieutenant, NOAA

Approved and Forwarded,

Dean R. Seidel
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 28 Jul 1997 ✓

No	Type	Latitude	Longitude	H Cart	Freq	Vel	Code	MM/DD/YY	Station Name
001	G	056:38:37.566	157:50:29.988	30 250	0.0	0.0	1	05/27/96	KHJH 1990
002	G	056:19:28.097	158:19:45.257	122 250	0.0	0.0	3	06/24/96	CHIGNIK 2 UW1351 DGPS FREQ 3
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

ILLEGIBLE ON ORIGINAL

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

July 31, 1996

ADVANCE INFORMATION

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

Dear Sir:

During the processing of hydrographic survey H-10694 near Kujulik Bay, five dangers to navigation have been discovered. These dangers affect the following chart:

Number	Edition	Date	Scale	Datum
16566	7TH ED.	89/10	1:77,477	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

DANGERS TO NAVIGATION

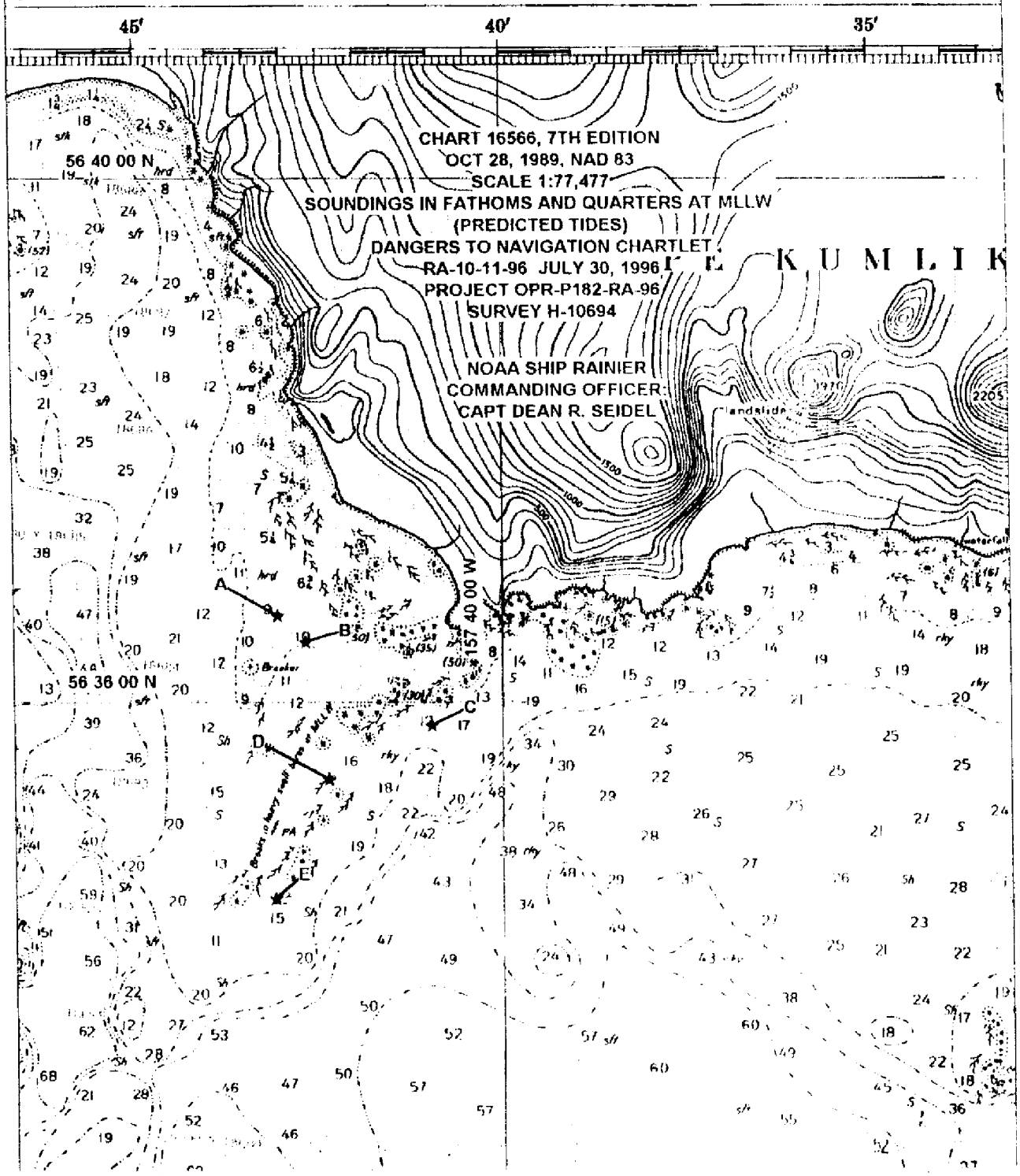
OPR-P182-RA SOUTHWEST ALASKA PENINSULA

REGISTRY NUMBER H-10694

AFFECTED CHARTS:	Number	Edition	Date	Scale	Datum
	16566	7TH ED	89/10	1:77,477	NAD 83

ITEM	DANGER	DEPTH	LATITUDE (N)	LONGITUDE (W)
A	SHOAL	6 1/4 FM	056:36:39.889	157:43:03.384
B	SHOAL	7 3/4 FM	056:36:27.651	157:42:40.325
C	SHOAL	3 1/4 FM	056:35:49.476	157:40:57.392
D	ROCK	COVERS 1 1/4 FM	056:35:24.582	157:42:21.499
E	ROCK	COVERS 1 1/2 FM	056:34:30.081	157:43:05.846

ADVANCE INFORMATION



ADVANCE INFORMATION

P 310028Z JUL 96
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCCNAVWARN WASHINGTON DC//MCNM//
INFO NOAAMOP SEATTLE WA
BT
RA-7-96 DTON MSG

UNCLAS

NOAA SHIP RAINIER HAS LOCATED 5 DANGERS TO NAVIGATION IN SOUTHWEST ALASKA PENINSULA (PROJECT: OPR-P182-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY H-10694.

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
16566	7 TH ED.	89/10	1:77,477

ALL CHART DATUM ARE NAD83.

ITEM	DANGER	DEPTH	LATITUDE (N)	LONGITUDE (W)	POSITION NUMBER
A	SHOAL	6 1/4 FM	056:36:39.9	157:43:03.4	60171+6
B	SHOAL	7 3/4 FM	056:36:27.6	157:42:40.3	20282+4
C	SHOAL	3 1/4 FM	056:35:49.5	157:40:57.4	30262+2
D	ROCK COVERS	1 1/4 FM	056:35:24.6	157:42:21.5	20815+7
E	ROCK COVERS	1 1/2 FM	056:34:30.1	157:43:05.8	30575+4

THIS IS ADVANCE INFORMATION SUBJECT OT OFFICE REVIEW.

QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE CHIEF, PACIFIC HYDROGRAPHIC BRANCH AT (206) 526-6835. A LETTER WITH ATTACHED CHARTLET WILL BE MAILED TO CONFIRM THIS MESSAGE.
BT

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

April 15, 1997

Commander (OAN)
Seventeenth Coast Guard District
P.O. Box 25517
Juneau, AK 99802

Dear Sir:

During office review of hydrographic survey H-10694, Alaska, Southwest Alaska Peninsula, Eastern Approaches to Kujulik Bay, two (2) additional dangers have been identified and are considered potential dangers to navigation affecting the following chart:

Chart	Edition/Date	Scale	Datum
16566	8th/Aug. 3, 1996	1:77,477	NAD 83

The attached information is provided for publication in the Local Notice to Mariners.

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

Sincerely,

Kathryn Timmons

Kathryn Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

Enclosures

cc: NIMA
N/CS261

REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H-10694

Survey Title: State: ALASKA
Locality: SOUTHWEST ALASKA PENINSULA
Sublocality: EASTERN APPROACHES TO KUJULIK BAY

Project Number: OPR-P182-RA, NOAA Ship RAINIER

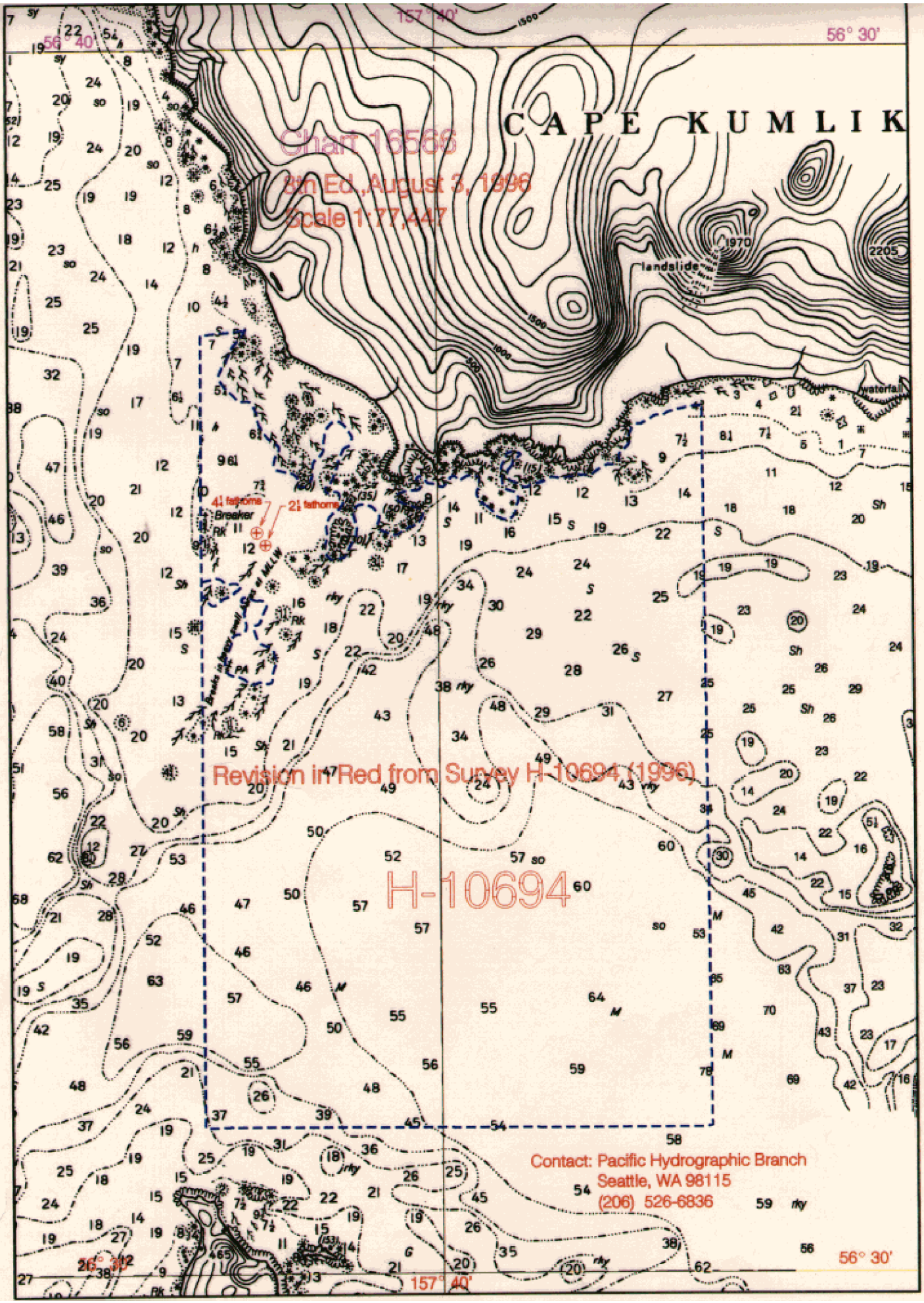
Survey Date: June 4-July 23, 1996

Features are reduced to Mean Lower Low Water (MLLW) using approved tides and are positioned on NAD 83.

Chart affected: 16566 8th Edition/Aug. 3, 1996, scale 1:77,477, NAD 83

DANGER TO NAVIGATION	LATITUDE(N)	LONGITUDE(W)
Shoal, covers 2 1/2 fathoms	56/35/57.9	157/42/34.4
Shoal, covers 4 1/4 fathoms	56/36/04.1	157/42/42.0

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


CAPE KUMLIK
157° 40'
56° 40'
56° 30'
Chart 16566
8th Ed., August 3, 1996
Scale 1:77,447
landslide
1970
2205
waterfall
4¼ fathoms
Breaker
2¼ fathoms
Revision in Red from Survey H-10694 (1996)
H-10694
Contact: Pacific Hydrographic Branch
Seattle, WA 98115
(206) 526-6836

Limited Shoreline Verification: The New Rules

First, understand that the fundamental difference between last year and this year is that the amount of shoreline we must verify is determined by US, not strictly specified in the Project Instructions.

Procedures:

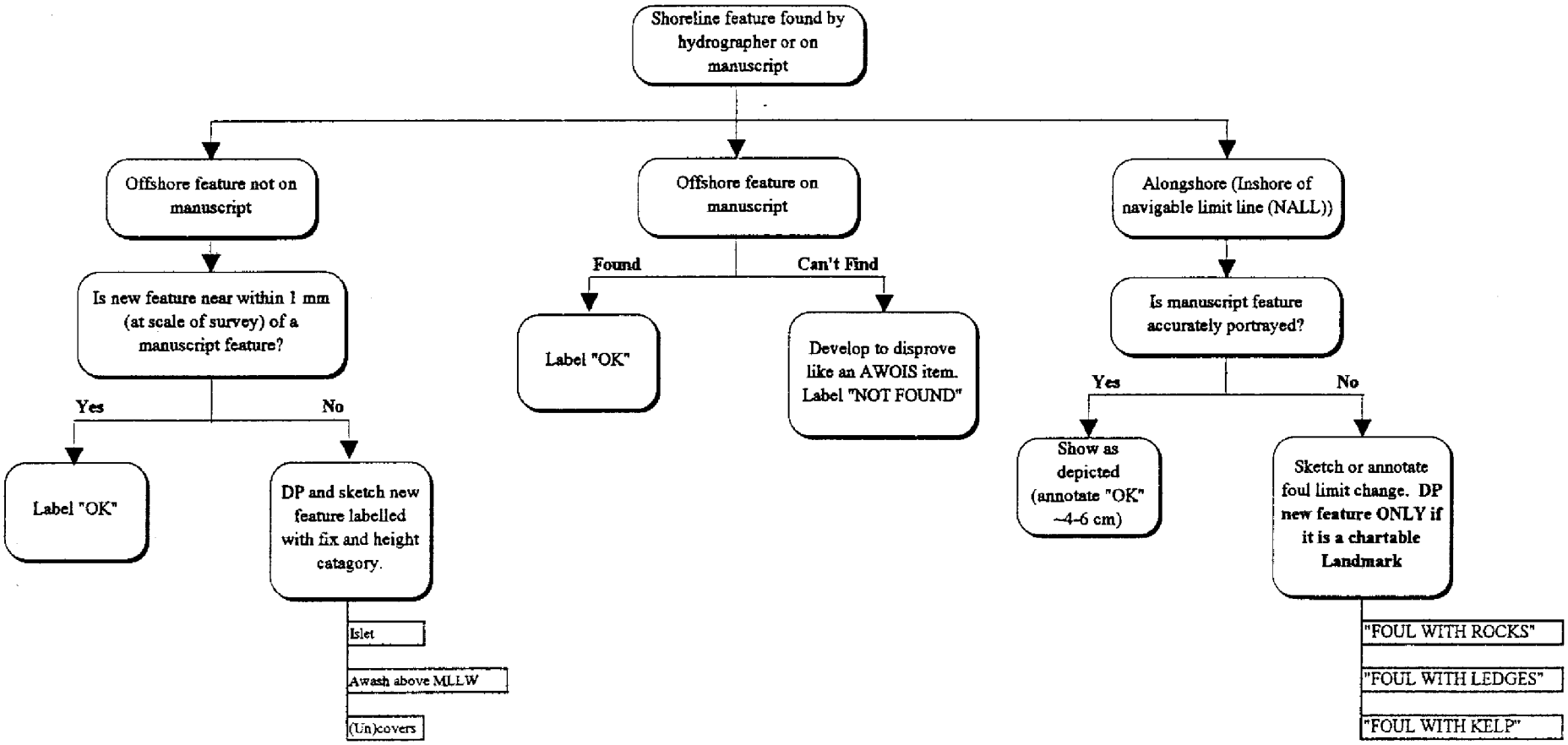
1) Determine distance from shore that is the MINIMUM working distance necessary for the survey. Take into account likely vessel traffic, bathymetry, complexity of the shoreline from prior surveys and the chart, and weather (sea) conditions experienced in the area. Use greater distances if shallow depths prevail, or if swell is severe. Even in steep foreshore bathymetry, do not go closer than 3 launch lengths (30 meters), unless vessel usage indicates that the area is used (e.g. a landing ramp is on shore, or an extremely narrow passage is used by fishing vessels to reach a certain bay.)

2) Draw the inshore limit determined in (1) on the boat sheet. Collecting data along this line may or may not be feasible, due to tides and project logistics, but the boat sheet line may be used to delimit mainscheme and development hydrography until such a "buffer" line is or may be needed.

3) Search for and develop all features seaward of the line drawn in (2). Use low water for this search, if possible. Combining this search with the acquisition of the data along the "buffer" line may be possible in areas which are not too complex. Detached positions are required only if a feature is found offshore of the NALL line and either more than 1 mm away from any manuscript feature or is mis-represented by the manuscript. If a charted or manuscript feature located offshore of the line is NOT found, a full disproval is required.

4) Annotate the field copies of the boat sheet (which by definition includes the charted, manuscript, and significant prior survey features) showing that the shoreline features offshore of the NALL each have a full disposition. These copies are bound and used to create the final field sheet, and submitted as official survey records.

Shoreline Decision Tree



Prepared by Mark S. Larsen

APPROVAL SHEET

for

H-10694

RA-10-11-96

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey 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 examined by me, are considered complete and adequate for charting purposes, and are approved.

Dean R. Seidel
Captain, NOAA
Commanding Officer

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: November 22, 1996

HYDROGRAPHIC BRANCH: Pacific

HYDROGRAPHIC PROJECT: OPR-P182-RA

HYDROGRAPHIC SHEET: H-10694

LOCALITY: Eastern Approaches Kujulik Bay, Southwest Alaska Peninsula, Alaska

TIME PERIOD: June 4 - July 23, 1996

TIDE STATION USED: 945-8779 Nakchamik Island, Ak.
Lat. 56° 21.1'N Lon. 157° 48.7'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.491 meters

TIDE STATION USED: 945-8819 Kujulik Bay, Ak.
Lat. 56° 36.0'N Lon. 157° 59.0'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.640 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: 2.472 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: #SAP13
Refer to Attachment(s) for zoning information

Note: Times are tabulated in Greenwich Mean Time.

CHIEF, TIDAL ANALYSIS BRANCH

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10694

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 16560	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
KUJULIK BAY (title) *	X		X							3
KUMLIK, CAPE	X		X							4
NORTH PACIFIC OCEAN	X		X							5
										6
										7
										8
* Plots outside survey limits.										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
					Approved:					20
										21
										22
					Chief Geographer					23
					SEP 3 1996					24
										25

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-10694

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	2					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List):	TP-00904
PHOTOBATHYMETRIC MAPS (List):	N/A
NOTES TO THE HYDROGRAPHER (List):	N/A
SPECIAL REPORTS (List):	N/A
NAUTICAL CHARTS (List):	Chart 16566, 8th Ed., 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~~ (selected)			22,870
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	96.0		96.0
COMPARISON WITH PRIOR SURVEYS AND CHARTS		8.0	8.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		13.0	13.0
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	96.0	21.0	117.0

Pre-processing Examination by J. Stringham	*Beginning Date* 8/14/96	*Ending Date* 8/16/96
Verification of Field Data by J. Stringham, D. Doles, R. Mayor, E. Domingo	*Time (Hours)* 96.0	*Ending Date* 1/30/97
Verification Check by B. Olmstead	*Time (Hours)* 3.5	*Ending Date* 3/27/97
Evaluation and Analysis by I. Almacen	*Time (Hours)* 21.0	*Ending Date* 2/26/97
Inspection by B. Olmstead	*Time (Hours)* 9	*Ending Date* 4/7/97

EVALUATION REPORT

H-10694

A. PROJECT

Project information is discussed in the hydrographer's report.

B. AREA SURVEYED

This basic hydrographic survey was conducted off the southeast coast of the Alaska Peninsula. It covers the eastern approaches to Kujulik Bay and the area offshore south of Cape Kumlik. The inshore area is generally comprised of islets, ledges, scattered rocks and reefs with dense concentration of kelp along the coast.

The hydrographer has determined the inshore limits of safe navigation by defining a Navigable Area Limit Line (NALL) 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 A.

The bottom is mainly composed of pebble, sand and mud mixed with shells. Depths range from 0.8 to 79.0 fathoms.

C. SURVEY VESSELS

Survey vessel information is found in the hydrographer's report.

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, Version 12.

At the time of the survey certification the format for transmission of digital data had not been formally 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 plot is filed both in the AutoCad drawing format, i.e., .dwg (extension); and in the more universally recognized graphics transfer format, .dxf (extension). Copies of these 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 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 the Hydrographic Survey Guideline 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 used on survey H-10694. However, because of the poor quality of the records obtained in the field, none of the data collected were retained for hydrographic processing.

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 tide, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with present NOS specifications. Actual tide reduction is derived from Kujulik Bay, Alaska gage (945-8819). Nakchamik Island, Alaska gage (945-8779) and Chignik, Anchorage Bay, Alaska gage (945-8917) were listed on the tide approval note but were not used for reduction of final sounding data. Refer to the approved tide note attached to this report concerning recommended tidal zoning.

H. CONTROL STATIONS

The horizontal control positions of DGPS reference stations used during hydrographic operations are published values based on NAD 83. The geographic positions of all survey data are also based on NAD 83. The AutoCAD generated smooth sheet is annotated with an NAD27 adjustment tick based on values determined with NGS program NADCON.

Data based on NAD 27 may be referenced to this survey by applying the following corrections:

Latitude: -2.747 seconds (-84.965 meters)
Longitude: 7.377 seconds (125.956meters)

I. HYDROGRAPHIC POSITION CONTROL

Differential GPS (DGPS) was used to control this survey. NAD83 is used as the horizontal

datum for plotting and position computations. A horizontal dilution of precision (HDOP) limits of 3.75 was computed for survey operations. The maximum allowable limit has not been exceeded and the quality of data obtained during this survey is considered good. The reference site confirmation test using the program MONITOR and the daily DGPS performance checks conducted in the field were adequate.

J. SHORELINE

A digitized 1:10,000 scale enlargement of Class III registered shoreline manuscript TP-00904 on NAD83 was used during this survey. The digitized shoreline file and the survey file were merged during Microstation processing. The "limited" shoreline verification procedures was applied during this survey in accordance with the Project Instructions (Attachment 1) and the new 1996 RAINIER limited shoreline verification guidelines (copy attached). The inshore limit of safe navigation (Navigable Area Limit Line, NALL) was determined by the field hydrographer based on bottom depth, bottom bathymetry, dangers to navigation, marine traffic, and area usage within the survey boundaries.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10694 junctions with the following surveys.

Survey	Year	Scale	Area
H-10557	1994	1:10,000	East
H-10695	1996	1:10,000	West
H-10697	1996	1:10,000	South
H-10702	1996	1:10,000	South
H-10698	1996	1:10,000	West

The junction with survey H-10557 has not been formally completed since this survey was previously processed and forwarded to headquarters for charting. There is good agreement between soundings, however, the depth curves depicted on survey H-10557 delineate depths in meters, and therefore, are not in coincidence within the junction area.

The junctions with surveys H-10695, H-10697, H-10698 and H-10702 are complete. The depth curves and soundings within the junction areas are in satisfactory agreement.

M. COMPARISON WITH PRIOR SURVEYS

Survey H-10694 was compared with the following prior surveys.

H-4495 (1925), scale 1:20,000
H-4506 (1925), scale 1:60,000
H-4510 (1925), scale 1:20,000

The above listed prior surveys cover the portion around the eastern entrance to Kujulik Bay and the area off the southern coast of Cape Kumlik. Comparisons with the above prior surveys are considered satisfactory. A few of the least depths determined in this survey were found to be shoaler by about 3 to 6 fathoms than the prior least depths from the 1925 surveys. The present depths generally differ by about 1.0 to 2.0 fathoms in most areas except for some isolated shoal depths located in the present survey. The differences found during this survey are primarily attributed to the higher accuracy of the positioning and sounding methods available in the field at the present time and the increase in bottom coverage of the area.

H-10694 is adequate to supersede the prior surveys within the common area.

T-8622 (1941) 1:20,000
T-4155 (1925) 1:20,000

The above listed prior shoreline maps depict the mean high water line, ledges, reefs, isolated rocks and kelp located within the common area of the present survey. Most of these features were either depicted on the latest shoreline maps or adequately defined during survey operations. However, several of the prior topographic rocks fall inside the NALL line and should remain charted.

H-10694 is adequate to supersede the prior topographic surveys within the common area.

N. ITEM INVESTIGATIONS

AWOIS item 52053 was investigated during this survey. Discussion and disposition of this item is included in the hydrographer's report.

O. COMPARISON WITH CHART

Survey H-10694 was compared with the following charts.

Chart	Edition	Date	Scale	Datum
16566	8th	Aug. 3, 1996	1:17,477	NAD83
16566	7th	Oct.28, 1989	1:77,477	NAD83

a. Hydrography

Charted hydrography originates with the previously mentioned prior hydrographic and topographic surveys. These prior surveys have been adequately addressed in the preceding section of this report and requires no further discussion.

The 8th Edition of Chart 16566 reflects the latest shoreline information and dangers to navigation not portrayed on the previous edition.

With the exception of AWOIS item 52053 (Wreck, PA), survey H-10694 is adequate to supersede charted hydrography within the common area of coverage.

b. Dangers to Navigation

Five (5) dangers to navigation were reported to the USCG, NIMA, N/CG221 and N/CS34 on July 31, 1996. Two (2) additional dangers were found during office processing. Copies of the report are attached.

P. ADEQUACY OF SURVEY

The hydrography on survey H-10694 is adequate to:

a. delineate the bottom configuration, determine least depths, and draw the standard 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.

Hydrography on survey H-10694 was acquired in the field in metric units while the AutoCAD generated smooth sheet for this survey was compiled in fathoms to conform to the sounding unit of the existing NOS nautical charts of the area.

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.

Survey H-10694 adequately complies with the project instructions.

Q. AIDS TO NAVIGATION

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

There are no prominent features of landmark value located around the survey area.

R. STATISTICS

Statistics are itemized in the hydrographer's report.

S. MISCELLANEOUS

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

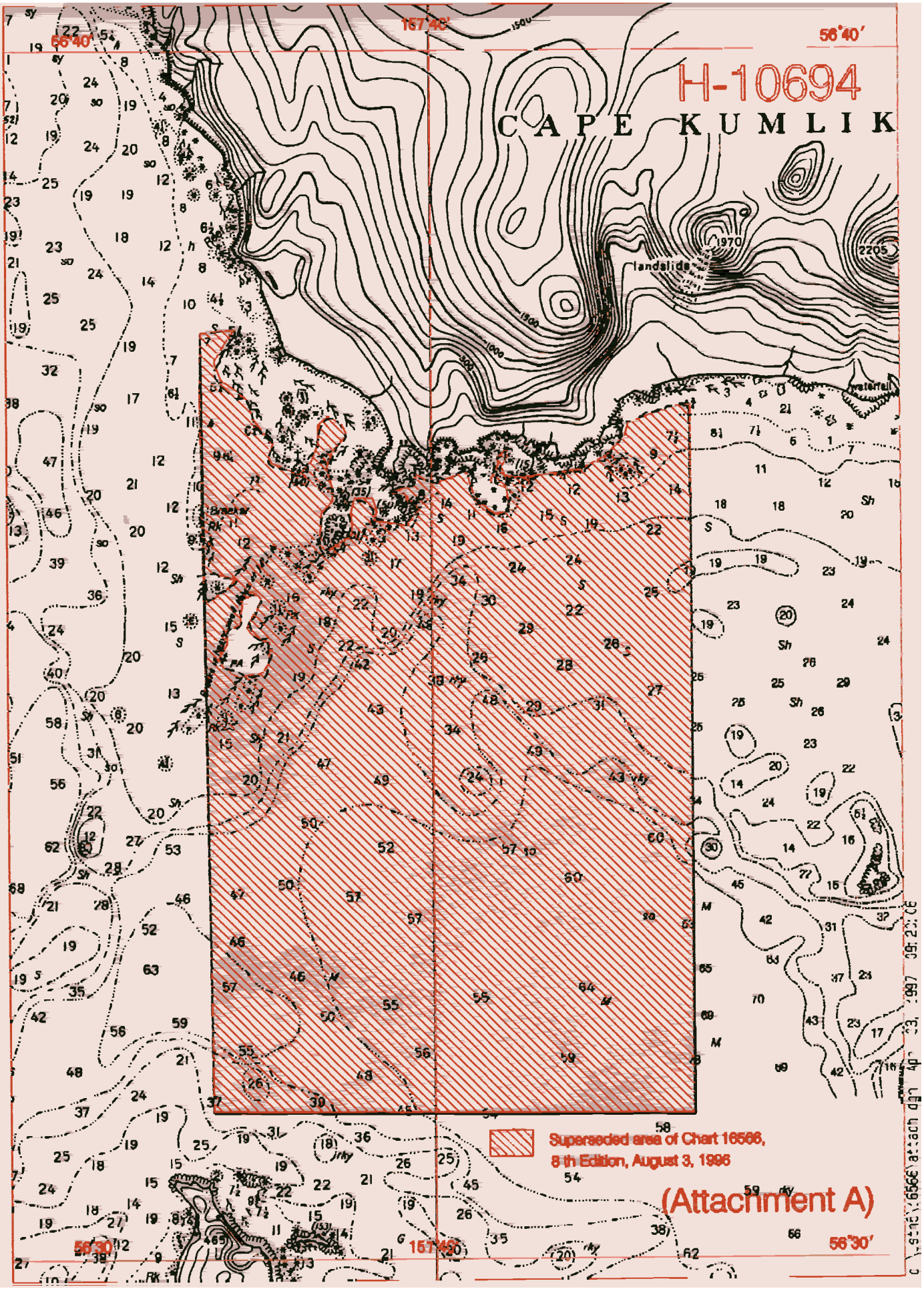
T. RECOMMENDATIONS

Survey H-10694 is a good hydrographic survey. However, additional field work is recommended on a low priority basis to adequately disprove the existence of the charted wreck (AWOIS Item 52053) mentioned in section N of this report.

U. REFERRAL TO REPORTS

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

Isagani A. Almacen
Cartographer


H-10694
CAPE KUMLIK
56°40′
157°40′
56°30′
landslide
1970
2205
waterfall
Superseded area of Chart 16566,
8th Edition, August 3, 1996
(Attachment A)

APPROVAL SHEET
H-10694

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: 4/7/97
Bruce A. Olmstead
Senior Cartographer, Cartographic Section
Pacific Hydrographic Branch

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

Kathy Timmons Date: 4/17/97
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

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Final Approval

Approved:

Andrew A. Armstrong III Date: Oct 23, 1997
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-10694

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	4/20/97	[illegible]	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. Full application of soundings and curves 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
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			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Charts
			16566 LB 12/26/97 Appd.
			16013
			16011
			16006

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.