

10462

10462

Diagram No. 8201-4

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. RA-10-2-93
Office No..... H-10462

LOCALITY

State Alaska
General Locality Southern Stephens Passage
Sublocality The Five Fingers

19 93

CHIEF OF PARTY
CAPT R.C. Arnold

LIBRARY & ARCHIVES

DATE April 15, 1994

HYDROGRAPHIC TITLE SHEET

H-10462

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-10-2-93

State Alaska

General locality The Five Fingers

Locality Southern Stephens Passage

Scale 1:10,000 Date of survey March 24-30, 1993

Instructions dated February 5, 1993 Project No. OPR-0136-RA

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

Chief of party CAPT Russell C. Arnold

Surveyed by LT M. Brown, LTJG S. Lemke, LTJG R. Ramos, ENS J. Klay, ENS D. Pitts,
ENS J. Graham, ENS G. Glover

Soundings taken by echo sounder, ~~hand level, etc.~~ DSF-6000N

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Verification by: E. Domingo Automated plot by PHS Xynetics Plotter

Evaluation by: R. Davies

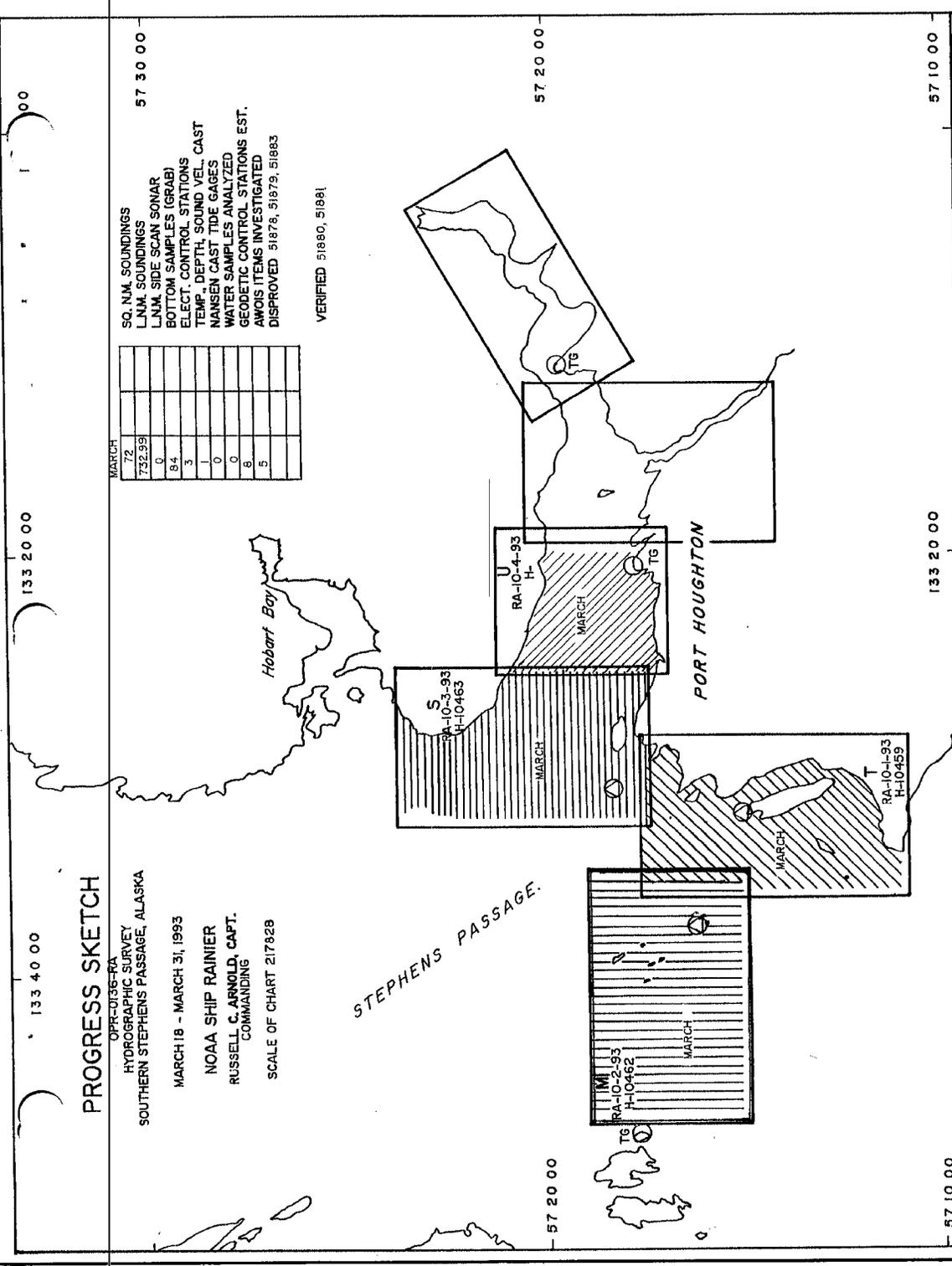
Soundings in meters and decimeters at ~~MLLW~~ MLLW

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.

RWW

Awois and SURF ✓ RWD 4/94



PROGRESS SKETCH

OPR-0136-RA
 HYDROGRAPHIC SURVEY
 SOUTHERN STEPHENS PASSAGE, ALASKA
 MARCH 18 - MARCH 31, 1993
 NOAA SHIP RAINIER
 RUSSELL, C. ARNOLD, CAPT.
 COMMANDING
 SCALE OF CHART 21782B

MARCH	
72	
732.99	
0	
84	
3	
1	
0	
0	
6	
5	

SQ. NM. SOUNDINGS
 L.N.M. SOUNDINGS
 L.N.M. SIDE SCAN SONAR
 BOTTOM SAMPLES (GRAB)
 ELECT. CONTROL STATIONS
 TEMP., DEPTH, SOUND VEL. CAST
 NANSEN CAST TIDE GAGES
 WATER SAMPLES ANALYZED
 GEODETIC CONTROL STATIONS EST.
 AWOIS ITEMS INVESTIGATED
 DISPROVED 51878, 51879, 51883
 VERIFIED 51880, 51881

STEPHENS PASSAGE.

Hobart Bay

PORT HOUGHTON

133 20 00

133 40 00

57 20 00

57 20 00

133 20 00

57 10 00

57 30 00

57 10 00

Descriptive Report to Accompany Hydrographic Survey H-10462

Field Number RA-10-2-93
Scale 1:10,000
March 1993

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

A. PROJECT ✓

This basic hydrographic survey was completed in Southern Stephens Passage, Alaska, as specified by Project Instructions OPR-O136-RA dated February 5, 1993.

Survey H-10462 corresponds to "Sheet M" as defined in the Project Instructions.

This survey will provide contemporary hydrographic survey data for updating existing nautical charts, and for a new series of metric charts as part of a continuing program to improve chart coverage of the Inside Passage in Southeast Alaska. Requests for hydrographic surveys and updated charts have been received from the Southeastern Alaska Pilot's Association, the Alaska Department of Transportation, and other private interests such as the cruise line and fishing industries.

B. AREA SURVEYED ✓

The survey is located in the southern end of Stephens Passage Alaska. It is four nautical miles NNW of Cape Fanshaw and it is one nautical mile east of the Brothers. The area surveyed includes Akusha Island and The Five Fingers.

Data acquisition was conducted from March 24, Day Number (DN) 83, through March 31, DN 90.

C. SURVEY VESSELS ✓

Data were acquired by the NOAA Ship RAINIER, and her four survey launches as noted below:

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

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

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

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>
AUTOST	3.00	9/24/92
BACKUP	2.00	9/24/92
BASELINE	1.13	9/24/92
BIGABST	2.03	9/24/92
BLKEDIT	2.00	9/24/92
CARTO	2.04	3/1/93
CONTACT	2.01	9/24/92
CONVERT	3.51	9/24/92
DAS_SURV	6.31	2/26/93
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	3.01	4/14/92
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. CORRECTIONS TO ECHO SOUNDINGS ✓

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

<u>Velocity Table No.</u>	<u>Cast No.</u>	<u>Deepest Depth (m)</u>	<u>Applicable DN</u>	<u>Cast Position</u>	<u>Day</u>
1	1	425.2	083-090	57°15'45"N 133°45'05"W	82

The sound velocity casts were acquired with a 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 "Spring 1993 Corrections to Echo Sounding Data Package for OPR-O136-RA."

Static Draft ✓

Transducer depths were determined for launches 2123, 2124, 2125 and 2126 on March 10, 1993 and may be found in the offset tables.*

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 in the "Spring 1993 Corrections to Echo Sounding Data Package for OPR-O136-RA." The data used was collected in Shilshole Bay, WA on March 11, 16, and 18, 1992. Revised settlement and squat correctors were received from Pacific Marine Center on October 21, 1992. Authorization had been previously obtained from N/CG241 to use this historical data. These revised correctors were applied to the data on sheet M. (H-10462)

Offset Tables

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

Heave ✓

Data acquired during periods of significant sea action were check scanned to remove any errors introduced into the digital data by vessel heave.

* Filed with the hydrographic data

Bar Check and Lead Lines ✓

Bar check and lead lines were calibrated by RAINIER personnel on February 19, 1993 at PMC. Calibration forms are included in the "Spring 1993 Corrections to Echo Sounding Package for OPR-O136-RA."

Tide Correctors ✓

The following time and height correctors were applied to predicted tides for the Juneau, Alaska, reference station (945-2210). These correctors are for Cleveland Passage, number 1665 in table 2 of the 1993 NOAA Tide Tables.

TIME		HEIGHT	
High Tide	Low Tide	High Tide	Low Tide
-1 min	+3 mins	-1.2 FT	-0.1 FT

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 The Brothers, Frederick Sound (945-1785) and Port Houghton, Stephens Passage (945-1771). The control station was Juneau, Alaska (945-2210). Opening levels were completed by RAINIER personnel on April 2, 1993. Closing levels will be completed by RAINIER personnel on April 16, 1993.

The station descriptions, field tide records, and Field Tide Notes will be forwarded at the conclusion of the project to N/OES212 in accordance with HSG 50 and FPM 4.3. Requests for approved tides will be forwarded to N/OES2. *Approved tides were applied to the smooth sheet.*

F. 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. New stations were positioned via GPS methods to meet third-order class I standards. Further information can be found in the "Spring 1993 Horizontal Control Report for OPR-O136-RA."

G. 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 equipment are annotated on the data printouts. Lists of all positioning equipment serial numbers are included in the "Spring 1993 Electronic Control Data Package for OPR-O136-RA."

** 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 March 1-2, 1993 (DN 60-61). Calibration data and a description of the baseline is included in the "Spring 1993 Electronic Control Data Package for OPR-O136-RA."

Ashtech GPS ✓

A VHF differential shore station was established at station INDX. After the station was established, 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 differences between the computed location and the station's published position were 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 this 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 periodically, and days with no system checks were always bracketed by days with good checks.

Problems ✓

The differential GPS station on INDX ran without problems for sheet M.

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."

H. SHORELINE *See ERM Report, section 2*

The shoreline map (T-sheet) used to transfer shoreline detail to the final sheets was T_X^P-01389, sections 1, 3, and 4, (1:20,000, NAD83).

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.

Inshore hydrography shows that photogrammetric and hydrographic positioning are in excellent agreement.

Shoreline and T-sheet features verified via visual inspection were assigned sequential reference numbers, described, and recorded in the field using sounding volumes and corresponding 1:10,000 photocopies of the T-sheet. Reference numbers, descriptions, and heights corrected to MLLW using predicted tides, are recorded in the sounding volume. Corresponding notes were annotated on the photocopies of the T-

* Filed with the hydrographic data

sheet when deemed necessary. The annotated photocopies of the T-sheet are attached to the sounding volumes which are included with the survey data.

DPs taken during shoreline verification were recorded on the master printouts 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 paper plots showing all DPs and reference numbers and notes relating to each feature are included with the sheets submitted with this survey. T-sheet features which were verified were retained and shown on the rough DP and bottom sample sheets. Verified shoreline and new features are shown in black, while changes to the shoreline are shown in red. Field carto codes were assigned using the HDAPS DP editor. These cartographic codes were not plotted because the majority of DPs describe features that are offset slightly from the DP. Heights are recorded in meters and are corrected to predicted MLLW.

Changes ✓

Position No. 3416 describes two T-sheet rocks in the vicinity $57^{\circ}18'05.2''N$, $133^{\circ}40'49.0''W$. There is only one large rock present. The highest point is exposed ~~3.8~~ ^{uncovered} m. *Shown as a reef with a high point of 3.5m at MLLW.*

Position No. 3417 describes two T-sheet rocks in the vicinity $57^{\circ}18'00.1''N$, $133^{\circ}41'11.2''W$. There is only one large rock present. The highest point is exposed ~~3.2~~ ^{uncovered} m. *Shown as a reef with a high point of 3.4m at MLLW.*

Position No. 3418 describes two T-sheet rocks in the vicinity $57^{\circ}17'52.7''N$, $133^{\circ}41'10.3''W$. There is only one large rock present. The highest point is exposed ~~2.0~~ ^{uncovered} m. *Shown as a reef with a high point of 2.2m at MLLW.*

Recommendations: The hydrographer recommends that the shoreline changes from this survey be used to supersede prior shoreline information. *CONCUR*

New Features

Position No. 3415 describes a ledge at $57^{\circ}17'18.2''N$, $133^{\circ}40'08.4''W$ which is ~~submerged~~ ^{uncovered} 0.6 m. *B*

An abstract of position numbers listing these changes is included with the survey records.

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

I. CROSSLINES ✓

Crosslines were used for comparisons with mainscheme hydrography. These totaled 12.08 nautical miles, representing 5.3 % of the total mainscheme hydrography. Crossline soundings are in good agreement with mainscheme soundings.

J. JUNCTIONS *See EVAC Report, section 5*

This survey junctions with survey H-10459 (1:10,000, 1993) to the east and surveys H-10288 and H-10289 (1:10,000, 1989) to the south. There are no contemporary surveys to the west or north. No irregularities were found when comparing soundings and depth curves. Agreement between overlapping

** Filed with the hydrographic data.*

soundings is within 2 meters or less. Detailed comparisons and recommendation will be made at the Pacific Hydrographic Section (PHS). *See Section 5 of EAC Report.*

K. COMPARISON WITH PRIOR SURVEYS *See EAC Report, section 6*

H-10289 (1:20,000, 1988) *(Not used as a Prior Survey)*

The soundings from this survey are in excellent agreement with survey H-10289 in their common area. Detailed comparisons and recommendations will be made at PHS.

H-1996 (1:20,000, 1889)

The soundings from this survey generally agree with survey H-1996 in their common area. Detailed comparisons and recommendations will be made at PHS. *See EAC Report, section 6*

L. COMPARISON WITH THE CHART *See EAC Report, section 7*

This survey was compared to NOS chart 17360, 28th Edition, February 8, 1992, 1:217,828 (NAD83) and NOS chart 17365, 11th Edition, March 23, 1991, 1:20,000 (NAD83). Detailed comparisons and recommendations will be made at PHS. *See EAC Report, section 7*

Chart 17360 shows a submerged cable area within the survey limits. However, there are no signs indicating submerged cables. *Retain submerged cable area.*

Disprovals

A charted rock shown in the vicinity of 57° 16' 05.9" N, 133° 38' 11.9" W (Pos. No. 3261) was searched for and not found. The search was conducted for 10 minutes within a 35 meter radius. The average water depth is 35 meters with 3 to 5 meters of water visibility. The area shows no signs of shoaling or kelp beds. *Remove charted rock*

A charted rock shown in the vicinity of 57° 16' 31.9" N, 133° 38' 27.9" W (Pos. No. 3262) was searched for and not found. The search was conducted for 10 minutes within a 30 meter radius. The average water depth is 18 meters with 3 to 5 meters of water visibility. The charted rock is located near a T-sheet rock; see R4-2. *uncovered 2m at MLW. Remove charted rock, chart rock at lat. 57°16'33N, long. 133°38'32W.*

A charted rock shown in the vicinity of 57° 17' 23.9" N, 133° 40' 05.4" W (Pos. No. 3414) was searched for and not found. The search was conducted for 10 minutes within a 25 meter radius. The average water depth is 58 meters with 5 meters of water visibility. The hydrographer believes the rock symbol was erroneously plotted on the boat sheets. *Remove chart rock*

Charted soundings from charts 17360 and 17365 were found to be in general agreement with this survey. Detailed comparisons will be made at the PHS office. *See EAC Report, section 7*

Dangers to Navigation *See EAC Report, section 7.9*

Five 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.

M. ADEQUACY OF SURVEY ✓

This survey is complete and adequate to supersede all prior surveys within the common areas. *COMLW*

N. AIDS TO NAVIGATION ✓Five Finger Light (Light List # 23280)

Published Position	57° 16.2' N	133° 37.9' W
Unadjusted Field Position	57° 16.22' N	133° 37.89' W
Scaled Position	57° 16.2' N	133° 37.9' W

The characteristics listed in the Light List, Volume VI, 1993 Edition are accurate.

O. STATISTICS ✓

<u>Vessel:</u>	<u>2120</u>	<u>2123</u>	<u>2124</u>	<u>2125</u>	<u>2126</u>	<u>Total</u>
# of Pos	16	539	1031	24	202	1796
NM Hydro	0	81.43	175.51	0	18.35	275.29

NM ² Hydrography	27.1	Velocity Casts	1
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Detached Positions	17	Tide Stations	2
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Reference Numbers	11	Bottom Samples	40
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P. MISCELLANEOUS ✓

During the course of operations, comparisons were made between predicted currents and those discussed in the Coast Pilot, in accordance with the Project Instructions. The current predictions were adequate and no anomalous currents were seen.

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

Q. RECOMMENDATIONS ✓

None.

R. 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 1993 Horizontal Control Report for OPR-O136-RA	May 1993	N/CG2333

Spring 1993 Electronic Control Data Package for OPR-O136-RA	March 1993	N/CG245
Spring 1993 Corrections to Echo Soundings Data Package for OPR-O136-RA	May 1993	N/CG245
Spring 1993 Coast Pilot Report for OPR-O136-RA	May 1993	N/CG245
Spring 1993 User Evaluation Report for OPR-O136-RA	May 1993	N/CG245

Respectfully Submitted,

Ricardo Ramos
Ricardo Ramos
Lt (jg), NOAA

Approved and Forwarded,

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

CONTROL STATIONS as of 5 Apr 1993

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
100	F	057°16'13.397	133°37'53.480	25	250	0.0	0.0	03/22/93		INDX(DGPS)
101	F	057°15'03.005	133°32'35.533	7	250	0.0	0.0	03/23/93		BILL POINT
102	F	057°18'17.093	133°31'46.082	7	250	0.0	0.0	5-03/23/93		WAL
200	0	057°17'457.880	133°37'42.297	0	254	0.0	0.0	03/23/93		ROBERT IS TP (FIXED-CAL.)
201	0	057°17'485.982	133°20'56.141	0	254	0.0	0.0	03/23/93		PORT HOUGHTON TP (FIXED-CAL.)
202	0	057°19'134.133	133°11'00.320	0	254	0.0	0.0	03/23/93		AUNT BEA BM A (FIXED-CAL.)

FIG 3/24



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 2, 1993

**ADVANCE
INFORMATION**

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

Dear Sir:

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

Sincerely,

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

Enclosures





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

NOAA Ship RAINIER

April 2, 1993

**ADVANCE
INFORMATION**

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

Dear Sir:

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

Sincerely,

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

Enclosures

cc: DMAHTC
N/CG221
PMC



1904

P 02 Z APR 93
FM NOAA S RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCNAVWARN WASHINGTON DC//MCNM//
INFO NOAA MOP SEATTLE WA
ACCT CM-VCAA

**ADVANCE
INFORMATION**

BT
UNCLAS

NOAA SHIP RAINIER HAS LOCATED 5 DANGERS TO NAVIGATION IN STEPHENS
PASSAGE, ALASKA (PROJECT OPR-0136-RA) WITHIN THE LIMITS OF
HYDROGRAPHIC SURVEY H-10462 (THE FIVE FINGERS). THE FOLLOWING
INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO
MARINERS:

CHARTS AFFECTED: 17360 28TH ED FEB 8/92 1:217,828 NAD 83

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

ITEM	DANGER	CHART	DEPTH	LATITUDE	LONGITUDE	POSITION #
A.	SHOAL	17360	2 3/4 FM	57/16/12.18N	133/39/15.76W	7754
B.	SHOAL	17360	8 FM	57/15/48.72N	133/37/45.99W	1231
C.	SHOAL	17360	3 1/4 FM	57/17/01.20N	133/40/37.30W	7788
D.	SHOAL	17360	1 1/2 FM	57/17/28.92N	133/38/34.12W	4002
E.	SHOAL	17360	10 FM	57/18/20.76N	133/40/04.85W	7850

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

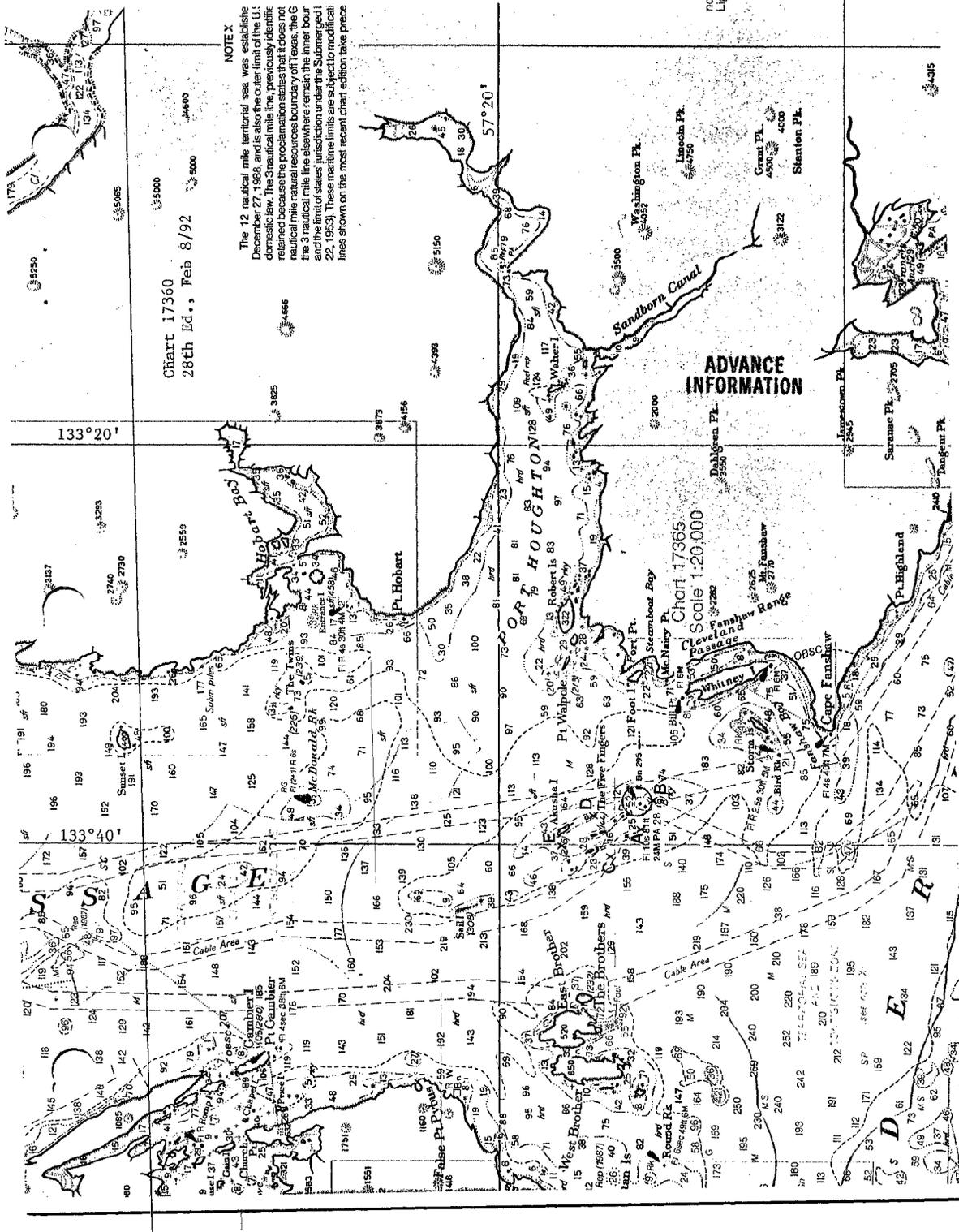


Chart 17360
28th Ed., Feb 8/92

NOTE

The 12 nautical mile territorial sea was established December 27, 1988, and is also the outer limit of the U.S. domestic law. The 3 nautical mile line, previously identified related because the proclamation states that it does not enclose the 12 nautical mile territorial sea boundary off Texas, the 3 nautical mile line elsewhere remain the inner boundary of States' jurisdiction under the submerged lands act of 1953. These maritime limits are subject to modification as shown on the most recent chart edition take precedence.

ADVANCE INFORMATION

Chart 17365
Scale 1:20,000



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Coast and Geodetic Survey
Seattle, Washington 98115-0070

April 22, 1993

**ADVANCE
INFORMATION**

Commander
Seventeenth Coast Guard District
Post Office Box 3-5000
Juneau, Alaska 99802

Dear Sir:

During the office processing of hydrographic survey H-10462 in Southern Stephens Passage, Alaska two additional dangers to navigation have been discovered. These dangers affect the following charts:

<u>Chart</u>	<u>Edition/Date</u>	<u>Datum</u>
17360	28th Ed., 2/8/92	NAD83
17365	11th Ed., 3/23/91	NAD83

It is recommended that these additional dangers to navigation be included in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526-6853.

Sincerely,

Douglas G. Hennick
Commander, NOAA
Chief, Pacific Hydrographic Section

Enclosure

cc: DMA/TC
PMC
RAINIER
N/CG221



**ADVANCE
INFORMATION**

Hydrographic Survey Registry Number: H-10462

Survey Title: State: Alaska
 Locality: Southern Stephens Passage
 Sublocality: The Five Fingers

Project Number: OPR-O136-RA

Survey date: March 1993

Features are reduced to Mean Lower Low Water using predicted tides.

Affected Nautical Chart:

<u>Chart</u>	<u>Edition/date</u>	<u>Datum</u>
17360	28th Ed., 2/8/92	NAD83
17365	11th ED., 3/23/91	NAD83

<u>Danger to Navigation</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
Shoal, 5.6 Fathoms	57/16/4.9	133/39/20.0
Shoal, 3.1 Fathoms	57/18/33.3	133/39/37.4

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526-6853.

APPROVAL SHEET

for

H-10462

RA-10-2-93

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
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: August 18, 1993

MARINE CENTER: Pacific

OPR: 0136

HYDROGRAPHIC SHEET: H-10462

LOCALITY: The Five Fingers, Stephens Passage, Alaska

TIME PERIOD: March 20, 1993 - April 1, 1993

TIDE STATION USED: 945-1785 The Brothers, Alaska
Lat. 57° 17.7'N Lon. 133° 47.8'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): = -0.88 feet
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 13.8 feet

TIDE STATION USED: 945-2210 Juneau, Alaska
Lat. 58° 17.9'N Lon. 134° 24.7'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): = 4.34 feet
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 15.3 feet

REMARKS: RECOMMENDED ZONING

1. Times and heights are direct on The Brothers, Ak. (945-1785). Data from the back-up gauge at The Brothers (945-1786) is used.
2. When data for The Brothers are not available, apply a -6 minute time correction, and a x0.90 range ratio to Juneau, Ak. (945-2210).

NOTE: Hourly heights for The Brothers are tabulated on Greenwich Mean Time, whereas, hourly heights for Juneau are tabulated in Alaska Standard Time.

William M. Gibson
ACTING CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

Name on Survey	ON CHART NO. 17360 FROM PREVIOUS SURVEY CON U.S. QUADRANGLE MAPS FROM LOCAL INFORMATION P.P. 01389 P.O. GUIDE OR MAP ATLAS U.S. LIGHT LIST										
	A	B	C	D	E	F	G	H	K		
ALASKA (title)	X				X						1
AKUSHA ISLAND	X				X						2
FIVE FINGERS, THE	X				X						3
STEPHENS PASSAGE	X				X						4
											5
											6
											7
											8
											9
											10
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Approved:

Charles P. Harrington
Chief Geographer - N/C&S

NOV - 2 1993

NOAA FORM 77-27(H) (9-83)		U.S. DEPARTMENT OF COMMERCE		REGISTRY NUMBER	
HYDROGRAPHIC SURVEY STATISTICS				H-10462	
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	
DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS
ACCORDION FILES	2				
ENVELOPES					
VOLUMES	2				
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					1796
POSITIONS REVISED					
SOUNDINGS REVISED					
CONTROL STATIONS REVISED					
			TIME-HOURS		
			VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION					
VERIFICATION OF CONTROL					
VERIFICATION OF POSITIONS			47		47
VERIFICATION OF SOUNDINGS			102		102
VERIFICATION OF JUNCTIONS					
APPLICATION OF PHOTOBATHYMETRY					
SHORELINE APPLICATION/VERIFICATION					
COMPILATION OF SMOOTH SHEET			47		47
COMPARISON WITH PRIOR SURVEYS AND CHARTS				8	
EVALUATION OF SIDE SCAN SONAR RECORDS					
EVALUATION OF WIRE DRAGS AND SWEEPS					
EVALUATION REPORT				8	
GEOGRAPHIC NAMES					
OTHER*					
*USE OTHER SIDE OF FORM FOR REMARKS		TOTALS	196	16	212
Pre-processing Examination by D. Haines, D. Neander			Beginning Date 4/8/93	Ending Date 4/22/93	
Verification of Field Data by E. Domingo, J. Stringham			Time (Hours) 196	Ending Date 12/14/93	
Verification Check by J. Stringham, R. Davies			Time (Hours) 19	Ending Date 1/4/94	
Evaluation and Analysis by R. Davies			Time (Hours) 16	Ending Date 1/6/94	
Inspection by D. Hill			Time (Hours) 2	Ending Date 4/5/94	

**EVALUATION REPORT
H-10462**

1. INTRODUCTION

Survey H-10462 is a basic hydrographic survey accomplished by the NOAA Ship *Rainier* under the following Project Instructions.

OPR-O136-RA, dated February 5, 1993

This survey was conducted in Alaska and covers a portion of southern Stephens Passage between Akusha Island and The Five Fingers. The surveyed area extends from latitude 57°15'12"N to latitude 57°19'00"N, and from longitude 133°35'30"W to longitude 133°46'30"W. The shoreline in the area is characterized by rock ledges, isolated rocks and reefs offshore. The bottom consists of mud, pebbles, and sand. Depths range from zero along the shoreline to 439 meters offshore.

Predicted tides for Juneau, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned from The Brothers, Alaska, gage 945-1785 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 computation. The offset values and sound 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 Guidelines 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 and the Spring 1993 Horizontal Control Report for OPR-O136-RA, contain adequate discussions of horizontal control and hydrographic positioning.

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 69 positions exceeded the limit in terms of HDOP. A review of the data, however, indicates

that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with the surrounding information. These fixes are considered acceptable.

The position of the horizontal control station used during hydrography is a 1993 field value based on NAD 83. This value was used during office processing for the computation of positions. 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: -1.227 seconds (-38.948 meters)
Longitude: 6.234 seconds (104.433 meters)

The year of establishment of control stations shown on the smooth sheet originates with the horizontal control records for this survey.

The following registered shoreline map was compiled on NAD 83 and applies to this survey.

<u>Photo</u>	<u>Date</u>	<u>Scale</u>
TP-01389	June, August 1988	1:20,000

3. HYDROGRAPHY

With the exception noted below and elsewhere in this report, hydrography is adequate to;

- a. delineate the bottom configuration, determine least depths, and draw the standard depth curves;
- b. reveal there are no significant discrepancies or anomalies requiring further investigation;
- c. show the survey was properly controlled and soundings are correctly plotted.

Standard depth curves were adequately drawn and developed with the exception of the 0, 1, 2, and 5-meter depth curves. This was due to the steeply sloping bottom and the limit of safe navigation. Hydrography is adequate for charting.

Holidays exist in the following areas. All of the holidays listed below, except for the first, are small inshore gaps in coverage near rocks or islands. These holidays do not degrade the usefulness of this survey for charting purposes.

<u>Latitude(N)</u>	<u>Longitude(W)</u>
57/16/52N	133/38/09
57/18/02	133/40/51
57/18/08	133/40/51
57/18/02	133/41/12
57/17/52	133/41/08
57/17/55	133/41/09
57/17/19	133/40/11
57/17/03	133/39/18
57/16/ 4 ₃	133/38/34

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, March 1993 edition, except for the following.

Two additional dangers to navigation were found during office processing.

There was no discussion of the reason for the deficiency of the development of the 0, 1, 2, 5-meter depth curves.

A prior survey, H-3994WD, was not discussed in section K of the hydrographer's report. All prior surveys that are common to the present survey, listed in the project instructions and are a source for charting, need to be discussed under section K, Comparison With Prior Surveys.

5. JUNCTIONS

Survey H-10462 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10288	1988	1:20,000	Southeast
H-10289	1988	1:20,000	South
H-10459	1993	1:10,000	East

The junction with survey H-10459 is complete. The junction with surveys H-10288 and H-10289 are not formally completed since these surveys were previously processed and forwarded for charting. These comparisons were made using a copy. Soundings have been transferred to survey H-10462 from the above surveys to better portray the bottom in the common areas. There are no contemporary surveys that junction survey H-10462 to the

north and west. A comparison was made with charted depths and this survey and was adequate.

6. COMPARISON WITH PRIOR SURVEYS

H-1996(1889-92) 1:80,000

Surveys H-1996 covers the entire area common with present survey. There is an average difference in depths of 2 meters between the present survey and the prior survey. The present survey is shoaler. There are a few instances where the difference is extreme, between five and ten meters. These cases are near steep sloping bottoms. This area has experienced possible isostatic rebound, natural accretion and erosional processes. These processes, the different horizontal datums, the greater sounding coverage and the relative accuracy of the data acquisition techniques account for the differences between the soundings on the prior surveys.

In accordance with Hydrographic Survey Guideline No. 39, the effects of the 1964 Prince William Sound earthquake were considered in the comparison of this survey. No reasonable adjustment value for prior soundings could be determined.

Survey H-10462 is adequate to supersede the prior surveys within the common area.

H-3994WD(1917) 1:20,000

Wire drag survey H-3994 covers the entire area common with the present survey. A hang depth, 53 feet (16.1 meters) at latitude 57/15/40N, longitude 133/37/50W is superseded by a 14.7 meter (48 feet) depth on the present survey at latitude 57/15/48N, longitude 133/37/46W. A hang depth, 76 feet (23.1 meters) at 57/16/50N, longitude 133/37/30W is superseded by a 21.5 meter (70.5 feet) depth at latitude 57/16/53N, longitude 133/37/27W. There are otherwise, no conflicts between the present and prior survey.

There are no AWOIS Items that originate with the above mentioned prior survey.

7. COMPARISON WITH CHART

Chart 17360 28th Edition, February 8, 1992; scale 1:217,828

Chart 17365 11th Edition, March 23, 1991; scale 1:20,000

a. Hydrography

Charted hydrography originates with the prior surveys mentioned in section 6 and requires no further discussion except as follows.

Survey H-10462 is adequate to supersede charted hydrography within the common area except for the cable area found on Chart 17360. This cable area should be retained as charted.

b. AWOIS

There are no AWOIS items located within the survey limits.

c. Controlling Depths

There are no controlling depths found within the survey area.

d. Aids to Navigation

There are no floating aids within the survey area. There is one fixed aid within the survey area. This aid was located and serves its intended purpose.

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

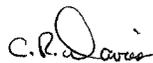
The hydrographer reported five dangers to navigation to the Seventeenth District of the United States Coast Guard, Juneau, Alaska. A copy of the message is attached. Two additional dangers to navigation were discovered during office processing and were reported to the Coast Guard, DMAHTC, and N/CG221, see attached letter.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10462 adequately complies with the project instructions, except where noted in this report.

9. ADDITIONAL FIELD WORK

This is an adequate hydrographic survey. Additional field work is not recommended.


C. R. Davies
Cartographer

APPROVAL SHEET
H-10462

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 Hill Date: 4/5/94
Dennis J. Hill
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Douglas G. Hennick Date: 4/5/94
Commander Douglas G. Hennick, NOAA
Chief, Pacific Hydrographic Section

Final Approval

Approved:

J. Austin Yeager Date: 8/10/94
J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

