

H-10499

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-10-20-93
Registry No.	H-10499
LOCALITY	
State	Alaska
General Locality	Prince William Sound
Sublocality	South of Fairmount Island
.....	
<u>19 93</u>	
CHIEF OF PARTY CAPT Russell C. Arnold, NOAA	
LIBRARY & ARCHIVES	
DATE	APR 4 1995

HYDROGRAPHIC TITLE SHEET

H-10499

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-10-20-93

State Alaska

General locality South of Fairmount Island

Locality Prince William Sound

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

Instructions dated 7/19/93, Change #1-8/25/93 Project No. OPR-P125-RA

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

Chief of party CAPT Russell C. Arnold, NOAA

Surveyed by LT M. Brown, LT D. Neander, LTJG S. Lemke, ENS D. Pitts, ENS A. Caron,
ENS J. Graham, ENS G. Johnson, CST F. Paranada, ST B. Judson,

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

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Evaluation by: Gordon E. Kay Automated plot by PHS Xynetics Plotter
~~Extracted by~~

Verification by Leo Deodato

Soundings in ~~feet~~ ~~fathoms~~ ~~fms~~ ~~at~~ Meters ~~MLW~~ MLLW

REMARKS: Time in UTC, revisions and marginal notes in black were generated
during office processing. All separates are filed with the
hydrographic data, as a result page numbering may be interrupted
or non-sequential.

All depths listed in this report are referenced to mean lower low
water unless otherwise noted.

AWOIS & SURF 4/27/95 mcl

Sc 4/4/95

Descriptive Report to Accompany Hydrographic Survey H-10499

Field Number RA-10-20-93

Scale 1:10,000

September 1993

NOAA Ship RAINIER

Chief of Party: Captain Russell C. Arnold NOAA

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 25th 1993, ~~and change No. 2 dated September 2nd 1993.~~ ✓

Survey H-10499 corresponds to "Sheet O" as defined in the Project Instructions. ✓

This survey is one in a series that will be used update existing nautical charts. It will also be used to generate a new 1:100,000 scale chart covering the fjords and bays of northwest Prince William Sound. Requests for updated charts have been received from the Defense Mapping Agency, the Southwest Pilot's Association, cruise ship lines, (in particular Holland America Line and Westours, Inc.), and local fisherman. ✓

B. AREA SURVEYED

The area surveyed is south of the entrance to Wells Bay and includes the south shore of Fairmount Island, Little Fairmount Island and Outland Island. It is defined by latitude 60°52'8"N to the north and latitude 60°49'45"N to the south, longitude 147°31'15"W to the west and longitude 147°18'15"W to the east. ✓

The area is characterized by numerous rocks and shoals. The islands are heavily wooded and have steep rocky shores. ✓

Data acquisition was conducted from September 6th, Day Number (DN 249), through September 22nd, Day Number (DN 265). ✓

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	Velocity Cast Bottom Samples
RA-3	2123	Hydrography Shoreline Verification
RA-4	2124	Hydrography

 ✓

RA-5	2125	Hydrography Shoreline Verification 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
CONVERT	3.51	9/24/92
DAS_SURV	6.31	2/26/93
DP	2.13	3/1/93
EXCESS	4.10	9/24/92
FILESYS	3.01	4/14/92
GRAFEDIT	1.01	2/26/93
LSTAWOIS	3.01	9/24/92
LISTDATA	1.00	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
PRESURV	7.01	2/26/93
PRINTOUT	4.01	9/24/92
QUICK	2.03	2/26/93
RAMSAVER	1.01	9/24/92
REAPPLY	2.01	9/24/92
SCANNER	1.00	9/24/92
ZOOMEDIT	2.10	9/24/92

Velocity corrections were determined using:

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

E. SONAR EQUIPMENT

Side scan sonar equipment was not used on Sheet O.

F. SOUNDING EQUIPMENT

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

G. CORRECTIONS TO 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	545 m	249-265	060°53'46"N 147°28'58"W	253

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 the project data for OPR-P125-RA. The data used were 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 O.

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. ✓

Bar Check and Lead Lines

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

Tide Correctors

Predicted tides for the project were provided on diskette by N/OES334 for the Cordova, Alaska reference station (945-4050). The following correctors were provided in the project instructions for sheet O:

<u>HIGH WATER</u>	<u>TIME(min)</u>	<u>LOW WATER</u>	<u>RANGE RATIO</u>
0		0	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 Valdez were completed by the Pacific Operations Section. Requirements for closing levels were waived in Change No. 1 of the Project Instructions. Bracketing levels will be done at the end of September. ✓

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

H. CONTROL STATIONS

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

Positions for all existing stations are from the National Geodetic Survey (NGS) data base. All existing stations were recovered in accordance with methods stated in Section 5.2.4 of the Field Procedures Manual. Further information can be found in the "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 RPU's and Ashtech equipment are annotated on the data printouts. ✓

Calibrations & Systems Check Methods

Ashtech GPS

VHF differential shore stations were established at stations QUOTE and INDIA. A remote sensor was directly connected to the MXII shore station and its antenna was collocated with the shore station. The ✓

computed position was transmitted back to the ship via VHF radio modem link. The difference between the computed location and the station's published position was recorded by the MONITOR program on a PC. Data from a 24-hour period were recorded and examined for signs of multi-path signal reflection, which was not evident at either station. ✓

Systems checks were accomplished using launch to launch comparisons. Three observations were made by each launch using correctors from two independent DGPS base stations. System checks were made each day and results were transferred to forms which are included in the project data for OPR-P125-RA. An abstract of the calibration results is included in the "Separates to be included with Survey Data, III. Horizontal Position Control and Corrections to Position Data." * ✓

Problems

None

Offset

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." * ✓

J. SHORELINE

The Shoreline map (T-sheet) used to transfer shoreline detail to the final sheet was DM-10065, (1:10,000, NAD 83). ✓

Due to the tidal cycles during the project the water levels during shoreline verification were higher than mean lower low water. Shoreline verification was performed at the lowest tide possible. 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. Significant features of Outland Island were not portrayed on the T-sheet. These are discussed in the changes section of this descriptive report. ✓

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 and on the DP forms. These indicate significant T-sheet features, features not found on the T-sheet, and locations of disprovals. Where possible, positions of some T-sheet features were verified during inshore mainscheme hydrography and annotated on the master printouts. ✓

Detailed 1:10,000 "Rough Bottom Sample and Detached Position Plots" are provided showing all DPs and reference numbers and notes relating to each feature. The information from these plots was transferred to a final field plot where possible. Where such information would interfere with the legibility of the final plot, the appropriate cartographic symbol has been transferred, but height and position number information remains on the rough plot which serves as an overlay (FPM 6.1.2.5). ✓

** Filed with the survey records.*

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.

Disprovals

None

Changes

The large number of changes are the result of inaccurate shoreline manuscripts. The errors are probably a result of photography being flown at high tide.

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

In the vicinity of Fairmount Island

1. The three T-sheet rocks in the vicinity of latitude $60^{\circ}52'02''^3$ N and longitude $147^{\circ}28'11''^{06}$ W, are a reef, position number 800. One of the T-sheet rocks forming the reef corresponds to a charted rock.
2. The T-sheet islet and rocks in the vicinity of latitude $60^{\circ}51'39''$ N and longitude $147^{\circ}26'00''$ are part of a foul area, delineated by position numbers 5441, 5442, 5443 and 5446.
3. The T-sheet rock in the vicinity of latitude $60^{\circ}51'45''$ N and longitude $147^{\circ}26'04''$ W, is part of a ledge attached to the islet. The edge of the ledge marks a foul area, position number 5447.
4. The two T-sheet rocks in the vicinity of latitude $60^{\circ}52'00''$ N and longitude $147^{\circ}26'51''$ W, reference number RA3-1 are a ledge.
5. The five T-sheet rocks and islet in the vicinity of latitude $60^{\circ}52'00''$ N and longitude $147^{\circ}26'30''$ W, reference number RA3-3, are ledges.
6. The three T-sheet rocks in the vicinity of latitude $60^{\circ}51'47''^8$ N and longitude $147^{\circ}26'06''$ W, reference number RA5-10, are a ledge.
7. The T-sheet rock in the vicinity latitude $60^{\circ}51'57''^3$ N and longitude $147^{\circ}25'27''$ W, reference number RA5-7, is a ledge.
8. The five T-sheet rocks in the vicinity latitude $60^{\circ}51'56''^2$ N and longitude $147^{\circ}25'46''^3$ W, reference number RA5-9, are a ledge.
9. The five T-sheet rocks in the vicinity latitude $60^{\circ}52'03''$ N and longitude $147^{\circ}25'09''$ W, reference number RA5-5, are a ledge.

In the vicinity of Little Fairmount Island

10. The T-sheet rock in the vicinity of latitude $60^{\circ}51'48''^7$ N and longitude $147^{\circ}27'57''^5$ W, is a reef approximately 30 meters long by 15 meters wide, position number 858.
11. The T-sheet rocks in the vicinity of latitude $60^{\circ}51'38''^4$ N and longitude $147^{\circ}27'43''$ W, are a ledge, position numbers 861 and 862.

- 12. The T-sheet rock in the vicinity of latitude 60°51'26"N and longitude 147°27'57"W, is a ledge, position number 863 is the outermost edge of the ledge.
- 13. The T-sheet rock in the vicinity of latitude 60°51'23"N and longitude 147°28'07"W, is a ledge connecting the islet to the Island, position number 864 depicts the edge of the ledge.
- 14. The T-sheet rock in the vicinity of latitude 60°51'28"N and longitude 147°28'17"W is a ledge connecting the T-sheet islet to the main island, position numbers 5404,5405 and 5406.
- 15. The T-sheet rock and islet in the vicinity of latitude 60°51'32"N and longitude 147°27'51"W, reference number RA3-7, are a ledge.

In the Vicinity of Outpost Island

- 16. The T-sheet rock in the vicinity of latitude 60°50'28"N and longitude 147°27'51"W, position number 1048, is a ledge attached to an islet.
- 17. T-sheet rocks in the vicinity of latitude 60°50'31"N and longitude 147°27'38"W, position number 1054, are a ledge attached to an ~~islet~~ island.
- 18. T-sheet rocks in the vicinity of latitude 60°50'45"N and longitude 147°27'35"W are a ledge surrounding islets that are attached to Outpost Island by a sandy beach. The ledge is delineated by position numbers 1058 and 1060.
- 19. T-sheet rocks in the vicinity of latitude 60°50'38"N and longitude 147°27'26"W are a ledge, position number 1063.

Recommendations: The hydrographer recommends that the shoreline changes from this survey be used to supersede prior shoreline compiled on DM-10065. *CONCUR*

K. CROSSLINES

Crosslines are in good agreement with mainscheme hydrography. Crosslines totaled 23.92 nautical miles, representing ~~8.68%~~ ^{5.1%} of total mainscheme hydrography. ✓

L. JUNCTIONS

This survey junctions with survey H-10500 (1:10,000, 1993) to the north and H-10502 (1:10,000, 1993) to the west. No irregularities were found when comparing soundings and depth curves. ✓

M. COMPARISON WITH PRIOR SURVEY *SEE Evaluation Report section 6*

The only prior survey run on Sheet O was a USGS reconnaissance survey done in 1973-1978. The soundings in common areas are in general agreement. ✓

PHS will make final comparisons.

N. ITEM INVESTIGATION REPORTS

1 AWOIS item was investigated.

AWOIS ITEM 52005

Area of investigation

State: Alaska
 Locality: Off of Little Fairmount Island
 Reported latitude(PA): 60°51'52"N ✓
 Reported longitude(PA): 147°29'12"W ✓
 Datum: NAD 83
 Depth: 0.00 m
 Feature: Rock

2. Description of Source Item

Source Unknown

3. Survey Requirements

Determine the nature, extent and least depth of the rock.

4. Method of Investigation

A 200 meter radius around the reported rock was searched both visually and by fathometer.
SEARCH RADIUS 500 METERS.

5. Results of Investigation

A 200 meter radius area was searched and the area was found to have a average depth of 250 meters. A detached position, number 5400, was taken at the reported position with a depth of 196.5 meters.

6. Comparisons of Prior Surveys

The only prior survey of sheet O is a USGS reconnaissance survey done 1973-1978. This survey is in general agreement with that survey. *DO NOT CONCUR. THERE ARE NO PRIORS AS PER PROJ. INST. 6.10.*

7. Comparison with Chart and Charting Recommendations

The largest scale chart depicting the area is NOS chart 16705, 15th Ed, January 1990 1:80,000 (NAD 83). This item is disproven and should be removed from the chart. *DO NOT CONCUR, SEE EVALUATION REPORT SECTION 7b*

O. COMPARISON WITH THE CHART

This survey was compared to NOS chart 16705, 15th ED January 1990 1:80,000 (NAD 83).

The charted soundings were found to be in general agreement with this survey with two major exceptions. A danger to navigation, latitude 60°51'38.7"N and longitude 147°19'51.2"W, is shown on the chart as a depth of seven fathoms, while the least depth found on this survey was 3 1/4 fms. Another danger to navigation, latitude 60°50'52.7"N and longitude 147°29'34.1"W, is near a charted shoal of 8

fathoms, while the survey least depth is 7 fms.

There are three charted rock disapprovals on sheet O. *do NOT CONCUR*

1. The charted rock in the vicinity of latitude 60°52'03" N and longitude 147°28'20"W, position number 802, is disproven. The surrounding area was searched both visually and by fathometer. A detached position was taken at the center of the search area with a depth of 14.1⁰ meters. *A rock was located 140 meters east of charted feature. Chart rock located. Delete Charted Rock, Chart rock in survey position.*
2. The charted rock in the vicinity of latitude 60°50'28" N and longitude 147°27'34" W, Position number 1052, is disproven. The surrounding area was searched both visually and by fathometer. A detached position was taken at the center of the search area with a depth of 9.9⁰ meters. *A Rock was located 50 meters west of charted feature. Chart rock located. Delete Charted Rock, Chart rock in survey position.*
3. The charted rock in the vicinity of latitude 60°50'44"N and longitude 147°27'52"W, position number 1062, is disproven. The surrounding area was searched both visually and by fathometer, a detached position was taken at the center of the search area with a depth of 6.8⁷ meters. *This feature should be removed from the chart.*

Recommendations: The hydrographer recommends that these features be removed from the chart. *Do NOT CONCUR, SEE ABOVE, 1 AND 2.*

Final comparisons will be made at PHS.

One AWOIS item was investigated.

Dangers to Navigation

Six dangers to navigation were identified within the limits of survey H-10499 and were reported to the Seventeenth Coast Guard District and DMAHTC. Copies of the radio messages and correspondence are *attached. included in Appendix I of this report.*

P. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede the T-Sheets and chart letters in the common areas.

Q. AIDS TO NAVIGATION

None.

R. STATISTICS

<u>Vessel:</u>	<u>2120</u>	<u>2123</u>	<u>2124</u>	<u>2125</u>	<u>2126</u>	<u>Total</u>
# of Pos	40	1224	712	664	745	3365 3/20
NM Hydro	0.00	205.29	89.51	90.19	84.97	469.96
NM ² Hydrography		17.32 nm ²				
Velocity Casts		1				
Detached Position		88				
Tide Stations		2				
Reference Numbers		27				
Bottom Samples		60				

S. MISCELLANEOUS

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

The Coast Pilot currents 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		N/CG2333
Fall 1993 Coast Pilot Report for OPR-P125-RA		N/CG245 ✓
Project related data for OPR-P125-RA	Incremental	N/CG245

Respectfully Submitted,



April J. Caron
Ensign, NOAA

Approved and Forwarded,



Russell C. Arnold
Captain, NOAA ✓



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

September 30, 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 six 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

NOAA Ship RAINIER

September 30, 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



RCA

P 25 Z SEP 93
FM NOAA S RAINIER
TO CCCGDSEVENTEEN JUNEAU AK
DMAHTCCNAVWARN WASHINGTON DC/ /MCNM/ /
INFO NOAA MOP SEATTLE WA
ACCT CM-VCAA

**ADVANCE
INFORMATION**

BT
UNCLAS

NOAA SHIP RAINIER HAS LOCATED 6 DANGERS TO NAVIGATION IN THE VICINITY SOUTH OF FAIRMOUNT ISLAND PRINCE WILLIAM SOUND ALASKA (PROJECT OPR-P125-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY H-10499. THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN THE LOCAL NOTICE TO MARINERS:

CHARTS AFFECTED: 16700 24TH ED JAN 11/92 1:200,000 NAD 83
16705 15TH ED SEP 1/90 1:80,000 NAD 83

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

ITEM	DANGER	DEPTH	LATITUDE	LONGITUDE
A.	SHOAL	7 fms	60/50/52.7	147/29/34.1
B.	SHOAL	6 1/4 fms	60/50/28.9	147/24/33.0
C.	SHOAL	7 1/2 fms	60/51/58.9	147/18/17.3
D.	SHOAL	3 1/4 fms	60/50/29.6	147/25/20.2
E.	SHOAL	4 1/4 fms	60/50/49.6	147/24/04.5
F.	SHOAL	3 1/4 fms	60/51/38.7	147/19/51.2 (7 fm charted)

THERE ARE NUMEROUS UNCHARTED ROCKS AND SHOALS BETWEEN OUTLAND ISLAND AND FAIRMOUNT ISLAND.

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

PRINCE WILLIAM

SOUND ADVANCE INFORMATION

Mercator Projection
Scale 1:200,000 at Lat. 60°00'
North American Datum of 1983
(World Geodetic System of 1984)

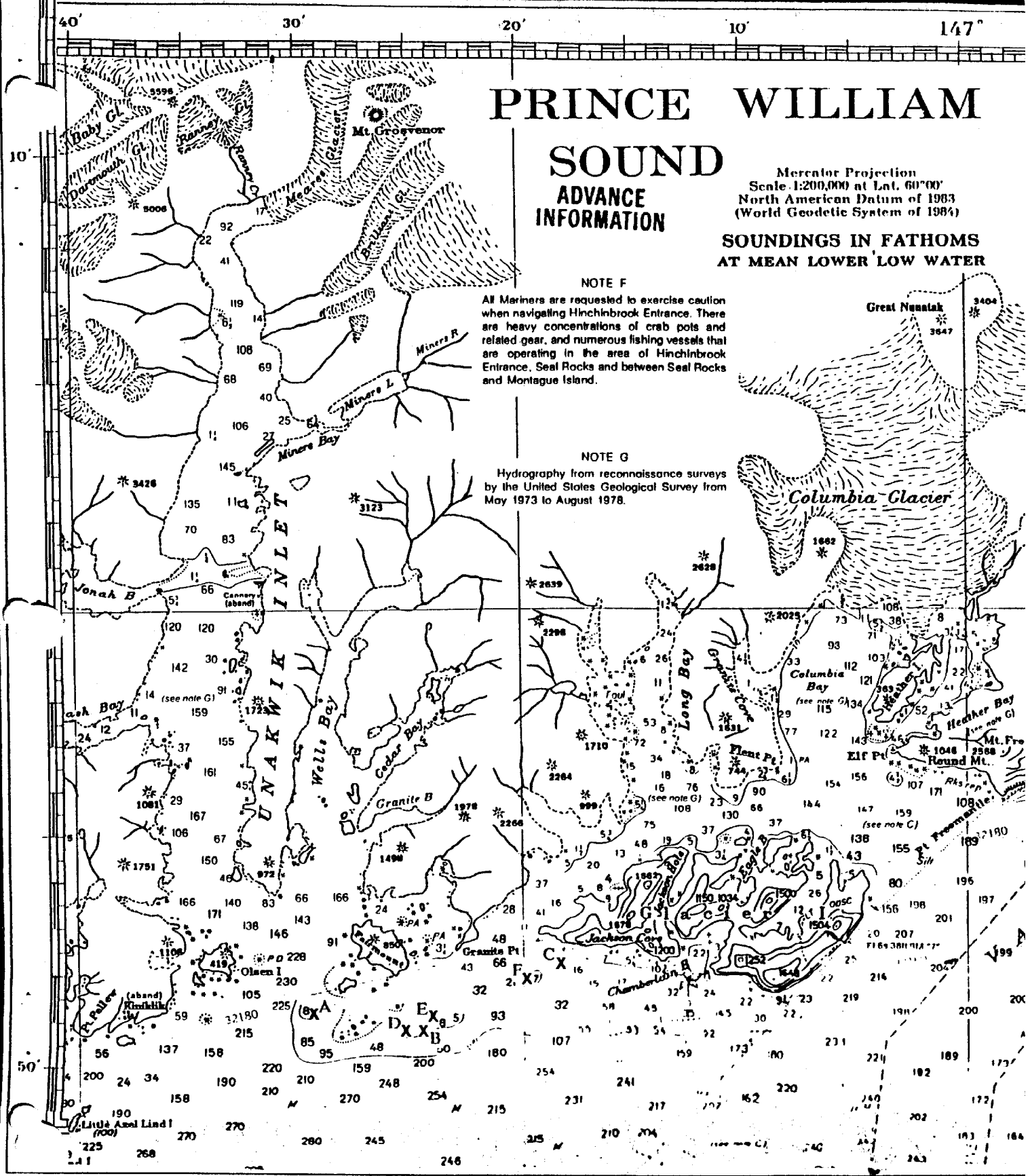
**SOUNDINGS IN FATHOMS
AT MEAN LOWER LOW WATER**

NOTE F

All Mariners are requested to exercise caution when navigating Hinchinbrook Entrance. There are heavy concentrations of crab pots and related gear, and numerous fishing vessels that are operating in the area of Hinchinbrook Entrance, Seal Rocks and between Seal Rocks and Montague Island.

NOTE G

Hydrography from reconnaissance surveys by the United States Geological Survey from May 1973 to August 1978.



24th Ed., Jan. 11/92

16700

LORAN-C OVERPRINTED

This chart has been corrected to reflect the latest information published by the Hydrographic Office, the United States Hydrographic Office, the United States Coast Guard, and the United States Coast Guard. The chart is published by the United States Coast Guard and is available for sale to the public.



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

October 27, 1993

**ADVANCE
INFORMATION**

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

Dear Sir:

During the office processing of hydrographic surveys H-10499 and H-10500 in Northwest Prince William Sound, five 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/HTC
PMC
RAINIER
N/CG221



H-10503

**ADVANCE
INFORMATION**

Hydrographic Survey Registry Number: H-10499

Survey Title: State: Alaska
 Locality: Northwest Prince William Sound
 Sublocality: South of Fairmount Island

Project Number: OPR-P125-RA

Survey Date: September 1993

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

Affected Nautical 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

<u>Danger to Navigation</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
Shoal, 1.6 Fathoms	60°50'30.0	147°25'20.0
Shoal, 2.1 Fathoms	60°51'12.0	147°27'32.0
Shoal, 1.0 Fathoms	60°51'21.0	147°26'51.0

CONTROL STATIONS as of 16 Sep 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	09/04/93	DUOTE 1947(DGPS)
101	F	060:52:35.967	147:33:15.597	6	250	0.0	09/04/93	INDIA 1947(DGPS)

GEOGRAPHIC NAMES

Name on Survey

A ON CHART NO. 16700
 B Chart No. 16705
 C Sheet DM-10065
 D FROM LOCAL INFORMATION
 E ON LOCAL MAPS
 F P.O. GUIDE OR MAP
 G RAND McNALLY ATLAS
 H U.S. LIGHT LIST
 K

Name on Survey	A	B	C	D	E	F	G	H	K
ALASKA (TITLE)									1
FAIRMOUNT ISLAND	X	X	X						2
LITTLE FAIRMOUNT ISLAND		X	X						3
OUTPOST ISLAND		X	X						4
PRINCE WILLIAM SOUND	X	X	X						5
									6
									7
									8
									9
									10
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Approved:

Charles B. Harrington
 Chief Geographer - N/CG245

JUN 23 1994

APPROVAL SHEET

for

H-10499
RA-10-20-93

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 was examined daily during data acquisition and processing.

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



Russell C. Arnold
Captain, NOAA
Commanding Officer



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

ORIGINAL

DATE: March 8, 1994

MARINE CENTER: Pacific

HYDROGRAPHIC PROJECT: OPR-P125-RA

HYDROGRAPHIC SHEET: H-10499

LOCALITY: South of Fairmount Island, Prince William Sound, Alaska

TIME PERIOD: September 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.

William M. Johnson
CHIEF, DATUMS SECTION



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		2
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS
ACCORDION FILES	1				
ENVELOPES					
VOLUMES					
CAHIERS					
BOXES					

SHORELINE DATA

SHORELINE MAPS (List): **DM-10065**

PHOTOBATHYMETRIC MAPS (List): **NA**

NOTES TO THE HYDROGRAPHER (List): **None**

SPECIAL REPORTS (List): **None**

NAUTICAL CHARTS (List): **16705 15th Ed., 9/1/90, scale 1:80,000 and 16700 24th Ed., 1/11/92 scale 1:100,00**

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			3120
POSITIONS REVISED			4
SOUNDINGS REVISED			33
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	139.5		139.5
VERIFICATION OF SOUNDINGS	309.0		309.0
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	160.5		160.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		5	5
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		14	14
GEOGRAPHIC NAMES			
OTHER: Digitization			
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	609.0	19
			628

Pre-processing Examination by D. Haines	Beginning Date 10/5/93	Ending Date 10/27/93
Verification of Field Data by E. Domingo, L. Deodato, R. Mayor	Time (Hours) 609.0	Ending Date 10/20/94
Verification Check by J. Stringham	Time (Hours) 72.0	Ending Date 9/28/94
Evaluation and Analysis by G. Kay	Time (Hours) 19.0	Ending Date 1/4/95
Inspection by Russ DAVIES	Time (Hours) 11	Ending Date 1/26/95

EVALUATION REPORT SURVEY H-10499

1. INTRODUCTION

Survey H-10499 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

This survey was conducted in Alaska, and covers an area in the northwestern portion of Prince William Sound. The surveyed area is bounded by latitude 60/52/08N to the north and latitude 60/49/45N to the south. The eastern limit is longitude 147/18/15W. The western limit is longitude 147/31/15W. The shoreline consists of rocky shoreline and small islands. The bottom consists of mud. Depths range from less than a meter along the shoreline, to a depth of 423 meters located in the lower southwest portion 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.

Predicted tides for Cordova, Alaska, were used for the reduction of soundings during field processing. Approved hourly heights 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. The velocity, and other 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 contain adequate discussions of horizontal control and hydrographic positioning. Additional detailed information on horizontal control is found in the Fall 1993 Horizontal Control Report for OPR-P125-RA.

Differential GPS (DGPS) was used throughout to control this survey. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The quality of 99 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: -1.949 seconds (-60.315 meters)
Longitude: 7.385 seconds (111.548 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 shoreline map compiled on NAD 83, enlarged to the scale of 1:10,000, applies to this survey.

<u>Map Number</u>	<u>Photography date</u>	<u>Scale</u>
DM-10065	June-July 1989	1:20,000

The following feature was transferred from the field sheet without supporting positional information.

<u>Feature</u>	<u>Latitude North</u>	<u>Longitude West</u>
rock	60/52/06.0	147/27/36.0

A ledge exists north and east of Outpost Island at latitude 60/50/42.0N, longitude 147/27/30.0W. The portrayal of this ledge was compiled during verification phase at PHB. The ledge was compiled by extending the field sheet ledge limit with negative off shore soundings and rocks producing a conservative view of this area. It is recommended that the area around Outpost Island be recompiled from future low water photography.

3. HYDROGRAPHY

With the exception 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; 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 with the exception of the following.

- a. The hydrographer failed to adequately investigate AWOIS item 52005 according to AWOIS search instructions. The instructions called for a search radius of 500 meters. The hydrographer performed a search radius of only 200 meters that provided the hydrographer with the wrong disposition for this AWOIS feature, see section 7b of this report.

5. JUNCTIONS

Survey H-10499 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10500	1993	1:10,000	North
H-10502	1993	1:10,000	West

The junctions with the above surveys have been made formally accomplished. Soundings are in good agreement.

There are no contemporary surveys to the east. However, the present survey H-10499 was compared to chart 16705, 15th edition. Sounding data does not compare well to the charted data. These discrepancies are attributed the quality of the charted data.

6. COMPARISON WITH PRIOR SURVEYS

There are no prior surveys within the limits of survey H-10499.

7. COMPARISON WITH CHART

Survey H-10499 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-10499 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 is one AWOIS item, number 52005 that originates with miscellaneous sources and was assigned for investigation. The hydrographer states, in his report, that the AWOIS feature was not located within a 200-meter radius search. However, during main scheme hydrography a rock uncovered (3.6 meters), was found 596 meters south-southwest from the charted obstruction. AWOIS 52005 has been confirmed. The charted rock should be removed from the chart. Chart the rock located at latitude 60/51/37.5N, longitude 147/28/46.0W, as shown on the smooth sheet.

c. Controlling Depths

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

d. Aids to Navigation

There is no aids to navigation located within the limits of this survey. There are no charted landmarks 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 ten dangers to navigation to the Seventeenth Coast Guard District, DMA/HTC and N/CG221, during this survey. Additionally three dangers to navigation were discovered during office processing as follows:

<u>Feature</u>	<u>Depth Meters</u>	<u>Latitude North</u>	<u>Longitude West</u>
Shoal	3.2	60/50/30.0	147/25/20.0
Shoal	3.7	60/51/12.0	147/27/32.0
Shoal	1.7	60/51/21.0	147/26/51.0

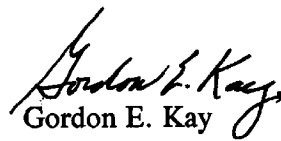
A copy of this danger to navigation has been forwarded to the Seventeenth Coast Guard District, DMA/HTC and N/CG221. Copies of these reports are attached.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10499 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 recommended.


Gordon E. Kay
Cartographer

APPROVAL SHEET
H-10499

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.

Dennis J. Hill Date: 1/26/95
Dennis J. Hill
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 A. Timmons Date: 2/3/95
Commander Kathy A. Timmons, NOAA
Chief, Pacific Hydrographic Section

Final Approval

Approved:

Thomas W. Richards Date: 2-16-95
Thomas W. Richards
Captain, NOAA
Chief Nautical Chart Division

