

10437

10437

Diagram No. 8551-4

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-20-3-92
Registry No. H-10437

LOCALITY

State Alaska
General Locality .. Prince William Sound
Sublocality College Fiord

1992

CHIEF OF PARTY
CAPT T.W. Richards

LIBRARY & ARCHIVES

DATE June 10, 1994

HYDROGRAPHIC TITLE SHEET

H-10437

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-20-3-92

State Alaska

General locality Prince William Sound

Locality College Fiord

Scale 1:20,000 Date of survey August 17 - September 28, 1992

Instructions dated July 7, 1992 Project No. OPR-P125-RA

August 28, 1992 - Change No. 1

Vessel RAINIER

Chief of party CAPT Thomas W. Richards, NOAA

Surveyed by LT Waddell, LT Brown, LTJG Nelson, LTJG Simmons, LTJG Johnson,
ENS Klay, ENS Pitts, SST Fleischmann, CH Schlagintweit

Soundings taken by echo sounder, ~~hand level, pole~~

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Verified by: R. Shipley, S. Otsubo Automated plot by PHS Xynetics Plotter

~~Rechecked by~~

Evaluation by: J. Green

~~Verification by~~

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

REMARKS: All times are UTC. Revisions and marginal notes in black were
generated during office processing. Separates are filed with
the hydrographic data.

ALUOIS + SURF MGR, 7/29/94

SC12-13-96
KWW 8/18/94

61°20'00"

147°40'00"

61°00'00"

148°20'00"

61°20'00"

61°00'00"

61°00'00"

61°00'00"

PROGRESS SKETCH

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

AUGUST 10 - OCTOBER 29 1992

NOAA SHIP RAINIER

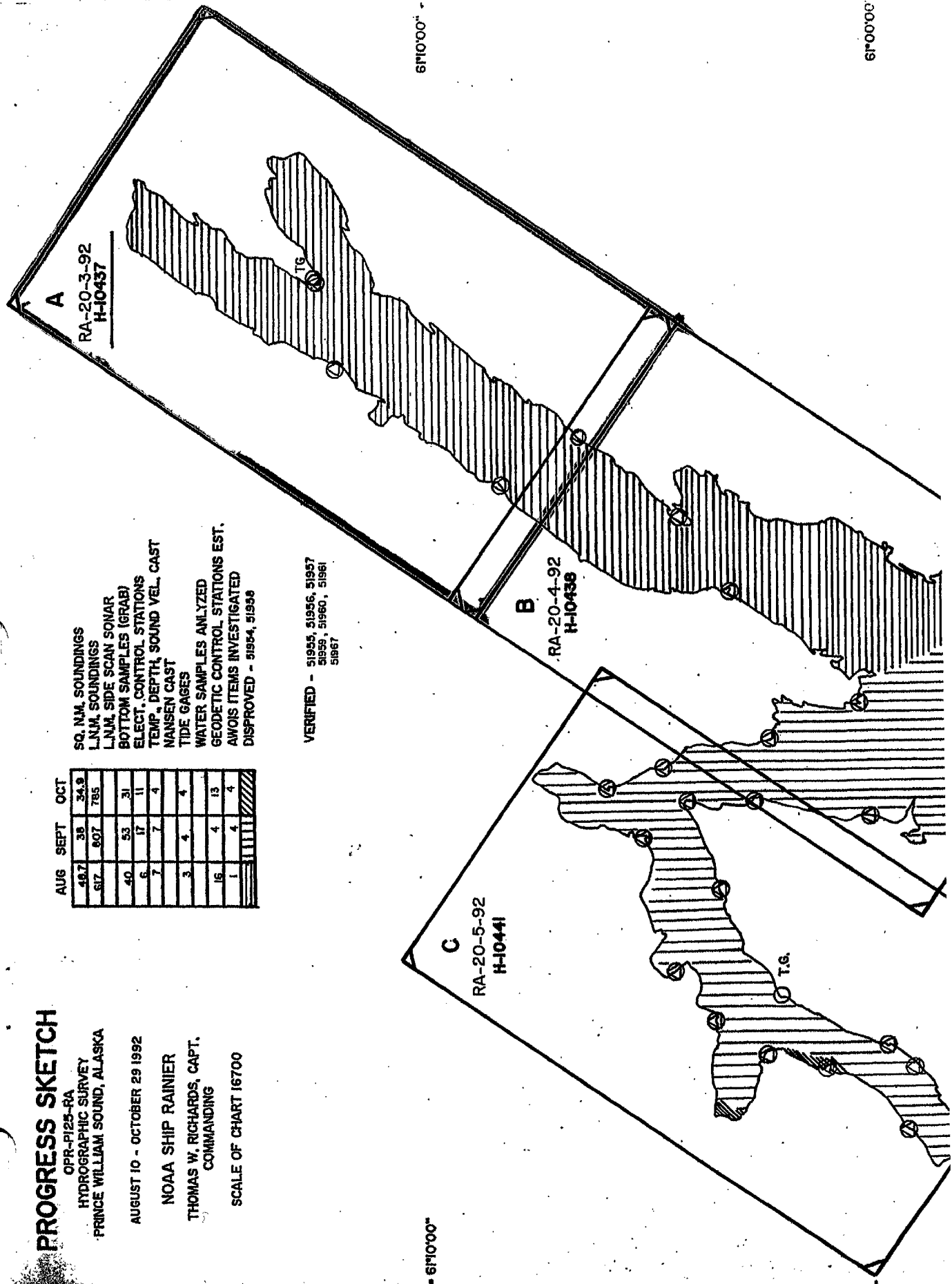
THOMAS W. RICHARDS, CAPT.
COMMANDING

SCALE OF CHART 16700

| AUG | SEPT | OCT |
|-----|------|------|
| 487 | 38 | 34.9 |
| 517 | 807 | 785 |
| 40 | 53 | 31 |
| 6 | 17 | 11 |
| 7 | 7 | 4 |
| 3 | 4 | 4 |
| 16 | 4 | 13 |
| 1 | 4 | 4 |
| | | |

- SQ. NM. SOUNDINGS
- L.N.M. SOUNDINGS
- L.N.M. SIDE SCAN SONAR
- BOTTOM SAMPLES (GRAB)
- ELECT. CONTROL STATIONS
- TEMP. DEPTH, SOUND VEL. CAST
- MANSEN CAST
- TIDE GAGES
- WATER SAMPLES ANALYZED
- GEODETIC CONTROL STATIONS EST.
- AWOIS ITEMS INVESTIGATED
- DISPROVED - 51954, 51956

VERIFIED - 51955, 51956, 51957
51959, 51960, 51961
51967



Descriptive Report to Accompany Hydrographic Survey H-10437

Field Number RA-20-3-92

Scale 1:20,000

August - September 1992

NOAA Ship RAINIER

Chief of Party: Captain Thomas W. Richards

A. PROJECT

This basic hydrographic survey was completed in Northwestern Prince William Sound, Alaska, as specified by Project Instructions OPR-P125-RA dated July 7, 1992, and Change Number One dated August 28, 1992. ✓

Survey H-10437 corresponds to "Sheet A" as defined in the Project Instructions. ✓

This survey is one in a series that will update existing nautical charts. Requests for hydrographic surveys and updated charts have been received from the Defense Mapping Agency, cruise ship lines, Southwest Alaska Pilots Association, and local fishermen. ✓

B. AREA SURVEYED

The survey is located in College Fiord, northwest Prince William Sound, 40 NM north of Whittier, Alaska. The survey includes Harvard Arm and Yale Arm. The survey's southwestern limit is a line from 61°07'30"N, 147°57'00"W to 61°06'20"N, 147°53'15"W. The remaining boundaries are mainland. Topographical relief consists of steep U-shaped glaciated valleys, and many tidewater glaciers. The receding glaciers have left several terminal and medial moraines, depicted as submerged shoal areas. ✓

Data acquisition was conducted from August 17, Day Number (DN) 230, through September 28, DN 272. ✓

C. SURVEY VESSELS

Data were acquired by NOAA Ship RAINIER's four survey launches as noted below:

| <u>Vessel</u> | <u>EDP No</u> | <u>Operation</u> |
|---------------|---------------|---|
| RA-3 | 2123 | Hydrography Shoreline Verification ✓ |
| RA-4 | 2124 | Hydrography Shoreline Verification |

| | | |
|------|------|---|
| RA-5 | 2125 | Hydrography Shoreline Verification Bottom Samples Velocity Casts |
| 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 | 2.00 | 4/14/92 |
| BACKOLD | 1.12 | 4/14/92 |
| BACKUP | 2.00 | 4/14/92 |
| BASELINE | 1.12 | 4/14/92 |
| BIGABST | 2.00 | 4/14/92 |
| CARTO | 2.02 | 4/14/92 |
| CONVERT | 3.02 | 4/14/92 |
| DAS SURY | 6.23 | 7/2/92 |
| DIAGNOSTIC | 3.00 | 4/14/92 |
| DISC UTIL | 1.00 | 4/14/92 |
| DP | 2.11 | 7/2/92 |
| EXCESS | 3.04 | 4/14/92 |
| FILESYS | 2.16 | 4/14/92 |
| GLOBAL | 1.12 | 4/14/92 |
| INVERSE | 1.51 | 4/14/92 |
| LISTAWOIS | 2.01 | 4/14/92 |
| LOADNEW | 1.50 | 4/14/92 |
| MAKEFIX | 1.02 | 4/14/92 |
| MANU DATA | 1.12 | 4/14/92 |
| NEWCONT | 1.17 | 4/14/92 |
| PLOTALL | 2.02 | 4/14/92 |
| POSTSUR | 5.21 | 4/14/92 |
| PREDICT | 1.11 | 4/14/92 |
| PRINTOUT | 3.00 | 4/14/92 |
| QUICK | 1.20 | 4/14/92 |
| RAMSAVER | 1.00 | 4/14/92 |
| READPROJS | 1.08 | 4/14/92 |
| REAPPLY | 1.33 | 4/14/92 |
| REJECT | 1.05 | 4/14/92 |
| SOFTCHECK | 1.13 | 4/14/92 |
| SURVEY | 6.11 | 4/14/92 |
| SYMBOLS | 1.00 | 4/14/92 |
| ZOOMEDIT | 1.10 | 4/14/92 |

Velocity corrections were determined using:

| <u>Program Name</u> | <u>Version</u> | <u>Date Installed</u> |
|---------------------|----------------|-----------------------|
| VELOCITY | 1.11 | 09 Mar 1990 |

E. SONAR EQUIPMENT

Side scan sonar operations were not performed on this survey.

F. SOUNDING EQUIPMENT

All survey launches were equipped with the Raytheon DSF-6000N echo sounders shown below. The echo sounders were operated in the HIGH + LOW (HIGH DIGITIZED) function, using manual gain controls on both high and low frequencies to obtain the best analog trace. Soundings were recorded in meters and tenths of meters. Six-meter bar checks were conducted and recorded daily, using both the LOW and the HIGH + LOW (HIGH DIGITIZED) functions. The echo sounders were operated in accordance with the Provisional Instructions "Raytheon DSF-6000N Echo-Sounder Operating and Processing Instructions", dated July 5, 1983, and the Field Procedures Manual for Hydrographic Surveying (FPM).

Raytheon DSF-6000N Echo Sounders

| <u>Vessel</u> | <u>Serial No.</u> | <u>DN</u> |
|---------------|-------------------|-----------|
| 2123 | B044N | 224-272 |
| 2124 | A103N | 224-272 |
| 2125 | B048N | 224-272 |
| 2126 | A117N | 224-242 |
| | B048N | 243-245 |
| | A117N | 246-272 |

The echo sounders were continuously monitored during data acquisition. All sounding data were scanned at least two times, to ensure all significant peaks were inserted, and to verify the digitized depths.

G. CORRECTIONS TO ECHO SOUNDINGS

Corrections to echo soundings were determined for static draft, velocity of sound through water, settlement and squat. Predicted tides were used for all plots. Sounding correctors apply to both narrow and wide beams of the DSF-6000N echo sounder. Supporting data and computations for all corrections to echo soundings are included in the "Fall 1992 Corrections to Echo Sounding Data Package for OPR-P125-RA."

Sound Velocity

Correctors for the velocity of sound through water were determined from the casts 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> |
|---------------------------|-----------------|--------------------------|----------------------|---------------------------|------------|
| 2 | 2 | 289.1 | 226-234 | 61°10'02"N 147°49'41"W | 226 |
| 3 | 6 | 295.7 | 237-262 | 61°10'17"N 147°49'39"W | 239 |
| 8 | 14 | 288.9 | 265-276 ² | 61°09'45"N 147°50'21"W | 272 |

The sound velocity casts were acquired with a SBE SEACAT Profiler, S/N 811, which was calibrated at the Northwest Regional Calibration Center in Bellevue, WA, on March 3, 1992.

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 are included in the "Fall 1992 Corrections to Echo Sounding Data Package for OPR-P125-RA." A copy is also included in the report filed with the survey data.

Static Draft

The distance from the transducer face to the gunwale was measured with a large metal square for all launches. Static draft measurements were then determined by dropping a lead line from the gunwale to the water and subtracting this distance from the distance measured with the square. The measurements from the gunwale to the waterline were conducted with the fuel tanks averaging 3/4 full and three people aboard. A transducer depth of 0.6 meter was determined for launches 2123, 2124, 2125 and 2126 on March 21-22, 1992.

Settlement and Squat

Settlement and squat correctors were determined in Shilshole Bay, WA, for launch 2123 on March 11, 2124 on March 16, and 2125 and 2126 on March 18, 1992. Tests were conducted over a hard bottom in depths well exceeding 7 times the vessels' drafts. Both sea and wind were calm. Observations were made through a Zeiss Ni2 leveling instrument to a rod held vertically on deck, directly over the transducer. Correctors were computed in accordance with Hydrographic Manual 4.9.4.2., using FPM Fig. 2.2 and 2.3., and are included in the "Fall 1992 Corrections to Echo Sounding Data Package for OPR-P125-RA." Revised settlement and squat correctors were received from PMC on October 21. These revised correctors were not applied to sheet A, as the final field sheet (FFS) was complete at that time. The revised correctors were applied for office processing.

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, 1992 at PMC. Calibration forms are included in the "Fall 1992 Corrections to Echo Sounding Package for OPR-P125-RA."

✓

Tide Correctors

A 0 hr 0 min time correction and a x0.97 range ratio were applied to predicted tides for the Cordova, Alaska, reference station (945-4050). These correctors were provided in the Project Instructions for sheet A's tidal zone.

✓

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 Whittier (945-4949), at Granite Mine, Port Wells (945-4806) and College Fiord (945-4672). The control station was Valdez, Alaska (945-4240). Opening levels were completed by POS personnel in June, 1992. Closing levels were completed by RAINIER personnel on October 16, 1992.

✓

The station descriptions, field tide records, and Field Tide Notes have been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. Requests for approved tides have been forwarded to N/OES2. Copies of the Field Tide Notes and the request for approved tides are included in Appendix V. ✕

✓

H. CONTROL STATIONS

Geographic positions for all control stations are based on the North American Datum of 1983 (NAD83) and the Geodetic Reference System 1980 Ellipsoid.

✓

A listing of the geodetic stations used to control this survey is ~~included in Appendix III~~ of this report.

attached to

** Filed with the survey records*

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 traverse methods to meet third-order class I standards. Further information can be found in the "Fall 1992 Horizontal Control Report for OPR-P125-RA." ✓

I. HYDROGRAPHIC POSITION CONTROL

Method of Position Control

Soundings, bottom samples, and detached positions were positioned using either Ashtech Differential GPS, or Motorola Mini Ranger Falcon 484 microwave system. ✓

Falcon 484

Accuracy requirements specified in the Hydrographic Manual and in FPM 3.1.3.1 were met. When maximum residuals exceeded the specified limits, the launch was held at a constant speed and course while the station(s) causing the problem was deselected and hydrography was continued. These data were reviewed, and any off track data were smoothed (T&C'd) between good positions. No editing was done when the maximum Error Circle Radius (ECR) value was exceeded for one or two soundings, the data plotted on track, and was bracketed by good positioning information. If the data plotted off track but was still bracketed by good positions, it was smoothed between the good positions during processing. ✓

Ashtech GPS

Accuracy requirements as stated in the FPM were met. Occasionally, the data from the Ashtech was interrupted due to extreme corrector age. The HDAPS dead reckons the launch position during short periods of data interruption. The data were retained if the interruption lasted for only one or two soundings and was bracketed by good positions. No editing was performed if the soundings plotted on line. If they plotted off line, they were smoothed during processing. ✓

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 "Fall 1992 Electronic Control Data Package for OPR-P125-RA." ✓

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 May 21-28, 1992 (DN 142-149). Calibration data and a description of the baseline is included in the "Fall 1992 Electronic Control Data Package for OPR-P125-RA." ✓

In accordance with FPM 3.1.3.3, formal system checks were not documented for multiple LOP hydrography. Data acquired with two LOP's were always bracketed by multiple LOP data acquired with ECR and maximum residuals within acceptable limits, which served as critical system checks. ✓

Ashtech GPS

A VHF Differential shore station was established at station COGHILL. 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 difference 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 normally made each day, and days with no system checks were always bracketed by days with good checks. ✓

Problems

The differential GPS station on COGHILL ran without problems for sheet A. ✓

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." ✱ ✓

J. SHORELINE

Shoreline maps (T-sheets) used to transfer shoreline detail to the final sheets were TP-01421, TP-01422 and TP-01423 (June-August 1988-photography, 1:20,000, NAD83). Chart 16700 (1:20,000 enlargement, 1992) was used to augment the existing registered shoreline manuscripts. ✓

Unpublished United States Geological Survey (USGS) bathymetric maps developed in 1980 by Austin Post were used to augment rock information shown on the existing registered shoreline manuscripts. Copies of these bathymetric maps were borrowed from Nancy and Jim Lethcoe in Valdez, Alaska and returned later during the project. Of the ten USGS rocks shown on the studies, one rock (Pos. No. 3094) was verified as a new feature while the remaining nine rocks were disproved by taking a DP and including full disproval descriptions in the raw master printout. These rocks are discussed later in this section.

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. ✓

✱ Filed with the survey records.

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 1:20,000 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-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. ✓

T-sheet features which were verified were retained and shown on the final field sheets (FFS). Verified shoreline and new features are shown in black on the FFS, while changes to the shoreline are shown in red. ✓

Detailed 1:20,000 paper plots showing all DPs and reference numbers and notes relating to each feature are included with the sheets submitted with this survey. The HDAPS DP Program requires that cartographic codes be assigned to all DPs. These cartographic codes were not plotted because the majority of DPs describe features that are offset slightly from the DP. Position numbers for all DPs are plotted on the DP overlay. Heights are recorded in meters and are corrected to predicted MLLW. ✓

Disprovals

- (on TP-01422)
- ✓ The vicinity of the T-sheet rock awash at $61^{\circ}08'30''N$, $147^{\circ}50'11''W$ was inspected (Pos. No. 4586) and the rock was not seen. The average water depth was 30 meters and the tide stage was 0.6 meters below MLLW. The search was conducted for 10 minutes and the search radius was 50 meters from the DP. Water visibility was 2 meters. *Rock considered disproved. Not shown on smooth sheet.*

New Features

The following are significant new features found and are shown on the FFS.

- ✓ Position Nos. 8072, 8073, 8074 describe an islet and reef at $61^{\circ}13'27''N$, $147^{\circ}37'42''W$ which bares ~~0.2~~ ^{0.5} m at ~~MLLW~~ ^{MLHW}. The feature is 200 m long trending northeast. *Chart as shown on smooth sheet.*
- ✓ Position Nos. 6046, 2872, 3094 describe three rocks along a submerged ridge which extends nearly 300 m offshore of a point of land. The high point of the feature at $61^{\circ}13'19''N$, $147^{\circ}41'32''W$ bares ~~2.2~~ ^{2.2} m at MLLW, with two lower high points shown on the FFS. *Chart as shown on smooth sheet.*
- ✓ Position Nos. 6035, 6036, 6037 define a reef at $61^{\circ}10'00''N$, $147^{\circ}52'37''W$ 400 m offshore which bares ~~1.2~~ ^{uncovers 5} m at MLLW. *Other Chart as shown on smooth sheet*

- ✓ Nine rocks (Pos. Nos. 3092, 3095, 3097-9, 6331, 6332, 6334, and 6346), originating from a preliminary 1:20,000 scale USGS bathymetric map, were searched for visually

and by echo sounder but not found. Search time was approximately 10 min. for each rock with an average search radius of 30 meters from the DP. Tide stage ranged between +0.1 meters and -1.0 meters, average water visibility was 2 meters. ✓

Recommendation: The hydrographer recommends that shoreline detail from this survey be used to supersede prior shoreline information. *Concur*

K. CROSSLINES

Crosslines were used for comparisons with mainscheme hydrography. These totaled 36.4 nautical miles, representing 14.7 % of the total hydrography; this percentage does not reflect developments run during additional investigations. ✓

Crossline soundings agree to within 2.0 meters with mainscheme soundings in areas that were not steep slopes. These differences are believed to be attributable to predicted tides or bottom slope. ✓

The vessels acquiring crossline data did not always acquire the corresponding mainscheme data. ✓

L. JUNCTIONS

This survey junctions with survey H-10438 (1:20,000, 1992) to the southwest. No irregularities were found when comparing soundings and depth curves. Agreement between overlapping soundings is less than 2 meters. ✓

M. COMPARISON WITH PRIOR SURVEYS

See Eval Rpt, rect 6

Not Applicable.

N. COMPARISON WITH THE CHART

See Eval Rpt, rect 7a.

This survey was compared to NOS chart 16700, 24th Edition, Jan 11, 1992, 1:200,000 (NAD83). Although there have been some reconnaissance investigations in the area, College Fiord has never been surveyed. Subsidence from the 1964 earthquake is clearly evident and has an effect on the accuracy of pre-earthquake blue print and chart letter data in the area. USGS bathymetric maps show submergence, as do dead trees along the shoreline and the repositioning of horizontal control stations. The bottom has been relatively stable since the 1964 earthquake. ✓

Recommendation: Sounding data from the present survey should be used to supersede prior soundings. *Concur*

AWOIS Item 51954: Shoaling (11 meters) reported northeast of College Point in the vicinity of 61°13'05.5"N, 147°42'23.8"W. This item was investigated by a 25-meter line spacing development in a 400-meter radius around the charted location. The shoalest sounding located during the present survey was 9.9 meters at 61°13'16.8"N, 147°42'25.2"W. ✓

Recommendation: Sounding data from the present survey should be used to supersede AWOIS item 51954. *Concur*

Dangers to Navigation

Eight 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~~ *attached to* this report. ✓

O. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede the blue prints and chart letters in the common areas. *Concur*

P. AIDS TO NAVIGATION

No fixed or floating aids to navigation are located on this survey. ✓

Q. STATISTICS

| <u>Vessel:</u> | <u>2123</u> | <u>2124</u> | <u>2125</u> | <u>2126</u> | <u>Total</u> |
|----------------|-------------|-------------|-------------|-------------|--------------|
| # of Pos | 1145 | 847 | 367 | 167 | 2526 |
| NM Hydro | 189.7 | 147.5 | 36.4 | 15.1 | 388.6 |

NM² Hydrography 24.3 Velocity Casts 3

Detached Positions 84 Tide Stations 3 ✓

Reference Numbers 51

Bottom Samples 31

R. MISCELLANEOUS

Loran C comparisons were sent to DMAHTC and U.S. Coast Guard in accordance with the Project Instructions. ✓

Bottom samples were not retained nor sent to the Smithsonian Institution in accordance with the Project Instructions. ✓

The deepest draft ship presently navigating these waters is the cruise ship SAGA FIORD with a reported (Southwest Alaska Pilots Association, Homer, Alaska) draft of 30 feet. Cruise ships frequently navigate to within 0.5 NM of the face of Harvard Glacier. As many as five large cruise ships per day transit College Fiord during the height of the summer season. ✓

Ice was observed near the faces of Yale, Harvard, Smith, Bryn Mawr, and Wellesley Glacier. Most floating ice from these glaciers calving is brash or growler type. Ice was found floating throughout College Fiord during the survey. The areas near the glaciers were beginning to freeze near the end of October. ✓

Small boat anchorage can be found in the vicinity of $61^{\circ}12'50''N$, $147^{\circ}42'30''W$, south of Tuition Island in Yale Arm. A 1:10,000 scale inset of the anchorage area, as per HSG #61, is included on the FFS. *Area depicted at 1:20,000 on the smooth sheet.* ✓

S. RECOMMENDATIONS

Mapping and Charting Branch should produce a ~~preliminary~~ 1:100,000 scale metric chart of this area as soon as possible to serve the needs of Southwest Alaska Pilots Association, recreational boaters, fishermen, and the numerous cruise ships that frequent this area. *Concur*

T. REFERRAL TO REPORTS

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

| <u>Title</u> | <u>Date Sent</u> | <u>to Office</u> |
|--|------------------|------------------|
| Fall 1992 Horizontal Control Report for OPR-P125-RA | November 1992 | N/CG2333 |
| Fall 1992 Electronic Control Data Package for OPR-P125-RA | November 1992 | N/CG245 |
| Fall 1992 Corrections to Echo Soundings Data Package for OPR-P125-RA | November 1992 | N/CG245 |
| Fall 1992 Coast Pilot Report for OPR-P125-RA | November 1992 | N/CG245 |
| Fall 1992 User Evaluation Report for OPR-P125-RA | November 1992 | N/CG245 |
| Cruising Guide to Prince William Sound; Lethcoe, Jim and Nancy, Valdez, Alaska | October 1992 | N/CG241 |
| USGS Preliminary Bathymetric Maps, 1980 | See Section J | |

Respectfully Submitted,

Jonathan M. Klay
Jonathan M. Klay
Ensign, NOAA

Approved and Forwarded,

Thomas W. Richards
Thomas W. Richards
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 28 Oct 1992

| No | Type | Latitude | Longitude | H | Cart | Freq | Vel | Code | MM/DD/YY | Station Name |
|----------------|--------------|--------------------------|--------------------------|---------------|----------------|----------------|----------------|--------------|---------------------|----------------------------|
| 100 | F | 061:04:13.341 | 147:56:49.572 | 44 | 250 | 0.0 | 0.0 | C | 08/16/92 | COGHILL(GPS) 1947 |
| 101 | F | 061:08:24.394 | 147:55:01.669 | 4 | 250 | 0.0 | 0.0 | 2 | 08/16/92 | HOLY 1992 |
| 102 | F | 061:03:11.820 | 148:00:04.900 | 5 | 250 | 0.0 | 0.0 | D | 08/16/92 | IORD 1992 |
| 103 | F | 061:06:34.024 | 147:52:56.711 | 9 | 250 | 0.0 | 0.0 | 6 | 08/27/92 | UPPER 1947 |
| 104 | F | 061:11:57.292 | 147:49:44.750 | 5 | 250 | 0.0 | 0.0 | 9 | 08/19/92 | VASS 1992 |
| 105 | F | 061:12:20.473 | 147:45:41.198 | 4 | 250 | 0.0 | 0.0 | 1 | 08/27/92 | COLLEGE 1947 |
| 106 | F | 061:00:20.003 | 148:05:20.704 | 5 | 250 | 0.0 | 0.0 | 1 | 09/02/92 | HAM 1947 |
| 107 | F | 061:00:07.172 | 148:10:30.719 | 5 | 250 | 0.0 | 0.0 | B | 09/02/92 | BARRY RMI 1947 |
| 108 | F | 061:02:20.039 | 148:07:02.590 | 4 | 250 | 0.0 | 0.0 | 7 | 09/02/92 | ORDER 1947 |
| 109 | F | 060:56:03.207 | 148:03:32.090 | 56 | 250 | 0.0 | 0.0 | 4 | 10/20/92 | PREF(GPS) 1992 |
| 110 | F | 061:04:44.163 | 148:08:27.593 | 11 | 250 | 0.0 | 0.0 | 0 | 09/10/92 | GLASS 1947 |
| 111 | F | 061:04:00.365 | 148:09:53.474 | 4 | 250 | 0.0 | 0.0 | 4 | 09/10/92 | DURHAM RMI 1947 |
| 112 | F | 061:02:42.590 | 148:09:51.591 | 4 | 250 | 0.0 | 0.0 | 3 | 09/10/92 | BARN 1992 |
| 113 | F | 061:05:58.301 | 148:09:12.319 | 8 | 250 | 0.0 | 0.0 | A | 09/13/92 | ACUTE 1947 |
| 114 | F | 061:05:09.058 | 148:11:28.016 | 6 | 250 | 0.0 | 0.0 | E | 09/13/92 | LIND 1992 |
| 115 | F | 060:48:05.062 | 148:10:45.275 | 7 | 250 | 0.0 | 0.0 | | 09/15/92 | PBRT(GPS) 1914 |
| 116 | F | 061:03:20.244 | 148:15:14.930 | 7 | 250 | 0.0 | 0.0 | D | 09/15/92 | JOINT 1947 |
| 117 | F | 061:00:07.990 | 148:21:21.276 | 10 | 250 | 0.0 | 0.0 | 6 | 09/22/92 | GNOME 1992 |
| 118 | F | 061:03:28.730 | 148:20:28.179 | 6 | 250 | 0.0 | 0.0 | 7 | 09/22/92 | SUPR 1992 |
| 119 | F | 061:02:25.699 | 148:21:40.950 | 8 | 250 | 0.0 | 0.0 | B | 09/22/92 | FAIRY 1992 |
| 120 | F | 061:04:33.081 | 148:18:12.690 | 6 | 250 | 0.0 | 0.0 | 5 | 10/06/92 | SERP 1992 |
| 121 | F | 060:59:07.956 | 148:22:25.717 | 29 | 250 | 0.0 | 0.0 | 2 | 10/06/92 | CALVE 1992 |
| 122 | F | 060:59:27.312 | 148:25:26.823 | 7 | 250 | 0.0 | 0.0 | 3 | 09/20/92 | ROAR 1992 |
| 123 | F | 061:01:05.907 | 148:22:25.927 | 17 | 250 | 0.0 | 0.0 | 3 | 10/07/92 | HARR 1992 |
| 124 | F | 060:46:37.100 | 148:40:34.304 | 6 | 250 | 0.0 | 0.0 | 4 | 10/10/92 | MARGIN 1956 |
| 125 | F | 060:47:59.465 | 148:40:06.242 | 4 | 250 | 0.0 | 0.0 | E | 10/10/92 | TRIP 1914 |
| 126 | F | 060:46:40.574 | 148:39:26.332 | 4 | 250 | 0.0 | 0.0 | A | 10/10/92 | PUNT 2 1956 |
| 127 | F | 060:57:29.915 | 148:13:01.522 | 45 | 250 | 0.0 | 0.0 | 6 | 10/19/92 | TEEC 1992 |
| 128 | F | 060:56:09.124 | 148:03:20.601 | 47 | 250 | 0.0 | 0.0 | 7 | 10/19/92 | PARR 1992 |
| 129 | F | 060:54:48.628 | 147:59:03.402 | 4 | 250 | 0.0 | 0.0 | 8 | 10/21/92 | BERM 1992 |
| 130 | F | 060:55:21.619 | 148:01:13.320 | 4 | 250 | 0.0 | 0.0 | C | 10/23/92 | TION 1992 |
| 131 | F | 060:53:31.700 | 147:57:06.079 | 5 | 250 | 0.0 | 0.0 | 5 | 10/23/92 | JELY 1992 |
| 132 | F | 060:52:07.247 | 147:54:30.050 | 4 | 250 | 0.0 | 0.0 | D | 10/23/92 | WISP 1951 |
| 133 | F | 060:51:02.341 | 147:54:57.590 | 6 | 250 | 0.0 | 0.0 | 9 | 10/23/92 | TOTAL 1947 |



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Rockville, MD 20852-3019

OFFICE OF NOAA CORPS OPERATIONS

NOAA Ship RAINIER S221
1801 Fairview Ave. E.
Seattle, Washington
98102-3767

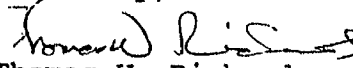
October 21, 1992

Director
DMAHTC
Attn: MCNM
6500 Brookes Lane
Washington, D.C. 20315-0030

Dear Sir:

While conducting hydrographic survey operations in College Fjord, Alaska, NOAA Ship RAINIER discovered 8 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,


Thomas W. Richards
Captain, NOAA
Commanding Officer

Enclosures





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Rockville, MD 20852-3019

OFFICE OF NOAA CORPS OPERATIONS

NOAA Ship RAINIER S221
1801 Fairview Ave. E.
Seattle, Washington
98102-3767


October 21, 1992

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


Thomas W. Richards
Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
PMC



**ADVANCE
INFORMATION**

9:02 Thursday, 15 October 1992
tPostOUT : Hellickson

RA-PMC-190-223

P 151513Z OCT 92
FM NOAA S RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCNAVWARN WASHINGTON DC//MCNM//
INFO NOAA MOP SEATTLE WA
ACCT CM-VCAA
BT
UNCLAS

NOAA SHIP RAINIER HAS FOUND 8 DANGERS TO NAVIGATION IN PRINCE
WILLIAM SOUND, ALASKA (PROJECT OPR-P125-RA) WITHIN THE LIMITS OF
HYDROGRAPHIC SURVEY H-10437 COLLEGE FIORD.
THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL
NOTICE TO MARINERS:

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

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

| ITEM | DANGER | DEPTH | LATITUDE | LONGITUDE |
|------|---|----------|-------------|--------------|
| A./ | ✓ ROCK UNCOVERS | 1 1/2 FM | 61/13/26.62 | 147/37/45.01 |
| B./ | SHOAL | 10 FM | 61/12/58.85 | 147/41/10.80 |
| C./ | ✓ ROCK COVERS | 3/4 FM | 61/13/15.90 | 147/41/36.37 |
| D./ | SHOAL | 1/2 FM | 61/12/08.44 | 147/42/11.05 |
| E./ | SHOAL | 9 FM | 61/11/36.70 | 147/46/18.32 |
| F./ | SHOAL | 2 1/4 FM | 61/14/55.75 | 147/43/10.82 |
| G./ | ✓ ROCK UNCOVERS | 3/4 FM | 61/15/48.72 | 147/41/47.04 |
| H./ | SOUTHERN HALF OF YALE GLACIER HAS RECEDED APPROXIMATELY 1.0 NM TO THE NORTHEAST. | | | |

BECAUSE OF THE SMALL SCALE OF CHART 16700 IT IS RECOMMENDED THAT
THESE DANGERS BE REPORTED IN THE LOCAL NOTICE TO MARINERS AS
DEGREES AND DECIMAL MINUTES.

QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO:
COMMANDING OFFICER, NOAA SHIP RAINIER, 1801 FAIRVIEW AVE E.
SEATTLE WA 98102-3767 OR VIA RADIO CONTACT ON 2182 MHZ OR VHF
CHANNELS 13 AND 16. CALL LETTERS WTEF. A LETTER WITH ATTACHED
CHARTLET IS BEING MAILED TO CONFIRM THIS MESSAGE.

BT

**ADVANCE
INFORMATION**

10'

148°

50'

60'

POLLUTION REPORTS

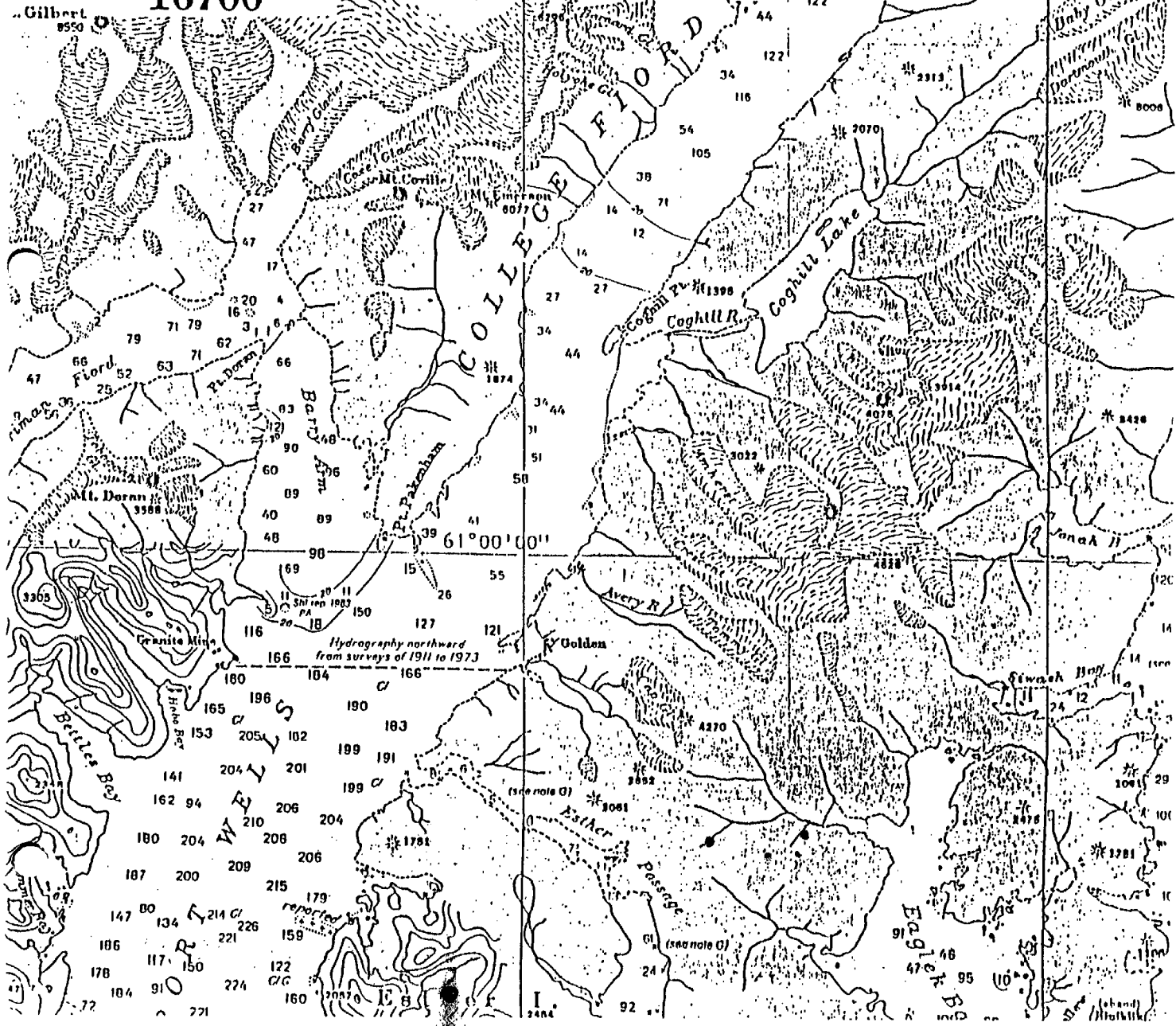
Report all spills of oil and hazardous substances to the National Response Center via 800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 FR 153).

NOTE

3 nautical mile territorial sea was established by Presidential Proclamation 5928, 27, 1968, and is also the outer limit of the U.S. contiguous zone for the application law. The 3 nautical mile line, previously identified as the outer limit of the territorial sea and because the proclamation states that it does not alter existing State or Federal nautical mile natural resources boundary of Texas, the Gulf coast of Florida, and the 3 nautical mile line elsewhere remain the inner boundary of the Federal jurisdiction and the limit of states' jurisdiction under the Submerged Lands Act (P.L. Stat 29, March 22, 1953). These maritime limits are subject to modification, as for future charts. The lines shown on the most recent chart edition take precedence.

24th Ed., Jan. 11/92

16700





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

May 19, 1994

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

Dear Sir:

During office processing of hydrographic survey H-10437, College Fiord, Prince William Sound, Alaska, it was determined that depths previously reported by NOAA Ship RAINIER on October 15, 1992 are shoaler than reported. These potential dangers affect the following nautical chart.

| <u>Chart</u> <u>Number</u> | <u>Edition</u> <u>No.</u> | <u>Edition</u> <u>Date</u> | <u>Horizontal</u> <u>Datum</u> |
|-------------------------------|------------------------------|-------------------------------|-----------------------------------|
| 16700 | 24th | 1/11/92 | 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-10437

Survey Title:

State: Alaska

General Locality: Prince William Sound

Sublocality: College Fiord

Project Number: OPR-P125-RA

The following was discovered during hydrographic survey operations:

A shoal previously reported covered 1/2 fathom has been determined to be covered by 1/4 fathom at MLLW.

A shoal previously reported covered 2 1/4 fathoms has been determined to be covered by 2 fathoms at MLLW.

Affected nautical chart:

| Chart Number | Edition | | Survey Depth | Horizontal Datum | Geographic Position | |
|--------------|---------|---------|--------------|------------------|---------------------|--------------|
| | No. | Date | | | Latitude | Longitude |
| 16700 | 24th | 1/11/92 | 1/4 fm | NAD83 | 61/12/08.4N | 147/42/11.0W |
| 16700 | 24th | 1/11/92 | 2 fm | NAD83 | 61/14/55.7N | 147/43/10.8W |

Depths have been reduced to Mean Lower Low Water.

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
Coast and Geodetic Survey
Rockville, Maryland 20852

APR 16 1992

*FOR
FOR THE
PLEASE RETURN
to me
CO
Please return
to FOO.*

MEMORANDUM FOR: Captain Thomas W. Richards, NOAA
Commanding Officer, NOAA Ship RAINIER

FROM: Lieutenant Commander John D. Wilder, NOAA
Chief, Operations Section

SUBJECT: Base-line Calibration Waiver

Your request for a waiver of the ^{back} required Mini-Ranger base-line calibrations between two back-to-projects (OPR-P319-RA, Northern Cook Inlet and OPR-P125-RA, Northwest Prince William Sound) is approved. Adhere to the remaining portions of the Field Procedures Manual section 3.1.3.2 throughout the 1992 field season.

cc: PMC1
N/CG245



| | | |
|---|---|--------------------------------------|
| UNITED STATES BOARD ON GEOGRAPHIC NAMES DOMESTIC GEOGRAPHIC NAMES REPORT | <input type="checkbox"/> Controversial name | Recommended name: TUIITION ISLAND |
| | <input type="checkbox"/> Name change | State: ALASKA |
| | <input type="checkbox"/> Changed application | County: ANCHORAGE |
| | <input checked="" type="checkbox"/> Other (NEW) | |

Lat. 061° 12' 36" N. Long. 147° 41' 24" W. Mouth End Center (Circle one)
 Lat. _____ " N. Long. _____ " W. Heading End (Circle one)

Description of feature: where appropriate, give shape, length, width, direction of flow or trend, direction and distance of extremities from points with established names, and section, township, range, meridian where useful, also elevation if known.

TUIITION ISLAND is the proposed name for an island located in Yale Arm of College Fiord, 1.9 NM east of College Point (see attached chartlet). The island is 0.15 NM wide, 0.9 NM long trending northeast, and 70 m high.

| Published Maps Using Recommended Name (Map name, date, agency, & scale) | Variant Name or Application | Map or Source Using Variant (Map name, date, agency, & scale) |
|--|-----------------------------|--|
| NOS Chart 16013, 1:969,761, 25th Ed., Nov 4/89 | | |
| NOS Chart 16700, 1:200,000, 24th Ed., Jan 4/92 | | |
| USGS Quadrangle Map Anchorage (A-2), 1:63,360, 1960 | | |

Av. include information as to origin, spelling, and meaning of the recommended name and/or statement concerning nature of difference in usage or application

The name TUIITION ISLAND reflects the name scheme of College Fiord and the many glaciers named after eastern colleges. This is the only sizable island in College Fiord and is a prominent feature in Yale Arm. It is referred to in the "Cruising Guide to Prince William Sound" by Jim and Nancy Lethcoe only as "the large island" in Yale Arm. See attached copy. A chartlet is also enclosed.

| AUTHORITY FOR RECOMMENDED NAME | MAILING ADDRESS | OCCUPATION |
|--------------------------------|--|------------|
| NOAA Ship RAINIER | 1801 Fairview Avenue East Seattle, WA 98102 | |
| | | |
| | | |
| | | |

Submitted by: *Thomas W. Richards*
 Name: Thomas W. Richards, CAPT, NOAA Title Commanding Officer Date: 9/29/92
 Agency: NOAA/NOS/NOAA Ship RAINIER Address: See above address

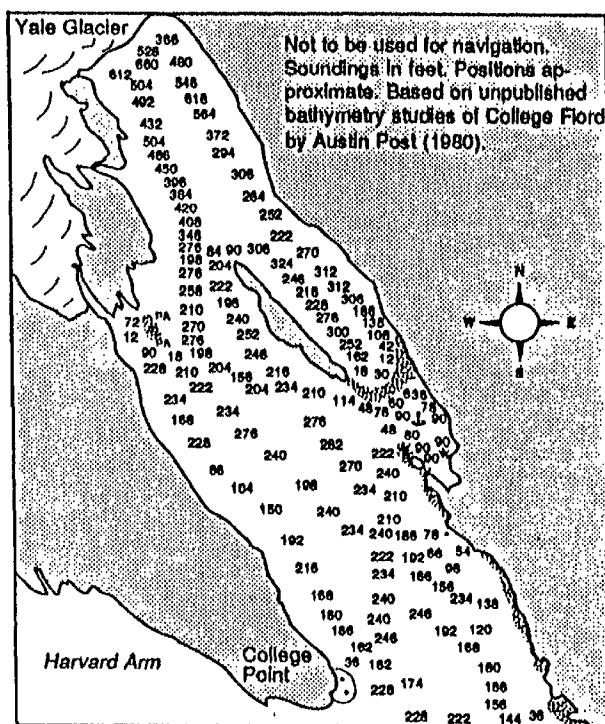
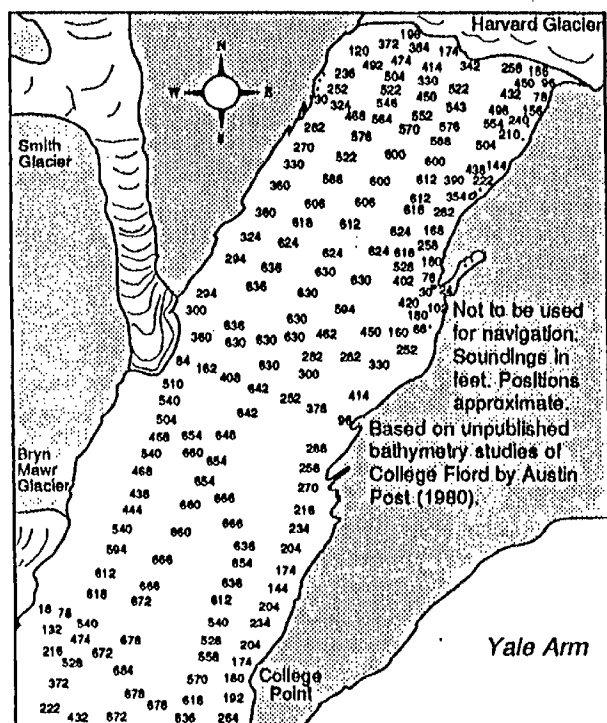


Cruising Guide to Prince William Sound

Volume I. Western Part

**By Jim and Nancy Lethcoe
Alaskan Wilderness Sailing Safaris
P.O. Box 701, Whittier, AK 99693**

Publisher: Prince William Sound Books, P.O. Box 1313, Valdez, AK 99686



COLLEGE FIORD: Charts I and II

Harvard and Yale Glaciers at the head of College Fiord are after Columbia the largest tidewater glaciers in the Sound. In addition, more than a dozen other glaciers flow into or lie just above the fiord, making this one of the most scenic and glacially active areas in the Sound. Because of the restricted nature of the fiord and the large quantities of ice calving off the glaciers, the fiord is not always navigable for small craft. However, if you happen to arrive on a day when ice is minimal, the trip to the glaciers is a truly memorable experience. In addition to the glaciers, the fiord supports a good population of harbor seals and sea otters. While drifting in the ice, we have watched mother sea otters sharing pup-sitting duties. Usually, a mother and pup will join another on a large ice berg. Once the pups begin to play, one mother stays to watch them while the other mother leaves to feed.

College Fiord has only been scantily surveyed. Several submerged moraines are apparent on the chart. Harvard Glacier is currently advancing slowly; Yale Glacier continues to retreat dramatically. Anchorage can be had in Yale Arm in the bay southwest of the large island. A moraine marking the glacier's position in 1910 stretches between the island and mainland and keeps some of the heavy ice in Yale Arm from entering the anchorage. However, boaters should be prepared for heavy ice in the anchorage.

Camping: There is a U.S. Forest Service cabin at Coghill. Kayakers often camp on the spit at Point Pakenham or along

two beaches a mile or two north of Point Pakenham. There are also camping spots on the outwash deltas near Wellesley, Vassar and Bryn Mawr Glaciers. The best spot to camp in Yale Arm is along the southeastern shore of the cove to the southwest of the island.

GOLDEN (60°58'; 148°01'W) holds more interest as a historical site than it does as an anchorage. However, one can anchor just inside the mouth of the cove which cuts deeply into the southwest shore of the large island in its mouth with protection from the prevailing northerly winds. The anchorage is shallow (13 ft.) and has limited swinging room with numerous rocks in the immediate vicinity. In really windy weather, we would recommend moving from here to the safety of nearby Esther Passage.

Points of Interest: On the southside of the lagoon, one can still see a few remains of the early gold mining developments (circa 1912 ff.) which have survived the vicissitudes of the weather, insects and souvenir hunters. A small A-frame has been built by a more recent miner on top of the old mine.

Hiking possibilities are virtually unlimited. It is an easy walk over a low hill covered with peatland bogs and hemlock copses to Dave's Lake. The stream from the lake runs through a narrow canyon whose lower end is accessible by dinghy or kayak.


APPROVAL SHEET

for

H-10437
RA-20-3-92

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.


Thomas W. Richards
Captain, NOAA
Commanding Officer

ORIGINAL



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Rockville, Maryland 20852

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: March 15, 1993

MARINE CENTER: Pacific

OPR: P-125-RA

HYDROGRAPHIC SHEET: H-10437

LOCALITY: College Fiord, Prince William Sound, Alaska

TIME PERIOD: August 17 - 28, 1992

TIDE STATION USED: 945-4949 Whittier, Passage Canal
Lat. $60^{\circ} 46.5'N$ Long. $148^{\circ} 41.5'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 945-4949 = 10.41 ft.
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 945-4949 = 11.2 ft.

REMARKS: RECOMMENDED ZONING

Apply a x1.03 range ratio correction to hourly heights

NOTE: Hourly heights are tabulated on Greenwich Mean Time.

for Brian H. Long
CHIEF, DATUMS SECTION



| NOAA FORM 76-155 (11-72) | | U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION | | | | | | SURVEY NUMBER | | | | | | | | | | |
|---------------------------------------|----------------------|--|-----------|--|-----------|--|--------------------------|---------------|-----------------|--|---------------------------|--|----------------|--|-------------------|--|---|----|
| GEOGRAPHIC NAMES | | | | | | | H-10437 | | | | | | | | | | | |
| Name on Survey | A ON CHART NO. 16700 | | B T-01423 | | C T-01422 | | D FROM LOCAL INFORMATION | | E ON LOCAL MAPS | | F P.O. GUIDE OR MAP ATLAS | | G RAND McNALLY | | H U.S. LIGHT LIST | | K | |
| | ALASKA (title) | X | | | | | | | | | | | | | | | | |
| BRYN MAWR GLACIER | X | X | X | | | | | | | | | | | | | | | 2 |
| COLLEGE FIORD | X | X | X | | | | | | | | | | | | | | | 3 |
| COLLEGE POINT | X | X | | | | | | | | | | | | | | | | 4 |
| HARVARD ARM | | X | X | | | | | | | | | | | | | | | 5 |
| HARVARD GLACIER | X | X | | | | | | | | | | | | | | | | 6 |
| PRINCE WILLIAM SOUND (title) | X | | | | | | | | | | | | | | | | | 7 |
| SMITH GLACIER | X | X | | | | | | | | | | | | | | | | 8 |
| TUITION ISLAND (PENDING BGN DECISION) | | | | | | | | | | | | | | | | | | 9 |
| VASSAR GLACIER | X | | | | | | | | | | | | | | | | | 10 |
| WELLESLEY GLACIER | X | | X | | | | | | | | | | | | | | | 11 |
| YALE ARM | | X | | | | | | | | | | | | | | | | 12 |
| YALE GLACIER | X | | | | | | | | | | | | | | | | | 13 |
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Approved:

Charles P. Harrington
Chief Geographer - N/CG 2-5

DEC - 8 1993

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 | 2 | | | | |
| ENVELOPES | | | | | |
| VOLUMES | 4 | | | | |
| CAHIERS | | | | | |
| BOXES | | | | 1 | |

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES
The following statistics will be submitted with the cartographer's report on the survey

| PROCESSING ACTIVITY | AMOUNTS | | |
|--|--------------|------------|--------|
| | VERIFICATION | EVALUATION | TOTALS |
| POSITIONS ON SHEET | | | 2403 |
| POSITIONS REVISED | | | |
| SOUNDINGS REVISED | 18 | | 18 |
| CONTROL STATIONS REVISED | | | |
| | TIME-HOURS | | |
| | VERIFICATION | EVALUATION | TOTALS |
| PRE-PROCESSING EXAMINATION | | | |
| VERIFICATION OF CONTROL | | | |
| VERIFICATION OF POSITIONS | 78 | | 78 |
| VERIFICATION OF SOUNDINGS | 99 | | 99 |
| VERIFICATION OF JUNCTIONS | | | |
| APPLICATION OF PHOTOBATHYMETRY | | | |
| SHORELINE APPLICATION/VERIFICATION | | | |
| COMPILATION OF SMOOTH SHEET | 111 | | 111 |
| COMPARISON WITH PRIOR SURVEYS AND CHARTS | | 3 | 3 |
| EVALUATION OF SIDE SCAN SONAR RECORDS | | | |
| EVALUATION OF WIRE DRAGS AND SWEEPS | | | |
| EVALUATION REPORT | | 13 | 13 |
| GEOGRAPHIC NAMES | | | |
| OTHER* | | | |
| *USE OTHER SIDE OF FORM FOR REMARKS | 288 | 16 | 304 |

| | | |
|---|---------------------------|------------------------|
| Pre-processing Examination by LT J Griffin | Beginning Date 11/9/92 | Ending Date 1/8/93 |
| Verification of Field Data by R. Shipley, S. Otsubo | Time (Hours) 288 | Ending Date 3/16/94 |
| Verification Check by S. Otsubo, J. Green | Time (Hours) 21 | Ending Date 4/22/94 |
| Evaluation and Analysis by J. Green | Time (Hours) 16 | Ending Date 4/22/94 |
| Inspection by D. Hill | Time (Hours) 4 | Ending Date 5/19/94 |

EVALUATION REPORT H-10437

1. INTRODUCTION

Survey H-10437 is a basic hydrographic survey accomplished by the NOAA Ship *Rainier*, under the following Project Instructions.

OPR-P125-RA, dated July 7, 1992
CHANGE NO. 1, dated August 21, 1992

This survey was conducted in Alaska, in northwest Prince William Sound, and covers the northern portion of College Fiord, Harvard Arm and Yale Arm. The survey extends from latitude 61/16/30N in the north, south to latitude 61/06/20N; from longitude 147/57/00W to the west to 147/37/15W to the east. The sea floor consists primarily of gray mud. Depths range from zero along the shore to 228 meters.

Predicted tides zoned for the survey area from Cordova, Alaska, were used for the reduction of soundings during field processing. Approved hourly heights zoned from Whittier, Passage Canal, Alaska, gage 945-4949, 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 dynamic draft, sound velocity and electronic control 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 feature 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 Fall 1992 Horizontal and Electronic Control Reports for OPR-P125-RA, dated November 1992, contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are 1992 field and published 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 using the NAD 83 projection by applying the following correction.

Latitude: -1.949 seconds (-60.335 meters)
Longitude: 7.423 seconds (110.888 meters)

The year of establishment of control stations shown on the smooth sheet originates with the previously listed horizontal control report and the published data.

Several positions were located by DGPS with high HDOP values. These positions were verified by ensuring consistency with surrounding data and are considered acceptable. No critical soundings or dangers to navigation were positioned with DGPS with unacceptable HDOP values.

Several additional positions were located by Mini-Ranger with weak geometry. These positions were also verified by ensuring consistency with surrounding data and are considered acceptable. No critical soundings or dangers to navigation were positioned with the Mini-Ranger with weak control.

The following final reviewed shoreline maps apply to this survey.

| <u>Number</u> | <u>Photography Date</u> | <u>Scale</u> | <u>Datum</u> |
|---------------|-------------------------|--------------|--------------|
| TP-01421 | June-August 1988 | 1:20,000 | NAD 1983 |
| TP-01422 | June-August 1988 | 1:20,000 | NAD 1983 |
| TP-01423 | June-August 1988 | 1:20,000 | NAD 1983 |

The shoreline map high waterline has been changed by hydrographic information between latitude 61/12/55N, longitude 147/38/44W, and latitude 61/13/36N, longitude 147/37/12W. It is shown in dashed red on the smooth sheet. A photogrammetrically depicted island in the vicinity of latitude 61/14/39N, longitude 147/46/54W is now connected to the high waterline which is drafted in red on the smooth sheet. ✓

These changes are considered adequate to supersede the common photogrammetrically delineated shoreline.

Rocks at the following positions were transferred to the smooth sheet from the shoreline maps without supporting hydrographic positions. The positions of the rocks have been manually digitized and are included in the digital file accompanying this survey.

| Latitude N | Longitude W | Latitude N | Longitude W |
|------------|-------------|------------|-------------|
| 61/06/17.9 | 147/53/15.8 | 61/12/46.6 | 147/45/32.0 |
| 61/06/19.4 | 147/53/14.3 | 61/13/19.4 | 147/41/24.9 |
| 61/09/01.9 | 147/49/03.1 | 61/13/00.5 | 147/48/41.3 |
| 61/09/23.3 | 147/48/18.3 | 61/13/21.8 | 147/42/01.9 |
| 61/09/53.3 | 147/47/38.1 | 61/13/23.0 | 147/41/47.2 |
| 61/09/56.3 | 147/52/55.9 | 61/13/29.0 | 147/44/29.3 |
| 61/11/28.9 | 147/44/03.6 | 61/13/56.9 | 147/47/39.3 |
| 61/11/46.4 | 147/43/16.0 | 61/14/26.9 | 147/47/01.6 |
| 61/11/50.5 | 147/49/43.2 | 61/15/47.9 | 147/41/46.7 |
| | | 61/15/48.7 | 147/41/47.0 |

3. HYDROGRAPHY

Except as noted below, 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.

Several standard depth curves could not always be drawn continuously because of the steep slope encountered in the survey area.

4. CONDITION OF SURVEY

Except as noted below 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 1992 Edition.

The raw data listing of records between positions 8066 and 8130 was not forwarded for processing.

5. JUNCTIONS

Survey H-10437 junctions with the following survey.

| <u>Survey</u> | <u>Year</u> | <u>Scale</u> | <u>Area</u> |
|---------------|-------------|--------------|-------------|
| H-10438 | 1992 | 1:20,000 | South |

The junction with survey H-10438 has been completed and hydrography is in reasonable agreement.

6. COMPARISON WITH PRIOR SURVEYS

There are no prior surveys applicable to this survey area.

7. COMPARISON WITH CHART

Survey H-10437 is compared to the following chart.

| <u>Chart</u> | <u>Edition</u> | <u>Date</u> | <u>Scale</u> | <u>Datum</u> |
|--------------|----------------|------------------|--------------|--------------|
| 16700 | 24th | January 11, 1992 | 1:200,000 | NAD 83 |

a. Hydrography

This is the initial NOS survey of this area. Charted hydrography originates from a University of Alaska survey in 1972 and a National Geographic Society survey in 1910. With the exception of the following, see section N of the hydrographer's report for the comparison with charted features.

Two charted islets were observed to be significantly diminished in elevation from the original charting report. The source of these features is unascertainable. Specifically, a charted islet in the vicinity of latitude 61/09/55N, longitude 147/52/39W is now classified as a reef which uncovers 0.6 meters at MLLW; while a charted islet in the vicinity of latitude 61/10/47N, longitude 147/51/30W is now covered 0.4 meters at MLLW.

Survey H-10437 is adequate to supersede charted hydrography within the common area.

b. AWOIS

There is one AWOIS item within the limits of this survey. This item is adequately discussed and disposed of by the hydrographer in his report, section N.

c. Controlling Depths

There are no channels with controlling depths on survey H-10437.

d. Aids to Navigation

There are no fixed or floating aids to navigation 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. The commander of the NOAA Ship Rainier has proposed the name Tuiton Island for the island located in Yale Arm. Refer to the attached United States Board of Geographic Names Domestic Geographic Names Report (Form 9-1343) for the specifics on this proposal.

f. Dangers to Navigation

Eight dangers to navigation were reported by the hydrographer during this survey. These dangers were reported to the Seventeenth Coast Guard District, DMAH/TC and N/CG221. Copies of the correspondence are attached.

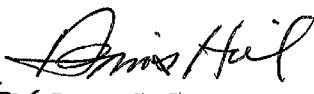
No additional dangers were found during the office processing of this survey, however a report was generated to revise depths previously reported by the hydrographer.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10437 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

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


James S. Green
Supervisory Cartographer

APPROVAL SHEET
H-10437

Initial Approvals:

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

Dennis Hill

Date: 5/19/94

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: 5/23/94

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

Final Approval

Approved:

J. Austin Yeager

Date: 8/8/94

J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

