D00130

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Reconnaissance

Field No. RA-40-1-99

Registry No. D-00130

LOCALITY

State Alaska

General Locality Yakutat Bay

Sublocality Russell Fiord

1999

CHIEF OF PARTY

CAPT A.D. Anderson

LIBRARY & ARCHIVES

DATE OCT 2 2000

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTER NO.
	HYDROGRAPHIC TITLE SHEET	**D-00130**
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-40-1-99**

State **Alaska**

General Locality **Yakutat Bay**

Sublocality **Russell Fiord**

Scale **1:40,000** Date of Survey **19-Jun-99**

Instructions Date **6/2/1999** Project No. **OPR-O351-RA**

Vessel **RA-6 (2126)**

Chief of Party **CAPT A.D. Anderson, NOAA**

Surveyed by **RAINIER Personnel**

Soundings taken by echo sounder,hand lead,pole **Reson SeaBat 8101 Shallow Water MB**

Graphic record checked by **RAINIER Personnel**

Evaluation by **CJ Barry** Automated plot by **HP Design Jet 650C**

Verification by **CJ Barry**

Soundings in **Fathoms and tenths at MLLW based on predicted tides**

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.

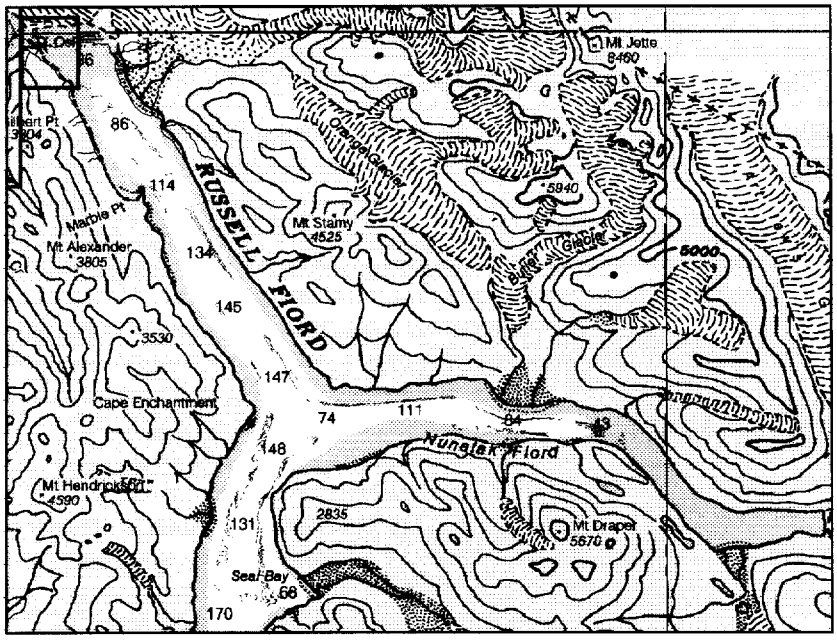
BASED ON PREDICTED TIDES AWOIS / SURF 8/25/00 MCR

Chart Letter to Accompany Reconnaissance Survey D00130

Field Number RA-40-01-99
Scale 1:40,000
June 1999
NOAA Ship RAINIER
Chief of Party: Captain Alan D. Anderson, NOAA

A reconnaissance survey was completed as an extension of the area specified by Project Instructions OPR-O351-RA dated June 2, 1999. The reconnaissance survey consisted of survey tracklines from Hubbard Glacier in Disenchantment Bay at the entrance to Russell Fiord south to Seal Bay and Nunatak Fiord. Data acquisition was conducted June 19, 1999 (DN170).

Illustration 1. Survey area for D00130



Data were acquired by RAINIER's survey launch vessel number 2126 as noted in the Survey Information Summary included with this report. See Project Related Data for OPR-O351-RA for vessel description.

Sounding data were acquired using the Reson SeaBat 8101 shallow water multibeam (SWMB). Coastal Oceanographic's HYPACK version 8.9 was utilized for vessel and line tracking during acquisition. Digital data acquisition was acquired using Triton Elics ISIS version 4.32 and processed using CARIS software version 4.3. Reson 8101 depth data was reviewed with CARIS-HIPS data cleaning programs. After review and cleaning, Reson 8101 depth, position and attitude data were merged with sound velocity, preliminary tides and dynamic draft correctors to compute the true depth and position of each sounding. For this survey, the outer ten beams of the Reson 8101 on each side of the swath (beam numbers 1-10 and 92-101) were not used, reducing the effective swath width to 120°. If there were obvious effects due to sound velocity, a swath of 90° to 110° was retained. This was one solution in limiting the effects of varying salinity and tidal influences.

Once all sounding data was consolidated in HPS, CO-OPS preliminary observed tides for Yakutat (945-3220) were downloaded from the Internet and used to create HPS table #5. This was applied to all soundings in HPS (SWMB) to produce a final sounding plot in MapInfo using UTM Zone 7 projection. A complete listing of

software is included in Appendix VI of the Descriptive Report for H10902.

Two sound velocity casts were used for this survey. Information on the cast is included in the SWMB acquisition log. Settlement and squat correctors, static draft measurements and vessel offsets are included with the project data for OPR-O351-RA-99.

The horizontal datum for this project is NAD 83. See the OPR-O351-RA-99 Horizontal Control Report for additional information. Soundings at the entrance to Russell Fiord were positioned using differential GPS using correctors from VHF differential reference station at HAENKE. Once inside Russell Fiord, non-differential GPS was the sole source of positioning due to loss of VHF correctors.

There was no shoreline manuscript supplied by N/NGS3 for the area east and south of the Russell Fiord inset included in Project OPR-O351-99. RAINIER personnel digitized Chart 16760 in order to provide digital shoreline for orientation purposes. No shoreline verification was conducted for this reconnaissance survey.

No prior surveys exist in the survey area. Reconnaissance survey D00130 extends from contemporary survey H10902.

Survey D00130 was compared to chart 16760 (8th Ed.; Sep 8, 1990, 1:300,000). Preliminary inspection reveals that data acquired on D00130 are in general agreement with the chart. However, due to the nature of the reconnaissance survey, the coverage is not adequate to support or reject the charted soundings. A more thorough survey is required for an adequate comparison. No dangers to navigation were discovered during the Reconnaissance survey.

Statistics for survey D00130 are listed in the Survey Information Summary included with this report.

HYDROGRAPHERS NOTES and RECOMMENDATIONS

The Hydrographer recommends removing Note D on Chart 16761 as Hubbard Glacier has receded since the chart update and Russell Fiord is no longer an isolated lake. CONCUR

The Hydrographer discourages any cruise ships or other marine vessels from attempting to enter Russell Fiord, as the pass is unsafe due to the narrow entrance and threat of sudden calving and strong currents. The current flowing into and out of Russell Fiord is extremely fast and can be treacherous, carrying large semi-submerged icebergs. As the pass continues to change, additional surveys should be considered for the Russell Fiord area, as most remains uncharted and likely to have changed since the receding of the glacier. CONCUR

The Hydrographer maintains the recommendation in charting the pass as foul for all mariners. If the chart is updated prior to the data from a new survey being applied, the following note should be added to the chart "Extreme currents occur at the opening of Russell Fiord into Disenchantment Bay. The pass is deemed unsafe and not navigable by mariners". CONCUR

Approved and Forwarded,

Daniel R. Hershey, CDR/NOAA

Alan D. Anderson for
Captain, NOAA
Commanding Officer

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF COAST SURVEY
Pacific Hydrographic Branch
Seattle, Washington 98115-0070

May 25, 2000

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

During office review of reconnaissance survey D-00130 in Russell Fiord, Yakutat Bay, Alaska, a shoal has been discovered and is considered to be a potential danger to navigation. The danger affects the following chart:

Chart	Edition	Date	Datum
16760	9th Edition	July 11, 1998	NAD83

It is recommended that the enclosed Report of Dangers to Navigation be included in the Local Notice To Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Branch at (206) 526-6836.

Sincerely

James C. Gardner
Commander, NOAA
Chief, Pacific Hydrographic Branch

Enclosure

cc: NIMA
N/CS261

REPORT OF DANGERS TO NAVIGATION

Reconnaissance Survey Registry Number: D-00130

Survey Title: State: Alaska
Locality: Russell Fiord
Sublocality: Yakutat Bay

Project Number: OPR-O351-RA

Survey Date: March 6, 1999

A 9¾ fathom shoal was discovered at the location of a charted 84 fathom sounding. Soundings are reduced to Mean Lower Low Water using predicted tides and are positioned on NAD 83.

Chart Affected: 16760, 9th Edition, July 11, 1998, scale 1:300,000, NAD 83

DANGER TO NAVIGATION	LATITUDE (N)	LONGITUDE (W)
Shoal, 9¾ fm	59°51'02.748"	139°06'41.613"

Questions concerning this report should be directed to the Pacific Hydrographic Branch at (206) 526-6836.

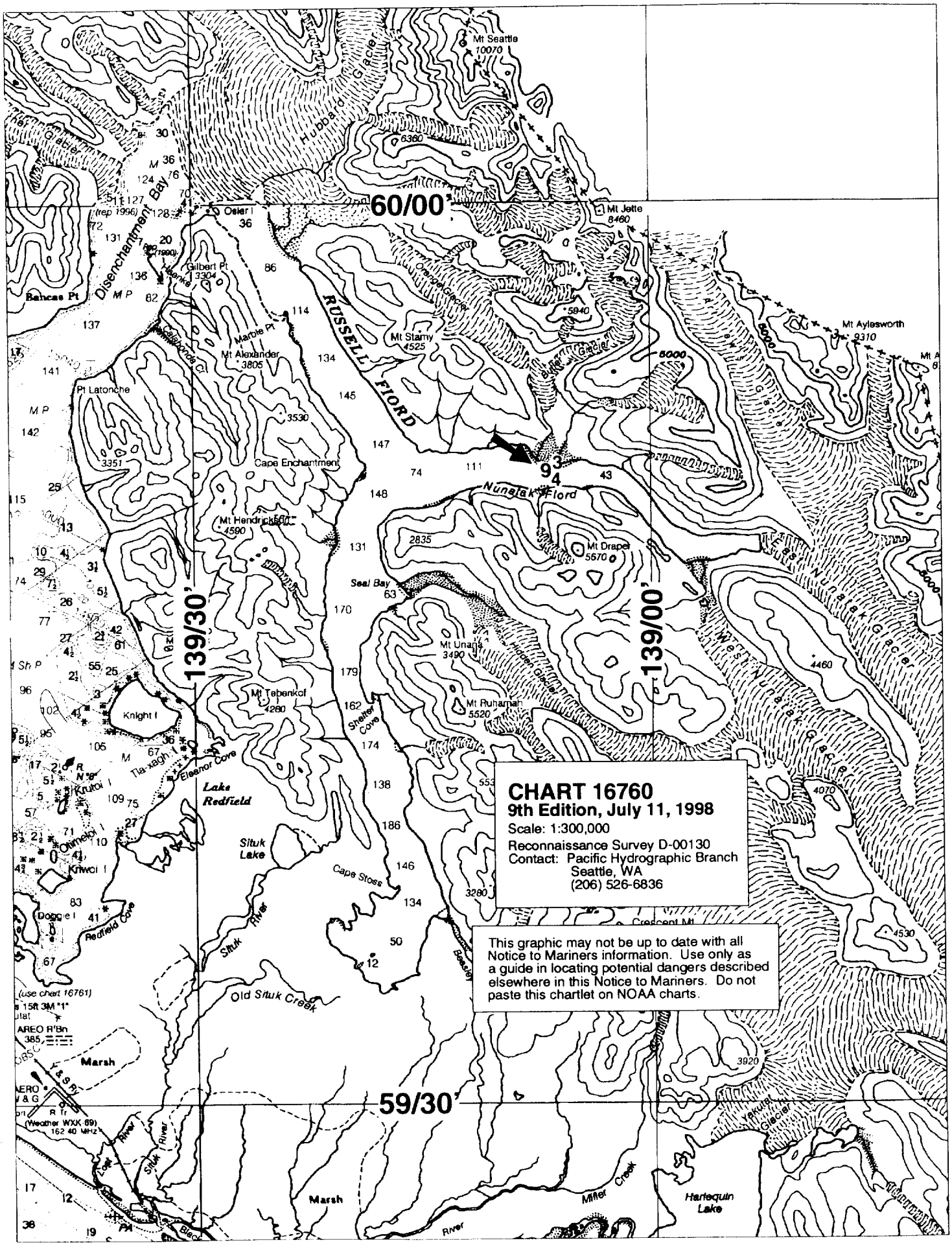


CHART 16760
9th Edition, July 11, 1998
Scale: 1:300,000
Reconnaissance Survey D-00130
Contact: Pacific Hydrographic Branch
Seattle, WA
(206) 526-6836

This graphic may not be up to date with all Notice to Mariners information. Use only as a guide in locating potential dangers described elsewhere in this Notice to Mariners. Do not paste this chartlet on NOAA charts.

NOAA FORM 77-27(H)
(9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER
D-00130

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	N/A
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	N/A

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
~~XXXXXXXXX~~ FILES	1					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES				1		

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List): N/A

NOTES TO THE HYDROGRAPHER (List): N/A

SPECIAL REPORTS (List): N/A

NAUTICAL CHARTS (List): Chart 16760, 9th Ed., July 11, 1998; 16761, 15th Ed., March 6, 1999

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			
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			

	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS			
VERIFICATION OF SOUNDINGS			
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	60.0		60.0
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		31.0	31.0
GEOGRAPHIC NAMES			
OTHER: (Chart Compilation)		N/A	N/A
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	60.0	31.0	91.0

Pre-processing Examination by N/A	*Beginning Date* 9-7-99	*Ending Date* N/A
Verification of Field Data by Barry	*Time (Hours)* 60.0	*Ending Date* 7-5-00
Verification Check by Hill	*Time (Hours)* 1	*Ending Date* 7-18-00
Evaluation and Analysis by Barry	*Time (Hours)* 31.00	*Ending Date* 7-5-00
Inspection by Hill	*Time (Hours)* 2	*Ending Date* 7-18-00

☆ U.S. GOVT. PRINTING OFFICE 1983: 764-006/6061

EVALUATION REPORT
D00130

A. PROJECT

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

B. AREA SURVEYED

The survey area is adequately described in the hydrographer's report, "Chart Letter to Accompany Reconnaissance Survey D0130". A page-size plot depicting the area of the survey accompanies this report as Attachment 1.

Depths sampled within the surveyed area range from 9.8 to 153 fathoms. However, it should be noted that sounding data is sparse, especially in critical near shore and central areas. Bottom samples were not taken.

C. SURVEY VESSELS

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

D. AUTOMATED DATA ACQUISITION AND PROCESSING

The acquisition and processing of data in the field has been adequately addressed in the hydrographer's report, page one, paragraph three.

Office processing of survey data was conducted using the same Computer Aided Resource Information System (CARIS) and Hydrographic Processing System (HPS) used by the hydrographer. MicroStation 95 was used during office processing to compile the smooth survey plot.

Processed digital data for this survey exists in the standard HPS format, a database format using the .dbf extension. In addition, the smooth sheet drawing is filed in the MicroStation format, i.e., .dgn extension. Copies of these files have been forwarded to the Hydrographic Surveys Division and a backup copy retained at PHB. Database records forwarded are in the Internal Data Format (IDF) and are in compliance with specifications in existence at the time of survey processing.

The drawing files necessarily contain information that is not part of the HPS data set such as geographic names text, line-type data, and minor symbolization. In addition, those soundings deleted from the drawing for clarity purposes remain unrevised in the HPS digital files to preserve the integrity of the original hydrographic data set. Cartographic codes used to describe the digital data are those authorized by Hydrographic Survey Guideline No. 35 and No. 75.

The data are plotted using a Universal Transverse Mercator (UTM) projection and are depicted on a single sheet.

E. SONAR EQUIPMENT

Side scan sonar equipment was not used during survey D00130.

F. SOUNDING EQUIPMENT

Sounding equipment has been adequately addressed in the hydrographer's report.

G. CORRECTIONS TO SOUNDINGS

Soundings below Mean High Water (MHW) have been reduced to Mean Lower Low Water (MLLW) using predicted tides. The reducers include corrections for predicted tides, dynamic draft, and sound velocity. Soundings were not corrected for actual tides. Additional reducers for multibeam survey data include heave, pitch and roll. These reducers have been reviewed, and with the exception of using predicted tides, are consistent with NOS specifications. Additional information is found in the hydrographer's report, page one, paragraph four.

H. CONTROL STATIONS

Section H of the hydrographer's report contains an adequate discussion of horizontal control and hydrographic positioning.

The position of the horizontal control station used during hydrographic operations is a field value based on NAD 83. The geographic positions of all survey data are based on NAD 83. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude:	-1.117 seconds	(-34.578 meters)
Longitude:	6.108 seconds	(95.009 meters)

I. HYDROGRAPHIC POSITION CONTROL

Differential GPS (DGPS) was used to control this survey at the entrance to Russell Fiord. Inside the fiord, the signal was lost and non-differential GPS was used for positioning. See the hydrographer's report, page two, paragraph two, for more information. NAD 83 is used as the horizontal datum for plotting and position computations.

Horizontal dilution of precision (HDOP) computations and limits were not addressed in the hydrographer's report. However, during shallow water multibeam (SWMB) data gathering, satellite configuration, as indicated by HDOP and the number of satellites, is monitored visually on HYPACK. The final positions are provided by the POS-MV, which combines the DGPS position with inertial navigation information. In the event that the differential GPS corrector signal is lost, the POS-MV continues to provide positions based on inertial navigation. Data was analyzed during processing and the hydrographer noted no significant errors.

J. SHORELINE

Shoreline maps GC-10444, GC-10445, GC-10446, GC-10447, GC-10448 and GC-10449, scale 1:20,000, were compiled on NAD 83 and apply to this survey. Shoreline drawn on the smooth sheet in black originates from the above digital data as provided by the Coastal Mapping Program. The shoreline data and the hydrographic data were merged in MicroStation during the compilation of the smooth sheet.

The shoreline map should supersede charted shoreline.

There were no MHW revisions on this survey.

L. CROSSLINES

No crosslines were performed for this reconnaissance survey.

L. JUNCTIONS

Hydrographic survey H-10902 (1:10,000), conducted northwest of the present survey in Disenchantment Bay, has one sounding in common with D-00130. This sounding compares within one fathom.

M. COMPARISON WITH PRIOR SURVEYS

There have been no prior surveys conducted in this area.

N. ITEM INVESTIGATIONS

There were no AWOIS items assigned to this survey.

O. COMPARISON WITH CHART

Reconnaissance survey D00130 was compared with the following charts.

Chart	Edition	Date	Scale
16760	9th	July 11, 1998	1:300,000
16761	15th	March 6, 1999	1: 80,000

a. Hydrography

Soundings in Russell Fiord appear only on the smaller scale chart, 16760. The origin of these is unconfirmed, but is believed to be from a third party source, possibly the U.S. Geological Survey.

D-00130 is a reconnaissance survey plotted with predicted tides. Because of the scarcity and doubtful quality of new sounding data, the evaluator recommends this information be used only to supersede charted data in areas where shoaler soundings were found. Additional sounding data should be used to supplement charted information as appropriate.

Twelve charted soundings appear within the area of smooth sheet hydrography. Of these, three actually fall within smooth sheet coverage areas. It is recommended that these charted soundings be replaced by three shoaler D-00130 soundings. In addition, it is recommended that a shoal area discovered mid-channel near Seal Bay be added to the chart.

Location	Geographic Position	Charted Sounding	D-00130 Sounding
Russell Fiord, Seal Bay	Lat. 59°47'01.9"N, Long. 139°16'57.8"W	63	16
Nunatak Fiord	Lat. 59°51'00.4"N, Long. 139°06'43.4"W	84	9.8
Nunatak Fiord	Lat. 59°50'50.6"N, Long. 139°03'13.6"W	43	27
Mid-channel near Seal Bay	Lat. 59°46'57.7"N, Long. 139°19'04.7"W	None	89

b. Dangers To Navigation

There were no dangers to navigation reported during the survey. There was one danger to navigation discovered during office processing.

P. ADEQUACY OF SURVEY

D00130 is a reconnaissance survey with sparse coverage and insufficient horizontal and vertical control to:

a. Delineate the bottom configuration, determine least depths, and draw the required 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.

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, April 1998 Edition.

Q. AIDS TO NAVIGATION

There are no fixed and floating aids to navigation within the survey area.

There were no features of landmark value located within the area of this survey.

R. STATISTICS

Statistics are not itemized for this reconnaissance survey.

S. MISCELLANEOUS

Miscellaneous information was not discussed in the hydrographer's report. No miscellaneous items were noted during office processing.

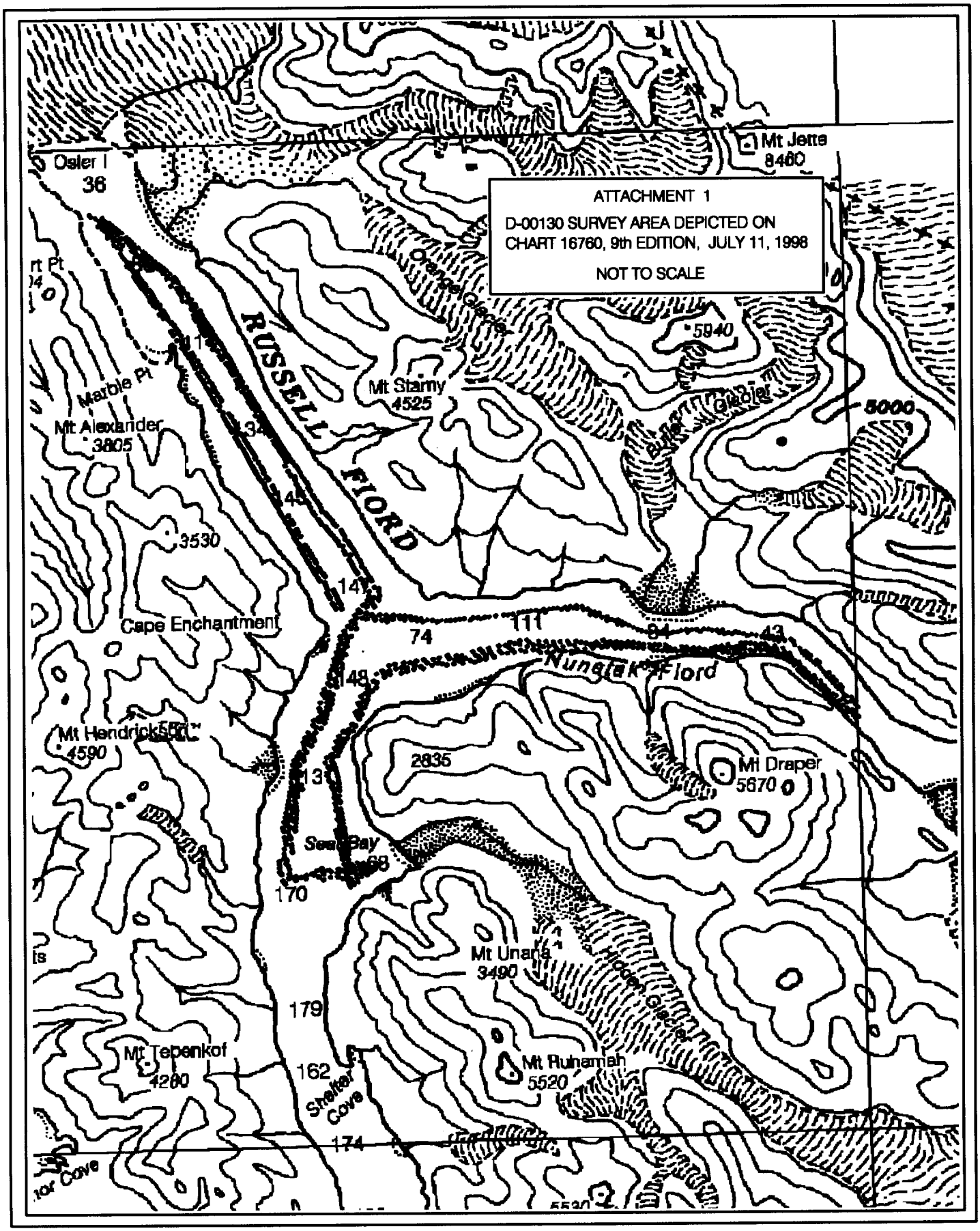
T. RECOMMENDATIONS

This is an adequate reconnaissance survey. No additional work is recommended. Additional information is found in the hydrographer's report under "Hydrographer's Notes and Recommendations".

U. REFERRAL TO REPORTS

Referral to reports is not discussed in the hydrographer's report.

CJ Barry
Cartographer


ATTACHMENT 1
D-00130 SURVEY AREA DEPICTED ON
CHART 16760, 9th EDITION, JULY 11, 1998
NOT TO SCALE
Mt Jette
8460
Osler I
36
RUSSELL FIORD
Mt Stamy
4525
5940
5000
Marble Pt
Mt Alexander
3805
3530
Cape Enchantment
74
111
84
43
Nunatak Fiord
Mt Hendrick
4590
2835
Mt Draper
5670
Sea Bay
170
Mt Unana
3490
179
Mt Tepenkof
4260
Mt Ruhamah
5520
162
Shelter Cove
174

APPROVAL SHEET
D-00130

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 survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Dennis Hill Date: 7-21-00
Dennis Hill
Chief, Cartographic Team
Pacific Hydrographic Branch

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

James C. Gardner Date: 7-21-00
James C. Gardner
Commander, NOAA
Chief, Pacific Hydrographic Branch

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Final Approval

Approved:

Samuel P. De Bow Date: October 2, 2000
Samuel De Bow
Cdr, NOAA
Chief, Hydrographic Surveys Division