

H-10551

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-10-9-94
Registry No. H-10551

LOCALITY

State Alaska
General Locality Alaska Peninsula
Sublocality Northeast of Sutwik Island

1994

CHIEF OF PARTY
CAPT. R.C. Arnold

LIBRARY & ARCHIVES

DATE March 22, 1996

HYDROGRAPHIC TITLE SHEET

H-10551

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-10-9-94

State Alaska

General locality Alaska Peninsula

Locality Northeast of Sutwik Island

Scale 1:10,000 Date of survey June 21 - July 9, 1994

Instructions dated 5/5/94 Project No. OPR-P180-RA

Vessel NOAA Ship 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 D. Neander, LT D. Haines, LTJG D. Lemke, ENS A. Caron, ENS G. Glover, ENS S. Smith

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

Graphic record scaled by RAINIER PERSONNEL

Graphic record checked by RAINIER PERSONNEL

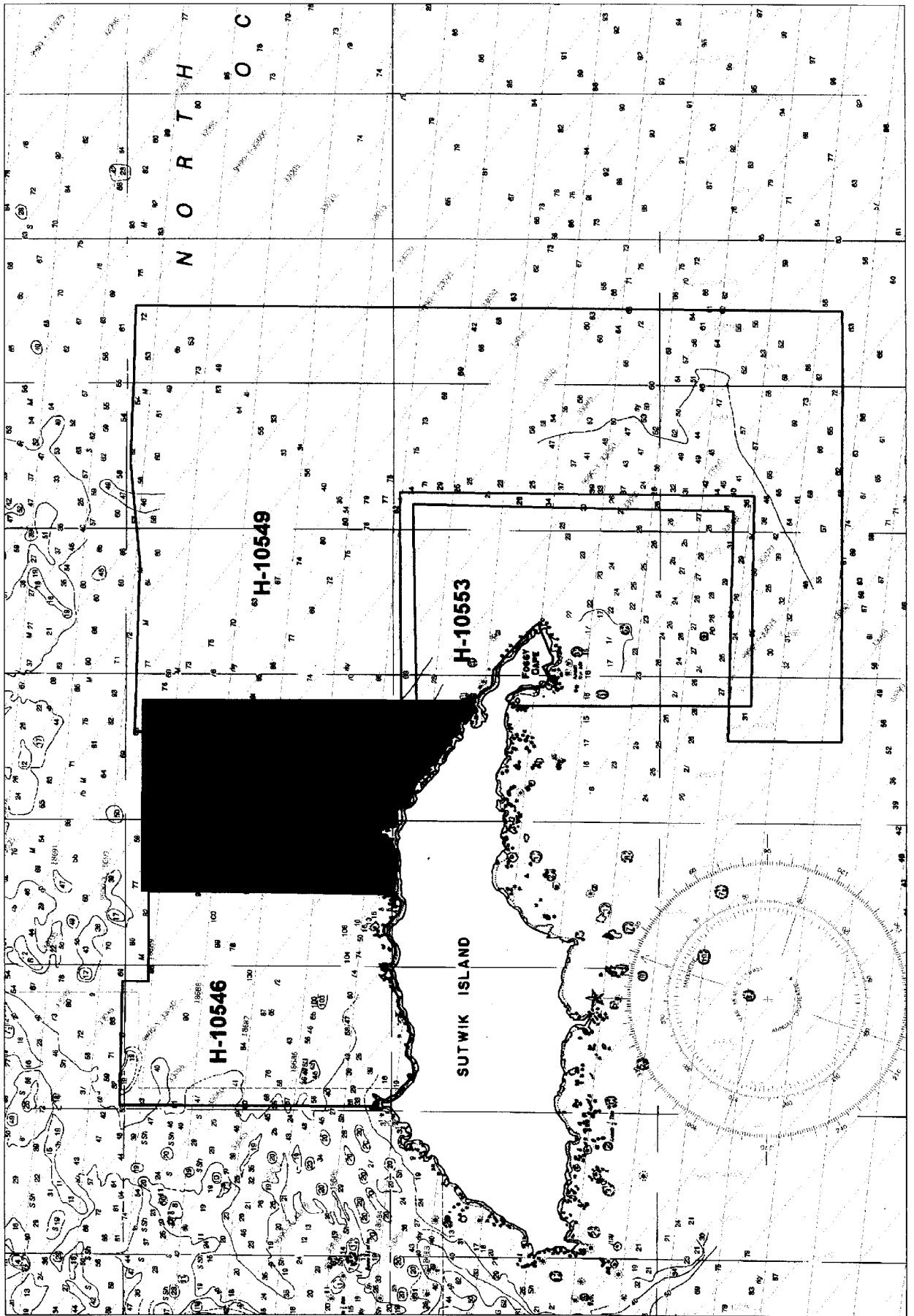
Evaluated by: B. Mihailov Automated plot by HP Design Jet 550L

Verification by E. Domingo, R. Shipley, D. Doles, J. Stringham, B. Mihailov

Soundings in ~~Meters~~ Meters & Decimeters at ~~MLLW~~ MLLW

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 3/26/96 MCR



PROGRESS REPORT

EAGLE I. A

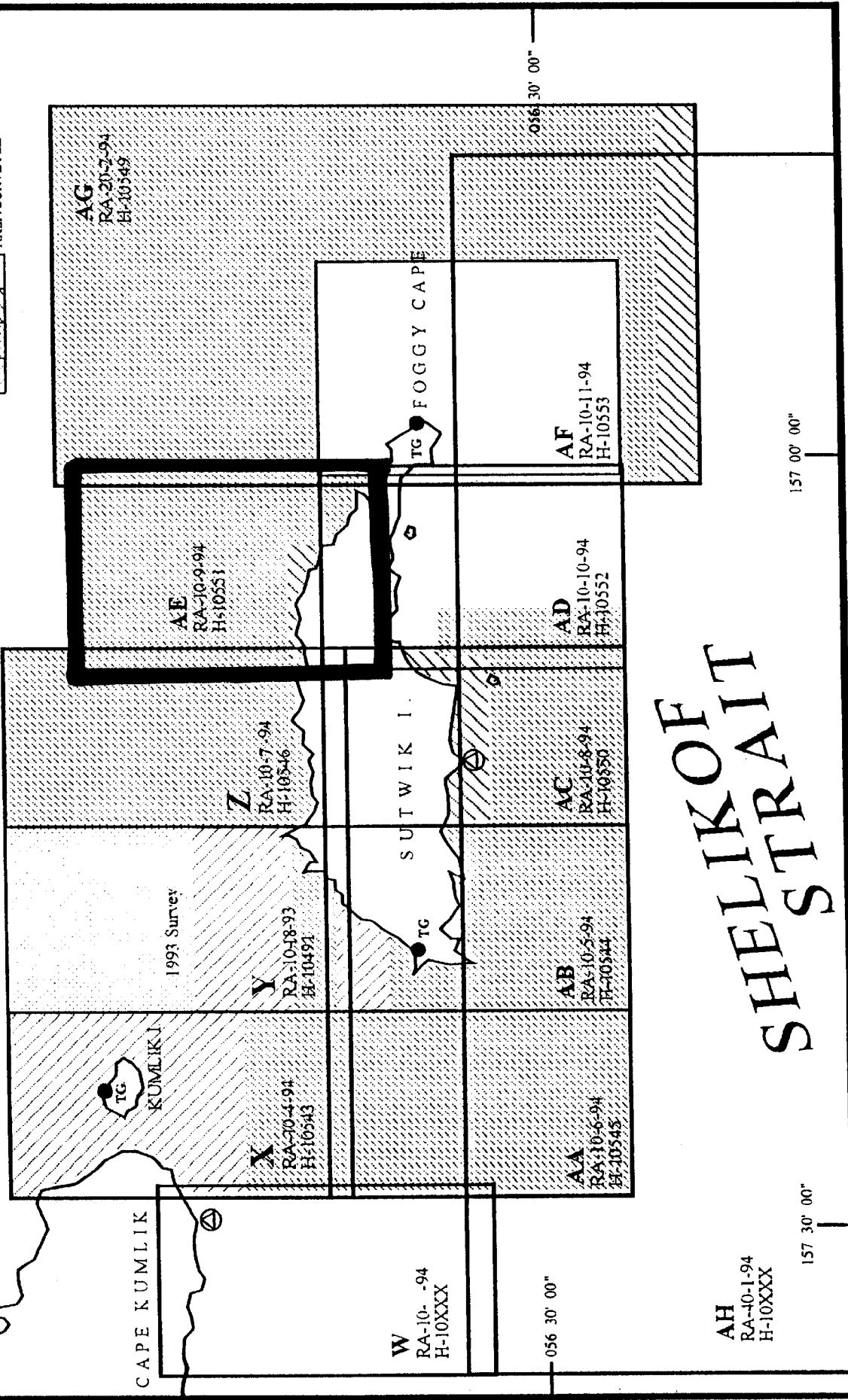
OPR-P180-KA
HYDROGRAPHIC SURVEY
SOUTHERN ALASKA PENINSULA, ALASKA
MAY 27-JUNE 30, 1994

NOAA SHIP RAINIER
R. C. ARNOLD, CAPT., NOAA
COMMANDING

SCALE OF CHART 16568
1:106,600

	MAY	JUN	JUL	AUG
SQ. NM SOUNDINGS	192	151		
LNM SOUNDINGS	593	3303		
LNM SIDE SCAN SOUNDINGS	0	0		
BOTTOM SAMPLES (GRAB)	0	357		
ELECTRONIC CONTROL STATIONS	3	1		
TEMP. DEPTH SOUND VEL. CAST	1	2		
TIDE GAGES	3	1		
GEO. CONT. STATIONS EST. REC.	3	2		
AWOIS ITEMS INVESTIGATED	0	0		
AREA SURVEYED				

157 00' 00"



AH
RA-10-1-94
H-10XXX

157 30' 00"

W
RA-10- -94
H-10XXX

056 30' 00"

SHELIKOF STRAIT

157 00' 00"

Descriptive Report to Accompany Hydrographic Survey H-10551

Field Number RA-10-9-94

Scale 1:10,000

June 1994

NOAA Ship RAINIER

Chief of Party: Captain Russell C. Arnold

A. PROJECT ✓

This basic hydrographic survey was completed along the Southern Alaska Peninsula, Alaska, as specified by Project Instructions OPR-P180-RA dated May 5, 1994.

Survey H-10551 corresponds to "sheet AE" 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 Eval Report, Section B.

The survey area is located along the Southern Alaska Peninsula, southwest of Kodiak Island. The survey's northern limit is bounded by latitude 56°39.6' N, and the southern limit is bounded by the north shore of Sutwik Island. The eastern limit is bounded by longitude 157°01.0' W, and the western limit is bounded by 157°07.5' W.

Data acquisition was conducted from June 21, 1994, Day Number (DN 172), through July 9, 1994, DN 190.

C. SURVEY VESSELS

Data were acquired by the NOAA SHIP RAINIER and four survey launches.

<u>Vessel</u>	<u>EDP #</u>	<u>Operation</u>
RAINIER	2120	Sound Velocity Casts Bottom Samples
RA-3	2123	Hydrography Shoreline Verification
RA-4	2124	Hydrography Shoreline Verification
RA-5	2125	Hydrography Bottom Samples Shoreline Verification

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

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

HDAPS 1994

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>
BACKUP	2.00	3/7/94
BASELINE	1.14	3/7/94
BIGABST	2.07	3/7/94
BIGAUTOST	3.01	3/7/94
BLKEDIT	2.02	3/7/94
CARTO	2.13	5/12/94
CLASSIFY	1.05	3/7/94
CONVERT	3.62	3/7/94
DAS_SURV	6.70	5/12/94
DIAGNOSE	3.04	5/12/94
DISC-UTIL	1.00	3/7/94
DP	2.14	3/7/94
EXCESS	4.21	3/7/94
FILESYS	3.24	5/12/94
GRAFEDIT	1.06	3/7/94
LISTDATA	1.02	3/7/94
LOADNEW	2.10	3/7/94
LSTAWOIS	3.07	5/12/94
MAINMENU	1.20	3/7/94
MAN_DATA	2.01	3/7/94
NEWPOST	6.01	3/7/94
PLOTALL	2.27	5/12/94
POINT	2.10	3/7/94
PREDICT	2.01	3/7/94
PRESURV	7.08	5/12/94
PRINTOUT	4.03	5/3/94
QUICK	2.05	5/12/94
RAMSAVER	1.02	3/7/94
REAPPLY	2.10	3/7/94
SCANNER	1.00	3/7/94
SELPRINT	2.04	3/7/94
SYMBOLS		3/7/94
VERSIONS	1.00	3/7/94
ZOOMEDIT	2.24	5/12/94

Velocity corrections were determined using:

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>
VELOCITY	2.10	15 Mar 1994

E. SONAR EQUIPMENT ✓

Sonar equipment was not used on sheet AE.

F. SOUNDING EQUIPMENT ✓

The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echo sounder. Serial numbers are included on the headers of the daily Raw Master Printouts. No problems which affect survey data were encountered. All DSF-6000N soundings were acquired using the High + Low, high frequency digitized setting.

G. CORRECTIONS TO ECHO SOUNDINGS ✓

Correctors for the velocity of sound through water were determined from the casts listed below: *Cast 3 is outside the survey area.*

<u>Table #</u>	<u>Cast #</u>	<u>DN</u>	<u>Cast Position</u>	<u>Depth</u>	<u>Applicable DN</u>
3	3	172	56°36'08" N 157°10'08" W	240	171 - 182
4	4	188	56°36'18" N 157°05'06" W	256.8	187 - 190

The sound velocity casts were acquired with SBE SEACAT Profiler (S/N 811), calibrated 12/17/93. Velocity correctors were computed using the PC program VELOCITY in accordance with Hydrographic Survey Guideline (HSG) No. 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 using FPM Fig 2.2 for launches 2123, 2124, 2125 and 2126 in the spring of 1994 and was entered into 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. 2.3, and are included with project data for OPR-P180-RA. The data used was collected in Shilshole Bay, Washington in March of 1994.

Offset Tables ✓

Offset tables contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 3-6 correspond to the number of the launch. The offset tables were compiled with new measurements in the spring of 1994 and are contained in the "Separates to be Included with Survey Data". *

Heave ✓

The launches are not equipped with heave, pitch and roll sensors. 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 during the winter inport 1993-1994. Calibration forms are included with project data for OPR-P180-RA. Bar checks were performed weekly and served as a functional check of the DSF-6000N.

Tide Correctors ✓

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

Tidal correctors as provided in the project instructions for this sheet are:

<u>Time Correction</u>	<u>Height Correction</u> <u>Range Ratio</u>
0 hr 0 min.	X0.96

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

RAINIER personnel installed an 8200 digital gage at Foggy Cape (945-8582) on June 4, 1994, DN 155. Opening levels were conducted upon installation. Only two of the three hours of opening observations were able to be completed due to inclement weather. Bracketing levels were completed at the end of June, and closing levels will be completed by RAINIER personnel at the conclusion of the project.

The control station was Sand Point, Alaska (945-9450). Opening levels of the control station were performed by RAINIER personnel on May 21 and 22, 1994. Closing levels at Sand Point, Alaska will be completed by the Pacific Operation Section N/OES214 during their annual visit in late July as per phone conversation with Mr. Mike Gibson (OES212).

The station description and Preliminary Field Tide Note (Appendix V) was submitted at the end of June to N/OES212 in accordance with HSG 50 and FPM 4.3, and the final tide package will be submitted at the end of the project. A request for approved tides was forwarded to N/OES2 in accordance with FPM 4.2.3. Tide note dated October 28, 1994 is attached.

H. CONTROL STATIONS ✓

A listing of the geodetic stations used to control this survey is included in Appendix III of this report. The horizontal datum for this project is NAD83.

DGPS stations were setup on existing stations CLAY 2 and HYDRA. Station CLAY 2 is located on an islet southwest of Kumlik Island and station HYDRA is located on Hydra Island. These stations were recovered in accordance with methods stated in Section 5.2.4 of the FPM. Additional information is contained in the "Summer 1994 Horizontal Control Report", which will be submitted at the end of the project.

* Filed with the hydrographic data

I. HYDROGRAPHIC POSITION CONTROL

Method of Position Control

All soundings and features were positioned using differential GPS. Serial numbers for Ashtech GPS equipment are annotated on the data printouts. *

Ashtech GPS ✓

VHF differential shore stations were established at stations CLAY 2 and HYDRA. 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 any of the stations. Scatterplot results are included in the "Project related data for OPR-P180-RA". The scatterplot results for station HYDRA were obtained last year. The area around station HYDRA remains undeveloped, and the geography unchanged.

Calibrations & Systems Check Methods ✓

System checks were performed by launch to launch comparisons of position. Three observations of position were made by each launch using correctors from two independent DGPS base stations. System checks were performed on a weekly basis. The 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 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". *

J. SHORELINE *See Evaluation Report, section J.*

The shoreline map (T-sheet) used to transfer shoreline detail to the final sheets was TP-01158 (enlarged to 1:10,000 from 1:20,000, NAD 27).

Shoreline verification was conducted near predicted lower low water in accordance with FPM 7.1. Shoreline verification was accomplished by assigning sequential reference numbers and taking detached positions (DPs), as explained later in this section.

Shoreline and T-sheet features verified via visual inspection were assigned sequential reference numbers, described, and recorded in the field using reference forms and corresponding 1:10,000 photocopies of the T-sheet. * Reference numbers, descriptions, and heights corrected to MLLW using predicted tides are recorded on the reference form. Corresponding notes were annotated on the photocopies of the T-sheet when deemed necessary. The annotated photocopies of the T-sheet and the reference forms are included with the survey data. *

* Filed with the hydrographic data.

DPs taken during shoreline verification were recorded on the master printouts and on the DP forms. These indicate significant T-sheet features and features not found on the T-sheet. Where possible, positions of some T-sheet features were verified during inshore mainscheme hydrography and annotated on the master printouts. *

Detailed 1:10,000 "Rough Bottom Sample and Detached Position Plots" are provided showing all DPs, reference numbers, and notes relating to each feature. The information from these plots was transferred to a final field plot where possible. Where such information would interfere with the legibility of the final plot the appropriate cartographic symbol has been transferred, but height and position number information remains on the rough plot, which serves as an overlay (FPM 6.1.2.5). Verified T-sheet features were retained and shown in black. Changes to the shoreline were shown in red, and new features are depicted in black. Field cartographic codes were assigned using the HDAPS DP editor. Heights are recorded in meters and are corrected to predicted MLLW. No red shoreline is shown on the smooth sheet.

Changes and New Features

Many new features and changes to the T-sheet shoreline were found and are depicted on the final field plot. Ledges were found to extend further than their depicted positions on the T-sheet, and T-sheet rocks were often identified as high points of ledges and reefs.

Recommendations: The hydrographer recommends that the shoreline changes from this survey be used to supersede prior shoreline information compiled on T-sheet TP-01158. Concur

Charted Features ✓

Charted rocks were either identified as T-sheet rocks, or high points or extensions of T-sheet ledges and reefs, except as noted below.

The charted rock in the vicinity of latitude 56°35'13"N, longitude 157°07'14"W, was not found. A search of a 100 M radius around the alleged position (Position No. 7704) was conducted for 7 min. by depth sounder and visual means. The visibility of the water in the area was 6 meters, and the average depth was 13.5 meters.

The charted rock in the vicinity of latitude 56°35'15"N, longitude 157°07'25"W, was not found. A search of a 100 M radius around the alleged position (Position No. 7705) was conducted for 5 min. by depth sounder and visual means. The visibility of the water in the area was 6 meters, and the average depth was 13.0 meters.

The charted rock in the vicinity of latitude 56°35'05"N, longitude 157°07'26"W, was not found. A search of a 100 M radius around the alleged position (Position No. 7706) was conducted for 11 min. by depth sounder and visual means. The visibility of the water in the area was 6 meters, and the average depth was 8.0 meters.

A T-sheet rock that is an extension of a new foul area lies within 400 meters of the charted rocks noted above.

Recommendations: The hydrographer recommends that the shoreline detail from this survey be used to supersede the shoreline on chart 16568. Concur, delete charted rocks (3) and chart T-sheet rock and foul area limits as shown on smooth sheet.

* Filed with the hydrographic data.

A charted rock in the vicinity of latitude 56°35'17"N, longitude 157°06'31"W was not found. This rock originated from USGS Quad Sutwik Island, 1:63,360, 1963. Hydrography (50 m splits) revealed no indication of this rock. Average depth was 15 - 20 meters.

Recommendations: The hydrographer recommends that this rock be deleted from the chart. *Concur*

K. **CROSSLINES** ✓

Crosslines are within 1-2 meter agreement with mainscheme hydrography except in areas of complex bathymetry. Crosslines totaled 21.9 nautical miles, representing 10.4% of the total mainscheme hydrography.

L. **JUNCTIONS** *See Evaluation Report, section L.*

This survey junctions with survey H-10546 (1:10,000, 1994) to the west, ^{H-10482}~~H-10468~~ (1:20,000, 1993) to the north, H-10553 (1:10,000, 1994) and H-10549 (1:20,000, 1994) to the east. These soundings were found to be in general agreement with this survey.

Final comparisons will be made at the Pacific Hydrographic Section (PHS).

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

One prior survey was compared: H-4506 (1:60,000, 1925). Sparse soundings from this prior survey were in general agreement with the present survey. However, the present survey, due to much greater sounding density, revealed numerous shoal soundings not found during the prior survey. There were no instances where prior survey soundings were shoaler in a corresponding area.

Final comparisons will be conducted by PHS.

N. **ITEM INVESTIGATIONS** ✓

There were no item investigations on sheet AE.

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

This survey was compared to NOS chart 16568, 9th Edition, March 21, 1992, 1:106,600 (NAD83). The sparsely charted soundings were found to be in general agreement with this survey.

Non-sounding charted features are discussed in Section J, Shoreline.

Final comparisons will be conducted by PHS.

Dangers to Navigation ✓

Two dangers to navigation within the limits of this survey were reported to the Seventeenth Coast Guard District on July 12, 1994. Copies of the correspondence can be found in ~~Appendix I~~ of this report.

P. ADEQUACY OF SURVEY ✓

Prior to final approval, survey H-10551 is complete and adequate to supersede charted depths and features in their 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>
Number of Positions	49	459	428	540	656	2132
NM Hydrography	0	73.3	64.0	75.9	105.0	318.2
Velocity Casts	2					
Detached Positions	41					
Bottom Samples	54					
Tide Stations	1					
NM ² Hydrography	20.8					

S. MISCELLANEOUS ✓

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

Coast Pilot current comparisons were made in accordance with Project Instructions. No tidal current predictions are available within the sheet limits.

No unusual magnetic variations were noted.

T. RECOMMENDATIONS ✓

None

U. REFERRAL TO REPORTS ✓

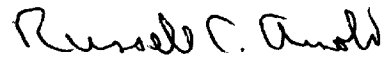
The following supplemental reports contain additional information relevant to this survey:

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
Summer 1994 Horizontal Control Report for OPR-P180-RA	August 1994	N/CG245
Summer 1994 Coast Pilot Report for OPR-P180-RA	August 1994	N/CG245
Project related data for OPR-P180-RA	Incremental	N/CG245

Respectfully Submitted,


Stacy M. Maenner
Ensign, NOAA

Approved and Forwarded,


Russell C. Arnold
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 2 Jul 1994 ✓

No	Type	Latitude	Longitude	H Cont	Freq	Vel Code	MM/DD/YY	Station Name
100	F	056:45:19.732	157:29:28.777	42	250	0.0	0.0	05/24/94 LAND (DGPS)
101	F	056:44:35.925	157:00:57.749	50	250	0.0	0.0	05/24/94 HYDRA (DGPS), 1994
102	F	056:36:08.811	157:29:12.200	44	250	0.0	0.0	05/24/94 CLAY 2 (DGPS), 1992
103	F	056:31:22.546	157:11:47.067	35	250	0.0	0.0	06/03/94 TUIK (DGPS)



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 12, 1994

Commander
Seventeenth Coast Guard District
Post Office Box 25517
Juneau, Alaska 99802

Dear Sir:

Attached is a confirmation copy of the radio messages 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
Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
PMC



RCA
FOO

AE

**ADVANCE
INFORMATION**

P 130016Z JUL 94
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCCNAVWARN WASHINGTON DC//MCNM//
INFO NOAMOP SEATTLE WA
ACCT CM-VCAA
BT
UNCLAS

NOAA SHIP RAINIER	
XMIT 130020Z JUL 94	
JFT RAPMC194.ZIP RLE	
CO <input checked="" type="checkbox"/>	XO _____
FOO _____	NAV _____
SHIPS OFFICE	
RDO_FILE <input checked="" type="checkbox"/>	

NOAA SHIP RAINIER HAS LOCATED 2 DANGERS TO NAVIGATION IN SOUTHERN ALASKA PENINSULA, ALASKA (PROJECT OPR-P180-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY H-10551. THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

CHART AFFECTED: 16568 9TH ED MAR 21/92 1:106,600 (NAD83)

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

ITEM	DANGER	DEPTH	LATITUDE	LONGITUDE		
A.	SHOAL	COVERS 2 3/4 fms	56/34/02N	157/01/06W	5830 +3	5.2m
B.	SHOAL	COVERS 2 1/2 fms	56/34/09N	157/01/56W	8504 +0	5.0m

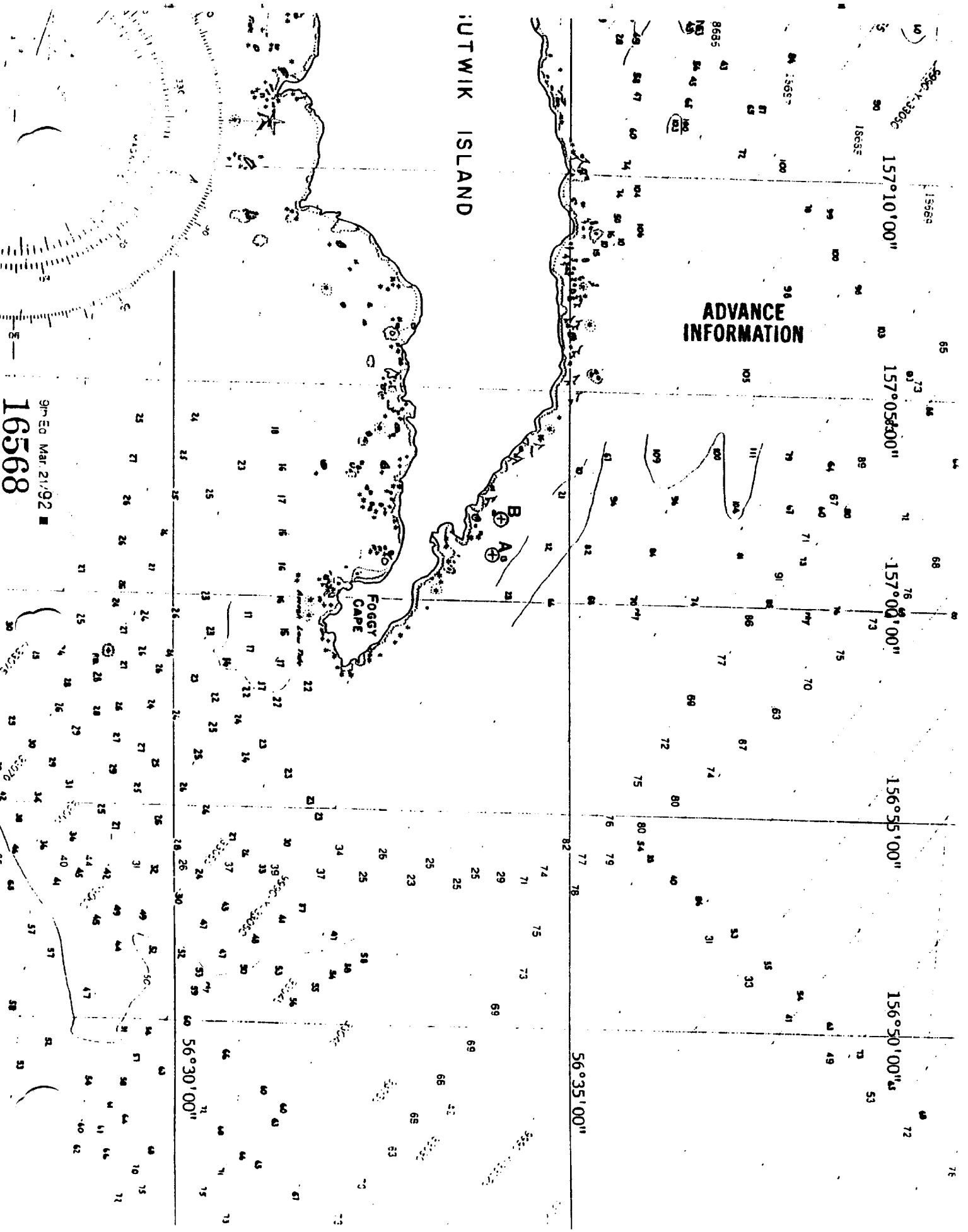
THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW. QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE CHIEF, PACIFIC HYDROGRAPHIC SECTION AT (206)526-6835. A LETTER WITH ATTACHED CHARTLET WILL BE MAILED TO CONFIRM THIS MESSAGE.

BT
NNNN

OUTWIK ISLAND

ADVANCE INFORMATION

FOGGY CAPE



9th Ed. Mar. 21/92
16568

APPROVAL SHEET

for

H-10551

RA-10-9-94

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, NOAA Ship RAINIER



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: October 28, 1994

MARINE CENTER: Pacific

OPR: P180

HYDROGRAPHIC SHEET: H-10551

LOCALITY: Northeast Central Sutwik Island, Shelikof Strait,
Alaska

TIME PERIOD: June 21 - July 9, 1994

TIDE STATION USED: 945-8582 Foggy Cape, Sutwik Island,
Alaska
Lat. $56^{\circ} 32.2'N$ Lon. $156^{\circ} 58.5'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): = 3.36 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 9.0 feet

REMARKS: RECOMMENDED ZONING

Times are direct, and apply a X1.03 range ratio to the heights
using Foggy Cape, Sutwik Island, Ak. (945-8582).

NOTES: Hourly heights are tabulated on Greenwich Mean Time.
The data for Foggy Cape, Sutwik Island, Ak. (945-8582)
is stored in the Next Generation Water Level Measurement
System temporary file #745-8582.

William M. Nelson
CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

H-10551

Name on Survey	ON CHART NO. 16568 BGN PREVIOUS SURVEY NO. C ON U.S. QUADRANGLE MAPS D FROM LOCAL INFORMATION E ON LOCAL MAPS F P.O. GUIDE OR MAP G GRAND McNALLY ATLAS H U.S. LIGHT LIST K										
	A	B	C	D	E	F	G	H	K		
ALASKA (title)	X		X							1	
ALASKA PENINSULA (title)	X		X							2	
NORTH PACIFIC OCEAN	X		X			(BGN Decision)				3	
SUTWIK ISLAND	X		X							4	
										5	
										6	
										7	
										8	
										9	
										10	
										11	
										12	
										13	
										14	
										15	
										16	
										17	
										18	
										19	
						Approved:				20	
						<i>Chris C. Long</i>				21	
						Chief Geographer				22	
										23	
						MAY 26 1995				24	
										25	

HYDROGRAPHIC SURVEY STATISTICS

H-10551

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

RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1		SMOOTH OVERLAYS: POS., ARC, EXCESS			
DESCRIPTIVE REPORT		1		FIELD SHEETS AND OTHER OVERLAYS			
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS		
ACCORDION FILES	2						
ENVELOPES							
VOLUMES							
CAHIERS							
BOXES							

SHORELINE DATA

- SHORELINE MAPS (List):
- 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			2132	
POSITIONS REVISED				
SOUNDINGS REVISED				
CONTROL STATIONS REVISED				
	TIME-HOURS			
	VERIFICATION	EVALUATION	TOTALS	
PRE-PROCESSING EXAMINATION				
VERIFICATION OF CONTROL				
VERIFICATION OF POSITIONS	46		46	
VERIFICATION OF SOUNDINGS	30.5		30.5	
VERIFICATION OF JUNCTIONS				
APPLICATION OF PHOTOBATHYMETRY				
SHORELINE APPLICATION/VERIFICATION				
COMPILATION OF SMOOTH SHEET	143		143	
COMPARISON WITH PRIOR SURVEYS AND CHARTS		4	4	
EVALUATION OF SIDE SCAN SONAR RECORDS				
EVALUATION OF WIRE DRAGS AND SWEEPS				
EVALUATION REPORT		25	25	
GEOGRAPHIC NAMES				
OTHER*				
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	219.5	29	248.5

Pre-processing Examination by LI M. Larsen	Beginning Date 6/21/94	Ending Date 8/8/94
Verification of Field Data by E. Domingo, R. Shipley, D. Doles, J. Stringham, B. Mihailov	Time (Hours) 219.5	Ending Date 8/29/95
Verification Check by B. Olmstead	Time (Hours) 2	Ending Date 11/10/95
Evaluation and Analysis by B. Mihailov	Time (Hours) 29.0	Ending Date 11/28/95
Inspection by B.A. Olmstead	Time (Hours) 24.0	Ending Date 11/28/95

**EVALUATION REPORT
H-10551**

A. PROJECT

Project information is discussed in the hydrographer's report.

B. AREA SURVEYED

This survey was conducted in Alaska, and is located along the Southern Alaska Peninsula, approximately eighty nautical miles southwest of Kodiak Island. Specifically, the survey area includes the northeastern portion of shoreline along Sutwik Island and extends northward five nautical miles. The area is characterized by alongshore ledges isolated reefs and rocks. Numerous rock pinnacles rising to near surface level were found from the foreshore area to depths of forty meters. The bottom consists mainly of sand and broken shells. Depths range from 0 meters to 229 meters.

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 12.0.

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 sounding plot was created with .dbf (extension) and enhanced using the autocad system, are filed both in the autocad drawing format, .dwg (extension); and in the more universally recognized graphics transfer format, .dxf (extension). Copies of these files will be retained at PHS until data transfer protocols are developed and improved.

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. 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 sheet.

E. SONAR EQUIPMENT

Side scan sonar was not used on survey H-10551.

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 an actual tide, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with NOS specifications. Actual tide reduction is derived from the Foggy Cape (Sutwik Island), Alaska, gage 945-8582.

H. CONTROL STATIONS

Control stations are discussed in the hydrographer's report and separates. A list of control stations used on survey H-10551 is attached to this report.

The positions of horizontal control stations used during hydrographic operations are published and 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.

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

Latitude: -2.687 seconds (-83.119 meters)
Longitude: 7.322 seconds (124.898 meters)

The year of establishment of the control stations originates with the horizontal control report and the hydrographer's signal list.

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, indicates 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.

J. SHORELINE

The following registered shoreline map compiled on NAD 27 applies to this survey.

<u>Map Number</u>	<u>Photo Date</u>	<u>Scale</u>
TP-01158	July 1982 August 1983	1:20,000

Shoreline drawn on the smooth sheet originates from a 1:10,000 scale photographic enlargement of the shoreline map.

There were no changes to the photogrammetric mean high water line. Changes to alongshore and offshore features shown on the shoreline manuscript were verified and revised as warranted during survey operations. These changes have been shown on the smooth sheet.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10551 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10482	1993	1:20,000	North
H-10546	1994	1:10,000	West
H-10549	1994	1:10,000	East
H-10553	1994	1:10,000	East

The junction with survey H-10482 has not been formally completed as this survey was previously forwarded for charting. The junction was made using a copy. There is good agreement between soundings within the common areas. There are no common depth curves within the junction area.

The junctions with surveys H-10546, H-10549 and H-10553 are complete. There is good agreement between depth curves and soundings within the common areas.

M. COMPARISON WITH PRIOR SURVEYS

H-4506 (1925) 1:60,000

Survey H-4506 (1925) covers the entire area of the present survey. Sounding coverage on prior survey H-4506 is sparse. Comparison with the prior survey reveals differences of 1-5 meters (0.5-2.5 fms). There is no apparent pattern as to shoaling or an increase in depths. The small differences can be attributed to increased bottom coverage and less positioning and sounding methods available in 1925.

H-10551 is adequate to supersede the prior survey within the common area.

N. ITEM INVESTIGATIONS

There were no item investigations assigned to survey H-10551.

O. COMPARISON WITH CHART

Survey H-10551 was compared with the following chart.

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
16568	10th	February 18, 1995	1:106,600	NAD83

A. Hydrography

Charted hydrography originates with the above mentioned prior surveys and miscellaneous sources. The prior surveys are discussed in section 6 and require no further discussion

Charted miscellaneous source data originates from BP-134041 (1987), NOS trackline, BP-40351 (1945), USC&GS Recon, T-4153 (1925) and TP-01158 (1982/83). The T-sheets largely comprise the charted nearshore rocks, reefs and ledges. These features have been satisfactorily addressed during survey operations. The few charted soundings that originate from the blue prints reveal the same general differences as discussed in section M. The greater sounding coverage and the relative accuracy of the data acquisition methods account for the differences.

Survey H-10551 is adequate to supersede charted hydrography within the common area.

B. 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 survey operations. A copy of this report is attached. No additional dangers to navigation were discovered during office processing.

P. ADEQUACY OF SURVEY

Hydrography contained on survey H-10551 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.

Q. AIDS TO NAVIGATION

There are no fixed or floating aids to navigation located within the survey area. There are no features of landmark value located within the area of this survey.

R. STATISTICS

Statistics are itemized in the hydrographer's report.

S. MISCELLANEOUS

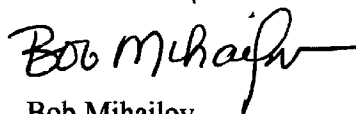
Miscellaneous information is discussed in the hydrographer's report. There are no additional items meriting further discussion.

T. RECOMMENDATIONS

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

U. REFERRAL TO REPORTS

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



Bob Mihailov
Cartographer

APPROVAL SHEET
H-10551

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproof of charted data. The digital data have been completed and all revisions and processing have been entered in the magnetic tape record for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report. Final control, position and sounding printouts have been included with the survey records.

Bruce Alan Olmstead Date: 11/28/95
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: 12/1/95
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

Final Approval

Approved:

Andrew A. Armstrong III Date: 3-22-96
Andrew A. Armstrong III
Captain, NOAA
Chief, Hydrographic Surveys Division

