

H-10515

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-10-25-93
Registry No. H-10515

LOCALITY

State Alaska
General Locality Prince William Sound
Sublocality Eaglek Bay and Vicinity

1993

CHIEF OF PARTY
CAPT Russell C. Arnold, NOAA

LIBRARY & ARCHIVES

APR 4 1995
DATE

HYDROGRAPHIC TITLE SHEET

H-10515

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-10-25-93

State Alaska

General locality Prince William Sound

Locality Eagle Bay and Vicinity

Scale 1:10,000 Date of survey October 6 - 22, 1993

Instructions dated 7/19/93; Change #1-8/25/93* Project No. OPR-0125-RA

Vessel NOAA Ship RAINIER, 2123, 2124, 2125, 2126

Chief of party CAPTAIN Russell C. Arnold, NOAA

Surveyed by CAPT R.C. Arnold, LTJG S.Lemke, ENS D.Pitts, ENS G.Glover,
ENS A.Caron, ENS S.Smith, CST F. Parana

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

Graphic record scaled by RAINIER PERSONNEL

Graphic record checked by RAINIER PERSONNEL

Evaluation by: G.E. Kay Automated plot by Xynetics Plotter

Verification by J. Stringham, S. Otsubo, R. Mayor, L. Deodato

Soundings in ~~fathoms~~ ~~feet~~ at MHW MLLW

* Change #2 - Sept. 2, 1993

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/Ambis Chk 6/20/95 mcr

Sc 44-95

148 00

147 40

147 20

PROGRESS SKETCH

OPR-P125-RA
HYDROGRAPHIC SURVEY
NW PRINCE WILLIAM SOUND, ALASKA

61 10 SEPTEMBER 4 - NOVEMBER 3, 1993

NOAA SHIP RAINIER

RUSSELL C. ARNOLD, CAPT.
COMMANDING

SCALE OF CHART 16700
1:200,000

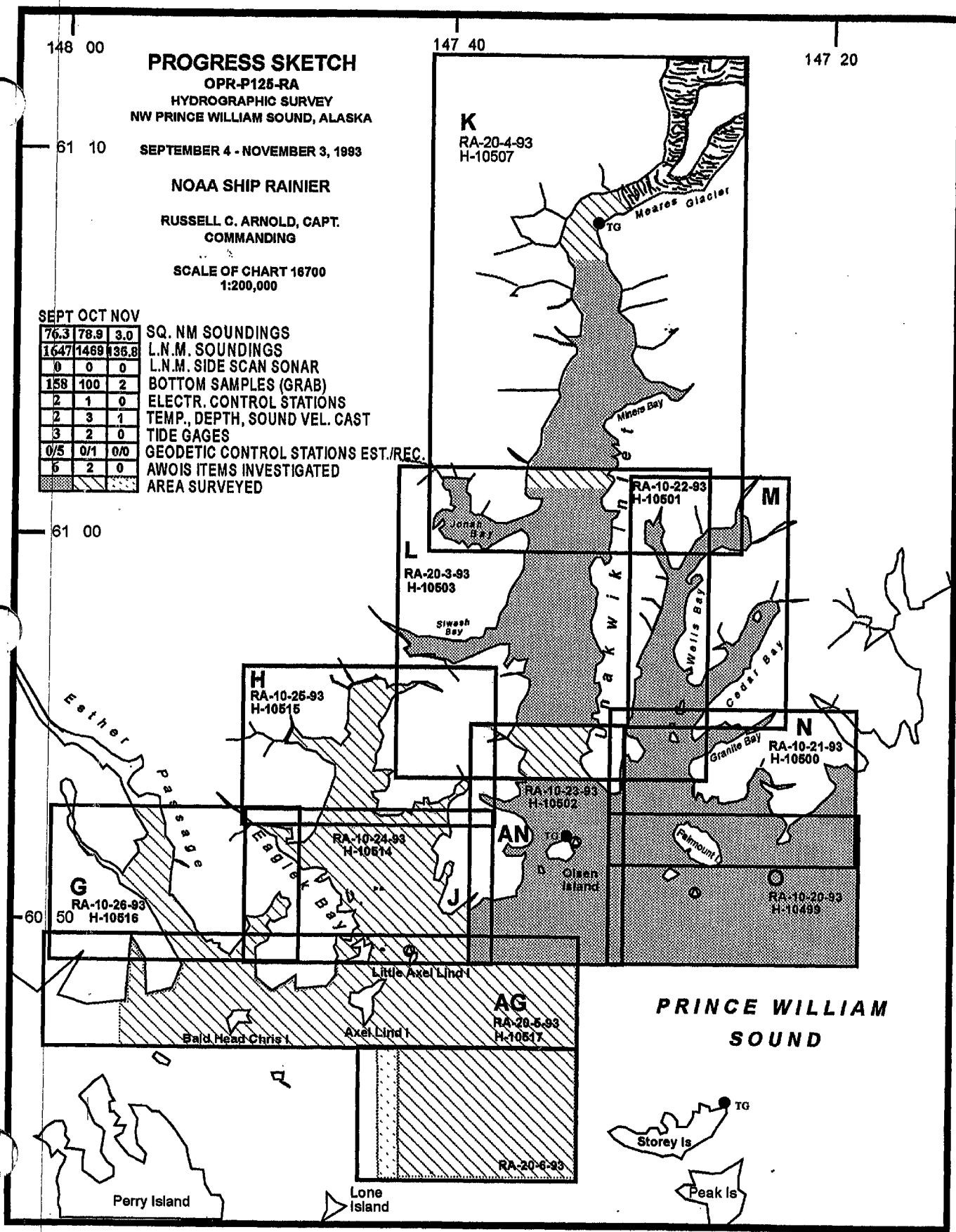
SEPT OCT NOV

76.3	78.9	3.0
1647	1469	136.8
0	0	0
158	100	2
2	1	0
2	3	1
3	2	0
0/5	0/1	0/0
5	2	0

SQ. NM SOUNDINGS
L.N.M. SOUNDINGS
L.N.M. SIDE SCAN SONAR
BOTTOM SAMPLES (GRAB)
ELECTR. CONTROL STATIONS
TEMP. DEPTH, SOUND VEL. CAST
TIDE GAGES
GEODETIC CONTROL STATIONS EST./REC.
AWOIS ITEMS INVESTIGATED
AREA SURVEYED

61 00

60 50



PRINCE WILLIAM SOUND

Descriptive Report to Accompany Hydrographic Survey H-10515

Field Number RA-10-25-93

Scale 1:10,000

Oct 1993

NOAA Ship RAINIER

Chief of Party: Captain Russell C. Arnold

A. PROJECT

This basic hydrographic survey was completed in northwest Prince William Sound, Alaska, as specified by Project Instructions OPR-P125-RA dated July 19, 1993, change No. 1 dated August 25, 1993, and change No. 2 dated September 2, 1993. ✓

Survey H-10515 corresponds to "Sheet H" as defined in the Project Instructions. ✓

This survey will provide contemporary hydrographic survey data for updating existing nautical charts, and for constructing two new 1:100,000 scale metric charts covering the fiords and bays of northwest Prince William Sound. Requests for hydrographic surveys and updated charts have been received from the Defense Mapping Agency, Southwest Alaska Pilot's Association, cruise ship lines (particularly Holland America Line and Westours, Inc.), and local fishermen. ✓

B. AREA SURVEYED

This survey area covers the interior of Eaglek Bay including Cascade Bay and the northern portion of Schoppe Bay. The survey limit to the south is latitude 60°52'30", and the north, east, and west limits are the shoreline of Eaglek Bay. ✓

Data acquisition was conducted from October 6, Day Number (DN) 279, through October 22, DN 295. ✓

C. SURVEY VESSELS

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

<u>Vessel</u>	<u>EDP No</u>	<u>Operation</u>
RAINIER	2120	Sound Velocity Casts
RA-3	2123	Hydrography Shoreline Verification ✓
RA-4	2124	Hydrography Shoreline Verification

RA-5	2125	Hydrography Bottom Samples	
RA-6	2126	Hydrography Shoreline Verification	✓

D. AUTOMATED DATA ACQUISITION AND PROCESSING

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

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>	
AUTOST	3.00	9/24/92	
BACKUP	2.00	8/20/93	
BASELINE	1.14	8/20/93	
BIGABST	2.05	8/20/93	
BLKEDIT	2.02	8/20/93	
CARTO	2.09	8/20/93	
CONVERT	3.54	8/20/93	
DAS_SURV	6.42	8/20/93	
DP	2.14	8/20/93	
EXCESS	4.11	8/20/93	✓
FILESYS	3.10	8/20/93	
GRAFEDIT	1.04	8/20/93	
LSTAWOIS	3.04	8/20/93	
LISTDATA	1.02	8/20/93	
MAINMENU	1.10	8/20/93	
MAN_DATA	2.01	8/20/93	
NEWPOST	6.01	8/20/93	
PLOTALL	2.12	8/20/93	
PRESURV	7.04	8/20/93	
PRINTOUT	4.03	8/20/93	
QUICK	2.04	8/20/93	
RAMSAVER	1.02	8/20/93	
REAPPLY	2.03	8/20/93	
SYMBOLS	2.00	9/24/92	
ZOOMEDIT	2.12	8/20/93	

Velocity corrections were determined using:

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>	
VELOCITY	2.0	24 Mar 1993	✓

E. SONAR EQUIPMENT

Sonar equipment was not used on sheet H.

F. SOUNDING EQUIPMENT

DSF-6000N serial numbers are included on the headers of the daily Raw Master Printouts. No problems which affect survey data were encountered. All 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 cast listed below:

<u>Velocity Cast Table No.</u>	<u>No.</u>	<u>Deepest Depth (m)</u>	<u>Applicable DN</u>	<u>Cast Position</u>	<u>Day</u>
3	3	472	279 - 295	060°49'24"N 147°39'14"W	293

The sound velocity cast was acquired with SBE SEACAT Profiler S/N 220. ✓

Velocity correctors were computed using the PC program VELOCITY in accordance with Hydrographic Survey Guideline (HSG) #69. A printout of the Sound Velocity Corrector Tables used in the HDAPS Post Survey program is included in the "Separates to be Included with Survey Data, IV. Sounding Equipment Calibrations and Corrections". *filed with the survey records* ✓

Static Draft

A transducer depth was determined for launches 2123, 2124, 2125 and 2126 on March 19, 1993 and is in the offset tables for each launch. ✓

Settlement and Squat

Correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2., using FPM Fig. 2.2 and 2.3, and are included with project data for OPR-P125-RA. The data used was collected in Shilshole Bay, Washington on March 11, 16, and 18 of 1992. Revised settlement and squat correctors were received from Pacific Marine Center on October 21, 1992. Authorization was obtained from N/CG241 to use the 1992 data. These revised correctors were applied to the data on sheet H. ✓

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 scanned to account for inaccuracies caused by heave. ✓

Bar Check and Lead Lines

Bar check and lead lines were calibrated by RAINIER personnel on February 19, 1993 at PMC. Calibration forms are included with the project data for OPR-P125-RA. ✓

Tide Correctors

The tidal reference station used for this survey was Cordova, Alaska (945-4050). Tidal correctors as provided in the project instructions for Sheet H are: ✓

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

HDAPS listings of the data used in generating tide corrector tables are included in Appendix V of this report. *filed with the survey records.* ✓

Tide gages were installed and maintained by RAINIER personnel at Storey Island, Alaska (945-4553), and Olsen Island, Alaska (945-4596). The control station was Valdez, Alaska (945-4240). Opening levels for the Valdez station were completed by the Pacific Operations Section. Requirements for closing levels were waived in Change No. 1 of the Project Instructions. ✓

The station descriptions, field tide records, and Field Tide Notes will be forwarded to N/OES212 monthly in accordance with HSG 50 and FPM 4.3, and at the end of the project. Requests for approved tides will be forwarded to N/OES2. ✓

H. CONTROL STATIONS

A listing of the geodetic stations used to control this survey is included ^{*attached.*} ~~in Appendix III~~ ^{*to*} of this report. ✓

Positions for all existing stations are from the National Geodetic Survey (NGS) data base. Horizontal datum for all control stations is NAD83. All existing stations were recovered in accordance with methods stated in Section 5.2.4 of the Field Procedures Manual. Further information can be found in the "Fall 1993 Horizontal Control Report for OPR-P125-RA." ✓

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. ✓

Calibrations & Systems Check Methods

Ashtech GPS

VHF differential shore stations were established at stations QUOTE, INDIA, and AXEL. After the stations were established, a remote sensor was directly connected to each MXII shore station and its antenna was collocated with the shore station. The computed position was transmitted back to the ship via VHF radio modem link. The difference between the computed location and the station's published position was recorded by the MONITOR program on a PC. Data from a 24-hour period were recorded and examined for signs of multi-path signal reflection, which was not evident at any of the stations. ✓

System checks were performed by launch to launch position comparisons. Three position comparisons were done with each launch using correctors from a different and independent DGPS base station. System checks were made every day and the results were transferred to forms which are included in the project data for OPR-P125. 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". *Filed with the survey records.* ✓

Problems

The differential GPS stations on QUOTE, INDIA, and AXEL ran without problems for sheet H. ✓

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, III. Horizontal Position Control and Corrections to Position Data." *Filed with the survey records.*

J. SHORELINE

The shoreline maps (T-sheets) used to transfer shoreline detail to the final sheets were enlargements of DM-10059 and DM-10064 (1:20,000, NAD 83). One section of shoreline at the northern side of Cascade Bay, however, was not included on the T-sheets. This portion of shoreline was transferred from an enlargement of the USGS quad map Seward (D-3), of scale 1:63,360, and is shown in brown on the final excessed plot.

Shoreline verification was conducted as near as possible to predicted lower low water in accordance with FPM 7.1, however tides were not ideal for shoreline verification during the survey period. 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 general agreement.

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 were 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 Survey records.*

DPs taken during shoreline verification were recorded on the master printouts and on the DP forms. These indicate significant T-sheet features, features not found on the T-sheet, and locations of disprovals. ✓

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. Verified T-sheet features were retained and shown in black. Changes to the shoreline were shown in red. Field cartographic codes were assigned using the HDAPS DP editor. Heights are recorded in meters and are corrected to predicted MLLW. ✓

Changes

T-sheet photographs were apparently taken at a high stage of tide, and many of the ledges were depicted as near shore T-sheet rocks. Because of the numerous changes to near shore T-sheet features, it is impractical to list all of these changes in the descriptive report. ✓

K. CROSSLINES

Crosslines are in good agreement with mainscheme hydrography. Crosslines totaled 7.16 nautical miles, representing $\frac{5.8}{4.0}\%$ of the total mainscheme hydrography. ✓

L. JUNCTIONS *SEE Evaluation Report section 5*

This survey junctions with survey H-10514 (1:10,000,1993) to the south. No irregularities were found when comparing soundings and depth curves. Final comparisons will be made at the Pacific Hydrographic Section (PHS). ✓

M. COMPARISON WITH PRIOR SURVEYS *See Evaluation Report section 6*

There were no prior surveys for sheet H. ✓

N. ITEM INVESTIGATIONS

There were no item investigations for sheet H. ✓

O. COMPARISON WITH THE CHART *See Evaluation Report Section 7*

This survey was compared to NOS chart 16705, 15th Edition, September 1, 1990, 1:80,000 (NAD83). ✓

The charted soundings were found to be in general agreement with the survey. There are, however, numerous features in this area which are not depicted on the chart. Final comparisons will be made at PHS. ✓

Dangers to Navigation

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 F~~ of this report. ✓

P. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede previous chart letters in their common areas. ✓

Q. AIDS TO NAVIGATION

None. ✓

R. STATISTICS

<u>Vessel:</u>	<u>2123</u>	<u>2124</u>	<u>2125</u>	<u>2126</u>	<u>Total</u>
# of Pos	515	700	749	282	2246 2325
NM Hydro	36.85	62.13	67.32	18.60	184.9 ✓

NM ² Hydrography	7.4
Velocity Casts	1
Detached Position	92
Tide Stations	2
Reference Numbers	175
Bottom Samples	15

S. MISCELLANEOUS

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

The Coast Pilot current and predicted current comparisons were made in accordance with the Project Instructions. The current predictions were adequate and the descriptions accurate. ✓

T. RECOMMENDATIONS


None. ✓

U. REFERRAL TO REPORTS

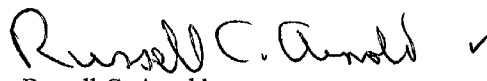
The following supplemental reports contain additional information relevant to this survey:

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>	
Fall 1993 Horizontal Control Report for OPR-P125-RA	1993	N/CG2333	✓
Fall 1993 Coast Pilot Report for OPR-P125-RA	1993	N/CG245	
Project related data for OPR-P125-RA	Incremental	N/CG245	

Respectfully Submitted,


Gregory G. Glover
Ensign, NOAA

Approved and Forwarded,


Russell C. Arnold ✓
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 6 Nov 1993

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
100	F	060:50:49.581	147:27:05.696	15	250	0.0	0.0		09/04/93	QUOTE 1947(DGPS)
101	F	060:52:39.967	147:33:15.597	6	250	0.0	0.0		09/04/93	INDIA 1947(DGPS)
102	F	060:48:21.781	147:41:49.698	7	250	0.0	0.0		09/28/93	AXEL 1947(DGPS)



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

**ADVANCE
INFORMATION**

NOAA Ship RAINIER

November 1, 1993

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

Dear Sir:

While conducting hydrographic survey operations in Northwest Prince William Sound, 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 dangers is enclosed.

Sincerely,

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

Enclosures





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

**ADVANCE
INFORMATION**

NOAA Ship RAINIER

November 1, 1993

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



RCA
FOO

22:08, Friday, 29 October 19
tPostOUT : Hellickson

PMC-122-116

**ADVANCE
INFORMATION**

P 292053Z OCT 93
FM NOAA RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCNAVWARN WASHINGTON DC//MCNM//
INFO NOAA MOP SEATTLE WA
ACCT CM-VCAA

BT

UNCLAS

NOAA SHIP RAINIER HAS LOCATED FIVE DANGERS TO NAVIGATION IN EAGLEK BAY, PRINCE WILLIAM SOUND, ALASKA (PROJECT OPR-P125-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY H-10515. THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN THE LOCAL NOTICE TO MARINERS:

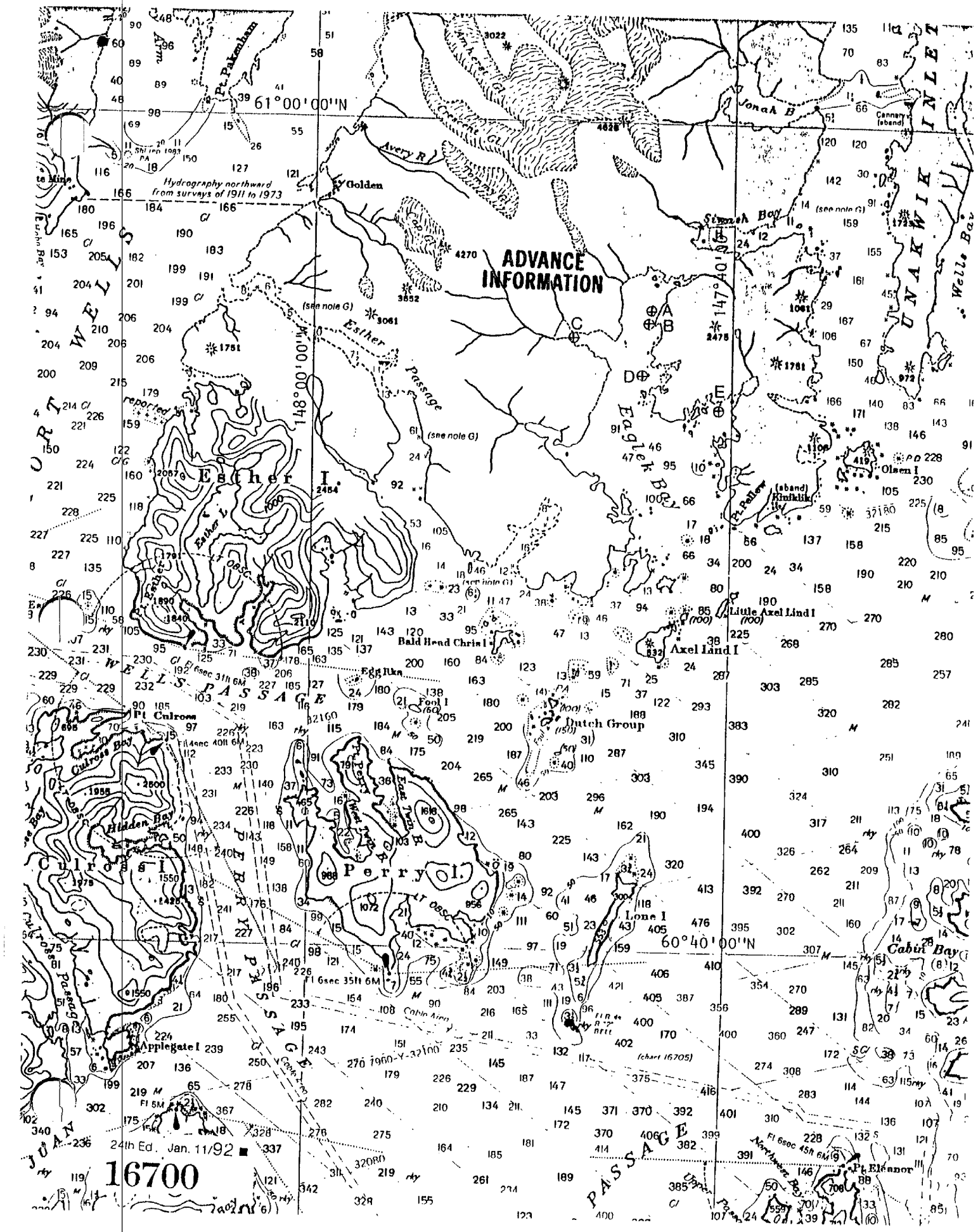
CHART AFFECTED: 16700 24TH ED FEB 11/92 1:200,000 NAD83

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

ITEM	DANGER	DEPTH	LATITUDE	LONGITUDE
A	SHOAL	2 3/4 FM	60/55/29.9N	147/43/49.9W
B	ROCK	BARES 1 1/2 FM	60/55/10.5N	147/43/55.6W
C	ROCK	BARES 1/2 FM	60/54/47.9N	147/47/38.4W
D	SHOAL	1 1/4 FM	60/53/54.2N	147/44/12.6W
E	SHOAL	6 1/2 FM	60/53/04.4N	147/40/23.7W

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

BT



ADVANCE INFORMATION

24th Ed. Jan. 11/92
16700

Hydrography northward
from surveys of 1911 to 1973

(see note G)

(see note G)

(see note G)

(chart 16705)

Fl 6sec 45R 6M (9)

Fl 6sec 45R 6M (9)



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

**ADVANCE
INFORMATION**

November 24, 1993

Commander (OAN)
Seventeenth Coast Guard District
P.O. Box 25517
Juneau, AK 99802-5517

Dear Sir:

During office processing of hydrographic survey H-10515, North Portion of Eaglek Bay, Prince William Sound, Alaska, it was determined that shoaling has occurred near the head of Eaglek Bay. This potential danger affects the following charts.

Chart Number	Edition No. Date	Horizontal Datum
16700	24 1/11/1992	NAD83

It is recommended that this information 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: DMAH/TC
N/CG221



Report of Danger To Navigation

Hydrographic Survey Registry Number: H-10515

Survey Title

State: Alaska

General Locality: Prince William Bay

Sublocality: North Portion of Eaglek Bay

**ADVANCE
INFORMATION**

Project Number: OPR-P125-RA

The following was discovered during survey operations:

An uncharted shoal with a minimum depth of 1/2 fathoms.

Affected nautical chart:

Chart Number	Edition		Survey Depth	Charted Horizontal		Geographic Position	
	No.	Date		Datum	Latitude	Longitude	
16700	24	1/11/92	1/2 fm	NAD83	60/56/09.3N	147/43/55.8W	

0 1/2 fm or 13 meters

The depth has been reduced to predicted Mean Lower Low Water.

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

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



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

**ADVANCE
 INFORMATION**

December 10, 1993

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

Dear Sir:

During the office processing of hydrographic surveys H-10514 and H-10515 in Prince William Sound, Alaska three additional dangers to navigation have been discovered. These dangers affect the following charts:

<u>Chart</u>	<u>Edition/Date</u>	<u>Datum</u>
16700	24th Ed., 1/11/92	NAD83
16705	15th Ed., 9/1/90	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

FILE COPY

CODE	SURNAME	DATE	CODE	SURNAME	DATE
N/CG221	Haines	12/10/93			
	Beckley	12/10/93			



Hydrographic Survey Registry Number: H-10515

**ADVANCE
INFORMATION**

Survey Title: State: Alaska
 Locality: Prince William Sound
 Sublocality: Northern Portion of Eaglek Bay

Project Number: OPR-O125-RA

Survey date: October 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>
16700	24th Ed., 1/11/92	NAD83
16705	15th ED., 9/1/90	NAD83

<u>Danger to Navigation</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
Shoal, 6 1/2 Fathoms	60/52/47.8	147/40/21.7
Shoal, 3 Fathoms	60/53/18.9	147/44/35.7

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



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
Seattle, Washington 98115-0070

February 10, 1995

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

Dear Sir:

During office review of hydrographic survey H-10515, Alaska, Prince Williams Sound, one previously submitted danger to navigation affecting the following chart should be revised.

<u>Chart</u>	<u>Edition/date</u>	<u>Datum</u>
16700	24th Ed., 1/11/92	NAD 83
16705	15th Ed., 9/6/90	NAD 83

It is recommended that the enclosed Report of 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,

Kathy A. Timmons
Kathy A. Timmons
Commander, NOAA
Chief, Pacific Hydrographic Section

Enclosure

cc: DMA/HTC
N/CG221



REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H-10515

Survey Title: State: Alaska
Locality: Prince William Sound
Sub locality: Eaglek Bay and Vicinity

Project Number: OPR-P125-RA, NOAA Ship *Rainier*

Application of actual tides resulted in a revision to a danger previously submitted by Pacific Hydrographic Section on December 10, 1993.

Object discovered: One shoal corrected to actual tides.

Affected nautical chart:

<u>Chart</u>	<u>Edition/date</u>	<u>Datum</u>
16700	24th Ed., 1/11/92	NAD 83
16705	15th Ed., 9/6/90	NAD 83

DANGER TO NAVIGATION
3 1/4 fathom

LATITUDE (N)
60/52/47.8

LONGITUDE (W)
147/40/21.7

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

APPROVAL SHEET

for

H-10515
RA-10-25-93

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and the Field Procedures Manual in producing this survey. The data were examined daily during data acquisition and processing.

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



Russell C. Arnold
Captain, NOAA
Commanding Officer

H-10515

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 16700 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 FM-10064									
	A	B	C	D	E	F	G	H		
ALASKA (title)	X		X						X	1
CASCADE BAY			X						X	2
CASCADE ISLAND			X						X	3
EAGLEK BAY	X		X						X	4
PRINCE WILLIAM SOUND (title)	X		X							5
SCHOPPE BAY									X	6
										7
										8
										9
										10
										11
										12
										13
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										25

Approved:

Charles E. Hamner
 Chief Geographer - N/CG2x5

JUN - 7 1994



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: March 8, 1994

MARINE CENTER: Pacific

HYDROGRAPHIC PROJECT: OPR-P125-RA

HYDROGRAPHIC SHEET: H-10515

LOCALITY: Northern Portion of Eaglek Bay, Prince William Sound,
Alaska

TIME PERIOD: October 6 - 22, 1993

TIDE STATION USED: 945-4596 Olsen Island, Unakwik Inlet, Ak.
Lat. $60^{\circ} 52.6'N$ Lon. $147^{\circ} 33.1'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): -4.33 ft.

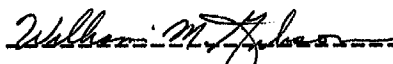
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 11.0 ft.

REMARKS: RECOMMENDED ZONING

Times and heights are direct on Olsen Island, Ak. (945-4596).

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

2. Data for Olsen Island, Ak. (945-4596) is temporarily
stored in file #556-4596.


CHIEF, DATUMS SECTION



HYDROGRAPHIC SURVEY STATISTICS

H-10515

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

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

SHORELINE DATA	
SHORELINE MAPS (List):	DM-10059, DM-10064
PHOTOBATHYMETRIC MAPS (List):	NA
NOTES TO THE HYDROGRAPHER (List):	NA
SPECIAL REPORTS (List):	None
NAUTICAL CHARTS (List):	16705 15th Ed. 9/1/90, 16700 24th Ed. 1/11/92

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			2325	
POSITIONS REVISED				
SOUNDINGS REVISED			1	
CONTROL STATIONS REVISED				
	TIME-HOURS			
	VERIFICATION	EVALUATION	TOTALS	
PRE-PROCESSING EXAMINATION				
VERIFICATION OF CONTROL				
VERIFICATION OF POSITIONS	46.5		46.5	
VERIFICATION OF SOUNDINGS	104		104	
VERIFICATION OF JUNCTIONS				
APPLICATION OF PHOTOBATHYMETRY				
SHORELINE APPLICATION/VERIFICATION				
COMPILATION OF SMOOTH SHEET	24.5		24.5	
COMPARISON WITH PRIOR SURVEYS AND CHARTS		11	11	
EVALUATION OF SIDE SCAN SONAR RECORDS				
EVALUATION OF WIRE DRAGS AND SWEEPS				
EVALUATION REPORT		19	19	
GEOGRAPHIC NAMES				
OTHER: Digitization				
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	175.0	30	205

Pre-processing Examination by LT D. Haines	Beginning Date 11/9/93	Ending Date 12/10/93
Verification of Field Data by J. Stringham, S. Otsubo, R. Mayor, L. Deodato	Time (Hours) 175	Ending Date 8/16/94
Verification Check by G.E. Kay	Time (Hours) 8	Ending Date 1/90/95
Evaluation and Analysis by G.E. Kay	Time (Hours) 30	Ending Date 2/3/95
Inspection by R. DAVIES	Time (Hours) 10	Ending Date 2/10/95

EVALUATION REPORT SURVEY H-10515

1. INTRODUCTION

Survey H-10515 is a basic hydrographic survey accomplished by the NOAA Ship *Rainier*, under the following Project Instructions.

OPR-P125 RA, dated July 19, 1993

CHANGE NO. 1, dated August 25, 1993

CHANGE NO. 2, dated September 2, 1993

This survey was conducted in Alaska, and covers an area in the northwestern portion of Prince William Sound. The surveyed area includes Eaglek Bay, Cascade Bay and the northern portion of Schoppe Bay. The surveys western, northern and eastern limits are contained inside the shoreline of the before mentioned bays. The surveys southern limit is latitude 60/52/30N. The bottom consists of mud. Depths range from less than a meter along the shoreline to a depth of 178 meters, located in the lower southwest limit area of this survey.

Depth curves depicted on the smooth sheet were selected from those authorized through HSG 69. However, instead of drafting all authorized curves only those curves considered necessary for the reasonable portrayal of the bottom were drafted. The selected curves were the 0, 5 and 20 meter. A note was added to the smooth sheet to identify these values. A few supplemental depth curves have been added to the smooth sheet in brown as warranted. The bottom characteristics are annotated on a separate overlay.

Predicted tides for Cordova, Alaska, were used for the reduction of soundings during field processing. Approved hourly heights are zoned from Olsen Island, Unakwik Inlet, Alaska, gage 945-4596, 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. 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 Guideline No. 52, Standard Digital Data Exchange Format, April 15, 1986. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for a complete depiction of the survey data.

2. CONTROL AND SHORELINE

Sections H and I of the hydrographer's report and the Fall 1993 Horizontal Control Report for OPR-P125-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 176 positions exceeds limits in terms of horizontal dilution of precision (HDOP). These positions are isolated and occur randomly throughout the survey area. A review of the data, however, indicates that none of these fixes are used to position dangers to navigation. The soundings located by these fixes are consistent with the surrounding information. These fixes are considered acceptable.

Positions of horizontal control stations used during this survey are field values based on NAD 83.

The smooth sheet is annotated with an NAD 27 adjustment tick based on values determined with the 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: -1.887 seconds (-58.418 meters)
Longitude: 7.469 seconds (112.583 meters)

The year of establishment of control stations shown on the smooth sheet originates with the previously referenced horizontal control report and the hydrographer's signal list.

The following digital shoreline maps were compiled on NAD 83, enlarged to the scale of 1:10,000, apply to this survey.

<u>Map Number</u>	<u>Photography date</u>	<u>Scale</u>
DM-10059	June-July 1989	1:20,000
DM-10064	June-July 1989	1:20,000

The following features were transferred from the field sheet with supporting positional information. These revisions are considered adequate to supersede the common photogrammetrically delineated shoreline.

<u>Feature</u>	<u>Latitude North</u>	<u>Longitude West</u>
red HWL	60/56/19	147/44/26
islet	60/55/42	147/43/15
red HWL	60/54/54	147/43/24
red HWL	60/54/44	147/43/38
islet	60/54/06	147/43/54
islet	60/54/00	147/43/18

<u>Feature</u>	<u>Latitude North</u>	<u>Longitude West</u>
islet	60/54/00	147/43/59
sand spit	60/54/00	147/43/15
dashed red MWL	60/53/55	147/43/09
dashed red MWL	60/53/46	147/43/21
red HWL	60/53/32	147/44/06
red HWL	60/53/51	147/43/24
red HWL	60/53/40	147/43/45
red HWL	60/53/40	147/43/22
red HWL	60/53/35	147/43/55
red HWL	60/53/20	147/41/16
red HWL	60/53/18	147/44/26
islet	60/53/03	147/43/45
red HWL	60/52/55	147/42/04
red HWL	60/52/47	147/41/49

3. HYDROGRAPHY

Except for the following, 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; and
- c. show the survey was properly controlled and soundings are correctly plotted.

Authorized depth curves were adequately drawn and developed except the zero curve. The inshore limit as defined by the Project Instructions (section 1.8), is the 3-meter depth curve in steeply sloping areas.

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.

5. JUNCTIONS

Survey H-10515 junctions with the following survey.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10514	1993	1:10,000	South

The junction with the above survey has been made formally accomplished.

6. COMPARISON WITH PRIOR SURVEYS

There are no prior surveys within the limits of survey H-10515.

7. COMPARISON WITH CHART

Survey H-10515 was compared with the following charts.

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
16705	15th	September 1, 1990	1:80,000	NAD 83
16700	24th	January 11, 1992	1:100,000	NAD 83

a. Hydrography

The charted hydrography on the above charts originate with miscellaneous sources. Survey H-10515 is adequate to supersede charted hydrography within the survey area.

A study of prior survey data, in accordance with Hydrographic Survey Guideline No. 39, the effect of the 1964 Prince William Sound earthquake was not performed, because of the lack of prior survey data.

b. AWOIS

There were no items for investigation within the limits of this survey.

c. Controlling Depths

There are no charted channels with controlling depths within the limits of this survey.

d. Aids to Navigation

There are no aids to navigation located within the limits of this survey. There are no charted landmarks there are located within the limits of this survey.

e. Geographic Names

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

f. Dangers to Navigation

The hydrographer reported five dangers to navigation to the Seventeenth Coast Guard District, DMA/HTC and N/CG221, during this survey. Three additional dangers to navigation were discovered during office processing and are as follows:

<u>Feature</u>	<u>Depth</u>	<u>Latitude North</u>	<u>Longitude West</u>
1. Shoal	6.3m (3 ¹ / ₄ fm)	60/52/47.8	147/40/21.7
2. Shoal	5.5m (3 fm)	60/53/18.9	147/44/35.7
3. Shoal	1.3m (1 ¹ / ₂ fm)	60/56/09.3	147/43/55.8

A copy of this danger to navigation has been forwarded to the Seventeenth Coast Guard District, DMA/HTC and N/CG221. Copies of these reports are attached.

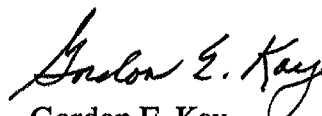
Item 1, above was previously reported (December 10, 1993) as a 6 1/2 fathom shoal. Further review and with the application of actual tides this shoal was reduced to 3 1/4 fathoms (6.3 meters). This value was transmitted in a Report of Dangers to Navigation, copy attached.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10515 adequately complies with the Project Instructions, except where noted in this report.

9. ADDITIONAL FIELD WORK


This is a good hydrographic survey. Additional field work is not required.


Gordon E. Kay
Cartographer

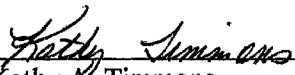
APPROVAL SHEET
H-10515

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 processings 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.

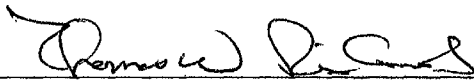

for Dennis J. Hill Date: 2/10/95
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

I have reviewed the smooth sounding plot, 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: 2/13/95
Commander, NOAA
Chief Pacific Hydrographic Section

Final Approval

Approved:


Thomas W. Richards Date: 3-1-95
Captain, NOAA
Chief Nautical Chart Division

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10515

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

- 1. Letter all information.
- 2. In "Remarks" column cross out words that do not apply.
- 3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
16705	9/8/95	ALMACEN	Full Part Before After Marine Center Approval Signed Via <i>Full application of</i> Drawing No. <i>Snags & features from 33.</i>
16700	9/14/95	ALMACEN	Full Part Before After Marine Center Approval Signed Via <i>Full application of</i> Drawing No. <i>snags & features from 33 thru chrt 16705</i>
			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.
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