

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT

Type of Survey ..... Hydrographic  
Field No. .... RA-10-11-94  
Registry No. .... H-10553

### LOCALITY

State ..... Alaska  
General Locality ..... Alaska Peninsula  
Sublocality ..... Foggy Cape and Vicinity

19 94

CHIEF OF PARTY  
CAPT Russell C. Arnold, NOAA

### LIBRARY & ARCHIVES

DATE ..... OCT 6 1995

H10553

## HYDROGRAPHIC TITLE SHEET

H-10553

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form,  
filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

RA-10-11-94

State Alaska

General locality Alaska Peninsula

Locality Foggy Cape and Vicinity

Scale 1:10,000 Date of survey July 6 - July 25, 1994

Instructions dated May 5, 1994 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 S. Smith, ENS S. Maenner, CST F. Paranada, SST J. Fleischmann

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 HP Design Jet 550L

Verification by R.N. Mihailov, J. Stringham

Soundings in ~~fathoms~~ Meters & Decimeters ~~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.

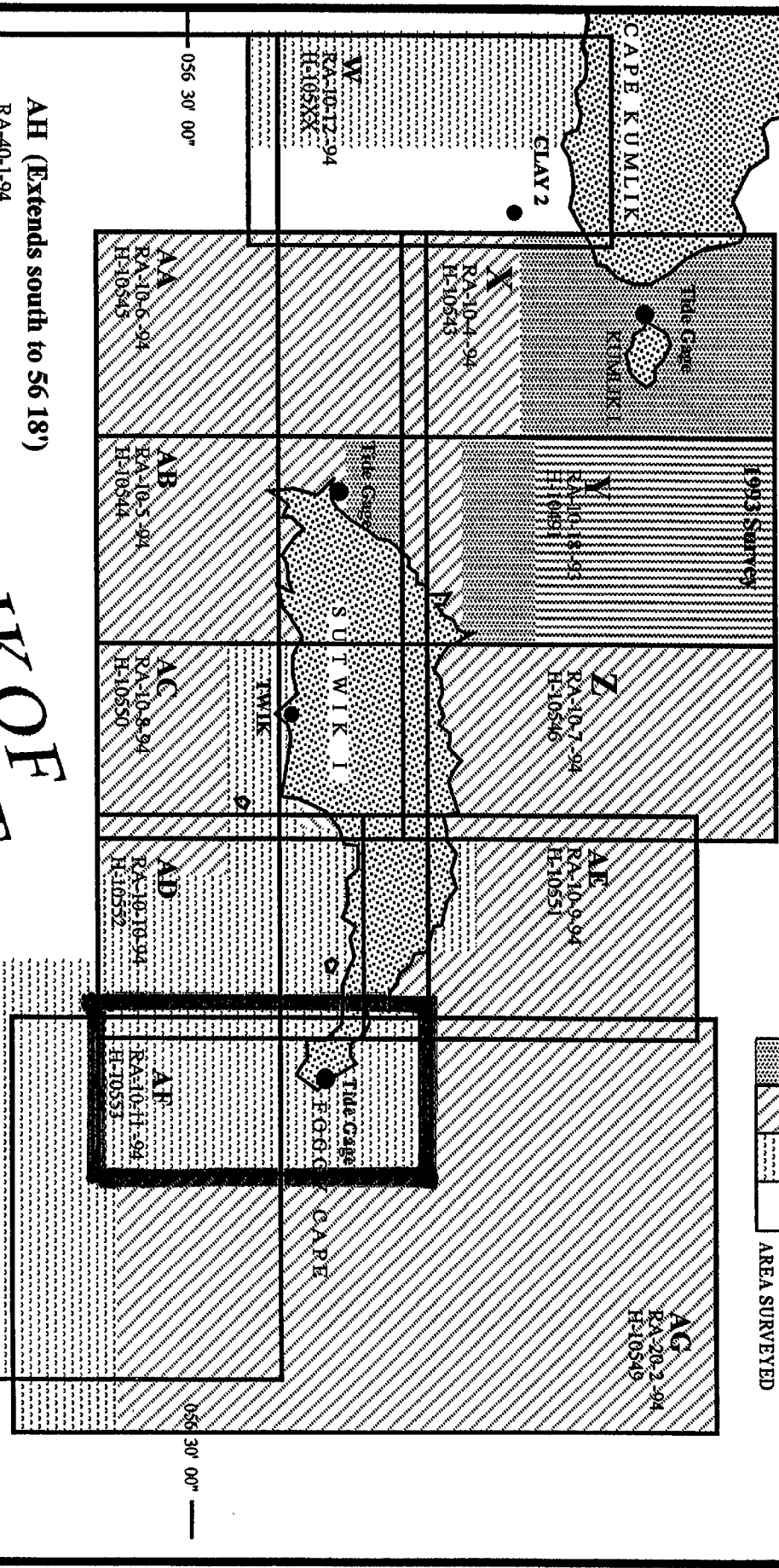
Surf/AWOS 10/17/95 mCR12-17-96  
OCT 6 1995

**PROGRESS SKETCH**  
 OP-PR-180-RA  
 HYDROGRAPHIC SURVEY  
 SOUTHERN ALASKA PENINSULA, ALASKA  
 May 27 - July 31, 1994  
**NOAA SHIP RAINIER**  
 R. C. ARNOLD, CAPT., NOAA  
 COMMANDING  
 HYDRA I.

SCALE OF CHART 16568  
 1:106,690

	MAY	JUN	JUL	AUG
19.2	151	120		
593	3303	2203		
0	0	0		
0	357	307		
3	1	0		
1	2	2		
3	1	0		
3	2	0		
0	0	2		

SQ. NM SOUNDINGS  
 LNM SOUNDINGS  
 LNM SIDE SCAN SOUNDINGS  
 BOTTOM SAMPLES (GRAB)  
 ELECTRONIC CONTROL STATIONS  
 TEMP. DEPTH. SOUND VEL. CAST  
 TIDE GAGES  
 GEO. CONT. STATIONS EST./REC.  
 AWOIS ITEMS INVESTIGATED  
 AREA SURVEYED



AH (Extends south to 56 18')  
 RA-40-1-94  
 H-10554

SHELF OF STRAIT

157° 30' 00"

157° 30' 00"

056 30' 00"

056 30' 00"

# Descriptive Report to Accompany Hydrographic Survey H-10553

Field Number RA-10-11-94

Scale 1:10,000

July 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-10553 corresponds to "sheet AF" 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 Rpt., section B.

The survey area is located along the Southern Alaska Peninsula, at the ~~west~~<sup>east</sup> end of Sutwik Island. The survey's northern limit is bounded by latitude  $56^{\circ}34.75' N$ , and the southern limit is bounded by latitude  $56^{\circ}28.25' N$ . The eastern limit is bounded by  $156^{\circ}53.75' W$ , and the western limit is bounded by  $157^{\circ}01.0' W$  and the east end of Sutwik Island.

Data acquisition was conducted from July 6, 1994, Day Number (DN) 187, through July 25, 1994, DN 206.

## C. SURVEY VESSELS ✓

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

<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
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>
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.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 AF.

**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: *Casts 4 and 5 were taken outside the survey area.*

<u>Velocity Table #</u>	<u>Cast#</u>	<u>DN</u>	<u>Cast Position</u>	<u>Deepest Depth</u>	<u>Applicable DN</u>
4	4	188	56°36'18" N 157°05'06" W	257	187 - 195
5	5	207	56°28'49" N 157°25'55" W	225	200 - 206

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.	X 0.95

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 4 June 1994. Opening levels of the staff were conducted upon installation. 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, field tide records, and Preliminary Field Tide Note (Appendix V) were forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3 at the end of June. The final tide package will be forwarded to N/OES212 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 - See Eval Rpt, section H.

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 installed on existing stations CLAY 2 and HYDRA. Station CLAY 2 is located on a small 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.

An additional DGPS station, TWIK, was established by RAINIER personnel on a small peninsula on the south shore of Sutwik Island. This station was positioned to Third-Order Class I accuracy using static GPS methods. Existing stations LAND and CLAY2 were used as control stations. Station LAND is located on a small islet in northern Aniakchak Bay. For further information see the "Summer 1994 Horizontal Control Report" that will be submitted at the end of the project.

## 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, HYDRA and TWIK. 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).

### Method of Shoreline Verification ✓

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 <sup>dashed</sup> 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. Features have been corrected on the smooth sheet for approved tides.

**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 or reefs.

Numerous rocks and shoals exist along the southern shore of Sutwik Island inside the 20-meter curve. A predominant swell from the southeast coupled with sparse T-sheet information made this a dangerous area to work.

The hydrographer believes that sufficient information has been portrayed on the final field sheet to characterize the general area as one where you can pick your way through the rocks in a small boat on a calm day. No small boat anchorages are apparent inshore. This generally foul area warrants no further risks or effort on the part of the hydrographer. Refer to the smooth sheet for final portrayal of ledges, reefs and foul areas within the survey area.

**Recommendations** ✓

The hydrographer recommends that the shoreline changes from this survey be used to supersede prior shoreline information compiled on TP-01158. - CONCUR ✓

#### **Charted Features** ✓

Charted rocks were either identified as T-sheet rocks, high points or extensions of T-sheet ledges and reefs. CONCUR ✓

#### **K. CROSSLINES** ✓

Crosslines are within 1-2 meter agreement with mainscheme hydrography except in areas of complex bathymetry. Crosslines totaled 33.1 nautical miles, representing 8.7% of the total mainscheme hydrography.

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

This survey junctions with survey H-10549 (1:20,000, 1994) to the south, east and north, survey H-10551 (1:10,000, 1994) to the west, north of Sutwik Island, and survey H-10552 (1:10,000, 1994) to the west, south of Sutwik Island. These soundings were found to be in general agreement with this survey.

\* Filed with the hydrographic data.

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

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

Two prior surveys were compared: H-6925 (1:~~20,000~~<sup>120,000</sup>, 1943) and FE-104 (1:20,000, 1952). Sparse soundings from these prior surveys 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 surveys. There were no instances where prior survey soundings were shoaler in a corresponding area.

Final comparisons will be conducted by PHS.

**N. ITEM INVESTIGATIONS** ✓

Two AWOIS items were investigated.

**AWOIS ITEM 51214**

**1. Area of Investigation**

State:	Alaska
Locality:	Southern Alaska Peninsula
Reported Latitude:	56° 29' 12.0" N
Reported Longitude:	156° 58' 37.5" W
Datum:	NAD 83
Reported Depth:	3 1/2 FM (6.6 m)
Feature:	Rock

**2. Description of Source Item**

A submerged rock was reported as the cause of a shipwreck in 1917 (CL373/17). Position scaled from chart is considered doubtful.

**3. Survey Requirements**

Verify or disprove, determine least depth and position. Techniques to be used are echo sounder, 200% side scan sonar, or visual search.

**4. Method of Investigation**

An echosounder investigation was conducted over the extent of the search area at 50 m line spacing.

**5. Results of Investigation**

No indication of shoaling was found in the search area. The depth in the area varies from 45-55 meters. However, a shoal with least depth ~~4.5~~<sup>1.7</sup> meters was located 4000 meters northwest of the reported position, at latitude 56° 31' 05.1" N 157° 00' 38.6" W. In addition, AWOIS Item 51215, a shoal found to have a least depth of 10.8 m, was located 2800 meters north of the center of the search area. Chart area as shown on smooth sheet. The 10.8 meter depth (5 3/4 Fms) located by the present survey at latitude 56° 35' 39.5" N, longitude 156° 58' 24.0" W is likely the feature reported as a submerged rock in 1917. However, the 1.7 meter depth (0.9 FM) would correspond much closer as an area susceptible to a vessel grounding.

7

## 6. Comparison with Prior Surveys

A field examination was conducted in 1952 with the purpose of confirming or disproving the rock. The search was not completed due to fog and lack of time. A 14 FM (26.4 m) shoal was found in general depths of 17-19 FM (32-35m) at latitude 56° 30' 40.3" N longitude 156° 58' 21.7" W (AWOIS Item 51215).

Final prior survey comparison will be performed by the Pacific Hydrographic Section.

## 7. Comparison with the Chart and Charting Recommendations

The item was compared to NOS chart 16568, 9th Edition, 3/21/92, 1:106,600 (NAD83). The charted rock (PD) should be deleted from the chart. *Concur*

### AWOIS ITEM 51215

#### 1. Area of Investigation

State: Alaska  
Locality: Southern Alaska Peninsula  
Reported Latitude: 56° 30' 37.5" N  
Reported Longitude: 156° 58' 21.7" W  
Datum: NAD 83  
Depth: 14 FM (26.4 m)  
Feature: Shoal

#### 2. Description of Source Item

While searching for AWOIS item 51214, a 14 FM (26.4 m) shoal was found. The reviewer recommends additional development.

#### 3. Survey Requirements

Determine the nature, extent, and least depth of shoal. Techniques to be used are echo sounder or 200% side scan sonar.

#### 4. Method of Investigation

The shoal was located during mainscheme hydrography and an echosounder development was conducted using 10 m line spacing over the extent of the shoal. *CONCUR*

#### 5. Results of Investigation

The least depth in the area was found to be <sup>10.8</sup> 5 <sup>39.5"</sup> 3/4 FMS (10.6 m) at latitude 56° 30' 40.3" N longitude 156° 58' ~~21.7"~~ W.

#### 6. Comparison with Prior Surveys

The present survey found a shoaler depth in the same vicinity of the reported position. Final prior survey comparison will be performed by the Pacific Hydrographic Section.

**7. Comparison with the Chart and Charting Recommendations ✓**

The item was compared to NOS chart 16568, 9th Edition, 3/21/92, 1:106,600 (NAD83). Present survey soundings should supersede charted soundings. -concur, chart area as shown on survey.

**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 charted soundings were found to be in general agreement with this survey. concur

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

Final comparisons will be made at PHS.

**Dangers to Navigation ✓**

Seven dangers to navigation within the limits of this survey were reported to the Seventeenth Coast Guard District on July 29, 1994. Copies of the correspondence can be found in Appendix I of this report.

**P. ADEQUACY OF SURVEY ✓**

Prior to final approval, survey H-10553 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	89	857	1396	971	1292	4605
NM Hydrography	0	121.0	247.3	184.5	255.3	808.1

Velocity Casts	2
Detached Positions	52
Bottom Samples	92
Tide Stations	1
NM <sup>2</sup> Hydrography	25.4

**S. MISCELLANEOUS ✓**

Bottom samples were sent to the Smithsonian Institution in accordance with the 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,



Shepard M. Smith  
Ensign, NOAA

Approved and Forwarded,



Russell C. Arnold  
Captain, NOAA  
Commanding Officer

CONTROL STATIONS as of 9 Jul 1994

No	Type	Latitude	Longitude	H	Cart	Freq	Vel Code	MM/DD/YY	Station Name
100	F	056:45:19.732	157:29:28.737	42	250	0.0	0.0	05/24/94	LAND(DGPS), 1945
101	F	056:44:35.925	157:00:57.249	50	250	0.0	0.0	05/24/94	HYDRA(DGPS), 1944
102	F	056:36:08.811	157:29:12.200	44	250	0.0	0.0	05/24/94	CLAY 2(DGPS), 1982
103	F	056:31:22.546	157:11:42.067	35	250	0.0	0.0	06/03/94	TWIK(DGPS), 1994 (Field position)



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

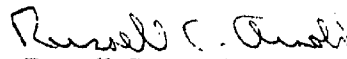
July 29, 1994

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



DN5AFAD

P 14 Z JUL 94  
FM NOAA'S RAINIER  
TO CGDSEVENTEEN JUNEAU AK  
IAHTCCNAVWARN WASHINGTON DC//MCNM//  
INFO NOAAAMOP SEATTLE WA  
ACCT CM-VCAA

ADVANCE  
INFORMATION

BT  
UNCLAS

NOAA SHIP RAINIER HAS LOCATED 14 DANGERS TO NAVIGATION IN  
SOUTHERN ALASKA PENINSULA, ALASKA (PROJECT OPR-P180-RA)  
WITHIN THE LIMITS OF HYDROGRAPHIC SURVEYS H-10553 AND H-10552.  
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	LOS.	DEPTH
SURVEY H-10553						
A.	SHOAL	COVERS 1 1/2 FMS	56/33/39.5N	157/00/45.0W	8367.2	2 <sup>9</sup>
B.	SHOAL	COVERS 3 FMS	56/33/31.0N	156/59/35.0W	8589.7	5 <sup>5</sup>
C.	ROCK	UNCOVERS 2 FT	56/33/07.0N	156/58/40.0W	809.0	(0 <sup>4</sup> )
D.	REEF	AWASH	56/32/12.0N	156/58/03.0W	4014, 4015	(0 <sup>3</sup> )
E.	SHOAL	COVERS 3 1/4 FMS	56/31/32.0N	156/59/11.0W	5561.9	6 <sup>1</sup>
F.	SHOAL	COVERS 5 3/4 FMS	56/30/39.5N	156/58/24.0W	8193.6	10 <sup>6</sup>
G.	SHOAL	COVERS 3/4 FMS	56/31/05.0N	157/00/39.0W	3450.9	1 <sup>5</sup>
SURVEY H-10552						
H.	SHOAL	COVERS 2 3/4 FMS	56/32/04.5N	157/06/48.0W	1597.3	5 <sup>3</sup>
I.	ROCK	UNCOVERS 3 FT	56/31/17.5N	157/07/26.0W	3364.0	(0 <sup>8</sup> )
J.	SHOAL	COVERS 1 1/4 FMS	56/31/00.0N	157/07/57.0W	3329.9	2 <sup>6</sup>
K.	SHOAL	COVERS 8 1/4 FMS	56/30/36.0N	157/06/08.0W	4104.5	15 <sup>1</sup>
L.	SHOAL	COVERS 7 1/2 FMS	56/28/49.5N	157/07/21.0W	5895.3	14 <sup>0</sup>
M.	SHOAL	COVERS 1 1/4 FMS	56/32/18.5N	157/06/12.0W	3506.7	2 <sup>6</sup>
N.	ROCK	UNCOVERS 6 FT	56/31/53.0N	157/02/56.0W	757989	(1 <sup>9</sup> )

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



ADVANCE  
INFORMATION

SUTWIK ISLAND

FOGGY CAPE

LAT 56° 35'

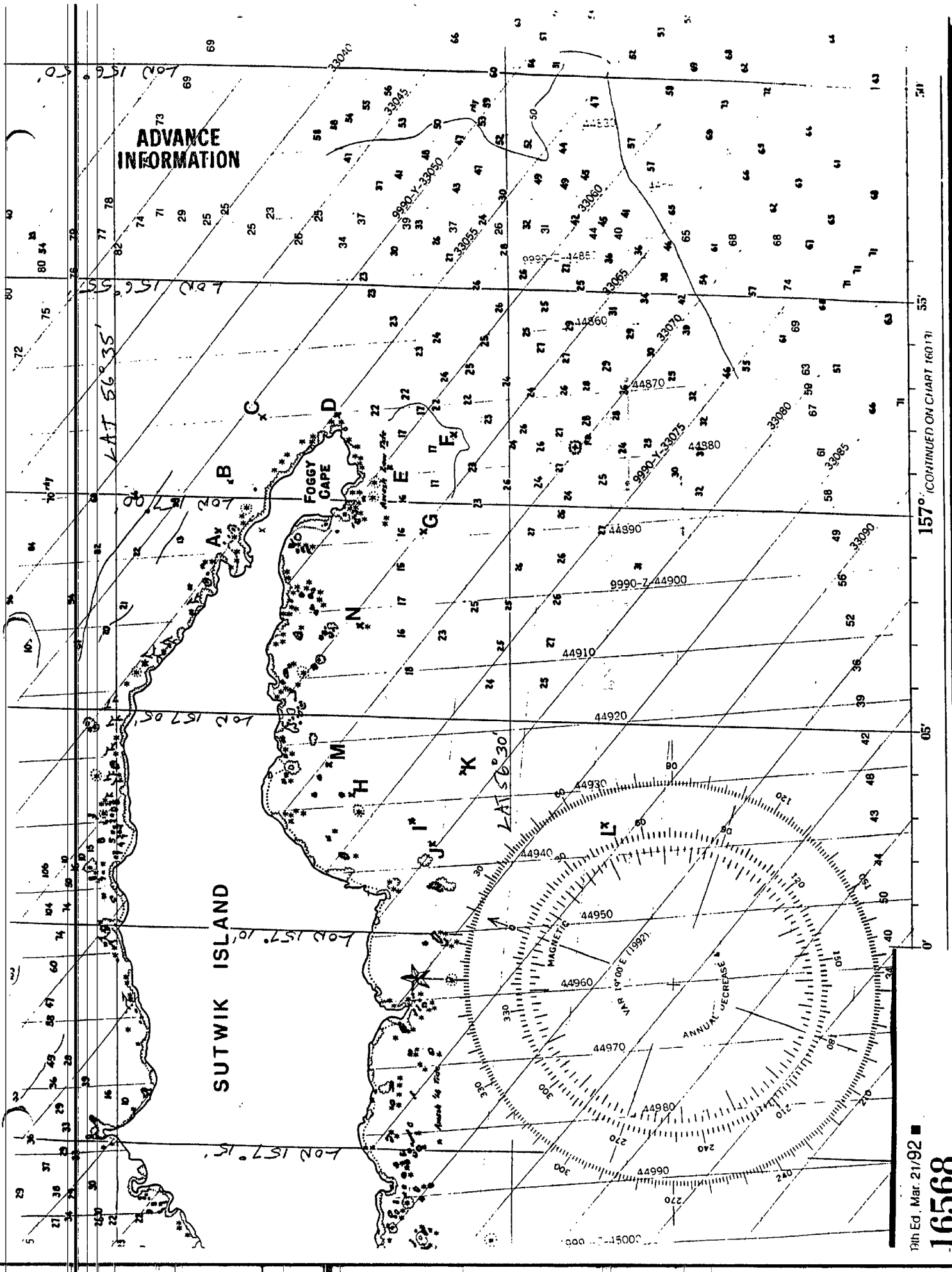
LAT 56° 30'

157° (CONTINUED ON CHART 16013)

19th Ed., Mar. 21/92

16568

NO DATA GUARANTEED



APPROVAL SHEET

for

H-10553

RA-10-11-94

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-10553

LOCALITY: Vicinity of Foggy Cape, Shelikof Strait,  
Alaska

TIME PERIOD: July 6 - August 2, 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 and heights are direct on 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. Gibbs*  
CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

H-10553

Name on Survey	ON CHART NO. 16568											
	A	B	C	D	E	F	G	H	K			
	ON PREVIOUS SURVEY NO.											
	CON U.S. QUADRANGLE MAPS											
	FROM LOCAL INFORMATION											
	ON LOCAL MAPS											
	P.O. GUIDE OR MAP ATLAS											
	RAND McNALLY											
	U.S. LIGHT LIST											
ALASKA (title)	X		X									1
ALASKA PENINSULA (title)	X		X									2
FOGGY CAPE	X		X									3
SUTWICK ISLAND	X		X									4
												5
												6
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Approved

*Charles C. Coy*

Chief Geographer

APR 3 1995

**HYDROGRAPHIC SURVEY STATISTICS**

H-10553

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

**SHORELINE DATA**

SHORELINE MAPS (List):

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			4605	
POSITIONS REVISED				
SOUNDINGS REVISED				
CONTROL STATIONS REVISED				
	TIME-HOURS			
	VERIFICATION	EVALUATION	TOTALS	
PRE-PROCESSING EXAMINATION				
VERIFICATION OF CONTROL				
VERIFICATION OF POSITIONS	51		51	
VERIFICATION OF SOUNDINGS	100		100	
VERIFICATION OF JUNCTIONS				
APPLICATION OF PHOTOBATHYMETRY				
SHORELINE APPLICATION/VERIFICATION				
COMPILATION OF SMOOTH SHEET	71		71	
COMPARISON WITH PRIOR SURVEYS AND CHARTS		3	3	
EVALUATION OF SIDE SCAN SONAR RECORDS				
EVALUATION OF WIRE DRAGS AND SWEEPS				
EVALUATION REPORT		40	40	
GEOGRAPHIC NAMES				
OTHER:				
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	222	43	265

Pre-processing Examination by <b>L. M. Larsen</b>	Beginning Date 7/6/94	Ending Date 8/23/94
Verification of Field Data by <b>B. Mihailov, J. Stringham</b>	Time (Hours) 222	Ending Date 3/24/95
Verification Check by <b>B. Olmstead</b>	Time (Hours) 2	Ending Date 9/5/95
Evaluation and Analysis by <b>B. Mihailov</b>	Time (Hours) 43	Ending Date 5/18/95
Inspection by <b>B. Olmstead</b>	Time (Hours) 26	Ending Date 9/14/95

## EVALUATION REPORT

H-10553

### 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, southwest of Kodiak Island. The surveyed area is bounded by latitude 56/35/00N to the north and latitude 56/28/00N to the south. The eastern limit is longitude 156/53/45W and the western limit is longitude 157/01/15W. The southeast portion of Sutwik Island, along Foggy Cape is the only shoreline on this survey. Rocky ledges encompass the majority of the shoreline. The bottom consists mainly of sand and broken shells. Depths range from 0 meters to 136 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-10553.

### **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-10553 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: -2.677 seconds (-82.812 meters)  
Longitude: 7.304 seconds (124.868 meters)

### **I. HYDROGRAPHIC POSITION CONTROL**

Differential GPS (DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The quality of several positions exceeds limits in terms of horizontal dilution of precision (HDOP). These positions are isolated and occur randomly throughout the survey area. A review of the data, however, suggests that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with the surrounding information. These fixes are considered acceptable.

### **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.

The following 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	56/32/09	156/58/37
MHWL	56/31/58	156/59/17

#### **K. CROSSLINES**

Crosslines are discussed in the hydrographer's report.

#### **L. JUNCTIONS**

Survey H-10553 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10549	1994	1:20,000	North-South-West
H-10551	1994	1:10,000	Northwest
H-10552	1994	1:10,000	Southwest

The junction with survey H-10549 is complete and the soundings are in good agreement.

The junctions with H-10551 and H-10552 cannot be completed because these surveys are in preliminary office processing. Comparison with the field sheets indicates good agreement. The junction comparisons will be addressed in the Descriptive Reports for these surveys.

#### **M. COMPARISON WITH PRIOR SURVEYS**

H-6925 (1943) 1:120,000  
FE-104 (1952) 1:20,000

Survey H-6925 (1943) and FE-104 (1952) cover the entire area of the present survey. Sounding agreement is good, with the present survey depths deeper between 1 and 3 meters. Differences can be attributed to increased bottom coverage and less accurate positioning and sounding methods available in 1943.

H-10553 is adequate to supersede the prior surveys within the common area.

#### **N. ITEM INVESTIGATIONS**

AWOIS item 51214 and 51215 fall within the survey area and were adequately investigated during survey operations. Refer to the hydrographer's report for discussion and disposition of these items.



## O. COMPARISON WITH CHART

Survey H-10553 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 hydrography generally agrees well. The present survey depths are deeper between 1 and 4 meters. The greater sounding coverage and the relative accuracy of the data acquisition methods account for the differences.

Survey H-10553 is adequate to supersede charted hydrography within the common area.

## P. ADEQUACY OF SURVEY

Hydrography contained on survey H-10553 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.

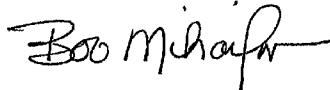
The hydrographer reported one rock, one reef and five shoals as dangers to navigation to the local United States Coast Guard District, DMAHTC and N/CG221 during survey operations. A copy of this report is attached. No additional dangers to navigation were discovered during office processing.

**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-10553

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. 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 A. Olmstead Date: 9/14/95  
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: 9/21/95  
Kathy Timmons  
Commander, NOAA  
Chief, Pacific Hydrographic Branch

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Final Approval

Approved:

Andrew A. Armstrong III Date: 10/6/95  
Andrew A. Armstrong III  
Captain, NOAA  
Chief, Hydrographic Surveys Division

MARINE CHART BRANCH  
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10553

INSTRUCTIONS

1. Basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
2. Letter all information.
3. In "Remarks" column cross out words that do not apply.
4. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
16568	7/94	B. Michailou	Full <del>Part Before</del> After Marine Center Approval Signed Via Drawing No. 12 <i>Sndgs. curves applied to H-16568</i>
16013	6/20/96	DHCPALINON	Full <del>Part Before</del> After Marine Center Approval Signed Via Drawing No. 30 <i>26TH ED AUG 92 REVISED SPMS THRU CHART 16568 H-DRAWING BP 13760</i>
16011	6-29-96	<i>DC Hanson William J. O'm</i>	Full <del>Part Before</del> After Marine Center Approval Signed Via <i>Revised thru 16013</i> Drawing No. 32
16006	8-20-96	<i>Christopher J. O'm William J. O'm</i>	Full <del>Part Before</del> After Marine Center Approval Signed Via <i>Revised soundings thru 16011</i> Drawing No. 28
531	8-21-96	<i>William J. O'm</i>	Full <del>Part Before</del> After Marine Center Approval Signed Via <i>Revised hydro thru 16006</i> Drawing No. 22
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.