

10478

10478

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-10-10-93
Registry No.	H-10478
LOCALITY	
State	Alaska
General Locality	Alaska Peninsula
Sublocality	Southwest Approach to Nakalilok Bay
	19 93
	CHIEF OF PARTY CAPT. R. C. Arnold
LIBRARY & ARCHIVES	
DATE	November 16, 1994

HYDROGRAPHIC TITLE SHEET

H-10478

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-10-10-93

State Alaska

General locality Alaska Peninsula

Locality Southwest Approach to Nakalilok Bay

Scale 1:10,000 Date of survey May 29 - June 14, 1993

Instructions dated 4/19/93, Change #1-4/23/93 Project No. OPR-P180-RA

Vessel RAINIER (2120), (2123), (2124), (2125), (2126)

Chief of party CAPT Russell C. Arnold, NOAA

Surveyed by LT M. Brown, LT D. Neander, LTJG S. Lemke, ENS D. Pitts, ENS G. Glover

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

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Evaluation by: R.N. Mihailov Automated plot by PHS Xynetics Plotter

Verification by R. Davies, D. Doles, R. Mayor, R. Mihailov, R. Shipley, J. Stringham

Soundings in meters and decimeters at ~~MLLW~~

REMARKS: All times UTC. North American Datum of 1983. Revision 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.

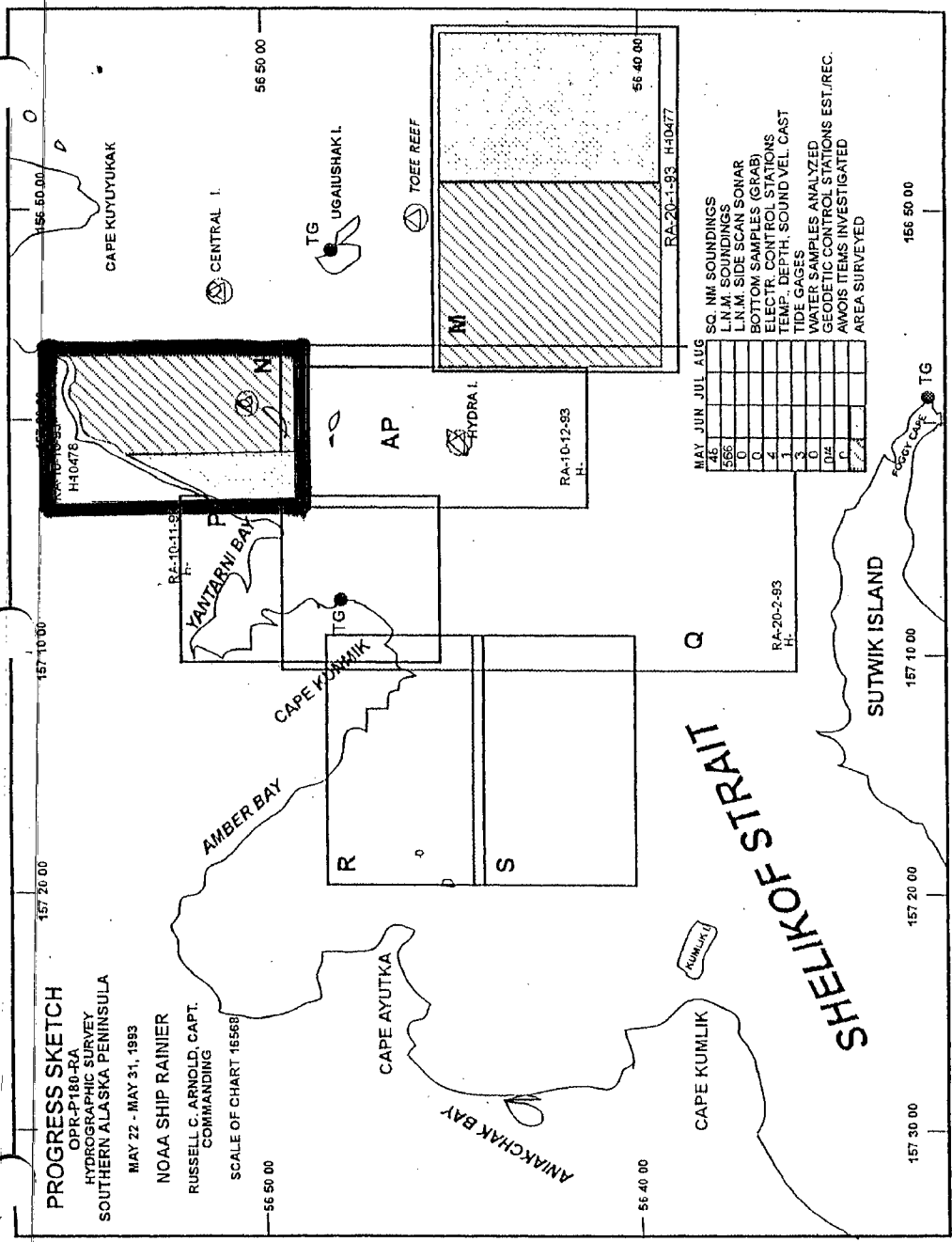
*SURP / AWOIS check 12/9/94
mcr*

*SC 1/27/97
11/29/94*

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

MAY 22 - MAY 31, 1993
 NOAA SHIP RAINIER
 RUSSELL C. ARNOLD, CAPT.
 COMMANDING

SCALE OF CHART 16568



	MAY	JUN	JUL	AUG
46				
565				
0				
0				
4				
1				
3				
0				
0/2				
0				
C				
C				

- SQ. 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.
- AMVOIS ITEMS INVESTIGATED
- AREA SURVEYED

RA-20-1-93, H-10477

RA-10-12-93
H.

RA-20-2-93
H.

RA-10-10-93
H-10476

RA-10-11-93
H.

156 50 00

157 10 00

157 20 00

157 30 00

156 50 00

157 10 00

157 20 00

157 30 00

56 50 00

56 40 00

56 40 00

SHELIKOF STRAIT

Descriptive Report to Accompany Hydrographic Survey H-10478

Field Number RA-10-10-93

Scale 1:10,000

May - June 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, and change No. 1 dated April 23, 1993.

Survey H-10478 corresponds to "Sheet N" 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 ✓

This survey area is located in Shelikof Strait along the Alaska Peninsula, southwest of Kodiak Island. The northern limit is defined by the Alaska Peninsula shoreline between Nakalilik Bay and Yantarni Bay. The area surveyed extends south to latitude 56°48'40"N, from longitude 156°57'00"W to the east to 157°03'45"W to the west. The northern shoreline is for the most part a sand and gravel beach with a gradual slope. The extreme northeast section of shoreline, however, is comprised of steep bluffs with rocky ledges extending offshore. The survey area includes two islands that are generally grass covered with rocky cliffs at their shorelines.

Data acquisition was conducted from May 29, Day Number (DN) ~~148~~¹⁴⁹ through June 14, DN 165.

C. SURVEY VESSELS ✓

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

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

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
CONTACT	2.01	9/24/92
CONVERT	3.51	9/24/92
DAS_SURV	6.33	5/17/93
DIAGNOSE	3.01	9/24/92
DISC_UTIL	1.00	9/24/92
DP	2.13	3/1/93
EXCESS	4.10	9/24/92
FILESYS	3.02	5/17/93
GRAFEDIT	1.01	2/26/93
HIPSTICK	1.01	9/24/92
HPRAZ	1.26	9/24/92
INVERSE	2.00	9/24/92
INSTALL	4.00	9/24/92
LSTAWOIS	3.01	9/24/92
LISTDATA	1.00	9/24/92
LOADNEW	2.01	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
POINT	2.10	9/24/92
PREDICT	2.00	9/24/92
PRESURV	7.01	2/26/93
PRINTOUT	4.01	9/24/92
QUICK	2.03	2/26/93
RAMSAVER	1.01	9/24/92
RECOMP	2.02	9/24/92
REAPPLY	2.01	9/24/92
SCANNER	1.00	9/24/92
SELPRINT	2.02	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 N.

F. SOUNDING EQUIPMENT ✓

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

G. CORRECTIONS TO ECHO SOUNDINGS ✓

Correctors for the velocity of sound through water were determined from the casts 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>
1	1	239.3	148-155	56°45'58"N 156°56'18"W	149
2	2	220.4	159-169	56°45'54"N 156°56'07"W	163

The sound velocity casts were 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 N.

Offset Tables

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

* Filed with the hydrographic data.

Heave

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

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). Correctors for two different tidal zones on sheet N were used. Latitude 56°50'00" divides the survey area into northern and southern zones. Tidal correctors are:

	TIME(min.)		RANGE RATIO
	High Water	Low Water	
North Zone	0	0	X 1.04
South Zone	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), and Cape Kunmik (945-8631). The control station was Sand Point, Alaska (945-9450). Bracketing levels will be completed by RAINIER personnel at the end of June, and the control station will be levelled 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.

H. CONTROL STATIONS ✓

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.

* Filed with the hydrographic data.

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.

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 each day and results were transferred to forms which are included in the "Separates to be Included with Survey Data, III. Horizontal Position Control and Corrections to Position Data."

Problems

On May 29 (DN ¹⁴⁹~~128~~), RA-6 and RA-3 survey launches experienced intermittent GPS dropouts while running on sheet N. These dropouts manifested themselves as momentary losses of GPS data, which resulted in the HDAPS dead reckoning the launch's position. At times, the launch was in DR mode about 50% of the time. Upon examining the non-selected, "inbetween," data using the HDAPS graphic edit functions, it was noted that the system would DR for up to six seconds, then have good positioning data for about four to six seconds (recorded in the non-selected data), then repeat the cycle. As the system was not without a good position for more than six seconds, the HDAPS never aborted the lines.

The problem was dealt with using the same criteria as applied to MiniRanger data. If the period of apparent bad data covered less than 4 cm at the survey scale (8 selected soundings), it was retained and smoothed if necessary. If the period exceeded this window, it was re-run.

The problem seemed to coincide with a change in the broadcast rate of the Ashtech M-12 GPS receiver. After the rate was changed, the problem disappeared and did not recur. Only the two survey launches were affected for one day of operation.

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." *

* Filed with the hydrographic data.

J. SHORELINE See Evaluation Report, section 2 and section 4.

Shoreline maps (T-sheets) used to transfer shoreline detail to the final sheets were TP-01155, TP-01151, and TP-01152, (enlarged to 1:10,000 from 1:20,000, NAD27).

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 number forms and corresponding 1:10,000 photocopies of the T-sheet. Heights were corrected to MLLW using predicted tides. Corresponding notes were annotated on the photocopies of the T-sheet when deemed necessary. The annotated photocopies of the T-sheets and reference number forms are included with the survey data. *

DPs taken during shoreline verification were recorded on the master printouts and DP forms, and indicate significant T-sheet features, features not found on the T-sheet, and locations of disprovals. 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 and reference numbers and notes relating to each feature. The information from these plots was transferred to a final field plot. Verified T-sheet features were retained and shown in black. Disproved features were removed from the final plot, and changes to the shoreline were shown in red. Field cartographic codes were assigned using the HDAPS DP editor. Heights are recorded in meters and are corrected to predicted MLLW.

Inshore hydrography showed a discrepancy between photogrammetric and hydrographic positioning at some points on sheet N. In these cases, shoreline buffers were run at near predicted high tide in order to define the high water shoreline. This method revealed a shift in the position of the long island at the southern end of the survey area, from that shown on the T-sheet shoreline. The shoreline of this island originated from T-sheet TP-01155, and is the only shoreline on this survey from TP-01155. A buffer line was also run around the small island to the northeast of the aforementioned island, but that buffer line matched shoreline depicted on T-sheet TP-01152. The mismatch is apparently due to a shift in the island's position on the T-sheet, possibly due to datum shift inaccuracies from NAD27 on the T-sheet to NAD83 on the survey. Since the island was shifted in position only, and the shoreline configuration was not changed, it is depicted in black on the final field plot, at the shifted position. It is recommended that the shoreline defined in this survey supersede prior shoreline information compiled on T-sheet TP-01155. Shoreline transferred from TP-01155 to the smooth sheet was referenced from the field sheet, and shown in red.

Disprovals

None.

Changes

Three changes to the T-Sheet shoreline were found and depicted on the final field plot.

The shoreline on the southernmost island of the survey area, originating from T-sheet, TP-01155, is shifted from its actual position, as noted above.

* Filed with the hydrographic data

The outlet to the stream at the northern shoreline, in the vicinity of 056°54'20"N, 157°00'20"W, has moved west from its previous position on the T-sheet. The shoreline change was defined while running the buffer line, and is noted in the field data printout. *

The T-sheet rock in the vicinity of 056°54'16"N, 156°57'21"W, was found at Position No. 6221, 056°54'17.138"N, 156°57'22.415"W.

Recommendations: The hydrographer recommends that the shoreline changes from this survey be used to supersede prior shoreline information compiled on T-sheets (T-001155, T-001151, and T-001152). -concur

New Features

Eleven new features were found and depicted on the field sheet.

Item	Approximate Position	Position Number	Depth (m)	Remarks	Smooth sheet	
					Depth	Remarks
Rock	056°48'50"N 157°00'50"W	5634	0.5	Submerged	0.5	covered
Rock	056°49'23"N 157°00'06"W	5643	0.4	Submerged	0.3	covered

The T-sheet rocks of reference number R6-5 in the vicinity of 056°50'22"N, 156°58'47"W, are part of a ledge that extends from the T-sheet islet. -concur

A foul area in the extreme northeast of the survey area in the vicinity of 056°54'19"N, 156°57'18"W, is delineated by Position No. 6222, Position No. 8441, and inshore hydrography. The foul area extends out from the T-sheet ledge to include the T-sheet rocks at the shoreline. At the sheet limit to the east, the foul area extends out to the ledge limit indicated by survey H-10305. In that area, sounding lines were run through the foul area in to the T-sheet ledge limit at a high tide. These soundings are all shallower than 1 meter. Ledge limit was transferred from survey H-10305 to survey H-10478.

Position No. 5862 is the offshore limit of a ledge in the vicinity of 056°48'56"N, 157°00'33"W.

Position No. 5863 is the offshore limit of a ledge in the vicinity of 056°48'55"N, 157°00'28"W.

Position No. 5638 is the offshore limit of a ledge in the vicinity of 056°48'59"N, 157°00'45"W.

Position No. 5639 is the offshore limit of a ledge in the vicinity of 056°48'55"N, 157°00'50"W.

Position No. 5866 is the offshore limit of a ledge in the vicinity of 056°48'53"N, 157°00'45"W.

Position No. 5867 is the offshore limit of a ledge in the vicinity of 056°48'52"N, 157°00'46"W.

Position No. 5868 is the offshore limit of a ledge in the vicinity of 056°48'53"N, 157°00'43"W.

Recommendations: The hydrographer recommends that the shoreline detail from this survey be used to supersede prior shoreline information. -concur

* Filed with the hydrographic data.

K. CROSSLINES ✓

Crosslines are in good agreement with mainscheme hydrography. Crosslines totaled 34.48 nautical miles, representing 9.9% of the total mainscheme hydrography.

L. JUNCTIONS ✓

This survey junctions with survey H-10305 (1:10,000, 1989) to the east. No irregularities were found when comparing soundings and depth curves.

Survey H-10305 depicts a ledge extending from the northern shoreline at the extreme northeast of this survey area. Inshore hydrography and shoreline verification procedures on sheet N showed areas offshore of the T-sheet ledge to be foul. Consequently, the foul area limit on sheet N was drawn out to the ledge limit of survey H-10305, at the survey junction. *The foul area limit line was transferred from survey H-10305 to survey H-10478.* Final comparisons will be made at the Pacific Hydrographic Section (PHS).

M. COMPARISON WITH PRIOR SURVEYS ✓

There are no prior surveys for ~~sheet N~~ survey H-10478.

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).

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

Dangers to Navigation

Two dangers to navigation within the limits of this survey were reported to the Seventeenth Coast Guard District and DMAHTC. Copies of the radio message and correspondence are included in ~~Appendix I~~ of this report.

P. ADEQUACY OF SURVEY ✓ *See Evaluation Report, section 4.*

This survey is complete and adequate to supersede the T-Sheets and chart letters in the common areas. Do
Not 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	50	784	505	952	749	3041
NM Hydro	0	144.7	98.47	123.48	114.32	480.97

NM ² Hydrography	18.52
Velocity Casts	2
Detached Positions	27
Tide Stations	0
Reference Numbers	16
Bottom Samples	60

S. MISCELLANEOUS ✓

LORAN C comparisons were required by the Project Instructions, and will be submitted to PHS 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.

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,



Gregory G. Glover
Ensign, NOAA

Approved and Forwarded,



Russell C. Arnold
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 20 Nov 1993

No	Type	Latitude	Longitude	H Cart	Freq	Vel Code	MM/DD/YY	Station Name
100	F	056°44'35.925	157°00'57.249	36	250	0.0	0.0	05/26/93 HYDRA(H/R SDCPS STATIONS)
101	F	056°45'36.294	156°51'13.289	17	250	0.0	0.0	5/05/77/93 TOEE
102	F	056°50'12.455	156°59'01.802	33	250	0.0	0.0	3/05/23/93 WOLFF
103	F	056°51'581.588	156°57'58.184	112	250	0.0	0.0	2/05/25/93 CENTRAL 1944
104	F	056°48'00.515	157°01'01.282	2	250	0.0	0.0	03/01/92 LONG

FB 5/28



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

June 17, 1993

**ADVANCE
INFORMATION**

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} ~~three~~ 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 98102-3787

NOAA Ship RAINIER

June 17, 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 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
Russell C. Arnold
Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
PMC



RCA
700

**ADVANCE
INFORMATION**

21:53, Thursday, 17 June 1993
tPostOUT : McDaniel

P 72130Z JUN 93
FM NOAA S RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCCNAVWARN WASHINGTON DC//MCNM//
INFO NOAA MOP SEATTLE WA
ACCT CM-VCAA
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-10478. THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

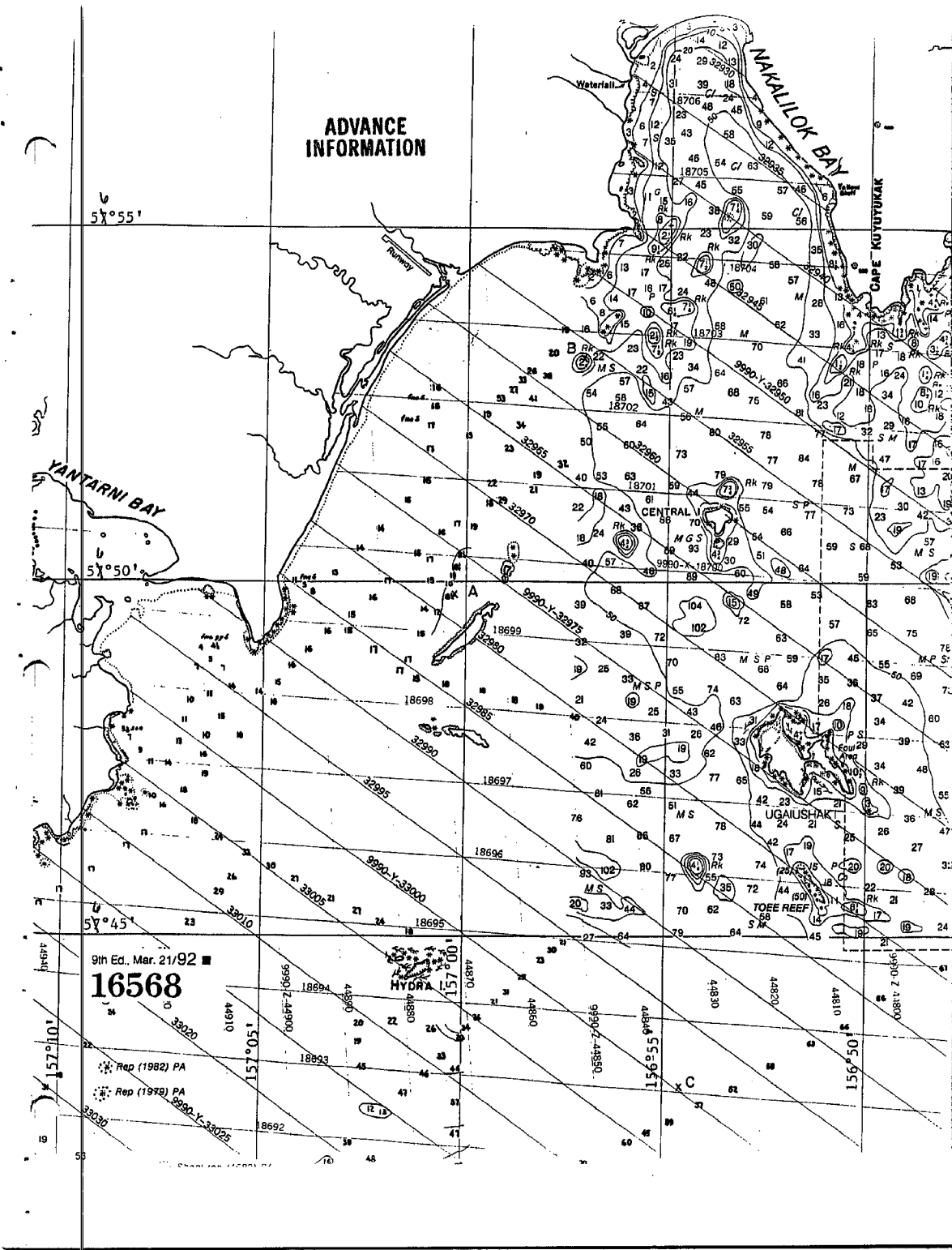
CHARTS AFFECTED: 16568 9TH ED MAR 21/92 1:106,600 NAD 83

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

ITEM	DANGER	CHART	DEPTH	LATITUDE	LONGITUDE	
A.	SHOAL	16568	4 1/2 fms	56/49/49.13N	157/00/19.15W	Pos.# 1121
B.	SHOAL	16568	2 fms	56/53/06.68N	156/57/10.50W	Pos.# 6007

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**



9th Ed., Mar. 21/92 ■
16568

• Rep (1982) PA
• Rep (1979) PA

HYDRA 157 00

APPROVAL SHEET

for

H-10478
RA-10-10-93

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

ORIGINAL

DATE: January 5, 1994

MARINE CENTER: Pacific

OPR: P180

HYDROGRAPHIC SHEET: H-10478

LOCALITY: Southwest Approach to Nakalilok Bay,
Shelikof Strait, Alaska

TIME PERIOD: May 28, 1993 - June 15, 1993

TIDE STATION USED: 945-8553 Ugaiushak Island, Alaska
Lat. 56° 47.7'N Lon. 156° 51.1'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): = -2.72 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 9.5 feet

REMARKS: RECOMMENDED ZONING

Times and heights are direct on Ugaiushak Island, Ak. (945-8553).

NOTE: Hourly heights are tabulated on Greenwich Mean Time.

William M. Johnson
CHIEF, DATUMS SECTION

J.E.J.



GEOGRAPHIC NAMES

H-10478

Name on Survey	<div style="display: flex; justify-content: space-between;"> A ON CHART NO 16568 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 </div>											K	
	A	B	C	D	E	F	G	H	I	J	K		
ALASKA (TITLE)	X												1
ALASKA PENINSULA	X												2
NAKALLOK BAY (TITLE)	X												3
													4
													5
													6
													7
													8
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Approved:

Charles E. Harrington
Chief Geographer - NCG 2x5

APR 18 1994

NOAA FORM 77-27(H) (9-83)		U.S. DEPARTMENT OF COMMERCE		REGISTRY NUMBER	
HYDROGRAPHIC SURVEY STATISTICS				H-10478	
RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.					
RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION	
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					
CAMERS					
BOXES				1	
SHORELINE DATA					
SHORELINE MAPS (List):					
PHOTOBATHYMETRIC MAPS (List):					
NOTES TO THE HYDROGRAPHER (List):					
SPECIAL REPORTS (List):					
NAUTICAL CHARTS (List):					
OFFICE PROCESSING ACTIVITIES					
<i>The following statistics will be submitted with the cartographer's report on the survey</i>					
PROCESSING ACTIVITY			AMOUNTS		
			VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET					2943
POSITIONS REVISED					
SOUNDINGS REVISED					
CONTROL STATIONS REVISED					
			TIME-HOURS		
			VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION					
VERIFICATION OF CONTROL					
VERIFICATION OF POSITIONS			55.5		
VERIFICATION OF SOUNDINGS			35.0		
VERIFICATION OF JUNCTIONS					
APPLICATION OF PHOTOBATHYMETRY					
SHORELINE APPLICATION/VERIFICATION					
COMPILATION OF SMOOTH SHEET			26.0		
COMPARISON WITH PRIOR SURVEYS AND CHARTS				2.0	
EVALUATION OF SIDE SCAN SONAR RECORDS					
EVALUATION OF WIRE DRAGS AND SWEEPS					
EVALUATION REPORT				30.0	
GEOGRAPHIC NAMES					
OTHER*					
*USE OTHER SIDE OF FORM FOR REMARKS			TOTALS	116.5	32.0
					148.5
Pre-processing Examination by L. D. Haines			Beginning Date 6/24/93	Ending Date 8/13/93	
Verification of Field Data by R. Davies, D. Doles, R. Mayor, R. Mihailov, J. Stringham			Time (Hours) 116.5	Ending Date 6/3/94	
Verification Check by			Time (Hours)	Ending Date	
Evaluation and Analysis by R. N. Mihailov			Time (Hours) 32.0	Ending Date 8/19/94	
Inspection by D. Hill			Time (Hours) 4	Ending Date 9-16-94	

EVALUATION REPORT

H-10478

1. INTRODUCTION

Survey H-10478 is a basic hydrographic survey accomplished by the NOAA Ship *Rainier*, under the following Project Instructions.

OPR-P180-RA, dated April 19, 1993
CHANGE NO. 1, dated April 23, 1993

This survey was conducted in Alaska, and is located along the Southern Alaska Peninsula, approximately 80 NM southwest of Kodiak Island. The northern limit of the survey area is bounded by the Alaska Peninsula at latitude 56/55/00N. The southern limit is latitude 56/48/40N. The eastern limit is longitude 156/57/00W and the western limit is longitude 157/04/00W. The majority of the shoreline consists of gradually sloping sand and gravel beaches. Rocky ledges with steep bluffs encompass the northeast section of the survey area. Two rocky grass covered islands are located within the southern limits of survey H-10478. The bottom consists mainly of mud, sand and broken shells. Depths range from 0 meters to 103 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 0, 5, 10, 20, 50 and 90 meter. A note was added to the smooth sheet to identify these values.

Predicted tides for Ugaiushak, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned from Ugaiushak Island, Alaska, gage 945-8553 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. Daily system checks by comparison with Miniranger positions confirmed the DGPS was operating properly. 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. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The quality of 97 positions exceeds limits in terms of horizontal dilution of precision (HDOP). These positions are isolated and occur randomly throughout the survey area. A review of the data, however, suggests that none of these fixes are used to position dangers to navigation. The features or soundings locate by these fixes are consistent with the surrounding information. These fixes are considered acceptable.

The positions of the horizontal control stations used during hydrography are field values 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: -2.663 seconds (-82.361 meters)
Longitude: 7.382 seconds (125.080 meters)

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

The following registered shoreline maps compiled on NAD 27 apply to this survey.

<u>Map Number</u>	<u>Photo Date</u>	<u>Scale</u>
TP-01151	July 1982 August 1983	1:20,000
TP-01155	July 1982 August 1983	1:20,000
TP-01152	July 1982 August 1983	1:20,000

Except as noted below, shoreline drawn on the smooth sheet originates from 1:10,000 scale photographic enlargements of shoreline maps TP-01151 and TP-01152.

Shoreline from map TP-01155 was found to be inconsistent between photogrammetric and hydrographic positioning. Shoreline in the vicinity of latitude 56/49/15N, longitude 157/00/00W was transferred in dashed red from the field sheet without supporting positional information. This revision is considered adequate to supersede the common photogrammetrically delineated shoreline.

Additional shoreline changes were transferred from the final field sheet to the smooth sheet in dashed red, without supporting positional information. These revisions are considered adequate to supersede the common photogrammetrically delineated shoreline.

<u>Feature</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
MHWL	56/53/45	157/01/20
MHWL	56/53/53	157/01/07
MHWL	56/54/15	157/00/20

3. HYDROGRAPHY

Except as noted elsewhere in this report, 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

With the exception of the following 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.

The hydrographer states in Section P, Adequacy of Survey, the present survey is adequate to supersede the "T-sheets" in the common area. The Chart Markup, dated 1993, indicates that shoreline rocks in this area originate with shoreline map T-8619(1941-44). Since this shoreline map was not provided to the hydrographer for comparison it is not possible to supersede the map. Rather, the hydrographer's conclusion should be that hydrography is adequate to supersede these features as depicted on the chart.

Section J, Shoreline of the hydrographer's report contains detailed discussions relative to the disproval of charted rocks. The disposition of charted features not originating with prior surveys should be discussed in Section O, Comparison with Charts.

The hydrographer incorrectly depicted displaced shoreline in black on the final field sheet. Instead, it should be depicted in red to indicate a change from the shoreline map (FPM, section 7.1.2).

5. JUNCTIONS

Survey H-10478 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10305	1989	1:10,000	Northeast
H-10314	1989	1:10,000	Southeast
H-10479	1993	1:10,000	Southwest
H-10481	1993	1:10,000	South

The junction with survey H-10481 is complete and the soundings are in good agreement.

The junctions with surveys H-10305, H-10314 and H-10479 have not been formally completed as these surveys were previously forwarded for charting. The junctions were made using a copy. There is good agreement between soundings, however, the depth curves shown on survey H-10304 and H-10314 delineate different depths, and therefore, do not agree. Several soundings have been transferred to junction survey H-10478 to better delineate the depth curves.

6. COMPARISON WITH PRIOR SURVEYS

No prior surveys common to the area of survey H-10478 were identified in the Project Instructions. However, the rocks charted in the vicinity of latitude 56/50/22N, longitude 156/59/15N, originate with prior shoreline map T-8619(1941-44). This prior survey was not compared with the present survey; however, the rocks as charted are considered to be superseded by the present survey.

7. COMPARISON WITH CHART

Survey H-10478 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	NAD83

a. Hydrography

Charted hydrography originates with a 1944 USC&GS reconnaissance survey (BP39180) and shoreline map T-8619(1941-44) and requires no further discussion.

Survey H-10478 is adequate to supersede charted hydrography within the common area.

b. AWOIS

There are no AWOIS items located within the survey area.

c. Controlling Depths

There are no channels with controlling depths located within the limits of survey H-10478.

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 on the smooth sheet and in the survey title have been approved by the Chief Geographer.

f. Dangers to Navigation

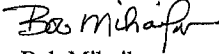
The hydrographer reported two shoals as dangers to navigation to the local United States Coast Guard District, DMAHTC and N/CG221, during the survey. A copy of this report is attached to this report. No additional dangers to navigation were discovered during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10478 adequately complies with the project instructions.

9. ADDITIONAL FIELD WORK

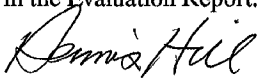
This is a good hydrographic survey. No additional work is recommended.


Bob Mihailov
Cartographer

APPROVAL SHEET
H-10478

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. 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.



Dennis J. Hill
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

Date: 9-16-94

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.

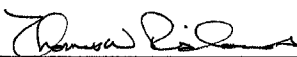


Commander Kathy Timmons, NOAA
Chief, Pacific Hydrographic Section

Date: 9/27/94

Final Approval

Approved:



J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

Date: 12-9-94

