

H10592

NOAA FORM 78-35A

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

**DESCRIPTIVE REPORT**

Type of Survey .... Hydrographic.....

Field No. .... RA-10-1-95.....

Registry No. ... H-10592.....

**LOCALITY**

State ..... Alaska.....

General Locality ..... Southern Stephens Passage.....

Sublocality ..... Windham Bay.....

.....

.....  
19 95  
.....

**CHIEF OF PARTY**  
CAPT D. R. Seidel.....

**LIBRARY & ARCHIVES**

DATE ..... APR 4 1996.....

## HYDROGRAPHIC TITLE SHEET

H-10592

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-10-1-95

State Alaska

General locality Southern Stephens Passage

Locality Windham Bay

Scale 1:10,000 Date of survey April 11 - April 23, 1995

Instructions dated 2/13/95, Change #1-3/28/95 Project No. OPR-0136-RA

Vessel NOAA Ship RAINIER (2122), (2123), 2124), (2125), (2126)

Chief of party CAPT Dean R. Seidel, NOAA

Surveyed by LT D.Haines, LT M.Larsen, ENS S.Smith, ENS E.Christensen, 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. Davies Automated plot by HP Inkjet 650C Plotter

Verification by R. Davies

Soundings in meters & decimeters

Soundings in ~~feet~~ ~~at~~ MLLW 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.

5/4/11/96 AWOIS and SURF ✓ 4/96 PUD

**PROGRESS SKETCH**  
 OPR-0136-RA  
 HYDROGRAPHIC SURVEY  
 STEPHENS PASSAGE, ALASKA

APRIL - MAY, 1995  
 D. R. SEIDEL, CAPT, NOAA  
 COMMANDING

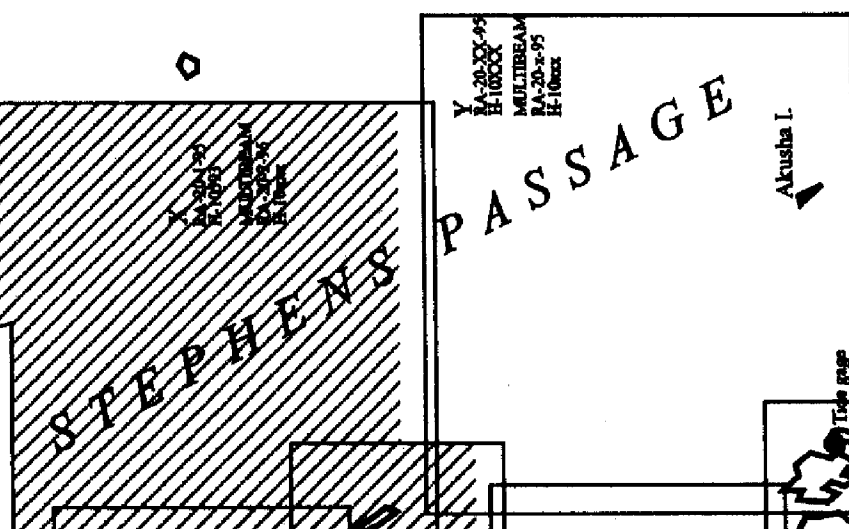
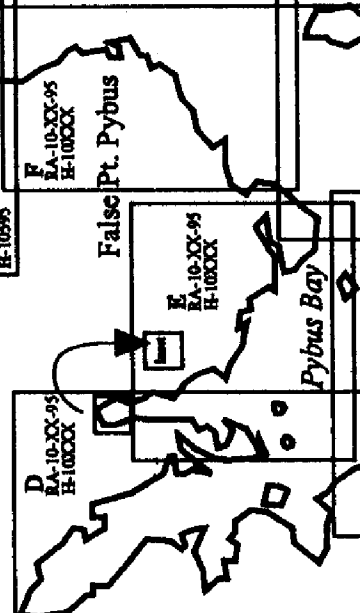
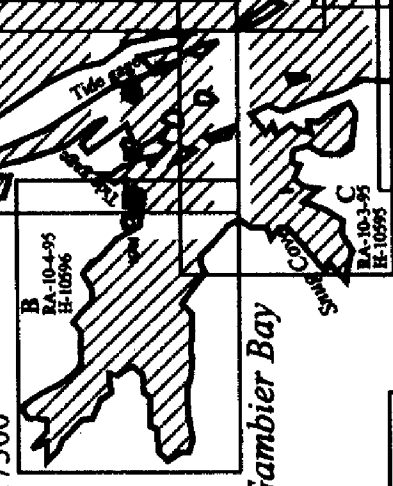
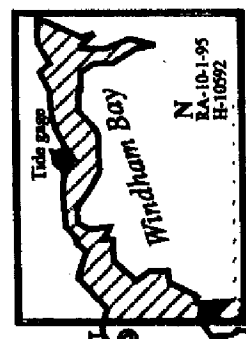
SCALE OF CHART 17360  
 1:217,828

134° 00' 00"

133° 20' 00"

57° 20' 00"

57° 20' 00"



	APR	MAY
SQ. NM. SOUNDINGS	78.3	
LNM. SINGLE BEAM	1120	
LNM. MULTIBEAM	286	
BOTTOM SAMPLES (GRAB)	68	
ELECTRONIC CONTROL STATIONS	3	
CTD CASTS	7	
TIDE GAGES	5	
GEODETIC CONTROL STATIONS EST./REC.	5	
AWOIS ITEMS INVESTIGATED	6	
AREA SURVEYED		

● ELECTRONIC CONTROL STATIONS  
 ● FIVE PINGERS LIGHT

● TIDE GAUGE

● GEODETIC CONTROL STATIONS EST./REC.

● AWOIS ITEMS INVESTIGATED

● AREA SURVEYED

FREDERICK SOUND

# Descriptive Report to Accompany Hydrographic Survey H-10592

Field Number RA-10-1-95

Scale 1:10,000

April 1995

NOAA Ship RAINIER

Chief of Party: Captain Dean R. Seidel

## A. PROJECT ✓

This basic hydrographic survey was completed in Windham Bay, Southern Stephens Passage, Alaska, as specified by Project Instructions OPR-O136-RA dated February 13, 1995, and Change No. 1 dated ~~April 3,~~ <sup>MARCH 28,</sup> 1995.

Survey H-10592 corresponds to "sheet N" as defined in the Project Instructions.

This survey will provide contemporary hydrographic survey data for updating existing nautical charts. Requests for hydrographic surveys and updated charts have been received from the United States Coast Guard (USCG), the Southeast Alaska Pilot's Association, the Alaska Department of Transportation, and private interests such as cruise ship lines and local logging and fishing industries.

## B. AREA SURVEYED ✓ See Eval Rpt, section B

The survey area is Windham Bay, located in Southern Stephens Passage. The survey's eastern limit is bounded by 133°20.5'W, and the western limit bounded by 133°31.0'W. The northern limit is bounded by 57°36.0'N, and the southern limit is 57°32.0'.

## C. SURVEY VESSELS ✓

Data were acquired by the five survey launches as noted below:

<u>Vessel</u>	<u>EDP #</u>	<u>Operation</u>
RA-2	2122	Hydrography
RA-3	2123	Hydrography
RA-4	2124	Hydrography Shoreline Verification
RA-5	2125	Hydrography Bottom Samples Sound Velocity Casts

**D. AUTOMATED DATA ACQUISITION AND PROCESSING** ✓

Data were acquired and processed using HDAPS Programs. A complete listing is included in Appendix VI.\*

Some hydrography was acquired using Coastal Oceanographics' HYPACK Version 5.2 software on launch 2122, which was equipped with an Ashtech DGPS and a DSF-6000N echosounder, with the following single program updates provided by N/CG24:

<u>HYPACK Program Name</u>	<u>Version</u>	<u>Date Installed</u>
HYSPEED.EXE	3/24/95	4/1/95
IOTEST.EXE	3/17/95	4/1/95

Post processing was conducted using the HDAPS HP system. HYPACK (DOS) files were converted to a PC-DAS format using a Visual Basic program, HYPMENU (Version B1.5) provided by N/CG24. The files were then loaded into HDAPS and processed in the same manner as PC-DAS data.

In addition, the following batch routine, GPSINIT.BAT(3/95), was used to initialize the Ashtech GPS receiver.

Velocity corrections were determined using:

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>
VELOCITY	2.11	5 Mar 1995

**E. SONAR EQUIPMENT** ✓

Sonar equipment was not used on sheet N. *Concur*

**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 or the low frequency digitized setting, depending on water depth.

\* Filed with the hydrographic data.

## G. CORRECTIONS TO ECHO SOUNDINGS ✓

Correctors for the velocity of sound through water were determined from the casts listed below.

<u>Velocity Table #</u>	<u>Cast#</u>	<u>DN</u>	<u>Cast Position</u>	<u>Deepest Depth (m)</u>	<u>Applicable DN</u>
1	1	102	57°35.1' N 133°24.5' W	280	101-113

Launches used velocity table 1. The sound velocity casts were acquired with SBE SEACAT Profiler (S/N 811), calibrated 03/31/95. Velocity correctors were computed using the PC program VELOCITY in accordance with Hydrographic Survey Guideline (HSG) No. 69. Velocity table was extended an additional 15m beyond specifications to meet all depths. A printout of the Sound Velocity Corrector Table used in the HDAPS Post Survey program is included in the "Separates to be Included with Survey Data, IV. Sounding Equipment Calibrations and Corrections".

### Static Draft ✓

A transducer depth was determined using FPM Fig 2.2 for vessels 2122-2126 in the spring of 1995. These values were 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-O136-RA. The data for 2123-2126 was collected in Shilshole Bay, Washington in the Spring of 1995, and for 2122 in Windham Bay, Alaska in April 1995.

### Offset Tables ✓

Offset tables contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 2-6 correspond to the number of the vessel. The offset tables were compiled with new measurements in the spring of 1995 and are contained in the "Separates to be Included with Survey Data". \*

### Heave ✓

The launches are not equipped with heave, pitch and roll sensors.

\* Filed with the hydrographic data.

## Bar Check and Lead Lines ✓

Bar check and lead lines were calibrated by RAINIER personnel during the winter inport 1994-1995. Calibration forms are included with project data for OPR-O136-RA. Bar checks were performed weekly and served as a functional check of the DSF-6000N.

## Tide Correctors *(See tide note attached to this report)*

Juneau, Alaska tide station (945-2210) served as control for datum for determination at all subordinate stations for this project.

Predicted tides for the project were provided on diskette by N/CG241 for the Juneau, Alaska reference station (945-2210).

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

Time Correction		Height Correction	
<u>High</u>	<u>Low</u>	<u>High</u>	<u>Low</u>
0.00	0.00	-1.1	-0.1

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

RAINIER personnel installed 8200 digital gages at Windham Bay (945-1962) and Windham Bay East (945-2046) on April 10, 1995, and at The Brothers (945-1785) on April 11, 1995. Bench marks and staffs were connected during opening levels, run on April 10, 1995 at Windham Bay (945-1962), on April 11, 1995 at Windham Bay East (945-2046), and on April 12, 1995 at The Brothers (945-1785). Closing levels were conducted at Windham Bay East (945-2046) and bracketing levels were run at Windham Bay (945-1962) on April 26, 1995. On April 16, 1995, at 1610 UTC, the Windham Bay recorder shut off. The problem was discovered and resolved on April 18 at 2042 UTC. Otherwise, all tide gages operated continuously during data acquisition.

The station descriptions, field tide records, and Preliminary Field Tide Notes (Appendix V) have been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. 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. *Approved Tide Note dated August 28, 1995 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~~ *attached to* this report. The horizontal datum for this project is NAD83.

\* Filed with the hydrographic data.

DGPS stations were installed on existing stations INDX and WIND. Station INDX is located on top of Five Fingers Light House, and station WIND is located on top of Windham Bay Light, which is located on a small islet south of Point Windham. These stations were recovered in accordance with methods stated in Section 5.2.4 of the FPM.

For further information see the "Spring 1995 Horizontal Control Report" that will be submitted at the end of the project.

## **I. HYDROGRAPHIC POSITION CONTROL** ✓ *See Eval Rpt, section I*

### **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 INDX and WIND. The difference between the computed location and station WIND's published position were recorded by the MONITOR 3.0 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. Scatterplot results are included in the "Project related data for OPR-O136-RA". The scatterplot results for station INDX were obtained in the Spring 1993 Project. The area around station INDX remains undeveloped, and the geography unchanged.

### **Calibrations & Systems Check Methods** ✓

System checks were performed in accordance with Section 3.4.4 of the FPM. Two observations of position were made from two independent DGPS base stations. The results were transferred to forms which are included in the project data for OPR-O136-RA. 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

## **J. SHORELINE** ✓ *See Eval Rpt, section J.*

The shoreline map (T-sheet) was digitized using Hypack (Ver 5.2) and plotted on final sheets. The shoreline originated from TP-01372 (enlarged to 1:10,000) and TP-01371.



## 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.

DPs taken during shoreline verification were recorded on the master printouts<sup>\*</sup> and on the DP forms.<sup>\*</sup> 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 "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 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 features 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. *Field values have been changed upon application of actual tides and shown on the smooth sheet.*

## Changes and New Features ✓

Several changes and new features were found and are depicted on the final field plot. T-sheet islets and rocks were often identified as high points of new ledges or reefs. Additionally, some soundings were located on the shore side of the T-sheet MHW line. This occurred in areas of extremely steep shoreline with overhanging trees and might have hampered the photogrammetry's ability to locate the MHW line. GPS positioning at the time the soundings were taken was good and HDOP was with acceptable limits.

## Disprovals ✓

None.

\* Filed with the hydrographic data.

## Recommendations ✓

The hydrographer recommends that the shoreline changes from this survey be used to supersede prior shoreline information compiled on TP-01372 and TP-01371.

*CIMCWT*

## Charted Features ✓

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

## K. CROSSLINES ✓

Crosslines are within 1-2 meter parameter agreement with mainscheme hydrography except in areas of complex bathymetry. Total mileage was 6.64 nautical miles or 9.2% of total mainscheme hydrography.

## L. JUNCTIONS ✓

This survey junctions with survey H-10470 (1:10,000 1993) at the western limit. Soundings were found to be in general agreement. Final comparison will be made at Pacific Hydrographic Section (PHS). *Junction was adequate.*

## M. COMPARISON WITH PRIOR SURVEYS *See Eval Rpt, section M.*

One prior survey was compared: H-2002, 1:80,000, 1889, USCGS. Soundings from the 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.

## N. ITEM INVESTIGATIONS

Six AWOIS items were assigned to H-10592.

### AWOIS Item 51870 ✓

#### 1. Area of Investigation

State: Alaska

Locality: Stephens Passage

Reported Latitude: 57/32/52.74N ✓

Reported Longitude: 133/30/22.17W

Datum: NAD83

Feature: Ledge

## 2. Description and Source of Item

Item is shown as islet scaled from USGS Quad - Sumdum(C-5)1951. Shown as ledge on TP-01371/87.

## 3. Survey Requirements

Verify or disprove, determine least depth or elevation and position. Technique to be used is visual search.

## 4. Method of Investigation

Visual search of area was conducted at low water on DN108. Ten minutes was spent searching the area in a 50m radius. Water visibility was 5m.

## 5. Results of Investigation

Date:	DN108
Time (UTC):	2007
Height:	12 m (8m MHW based on approved tides)
Position #:	3210
Vessel:	2124

The ledge was located with the high point being an islet.

## 6. Comparison with Prior Surveys

The item was compared to H-2002, 1:80,000, 1889, USCGS. This item did not originate with a prior survey.

## 7. Comparison with the Chart and Charting Recommendations

The item was compared to NOS chart 17363, 11th Edition, April 27, 1991 (NAD83). The chart shows an islet at the same location.

This item was not submitted as a danger to navigation.

## Recommendation

Chart as an islet surrounded by a ledge at latitude 57°32'53.47"N, longitude 133° 30'19.77"W.

OK  
CONCWR

AWOIS Item 51872 ✓

### 1. Area of Investigation

State: Alaska

Locality: Stephens Passage

Reported Latitude: 57/33/51.75N ✓

Reported Longitude: 133/29/01.16W

Datum: NAD27

Feature: Rock awash

### 2. Description and Source of Item

Item is shown as <sup>a rock</sup> ~~islet~~ scaled from USGS Quad - Sumdum(C-5)1951. Shown as rock on TP-01372/87.

### 3. Survey Requirements

Verify or disprove, determine least depth or elevation and position. Technique to be used is visual search.

### 4. Method of Investigation

Visual search of area was conducted at low water on DN108. Ten minutes was spent searching the area in a 50m radius. Water visibility was 5m.

### 5. Results of Investigation

Date:	DN108
Time (UTC):	1833
Height:	1 <sup>2</sup> m
Position #:	3204
Vessel:	2124

AWOIS item is T-sheet rock.

### 6. Comparison with Prior Surveys

The item was compared to H-2002, 1:80,000, 1889, USCGS. This item did not originate with a prior survey.

### 7. Comparison with the Chart and Charting Recommendations

The item was compared to NOS chart 17363, 11th Edition, April 27, 1991 (NAD83).

Chart shows a rock in the vicinity of AWOIS #51872, 40 meter away.

This item was not submitted as a danger to navigation.

### Recommendation

Chart rock at latitude <sup>and islet</sup> 57°33'52.51"N, longitude 133°29'00.65"W, <sup>✓</sup> delete charted rock at lat. 57°33'52"N  
long. 133°29'01.5"W

**AWOIS Item 51873** ✓

### 1. Area of Investigation

State: Alaska

Locality: Stephens Passage

Reported Latitude: 57/33/59.75N ✓

Reported Longitude: 133/29/06.17W

Datum: NAD83

Feature: Rock awash

### 2. Description and Source of Item

Item is shown as <sup>a rock</sup> islet scaled from USGS Quad - Sumdum(C-5)1951. Shown as rock on TP-01372/87.

### 3. Survey Requirements

Verify or disprove, determine least depth or elevation and position. Technique to be used is visual search.

### 4. Method of Investigation

Visual search of area was conducted at low water on DN108. Ten minutes was spent searching the area in a 50m radius. Water visibility was 5m.

### 5. Results of Investigation

Date: DN108  
Time (UTC): 1820  
Height: 0.5 m  
Position #: 3203  
Vessel: 2124

A rock was found at the location given for AWOIS #51873.

## 6. Comparison with Prior Surveys

The item was compared to H-2002, 1:80,000, 1889, USCGS. This item did not originate with a prior survey.

## 7. Comparison with the Chart and Charting Recommendations

The item was compared to NOS chart 17363, 11th Edition, April 27, 1991 (NAD83). This item was not submitted as a danger to navigation and did not appear on chart.

### Recommendation

Chart as a rock at latitude  $57^{\circ}33'59.56''N$ , longitude  $133^{\circ}29'07.40''W$ . *Delete charted rock at lat. 57/34/01N, long 133/29/07W.*

AWOIS Item 51874 ✓

### 1. Area of Investigation

State: Alaska

Locality: Stephens Passage

Reported Latitude:  $57/34/34.75N$  ✓

Reported Longitude:  $133/30/22.17W$

Datum: NAD83

Feature: Rock awash

### 2. Description and Source of Item

Item is shown <sup>not</sup> as <sup>on</sup> islet scaled from USGS Quad - Sumdum(C-5)1951. Shown as ledge on TP-01372/87.

### 3. Survey Requirements

Verify or disprove, determine least depth or elevation and position. Technique to be used is visual search.

### 4. Method of Investigation

Visual search of area was conducted at low water on DN109. Ten minutes was spent searching the area in a 50m radius. Water visibility was 5m.

## 5. Results of Investigation

Date: DN109  
Time (UTC): 1801  
Height: 1.4 m  
Position #: 3229  
Vessel: 2124

AWOIS #51874 is a ledge extending off a T-sheet islet.

## 6. Comparison with Prior Surveys

The item was compared to H-2002, 1:80,000, 1889, USCGS. This item did not originate with a prior survey.

## 7. Comparison with the Chart and Charting Recommendations

The item was compared to NOS chart 17363, 11th Edition, April 27, 1991 (NAD83). The chart showed an islet in the same location as the AWOIS item.

This item was not submitted as a danger to navigation.

## Recommendation

Chart as <sup>ledge</sup> reef connected to T-sheet islet at 57°34'34.97"N, longitude 133°30'20.50"W. Remove  
charted rock at lat. 57/34/06 N, long. 133/30/23 W.

AWOIS Item 51875 ✓

## 1. Area of Investigation

State: Alaska  
Locality: Stephens Passage  
Reported Latitude: 57/35/00.25N ✓  
Reported Longitude: 133/28/56.17W  
Datum: NAD83  
Feature: Rock awash

## 2. Description and Source of Item

Item is shown as <sup>a rock</sup> islet scaled from USGS Quad - Sumdum(C-5)1951. Shown as ledge on TP-01372/87.

### 3. Survey Requirements

Verify or disprove, determine least depth or elevation and position. Technique to be used is visual search.

### 4. Method of Investigation

Visual search of area was conducted at low water on DN109. Ten minutes was spent searching the area in a 50m radius. Water visibility was 5m.

### 5. Results of Investigation

Date: DN109  
Time (UTC): 1826  
Height: 3.4 m  
Position #: 3230  
Vessel: 2124

AWOIS #51875 is <sup>high point on a</sup> ledge as on T-sheet. ✓

### 6. Comparison with Prior Surveys

The item was compared to H-2002, 1:80,000, 1889, USCGS. This item did not originate with a prior survey.

### 7. Comparison with the Chart and Charting Recommendations

The item was compared to NOS chart 17636, 11th Edition, April 27, 1991 (NAD83). Chart shows a rock in the vicinity of AWOIS #51875.

This item was not submitted as a danger to navigation.

### Recommendation

Chart as ledge at latitude 57°35'00.74"N, longitude 133°28'57.62"W, ~~delete charted rock.~~



AWOIS Item 51876 ✓

### 1. Area of Investigation

State: Alaska

Locality: Stephens Passage

Reported Latitude: 57/35/11.76N ✓

Reported Longitude: 133/27/02.16W

Datum: NAD83

Feature: Rock awash

### 2. Description and Source of Item

Item is shown as <sup>a rock</sup> islet scaled from USGS Quad - Sumdum(C-5)1951. Shown as <sup>a rock</sup> ledge on TP-01372/87.

### 3. Survey Requirements

Verify or disprove, determine least depth or elevation and position. Technique to be used is visual search.

### 4. Method of Investigation

A visual search of 50-meter radius was conducted at low water in the vicinity for eleven minutes on DN109. An echosounder search was conducted on DN113 using 5-meter spacing to cover the 50-meter search radius.

### 5. Results of Investigation

The visual search was conducted for 11 minutes with 5-meter visibility. There was no visual evidence of a rock awash within the search area. 5-meter line spacing found no indications of a rock with average depths of 10-meters (position 1107-1229). A T-sheet rock was located approximately 100 meters west of the center of the AWOIS search area.

### 6. Comparison with Prior Surveys

The item was compared to H-2002, 1:80,000, 1889, USCGS. The prior survey indicates a reef in the same area as the T-sheet rock.

### 7. Comparison with the Chart and Charting Recommendations

The item was compared to NOS chart 17363, 11th Edition, April 27, 1991(NAD83) ✓  
Chart shows a rock in the same location as the T-sheet rock.

This item was not submitted as a danger to navigation.

### Recommendation

Delete AWOIS item at 57°35'11.75"N, 133°27'02.16"W. <sup>\*</sup> It is recommended that the shoreline be completely recompiled from TP-01371 and TP-01372 on the next edition of this chart.   
\* Chart rec. F. uncovers 1.8 meters (\* 6 FT) at MLW at latitude 57/35/10 N, longitude 133/27/10.5 W.

### O. COMPARISON WITH THE CHART See Eval Rpt, section O.

This survey was compared to NOS chart 17363, 11th edition, April 27, 1991, 1:40,000, (NAD83), and charted soundings were found to be in general agreement, except as noted below:

The charted soundings through The Narrows show a least depth of ~~seven fathoms~~ <sup>5 3/4 fathoms \*\* ✓</sup> (12.8m). The survey found a very narrow channel with least depths of 7.6m on the NW side and ~~6.9m~~ <sup>3.7 (2.8m)</sup> on the SE side. Depths between the two soundings range from ~~9m-15m~~ <sup>17.4 3.7</sup>.

Non-sounding charted features are discussed in Section J, Shoreline. Final comparisons to made at PHS.

### Dangers to Navigation ✓

One danger to navigation within the limits of survey H-10592 were reported to the Seventeenth Coast Guard District on April 27, 1995. Copies of the correspondence can be found in Appendix I of this report.

### P. ADEQUACY OF SURVEY ✓

Survey H-10592 is complete and adequate to supersede charted depths and features in their common areas.   
concur

### Q. AIDS TO NAVIGATION

None.

\*\* The currently charted least depth in The Narrows is 7 fathoms. Based on this survey a new charted least depth in the Narrows of 5 3/4 fathoms is recommended. — ARR 4/11/96

## R. STATISTICS ✓

NM Hydrography	102.70
Velocity Casts	1
Detached Positions	18
Selected Soundings	4809
Bottom Samples	16
Tide Stations	3
NM <sup>2</sup> Hydrography	4.0

## S. MISCELLANEOUS ✓

Bottom samples were collected in accordance with Project Instructions. Samples have been stored and shipped to the Smithsonian Institution in accordance with Section 4.7.1 of the Hydrographic Manual.

No tidal current predictions are available within the sheet limits. However, tidal currents through The Narrows were noticed to be 2-3 knots.

No unusual magnetic variations were noted.

## T. RECOMMENDATIONS


*None* The complete shoreline common to this survey should be recompiled from this survey and shoreline maps TP-01371 and TP-01372.

## 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>
Spring 1995 Horizontal Control Report for OPR-O136-RA.	May 1995	N/CG245
Spring 1995 Coast Pilot Report for OPR-O136-RA.	May 1995	N/CG245
Project related data for OPR-O136-RA.	April 1995	N/CG245

Respectfully Submitted,



Eric J. Christensen  
Ensign, NOAA

Approved and Forwarded,



Dean R. Seidel  
Captain, NOAA  
Commanding Officer

CONTROL STATIONS as of 27 Apr 1995 ✓

No	Type	Latitude	Longitude	H	Cart	Freq	Vel Code	MM/DD/YY	Station Name
100	F	057:33:42.067	133:32:35.061	19	250	0.0	0.0	04/03/95	WINDHAM BAY LIGHT(GPS STATION), 1985
101	F	057:16:13.398	133:37:53.480	30	250	0.0	0.0	04/03/95	INDX(GPS STATION), 1985
102	F	057:28:37.836	133:58:16.968	6	250	0.0	0.0	04/12/95	KAN 1924(GPS STATION)



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

April 27, 1995

**ADVANCE  
INFORMATION**

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

Dear Sir:

NOAA Ship RAINIER has located one danger to navigation in Southern Stephens Passage (Project OPR-O136-RA) within the limits of hydrographic survey H-10592. The attached information is provided for publication in the Local Notice to Mariners for the Seventeenth Coast Guard District. A copy of the chart showing the area in which the danger exists is also attached.

Sincerely,

Dean R. Seidel  
Captain, NOAA  
Commanding Officer

Enclosures

cc: DMAHTC  
N/CG221  
PMC





# SOUNDINGS IN FATHOMS

Nautical Chart No. 3, Panel Q

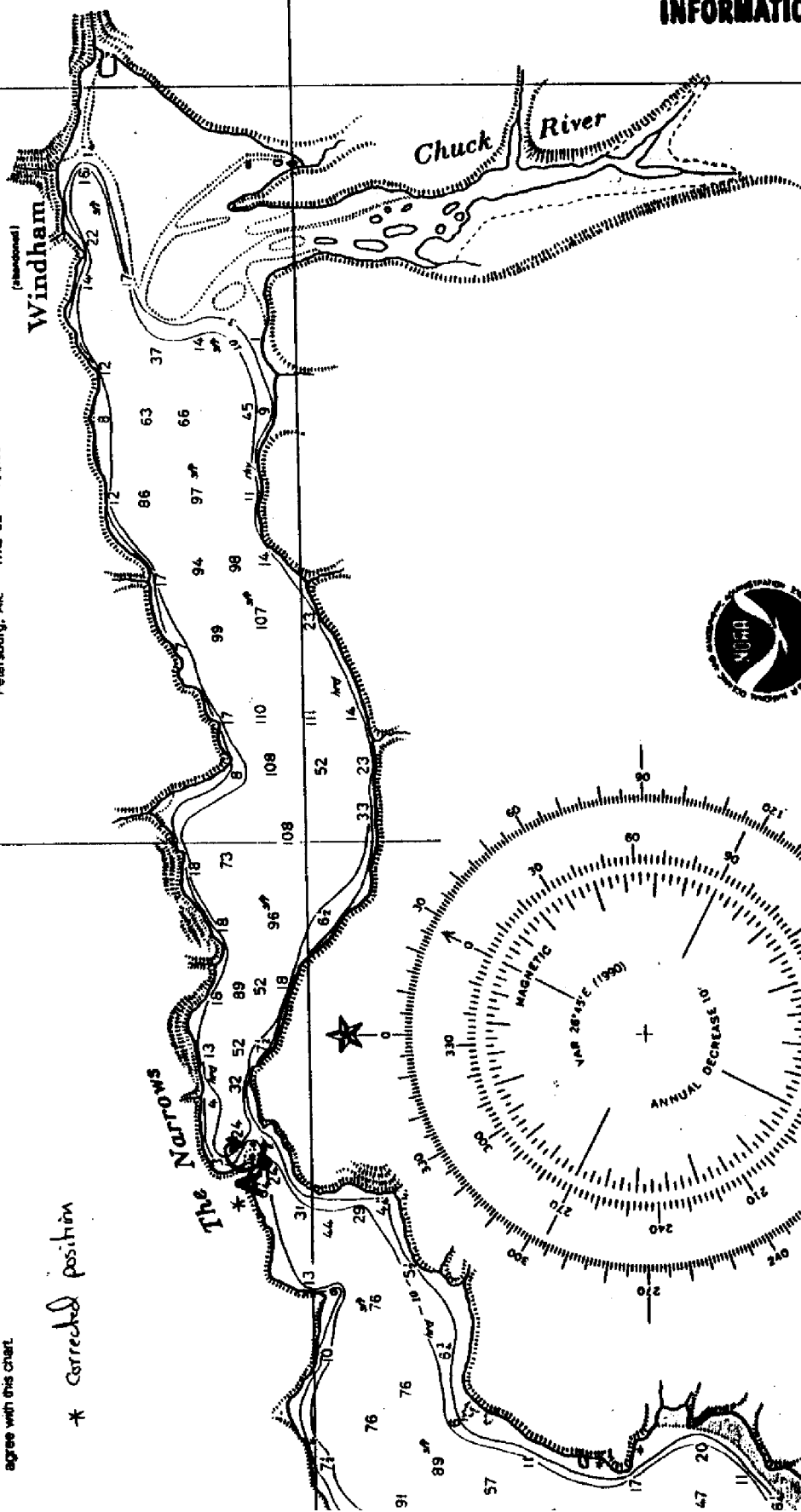
29° 45' 30' 15' 28' 133° 25' 57° 35'

### HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 1.224' southward and 6.179' westward to agree with this chart.

\* Corrected position

**NOAA VHF-FM WEATHER BROADCASTS**  
The National Weather Service station listed below provides continuous marine weather broadcasts. The range of reception is variable, but for most stations is usually 20 to 40 miles from the antenna site.  
Petersburg, Ak. WXJ-82 162.55 MHz



**ADVANCE INFORMATION**



UNITED STATES  
ALASKA - SOUTHEAST COAST  
STEPHENS PASSAGE

11th Ed., Apr. 27/91  
**17363**



**APPROVAL SHEET**

for

H-10592

RA-10-1-95

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 acquisition and processing.

The field sheet and accompanying records have been examined by me, are considered complete and adequate for charting purposes, and are approved.



Dean R. Seidel  
Captain, NOAA  
Commanding Officer



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

ORIGINAL

TIDE NOTE FOR HYDROGRAPHIC SURVEY

**DATE:** August 25, 1995

**HYDROGRAPHIC SECTION:** Pacific

**HYDROGRAPHIC PROJECT:** OPR-0136

**HYDROGRAPHIC SHEET:** H-10592

**LOCALITY:** Windham Bay, Alaska

**TIME PERIOD:** April 11 - 23, 1995

**TIDE STATION USED:** 945-1962 Windham Bay, Stephens Passage, AK  
Lat. 57° 32.6'N Lon. 133° 29.9'W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** -5.95 ft.  
**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 14.4 ft.

**TIDE STATION USED:** 945-2046 Windham Bay East, Stephens Passage, AK  
Lat. 57° 35.3'N Lon. 133° 24.4'W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** -0.82 ft.  
**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 14.3 ft.

**REMARKS:** RECOMMENDED ZONING

1. West of 133° 27.0'W, times and heights are direct on Windham Bay, AK (945-1962).
2. East of 133° 27.0'W, times and heights are direct on Windham Bay East, AK (945-2046).

**Notes:** 1. Times are tabulated in Greenwich Mean Time.

2. Data for Windham Bay, AK (945-1962) and Windham Bay East, AK (945-2046) are temporarily stored in files #745-1962 and #745-2046 respectively.

  
CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 17363 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																					
	A	B	C	D	E	F	G	H														
ALASKA (title)	X		X																		1	
CHUCK RIVER	X		X																		X	2
NARROWS, THE	X		X																		X	3
STEPHENS PASSAGE (title)	X		X																			4
WINDHAM (Abandoned)	X		X																		X	5
WINDHAM BAY	X		X																		X	6
																						7
																						8
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Approved

*Charles Bentley*

Chief Geographer

OCT 4 1995

ATP-01371  
EP-01372

**HYDROGRAPHIC SURVEY STATISTICS**

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	1				
ENVELOPES					
VOLUMES					
CAHIERS					
BOXES				1	

**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			4827	
POSITIONS REVISED				
SOUNDINGS REVISED				
CONTROL STATIONS REVISED				
	TIME-HOURS			
	VERIFICATION	EVALUATION	TOTALS	
PRE-PROCESSING EXAMINATION				
VERIFICATION OF CONTROL				
VERIFICATION OF POSITIONS				
VERIFICATION OF SOUNDINGS				
VERIFICATION OF JUNCTIONS				
APPLICATION OF PHOTOBATHYMETRY				
SHORELINE APPLICATION/VERIFICATION				
COMPILATION OF SMOOTH SHEET	74		74	
COMPARISON WITH PRIOR SURVEYS AND CHARTS				
EVALUATION OF SIDE SCAN SONAR RECORDS				
EVALUATION OF WIRE DRAGS AND SWEEPS				
EVALUATION REPORT		21	21	
GEOGRAPHIC NAMES				
OTHER*				
*USE OTHER SIDE OF FORM FOR REMARKS				
	TOTALS	74	21	95

Pre-processing Examination by <b>LT P. Haines</b>	Beginning Date 5/5/95	Ending Date 5/5/95
Verification of Field Data by <b>R. Davies</b>	Time (Hours) 74	Ending Date 12/11/95
Verification Check by <b>B. Olmstead</b>	Time (Hours) 1	Ending Date 12/12/95
Evaluation and Analysis by <b>R. Davies</b>	Time (Hours) 21	Ending Date 12/11/95
Inspection by <b>B. Olmstead</b>	Time (Hours) 5	Ending Date 12/13/95

**EVALUATION REPORT  
H-10592**

**A. PROJECT**

The hydrographer's report contains a complete discussion of the Project information.

**B. AREA SURVEYED**

This survey was conducted in Southern Stephens Passage, Alaska, and includes Windham Bay. Depths range from 0 to 264 meters. The bottom consists primarily of mud and sand.

**C. SURVEY VESSELS**

The hydrographer's report contains information relating to survey vessels.

**D. AUTOMATED DATA ACQUISITION AND PROCESSING**

Survey data were processed using the same Hydrographic Data Acquisition/Processing System (HDAPS) software used by the hydrographer; the Hydrographic Processing System (HPS) and AutoCad, Version 12.

At the time of the survey certification the format for the transmission of digital data had not been finally 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, created with the .dbf data and enhanced using the AutoCad system, is filed both in the AutoCad drawing format, i.e., .dwg; and in the more universally recognized graphics transfer format, .dxf. Copies of these data files will be retained at PHS until data transfer protocols are developed and approved.

The drawing files necessarily contain information which is not part of the HPS data set such as geographic name text, line-type, 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. 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-10592.

## **F. SOUNDING EQUIPMENT**

Sounding equipment is discussed in the hydrographer's report.

## **G. CORRECTIONS TO SOUNDINGS**

Predicted tides for Juneau, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned direct from Windham Bay and Windham Bay East, gages 945-1962, and 945-2046, were used during office processing. Soundings have been corrected for dynamic draft, actual tides and sound velocity. The offset values and velocity correctors are adequate.

## **H. CONTROL STATIONS**

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

The positions of the horizontal control stations used during hydrography are field values based on NAD 83. The smooth sheet is annotated with a NAD 27 adjustment tick 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: -1.237 seconds (-38.255 meters)  
Longitude: 6.163 seconds (102.432 meters)

The year of establishment of control stations originates with the horizontal control records for this survey.

## **I. HYDROGRAPHIC POSITION CONTROL**

Differential GPS(DGPS) was used to control this survey. NAD 83 is used as the horizontal datum for plotting and position computations. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. No positions exceeded the limits in terms of horizontal dilution of precision (HDOP).

## **J. SHORELINE**

The following registered shoreline maps compiled on NAD 83 apply to this survey.

<u>Map number</u>	<u>Photo Date</u>	<u>Scale</u>
TP-01371	May, June 1987	1:20,000
TP-01372	May, June 1987	1:20,000

Shoreline drawn on the smooth sheet originates from 1:10,000 scale photogrammetric enlargements of the shoreline map. Shoreline from TP-01371 and TP-01372 has been digitized during office processing and merged with the survey file during ACAD processing. 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 adequately discussed in the hydrographer's report.

#### **L. JUNCTIONS**

Survey H-10592 junctions with the following survey.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10470	1993	1:10,000	West

The junction with survey H-10470 was not formally completed since this survey was previously processed and forwarded for charting. Soundings are in good agreement.

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

H-2002(1889) 1:20,000

H-2002 covers the entire area of the present survey. Present survey depths are generally shoaler with an average difference of 7 meters (3.8 fathoms). However, a few extreme differences up to 20 meters (11 fathoms) were found. These differences can be attributed to greater sounding coverage, relative accuracy of the data acquisition techniques along with possible isostatic rebound and natural accretion and erosional processes.

Survey H-10592 is adequate to supersede the above mentioned prior survey within the common area.

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

Six AWOIS Items originating from prior survey H-2002 and miscellaneous sources were investigated during survey operations. Discussion and disposition of these items have been adequately addressed in the hydrographer's report.

## **O. COMPARISON WITH CHART**

Survey H-10592 was compared with the following chart

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
17363	11th	April 27, 1991	1:40,000	NAD83

### **A. Hydrography**

Charted hydrography originates with the prior surveys mentioned in section M. The prior survey is discussed in section M and requires no further discussion. There is a datum shift between the shoreline maps and the chart 17363 of up to 200 meters. It is recommended that the shoreline maps, TP-01371 and TP-01372 and this survey be source for the shoreline on the next edition of chart 17363.

Survey H-10592 is adequate to supersede charted hydrography within the common area.

### **B. Dangers to Navigation**

There was one danger to navigation reported during survey operations. The shoal sounding, 4 fathoms (7.3 meters) was exceeded by a 1.1 meter (0.6 fathoms) on the smooth sheet.

Representative depths and features from the smooth sheet have been compiled on the H-drawing to best portray the navigable portion of the "The Narrows". The specific dangers to navigation reported by the field is not included on the drawing but included within the 3 fathoms depth curve.

## **P. ADEQUACY OF SURVEY**

Hydrography is adequate:

- a. delineate the bottom configuration, determine least depth, and draw the standard curves;
- b. reveal there are no significant discrepancies or anomalies requiring further investigations; 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 floating or fixed aids to navigation located within the survey area. There are no landmarks within the survey area.

**R. STATISTICS**

Statistics are itemized in the hydrographer's report.

**S. MISCELLANEOUS**

Because of the 200 meter shift between the shoreline maps and the chart, it is recommended that the shoreline on chart 17363 that is common to this survey be recompiled using this survey and shoreline maps.

**T. RECOMMENDATIONS**

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

**U. REFERRAL TO REPORTS**

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

*Charles R. Davies*  
C.R. Davies  
Cartographer

**APPROVAL SHEET  
H-10592**

Initial Approvals:

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

Bruce A. Olmstead Date: 12/15/95  
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: 12/20/95  
Kathy Timmons  
Commander, NOAA  
Chief, Pacific Hydrographic Branch

\*\*\*\*\*

Final Approval

Approved:

Andrew A. Armstrong III Date: 4/11/96  
Andrew A. Armstrong III  
Captain, NOAA  
Chief, Hydrographic Surveys Division

