

H10487

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-10-15-93
Registry No. H-10487

LOCALITY

State Alaska
General Locality Alaska Peninsula
Sublocality Four Nautical Miles
Southeast of Garden Island

19 93

CHIEF OF PARTY
CAPT Russell C. Arnold, NOAA

LIBRARY & ARCHIVES

DATE MAR 6 1995

HYDROGRAPHIC TITLE SHEET

H-10487

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-10-15-93

State Alaska

General locality Alaska Peninsula

Locality Four Nautical Miles Southeast of Garden Island

Scale 1:10,000 Date of survey July 12 - July 22, 1993

Instructions dated 4/13/93, Change #1-4/23/93 Project No. OPR-P180-RA

Vessel RAINIER (2120), RA-3(2123), RA-4(2124), RA-5(2125), RA-6(2126)

Chief of party CAPT Russell C. Arnold, NOAA

Surveyed by CAPT R. Arnold, LT M. Brown, LT D. Neander, LTJG S. Lemke, ENS G. Glover, ENS G. Johnson, CST Paranada, SST Fleischmann

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

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Evaluation by R. Mihailov Automated plot by PHS Xynetics Plotter

Verification by R. Mihailov, R. Shipley, J. Stringham, S. Otsubo

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

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

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

4WDIS/SURF check
4/7/93, mCR

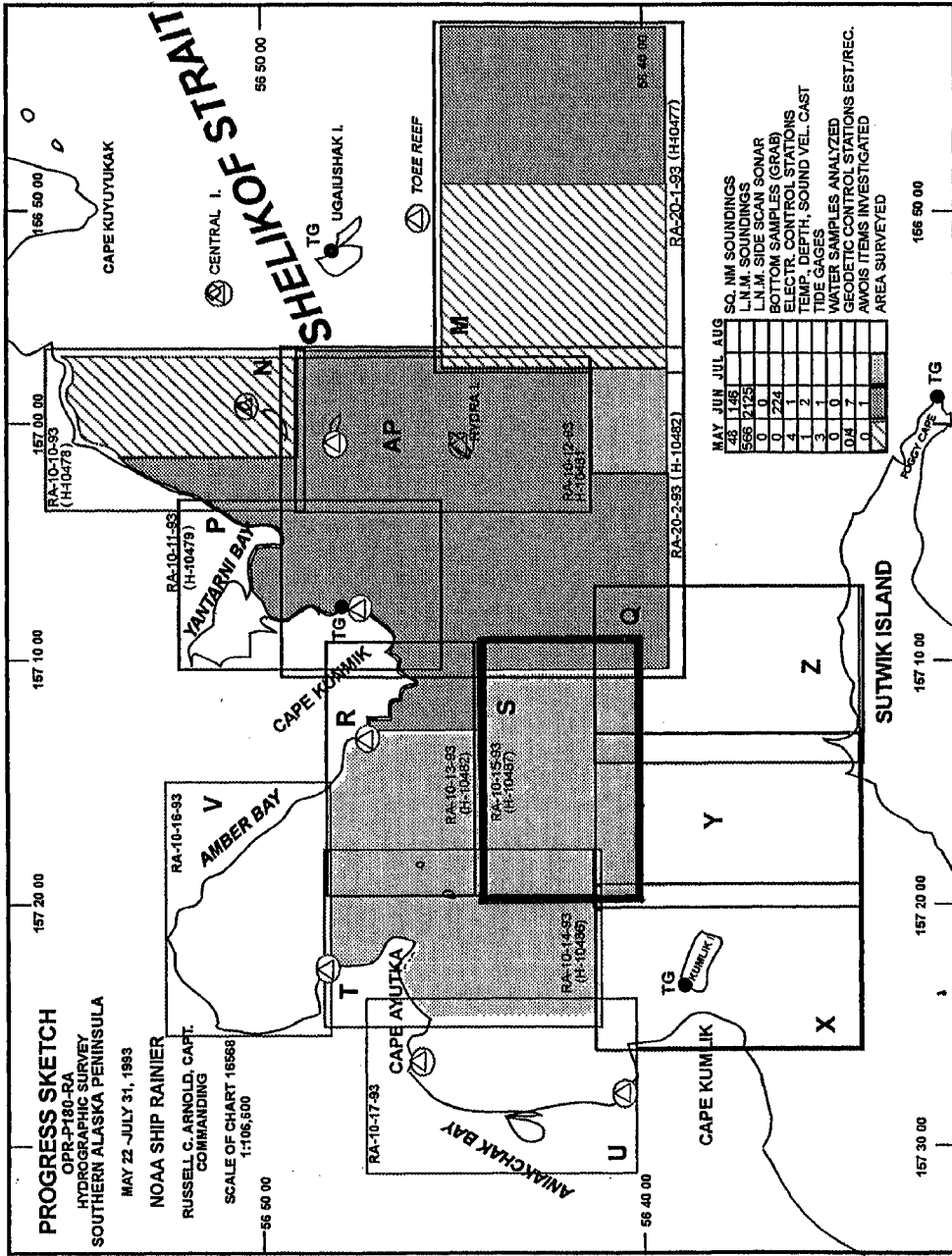
PROGRESS SKETCH
 OPR-P180-RA
 HYDROGRAPHIC SURVEY
 SOUTHERN ALASKA PENINSULA

MAY 22 - JULY 31, 1993

NOAA SHIP RAINIER

RUSSELL C. ARNOLD, CAPT.
 COMMANDING

SCALE OF CHART 18568
 1:100,500



	MAY	JUN	JUL	AUG
SO. NM SOUNDINGS	48	1	148	
L.N.M. SOUNDINGS	566	2	125	
L.N.M. SIDE SCAN SONAR	0	0		
BOTTOM SAMPLES (GRAB)	0	1	224	
ELECTR. CONTROL STATIONS	4	1		
TEMP., DEPTH, SOUND VEL. CAST	1	2		
TIDE GAGES	3	1		
WATER SAMPLES ANALYZED	0	0		
GEODETTIC CONTROL STATIONS EST./REC.	0	1		
AVOIS ITEMS INVESTIGATED	0	1		
AREA SURVEYED	1	1		

- SO. NM SOUNDINGS
- L.N.M. SOUNDINGS
- L.N.M. SIDE SCAN SONAR
- BOTTOM SAMPLES (GRAB)
- ELECTR. CONTROL STATIONS
- TEMP., DEPTH, SOUND VEL. CAST
- TIDE GAGES
- WATER SAMPLES ANALYZED
- GEODETTIC CONTROL STATIONS EST./REC.
- AVOIS ITEMS INVESTIGATED
- AREA SURVEYED

Descriptive Report to Accompany Hydrographic Survey H-10487

Field Number RA-10-15-93
Scale 1:10,000
July 1993

NOAA Ship RAINIER
Chief of Party: Captain Russell C. Arnold

A. PROJECT ✓

This basic hydrographic survey was completed in Shelikof Strait, Alaska, as specified by Project Instructions OPR-P180-RA dated April 19, 1993, change No. 1 dated April 23, 1993 and change No. 2 dated June 21, 1993.

Survey H-10487 corresponds to "Sheet S" as defined in the Project Instructions.

This survey will provide contemporary hydrographic survey data for updating existing nautical charts, and for constructing two 1:100,000 scale metric charts. The new charts will cover inshore and offshore areas between Sutwik Island and Mitrofanina Island along the southern Alaska Peninsula. Requests for hydrographic surveys and updated charts have been received from the U.S. Coast Guard, Alaska congressional delegates, NOAA, Defense Mapping Agency, and local fishermen.

B. AREA SURVEYED ✓ See Evaluation Report, section 1.

This survey is located in Shelikof Strait along the Alaska Peninsula, southwest of Kodiak Island. The survey area is north of Sutwik Island and extends south from latitude $56^{\circ}44'00''N$ to latitude $56^{\circ}40'00''N$, and west from longitude $157^{\circ}11'00''W$ to $157^{\circ}16'00''W$. There is no shoreline on sheet S.

Data acquisition was conducted from July 12, Day Number (DN) 193, through July 22 (DN) 202.

C. SURVEY VESSELS ✓

Data were acquired by the NOAA SHIP RAINIER, four survey launches as noted below:

<u>Vessel</u>	<u>EDP No</u>	<u>Operation</u>
RAINIER	2120	Bottom Samples
RA-3	2123	Hydrography
RA-4	2124	Hydrography
RA-5	2125	Hydrography Sound Velocity Cast
RA-6	2126	Hydrography

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

Data acquisition and processing were accomplished with the following HDAPS programs:

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>
AUTOST	3.00	9/24/92
BACKUP	2.00	9/24/92
BASELINE	1.13	9/24/92
BIGABST	2.03	9/24/92
BLKEDIT	2.00	9/24/92
CARTO	2.04	3/1/93
CONVERT	3.51	9/24/92
DAS_SURV	6.33	5/17/93
DP	2.13	3/1/93
EXCESS	4.10	9/24/92
FILESYS	3.02	5/17/93
GRAFEDIT	1.01	2/26/93
LSTAWOIS	3.01	9/24/92
LISTDATA	1.00	9/24/92
MAINMENU	1.00	9/24/92
MAN_DATA	2.00	9/24/92
NEWPOST	6.00	9/24/92
PLOTALL	2.08	2/26/93
PRESURV	7.01	2/26/93
PRINTOUT	4.01	9/24/92
QUICK	2.03	2/26/93
RAMSAVER	1.01	9/24/92
REAPPLY	2.01	9/24/92
SYMBOLS	2.00	9/24/92
ZOOMEDIT	2.10	9/24/92

Velocity corrections were determined using:

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>
VELOCITY	2.0	24 Mar 1993

E. SONAR EQUIPMENT ✓

Side scan sonar equipment was not used on sheet S.

F. SOUNDING EQUIPMENT ✓

DSF-6000N serial numbers are included on the headers of the daily Raw Master Printouts. *

* Filed with the hydrographic data.

G. CORRECTIONS TO ECHO SOUNDINGS ✓

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

<u>Velocity Table No.</u>	<u>Cast No.</u>	<u>Deepest Depth (m)</u>	<u>Applicable DN</u>	<u>Cast Position</u>	<u>Day</u>
4	4	220.4	193-200	56°40'38"N 157°10'41"W	194

The sound velocity cast was acquired with SBE SEACAT Profiler S/N 220.

Velocity correctors were computed using the PC program VELOCITY in accordance with Hydrographic Survey Guideline (HSG) #69. A printout of the Sound Velocity Corrector Tables 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 for launches 2123, 2124, 2125 and 2126 on March 19, 1993 and is in the offset tables for each launch. ✕

Settlement and Squat ✓

Correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2., using FPM Fig. 2.2 and 2.3, and are included with project data for OPR-P180-RA. The data used was collected in Shilshole Bay, Washington on March 11, 16, and 18 of 1992. Revised settlement and squat correctors were received from Pacific Marine Center on October 21, 1992. Authorization was obtained from N/CG241 to use the 1992 data. These revised correctors were applied to the data on sheet S.

Offset Tables ✓

<u>Vessel</u>	<u>Offset Table No.</u>
2123	3
2124	4
2125	5
2126	6

Heave ✓

Data acquired during periods of significant sea action were scanned to account for inaccuracies caused by heave.

* Filed with the hydrographic data.

Bar Check and Lead Lines

Bar check and lead lines were calibrated by RAINIER personnel on February 19, 1993 at PMC. Calibration forms are included with project data for OPR-P180-RA.

Tide Correctors

Predicted tides for the project were provided on diskette by N/OES334 for the Ugaiushak, Alaska reference station (945-8553). Tidal correctors are:

<u>TIME(min.)</u>		<u>RANGE RATIO</u>
<u>High Water</u>	<u>Low Water</u>	
0	0	X 1.00

HDAPS listings of the data used in generating tide corrector tables are included in Appendix V of this report.

Tide gages were installed and maintained by RAINIER personnel at Ugaiushak Island (945-8553), Foggy Cape, Sutwik Island (945-8582), Cape Kumlik (945-8704), and Cape Kunmik (945-8631). The control station was Sand Point, Alaska (945-9450). Bracketing levels was completed by RAINIER personnel during July and the control station was leveled at the conclusion of the project.

The station descriptions, field tide records, and Field Tide Notes will be forwarded to N/OES212, in accordance with HSG 50 and FPM 4.3, monthly and at the end of the project. Requests for approved tides will be forwarded to N/OES2. Approved Tide note dated January 5, 1994 is attached.

H. CONTROL STATIONS ✓ *See Evaluation Report, section 2.*

A listing of the geodetic stations used to control this survey is included in ~~Appendix III~~ of this report.

Positions for all existing stations are from the National Geodetic Survey (NGS) data base. All existing stations were recovered in accordance with methods stated in Section 5.2.4 of the Field Procedures Manual. Further information can be found in the "Summer 1993 Horizontal Control Report for OPR-P180-RA."

I. HYDROGRAPHIC POSITION CONTROL ✓**Method of Position Control**

All soundings and features were positioned using differential GPS. Falcon was used solely for GPS system checks. Serial numbers for Falcon R/T units, RPU's and Ashtech GPS equipment are annotated on the data printouts.*

Calibrations & Systems Check Methods ✓**Falcon 484**

Baseline calibrations were conducted in accordance with FPM 3.1.2.1 and 3.1.3.2. Calibrations were performed at the MATTHEWS PARK BEACH BASELINE on May 4-7, 1993. Calibration data and a description of the baseline is included with project data for OPR-P180-RA.

* Filed with the hydrographic records.

Ashtech GPS ✓

Station HYDRA was used as the VHF differential shore station. A remote sensor was directly connected to the MXII shore station and its antenna was collocated with the shore station. The computed position was transmitted back to the ship via VHF radio modem link. The difference between the computed location and the station's published position was recorded by the MONITOR program on a PC. Data from a 24-hour period were recorded and examined for signs of multi-path signal reflection, which was not evident at the station.

Launch system checks were made by a direct comparison of the Falcon position with the GPS position. HDAPS Survey Screen Two was used for the Falcon comparison, and was dumped to the system printer to record the results. Three such dumps were made for each system check. System checks were made every day and results were transferred to forms which are included in the project data for OPR-P180. An abstract of the system checks is included in the "Separates to be included with Survey Data III. Horizontal Position Control and Corrections to Position Data". *

Problems

None.

Offset

The launch GPS antenna is mounted on the mast of the Falcon R/T unit. Antenna offsets are stored in the HDAPS Offset Tables as listed in Section G. *Copies of the Offset Tables are included in the "Separates to be Included with Survey Data, III. Horizontal Position Control and Corrections to Position Data."

J. SHORELINE ✓

There was no shoreline on sheet S.

K. CROSSLINES ✓

Crosslines are in good agreement with mainscheme hydrography. Crosslines totaled 23.44 nautical miles, representing 6.0% of the total mainscheme hydrography.

L. JUNCTIONS See Evaluation Report, section 5.

~~This survey does not junction with any contemporary survey.~~

M. COMPARISON WITH PRIOR SURVEYS See Evaluation Report, section 6.

~~There were no prior surveys done on sheet S.~~

N. ITEM INVESTIGATIONS

None.

O. COMPARISON WITH THE CHART See Evaluation Report, section 7.

This survey was compared to NOS chart 16568, 9th Edition, March 25, 1992, 1:106,600 (NAD83).

* Filed with the hydrographic records.

The few charted soundings were found to be in general agreement with this survey. Final comparisons will be made at PHS.

No AWOIS items were included in this survey.

Dangers to Navigation ✓

Two danger to navigation within the limits of this survey were reported by radio message and letter to the Seventeenth Coast Guard District and DMAHTC. Copies of the correspondence are attached to this report. Correspondence is dated July 22, 1993.

P. ADEQUACY OF SURVEY ✓

This survey is complete and adequate to supersede the ~~T-Sheets and~~ chart letters in the common areas. ~~CONCUR~~

Q. AIDS TO NAVIGATION ✓

None.

R. STATISTICS ✓

<u>Vessel:</u>	<u>2120</u>	<u>2123</u>	<u>2124</u>	<u>2125</u>	<u>2126</u>	<u>Total</u>
# of Pos	105	44	1,311	383	64	1,907
NM Hydro	0	8.0	193.6	147.9	41.3	390.8

NM ² Hydrography	16.1
Velocity Casts	1
Detached Positions	0
Tide Stations	3
Reference Numbers	0
Bottom Samples	81 73

S. MISCELLANEOUS ✓

LORAN C comparisons were required by the Project Instructions and will be submitted at the end of the project.

Bottom samples were sent to the Smithsonian Institution in accordance with the Project Instructions. *

The Coast Pilot current and predicted current comparisons were made in accordance with the Project Instructions. The current predictions were adequate and the descriptions accurate.

T. RECOMMENDATIONS ✓

None.

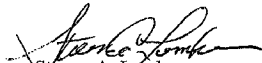
* Filed with the hydrographic records.

U. REFERRAL TO REPORTS ✓

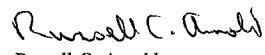
The following supplemental reports contain additional information relevant to this survey:

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
Summer 1993 Horizontal Control Report for OPR-P180-RA	1993	N/CG2333
Summer 1993 Coast Pilot Report for OPR-P180-RA	1993	N/CG245
Project related data for OPR-P180-RA	Incremental	N/CG245

Respectfully Submitted,


Steven A. Lemke
Lieutenant (jg), NOAA

Approved and Forwarded,


Russell C. Arnold
Captain, NOAA
Commanding Officer



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

**ADVANCE
INFORMATION**

NOAA Ship RAINIER

July 22, 1993

Director
DMAHTC
Attn: MCNM
6500 Brookes Lane
Washington, DC 20315-0030

Dear Sir:

While conducting hydrographic survey operations in Shelikof Strait, Alaska, NOAA Ship RAINIER discovered two dangers to navigation. They have been reported to DMAHTCNAVWARN and the Seventeenth Coast Guard District. A copy of the correspondence describing the dangers is enclosed.

Sincerely,

Russell C. Arnold
Russell C. Arnold
Captain, NOAA
Commanding Officer

Enclosures





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 22, 1993

**ADVANCE
INFORMATION**

Commander
Seventeenth Coast Guard District
Post Office Box 25517
Juneau, AK 99802-5517

Dear Sir:

Attached is a confirmation copy of the radio message sent to your office regarding the dangers to navigation which I recommend for inclusion in the Local Notice to Mariners for the Seventeenth Coast Guard District. A copy of the chart showing the areas in which the dangers exist is also attached.

Sincerely,

Russell C. Arnold
Russell C. Arnold
Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
PMC



P 22 Z JUL 93
FM NOAA S RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCNAVWARN WASHINGTON DC//MCNM//
INFO NOAA MOP SEATTLE WA
ACCT CM-VCAA

**ADVANCE
INFORMATION**

BT

UNCLAS

NOAA SHIP RAINIER HAS LOCATED 2 DANGERS TO NAVIGATION IN SHELIKOF STRAIT, ALASKA (PROJECT OPR-P180-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY H-10487 (FOUR NAUTICAL MILES SOUTHEAST OF GARDEN ISLAND). THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

CHARTS AFFECTED: 16568 9TH ED MAR 21/92 1:106,600 NAD 83

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

ITEM	DANGER	DEPTH	LATITUDE	LONGITUDE	FIX NOS.
A.	SHOAL	7 1/2 FM	56/42/10.185N	157/12/22.497W	4398
B.	SHOAL	11 FM	56/41/12.848N	157/17/30.573W	4232

THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW. QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE CHIEF, PACIFIC HYDROGRAPHIC SECTION AT (206) 526-6835. A LETTER WITH ATTACHED CHARTLET IS BEING MAILED TO CONFIRM THIS MESSAGE.

BT

**ADVANCE
INFORMATION**

CAPE KUNLIK

Waterfall

EAGLE I

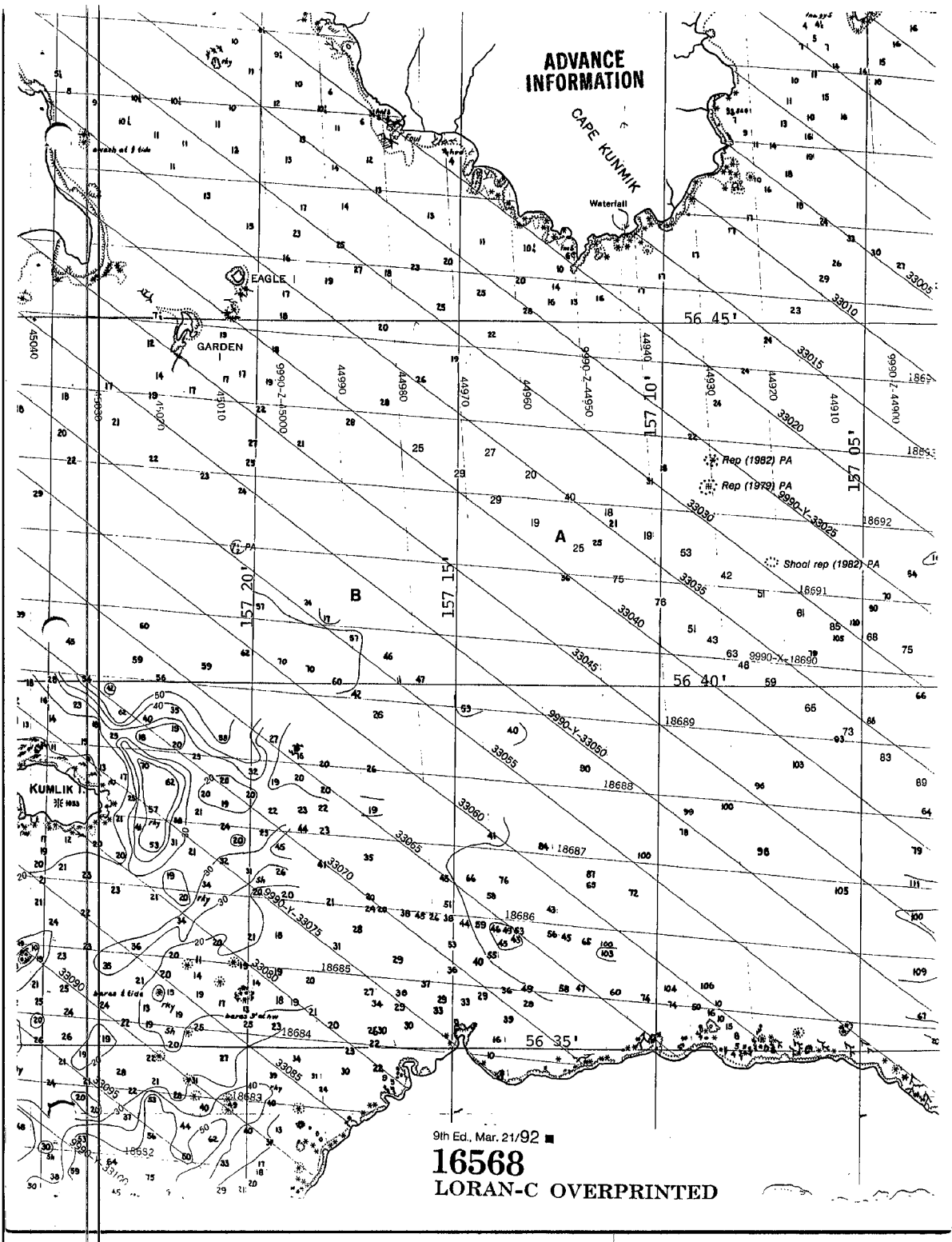
GARDEN I

KUNLIK

9th Ed., Mar. 21/92

16568

LORAN-C OVERPRINTED



CONTROL STATIONS as of 14 Jul 1993

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MI/DD/YY	Station Name
100	F	056+44+35.925	157+00+57.249	36	250	0.0	0.0	0	05/26/93	HYDRA 1944IM/R & DGPS STATION
101	F	056+45+36.294	156+51+13.289	17	250	0.0	0.0	0	5-05/27/93	TOEE
102	F	056+50+12.455	156+59+01.802	37	250	0.0	0.0	0	3-05/23/93	WOLFF
103	F	056+51+01.500	156+53+50.184	112	250	0.0	0.0	0	2-05/27/93	CENTRAL 1944
104	F	056+48+00.515	157+01+01.282	4	250	0.0	0.0	0	6-06/15/93	LONG 1944
105	F	056+48+55.025	157+08+22.740	28	250	0.0	0.0	0	5-06/22/93	EXTRA 1944
106	F	056+47+34.560	157+16+31.888	8	250	0.0	0.0	0	3-07/08/93	GALE 1945
107	F	056+40+03.120	157+25+16.321	12	250	0.0	0.0	0	6-07/09/93	GRAN 1945
108	F	056+45+19.738	157+29+20.737	29	250	0.0	0.0	0	5-07/14/93	LAND 1945

-P80 7/14

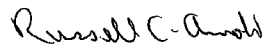
APPROVAL SHEET

for

H-10487
RA-10-15-93

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and 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.



Russell C. Arnold
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

ORIGINAL

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: January 5, 1994

MARINE CENTER: Pacific

OPR: P180

HYDROGRAPHIC SHEET: H-10487

LOCALITY: Four NM Southeast of Garden Island,
Shelikof Strait, Alaska

TIME PERIOD: July 15, 1993 - July 22, 1993

TIDE STATION USED: 945-8631 Cape Kunmik, Alaska
Lat. 56° 47.5'N Lon. 157° 07.5'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): = 1.01 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 9.2 feet

REMARKS: RECOMMENDED ZONING

Times are direct and apply a x0.96 range ratio to heights at
Cape Kunmik, Ak. (945-8631).

NOTE: Hourly heights are tabulated on Greenwich Mean Time.

William M. Johnson
CHIEF, DATUMS SECTION

J.S.S.



GEOGRAPHIC NAMES

H-10487

Name on Survey	Source of Name									
	A	B	C	D	E	F	G	H	K	
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	RAND McNALLY ATLAS	U.S. LIGHT LIST		
ALASKA (title)	X									1
ALASKA PENINSULA (title)	X									2
GARDEN ISLAND (title)	X									3
										4
										5
										6
										7
										8
										9
										10
										11
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										23
										24
										25

Approved:

Charles E. Hauling
Chief Geographer - NCG-2x5

FEB 14 1994

HYDROGRAPHIC SURVEY STATISTICS

H-10487

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

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

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

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

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			
BOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	58.5		58.5
VERIFICATION OF SOUNDINGS	22		22
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	79.5		79.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		3.0	3.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		32.0	32.0
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	160	35.0
			195.0

Pre-processing Examination by D. Haines	Beginning Date 6/29/93	Ending Date 8/31/93
Verification of Field Data by B. Mihailov, R. Shipley, J. Stringham	Time (Hours) 160	Ending Date 9/9/94
Verification Check by S. Otsubo	Time (Hours) 14	Ending Date 9/9/94
Evaluation and Analysis by B. Mihailov	Time (Hours) 35.0	Ending Date 10/20/94
Inspection by B.A. Olmstead	Time (Hours) 30	Ending Date 2/14/95

EVALUATION REPORT

H-10487

1. INTRODUCTION

Survey H-10487 is a basic hydrographic survey accomplished by the NOAA Ship *Rainier*, under the following Project Instructions.

OPR-P180-RA, dated April 13, 1993
CHANGE NO. 1, dated April 23, 1993
CHANGE NO. 2, dated June 21, 1993

This survey was conducted in Alaska, and is located along the Southern Alaska Peninsula, approximately 85 nautical miles southwest of Kodiak Island. The surveyed area is bounded by latitude 56/44/07N to the north and latitude 56/39/50N to the south. The eastern limit is longitude 157/10/50W and the western limit is longitude 157/20/35W. There is no shoreline within the limits of survey H-10487. Depths range from 13.8 meters to 167 meters.

Depth curves depicted on the smooth sheet were selected from those authorized through HSG 69. However, instead of drafting all authorized curves only those curves considered necessary for the reasonable portrayal of the bottom were drafted. The selected curves were the 20, 40, 50, 90 and 120 meter. A note was added to the smooth sheet to identify these values. A few supplemental depth curves have been added to the smooth sheet in brown as warranted.

Predicted tides for Ugaiushak, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned from Cape Kunmik, Alaska, gage 945-8631, were used during office processing.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. NAD 83 is used as the horizontal datum for plotting and position computations. The offset values and velocity correctors are adequate. An accompanying computer printout contains the parameters and the correctors.

A digital file has been generated for this survey that includes categories of information required to comply with Hydrographic Survey Guideline No. 52, Standard Digital Data Exchange Format, April 15, 1986. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

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

Additional detailed information on horizontal control is found in the 1993 Summer Horizontal Control Report for OPR-P180-RA.

Differential GPS (DGPS) was used to control this survey. Daily system checks by comparison with Miniranger positions confirmed the DGPS was operating properly. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The quality of 72 positions exceeded the limit 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.

The position of the horizontal control station used during hydrography is a published value based on NAD 83.

The smooth sheet and accompanying overlays are annotated with NAD 27 adjustment ticks based on values determined with NGS program NADCON. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: -2.697 seconds (-83.412 meters)
 Longitude: 7.362 seconds (125.278 meters)

The year of establishment of the control station shown on the smooth sheet originates with the above mentioned horizontal control reports and the hydrographer's signal list.

There is no shoreline within the limits of survey H-10487.

3. HYDROGRAPHY

Hydrography 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.

4. CONDITION OF SURVEY

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, March 1993 Edition.

5. JUNCTIONS

Survey H-10487 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10482	1993	1:20,000	East
H-10484	1993	1:10,000	North
H-10486	1993	1:10,000	West
H-10491	1993-94	1:10,000	South
H-10546	1994	1:10,000	Southeast
H-10543	1994	1:10,000	Southwest

The junctions with surveys H-10482, H-10484 and H-10486 are complete and the soundings are in good agreement.

Surveys H-10491, H-10543 and H-10546 were completed during the 1993-94 field season and have been recently received for processing. These surveys are in a preliminary stage of processing and the junctions will be discussed in the report for these surveys.

6. COMPARISON WITH PRIOR SURVEYS

H-4506 (1925) 1:60,000

Prior survey H-4506(1925) covers the entire area of the present survey. There are seven charted soundings originating with the prior survey. The sounding agreement is generally good, with present survey depths deeper between 1 and 5 meters. Differences can be attributed to increased bottom coverage and the less accurate positioning and sounding methods available at the time the prior survey was accomplished.

Survey H-10487 is adequate to supersede the prior survey within the common area.

7. COMPARISON WITH CHART

Survey H-10487 was compared with the following chart.

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
16568	9th	March 21, 1992	1:106,600	NAD 83

a. Hydrography

Charted hydrography originates with USGS reconnaissance survey (BP-40351-1945) and NOS trackline BP-134041 (D-74)1987.

Charted soundings reveal general differences of 0-5 meters with the present survey. However, a few isolated depths disagree by as much as 25 meters. Differences can be attributed to increased bottom coverage and the less accurate positioning and sounding methods available at the time these surveys. Due to the lack of sufficient depth information, it is not possible to determine whether the survey area has shoaled or become deeper.

Survey H-10487 is adequate to supersede charted hydrography within the common area.

b. AWOIS

There are no AWOIS items identified for this survey.

c. Controlling Depths

There are no channels with controlling depths located within the limits of survey H-10487.

d. Aids to Navigation

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

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

e. Geographic Names

Names appearing in the survey title have been approved by the Chief Geographer.

There are no geographic names appearing on the smooth sheet.

f. Dangers to Navigation

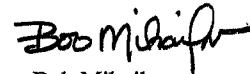
The hydrographer reported two shoals as dangers to navigation to the local United States Coast Guard District, DMAHTC and N/CG221, during the survey. A copy of this report is attached. No additional dangers to navigation were discovered during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10487 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is a good hydrographic survey. No additional work is recommended.



Bob Mihailov
Cartographer

APPROVAL SHEET
H-10487

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 digital data have been completed and all revisions and processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts have been made and are included with the survey records. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

for Bruce A. Olmstead
Dennis J. Hill _____ Date: 2/15/95
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

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
Kathy Timmons _____ Date: 2/17/95
Commander, NOAA
Chief, Pacific Hydrographic Section

Final Approval

Approved:

Thomas W. Richards
Thomas W. Richards _____ Date: 3-2-95
Captain, NOAA
Chief, Nautical Charting Division

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