H10721

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. RA-10-25-96

Registry No. H-10721

LOCALITY

State Alaska

General Locality Southwest Prince William Sound

Sublocality Icy Bay and Nassau Fiord

1996

CHIEF OF PARTY
CAPT Dean R. Seidel, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H-10721

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

RA-10-25-96

State: Alaska

General locality: Southwest Prince William Sound

Locality: Icy Bay and Nassau Fiord

Scale: 1:10,000 Date of survey: September 23-October 16,1996

Instructions dated: August 23, 1996 Project No.: OPR-P139-RA

Vessel: NOAA Ship RAINIER, Launches (2122),(2123),(2124),(2125)

Chief of party: CAPT Dean R. Seidel, NOAA

Surveyed by: CAPT Seidel,LT S.LaBossiere, LT G.Noll, LT M.Larsen,LT S.Lemke,LTJG J.Crocker, LTJG E.Christensen, CST J.Fleischmann,SST J.Jacobson,ST S. Baum

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

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

Evaluation by: R. Davies ~~Protracted by~~ Automated plot by: HP Design Jet 650C

Verification by: R. Davies

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW and tenths

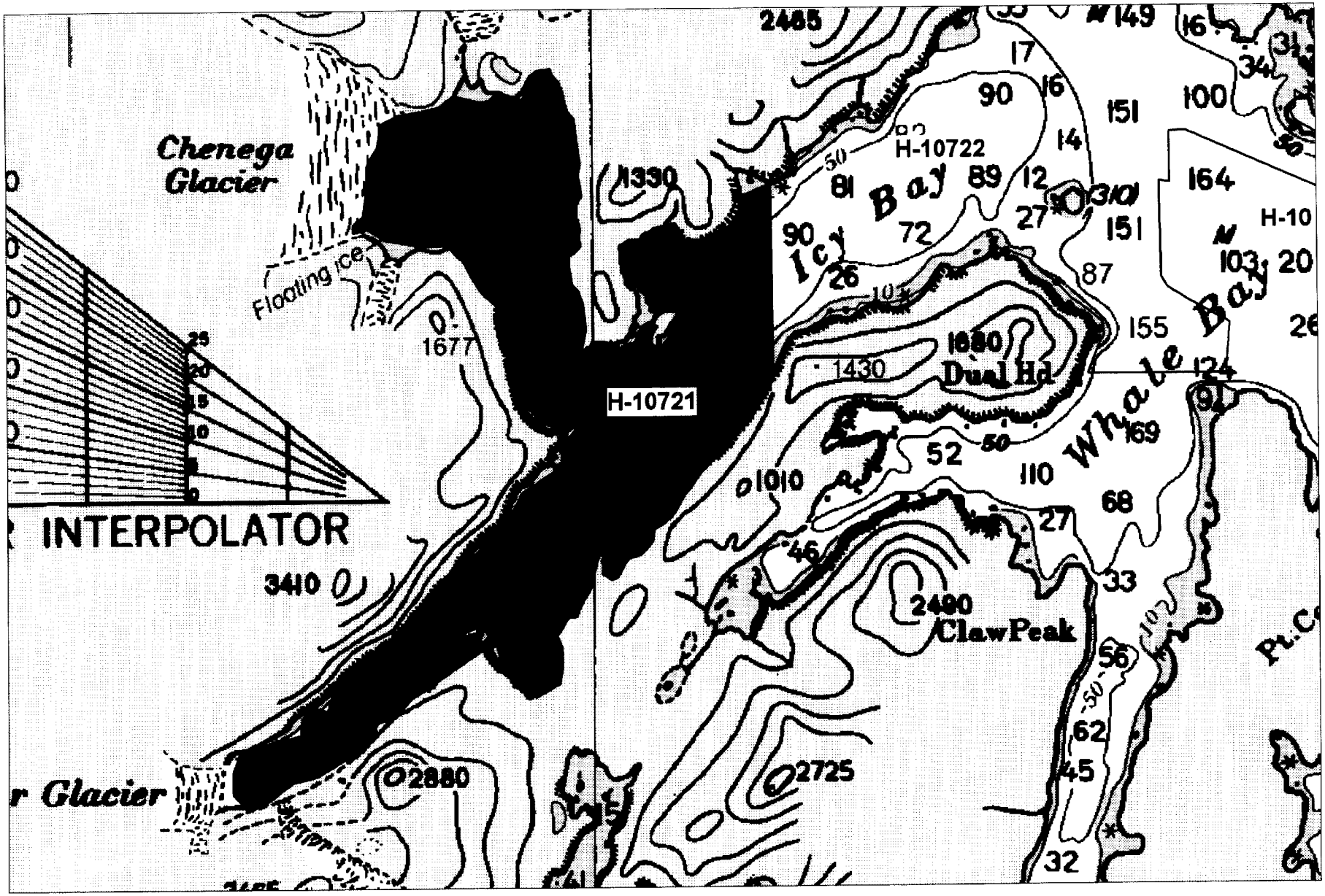
REMARKS: Time in UTC, revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

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

AWOIS/SURF 1/8/98
MCR

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

U.S. GOVERNMENT PRINTING OFFICE: 1986 - 652-007/41215


Chenega Glacier
Floating ice
INTERPOLATOR
H-10721
H-10722
Icy Bay
Dual Hd
Whale Bay
Claw Peak
2485
1330
1677
1430
1680
1010
3410
2880
2725
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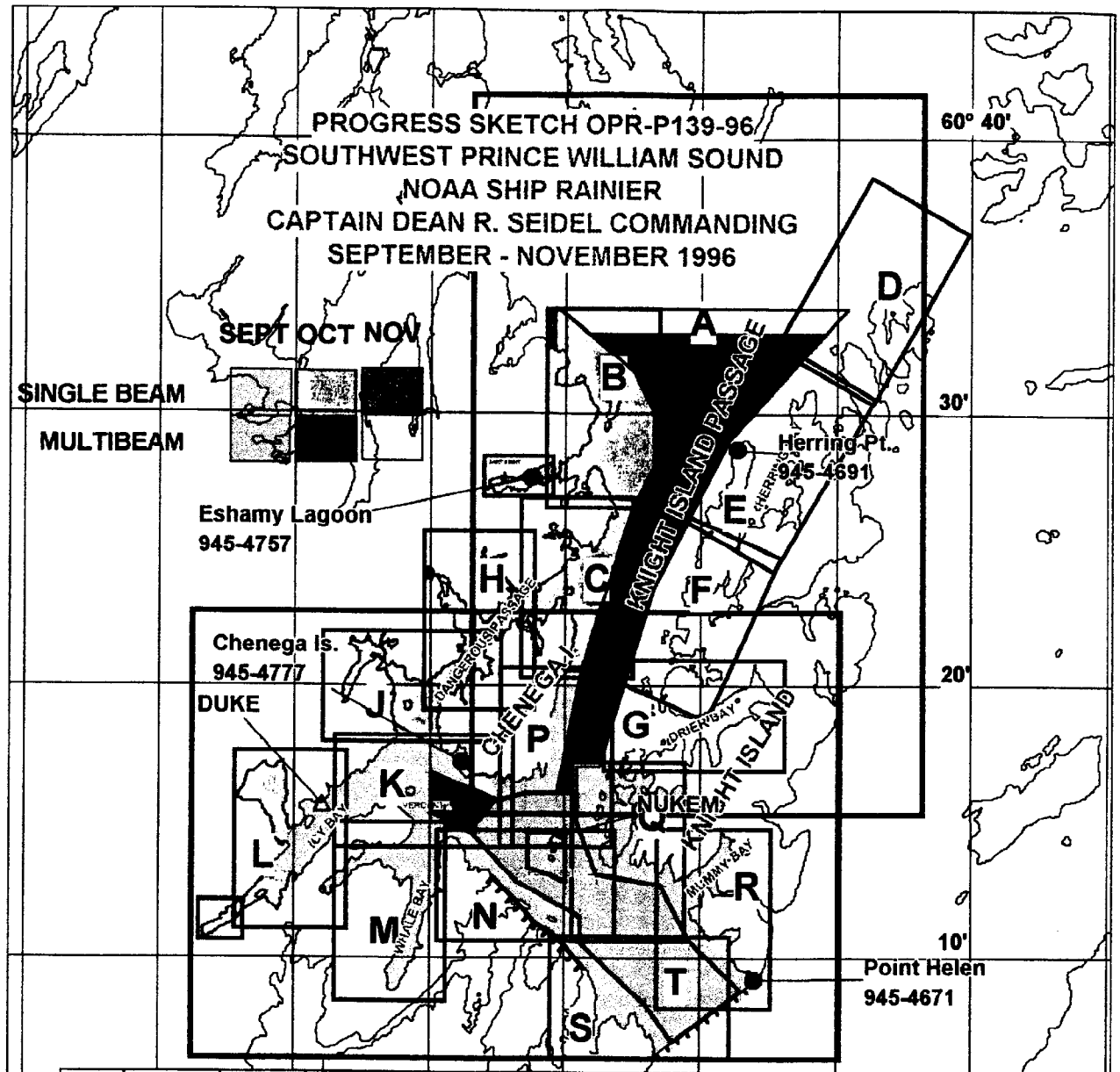
H-10



Sheet	Reg_No	Started	Percent	Completed	Submitted	SQNM
Q	H-10713	SEP 3	100%	SEP 24	OCT 25	10.4
R	H-10712	SEP 3	100%	SEP 12	OCT 11	5.8
S	H-10715	SEP 6	100%	SEP 11	OCT 11	4.5
N	H-10716	SEP 9	100%	SEP 21	OCT 11	6.5
T	H-10718	SEP 12	100%	OCT 21		32.7
L	H-10721	SEP 23	100%	OCT 16	NOV 15	9.4
J	H-10723	SEP 28	100%	OCT 14		5.4
P	H-10719	SEP 21	100%	OCT 10	OCT 25	5.1
M	H-10717	SEP 18	100%	OCT 7	OCT 25	7.8
K	H-10722	SEP 19	100%	SEP 28	NOV 15	9.7
H	H-10725	OCT 3	100%	OCT 20		7.3
C	H-10726	OCT 8	100%	OCT 23		9.1
B	H-10730	OCT 18	100%	NOV 1		16.5
A	H-10729	OCT 17	100%	NOV 1		52.7

Downtime_Type	Sept	Oct	Nov
Weather - Days	2	0	0
Mechanical -Hr	14	2	0
Electronic -Hr	2	0	0

Accomplished	Sept	Oct	Nov
LNM Hydro	1621	1783	4.2
LNM SSS	0	0.4	0
SQ NM	79.9	87.2	15.7
AWOIS Invest.	5	1	0
Other Invest.	14	27	0
LNM Multibeam	107.4	210.2	60.8

Descriptive Report to Accompany Hydrographic Survey H-10721

Field Number RA-10-25-96
Scale 1:10,000
September-October 1996
NOAA Ship RAINIER
Chief of Party: Captain Dean R. Seidel, NOAA

A. PROJECT ✓

This basic hydrographic survey was completed as specified by Project Instructions OPR-P139-RA dated August 23, 1996. Survey H-10721 corresponds to sheet L as defined in the sheet layout. This survey will provide data to supersede a survey performed in 1957. Requests for hydrographic surveys and updated charts have been received from the Defense Mapping Agency, United States Coast Guard, the Southwest Alaska Pilot's Association, cruise ship lines, and local fisherman.

B. AREA SURVEYED ✓ See Eval Rpt., section B

The survey area is located in Icy Bay and Nassau Fiord, Southwest Prince William Sound, Alaska. The survey is bounded by 148° 17' 00"W to the east and the shores of Icy Bay and Nassau Fiord. Data acquisition was conducted from September 23, 1996 (DN 267) to October 16, 1996 (DN 290).

C. SURVEY VESSELS ✓

Data were acquired by RAINIER survey launches as noted below. No unusual vessel configurations or problems exist for this survey.

Vessel	EDP #	Operation
RAINIER	2120	Velocity Casts
RA-2	2122	Hydrography Detached Positions
RA-3	2123	Hydrography Shoreline Verification Detached Positions
RA-4	2124	Hydrography Shoreline Verification Detached Positions
RA-5	2125	Hydrography Shoreline Verification Detached Positions Bottom Samples

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

All data were acquired and processed with HDAPS. A complete listing of software for HDAPS is included in Appendix VI.*

E. SONAR EQUIPMENT ✓

Neither Side Scan Sonar nor multi-beam echo sounder equipment were used on H-10721. Concur

F. SOUNDING EQUIPMENT ✓

The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echo sounder. Serial numbers are included on the headers of the daily Raw Master Printouts.* No unusual problems which affect survey data were encountered.

G. CORRECTIONS TO ECHO SOUNDINGS ✓

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

Velocity Table #	Cast #	DN	Cast Position	Deepest Depth (m)	Applicable DN
7	22	264	60° 16' 54" N 148° 13' 12"W	178	267-275
9	24	276	60° 15' 48" N 148° 21' 24"W	427	276-290

The sound velocity cast was acquired with SBE SEACAT Profiler (S/N 219), calibrated January 16, 1996. Velocity correctors were computed using the PC programs SEACAT and VELOCITY, version 2.11 (1995), in accordance with Hydrographic Survey Guideline (HSG) No. 69. A printout of the Sound Velocity Corrector Table used in the HDAPS Post Survey program is included in the "Separates to be Included with Survey Data, IV. Sounding Equipment Calibrations and Corrections"* Cast # 22 was taken outside the survey area.

A static transducer depth was determined using FPM Fig 2.2 for vessels 2122-2125 in the spring of 1996. Settlement and squat correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2., using FPM Fig. 2.3, and are included with project data for OPR-O139-RA. The data for vessels 2122-2125 were collected in Shilshole Bay, Washington in the Spring of 1996. All offset tables* contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 2-5* correspond to the last digit of the vessel number. The offset tables* are included with project data for OPR-P139-RA. The launches are not equipped with heave, roll and pitch sensors.

* Filed with the hydrographic data

Bar Check and Lead Lines ✓

Bar check lines were calibrated by RAINIER personnel during Spring 1996. Calibration forms are included with project data for OPR-P139-RA. Bar checks were performed periodically and served as a functional check of the DSF-6000N.

Tide Correctors ✓

Predicted tides for the project were provided on diskette by N/OES334 through N/CS31 for the Cordova, Alaska reference station (945-4050). HDAPS listings of the data used in generating tide corrector tables are included in Appendix V* of this report. Tidal correctors as provided in the project instructions for H-10721 are:

Zone	Time Correction	Height Correction
PWS20	0 hr 00 mins	x0.90

Cordova, Alaska (945-4050) and Valdez, Alaska (945-4240) were used as the primary control stations for datum determination at all subordinate stations. RAINIER personnel installed Sutron 8200 GOES-transmitter equipped tide gages at Point Helen (945-4671) and Chenega Island (945-4777) on September 2, 1996. Refer to the Field Tide Notes and supporting data in Appendix V* for individual gage performance and level closure information. This information has been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. A request for approved tides was forwarded to N/OES23 in accordance with FPM 4.2.3. Approved Tide Note dated January 16, 1997 is attached.

H. CONTROL STATIONS ✓ See Evel Rpt., Section H.

The horizontal datum for this project is NAD 83. First order station ROCK was used to establish positions for stations DUKE and NUKEM. The control stations are listed in ~~Appendix III~~ this report. See the OPR-P139-RA-96 Horizontal Control Report for station recovery notes, closure results, and other information.

I. HYDROGRAPHIC POSITION CONTROL ✓

Method of Position Control

All soundings and features were positioned using differential GPS. Serial numbers for vessel GPS equipment are annotated on the raw data printouts.* VHF differential reference stations were established at DUKE and NUKEM. The differences between the computed locations and the published positions were recorded by the MONITOR 3.0 program with a 0.15 meter offset between the Ashtech sensor and the reference GPS station. A similar check was also performed for the U. S. Coast Guard Beacons at Cape Hinchenbrook and Potato Point, Alaska. Due to poor performance results while monitoring Potato Point, this station was not used for data aquisition on this survey. No multi-path or other systematic error was indicated for the beacon at Cape Hinchenbrook. See the OPR-P139-RA-96 Horizontal Control Report for further information.

Filed with the hydrographic data.

Calibrations & Systems Check Methods ✓

Launch-to-launch DGPS performance checks were performed in accordance with Section 3.4.4 of the FPM. Two observations of position were made from two different DGPS base stations, DUKE and NUKEM or the US Coast Guard Beacon at CAPE HINCHINBROOK while the launches were rafted together with their GPS antennae within 3 meters of each other. RAINIER also used SHIPDIM, version 2.2R (April 1996) with a Trimble Centurion P-code receiver and an Ashtech sensor (both differentially-corrected) to monitor the performance of the USCG Beacon. NUKEM or DUKE were compared to CAPE HINCHINBROOK during 12-hour daily comparisons and occasional performance checks. Some outliers were noted, but none indicated systematic or continuous errors in the CAPE HINCHINBROOK beacon. The SHIPDIM OUTLIER.SUM results are included in the project data for OPR-P139-RA.

J. SHORELINE See Evac Report, section J

The shoreline manuscript from Coastal Mapping survey CM-92012 was supplied by N/CS341 in Standard Digital Data Exchange Format (SDDEF). The digital file was projected to the survey grid with OPR-P139-RA-96 geodetic parameters using program Shore version 2.0. provided by N/CS32, and plotted on the survey using HDAPS.

Limited shoreline verification was conducted in accordance with the Project Instructions. For this survey the general limit of safe navigation of a survey launch is 5-15 meters offshore of apparent low tide, generally 1 to 5 meters of depth at Mean Lower Low Water. This safe navigation limit varied from 10 meters offshore of bedrock features to 50 to 100 meters offshore of shallow bays and beaches. Features shown in pencil inshore of the NALL are the hydrographer's representation of the shoreline while slowly transiting along the shore. Features portrayed on the Detached Position Plot were analyzed during office processing and shown on the smooth sheet as warranted.
The shoreline was predominantly steep sloping bedrock and occasional narrow sand, gravel, and rock beaches. Three glaciers were located within the survey limits, Chenega, Tiger, and Tigertail. Chenega appeared to be receding while Tiger appeared to be advancing as noted in the shoreline notes. Tigertail glacier, a spur of Tiger glacier has receded well away from the waterline, fronted by approximately 100 meters of gravel moraine.

Three T-sheet rocks located near charted position latitude 60° 11' 00.0" N, longitude 148° 25' 30.0"W were not found during this survey. The location of the rocks were surveyed using 50 meter line spacing and drift searches in depths of 40 to 80 meters with no indication of shoaling. The rocks were not found during a visual search of the area at low water with 3 to 5 meter water visibility. Detached Positions (fix 40619, 40620, and 40621), were taken at the center of each search area. The area was full of bergy bits and growlers during most of the period this area was surveyed and the rocks were probably large pieces of ice. The hydrographer recommends that these rocks not be portrayed on the chart. Concur

K. CROSSLINES ✓

Crosslines agreed within 1 meter with mainscheme hydrography. Crossline mileage was 19.1 nautical miles or 12.5 % of total mainscheme hydrography.

L. JUNCTIONS See Evaluation Report, section L

This survey junctions survey H-10722, 1:10,000, 1996 at its eastern boundary. Soundings on these 1996 surveys were found to be in good agreement. Final comparison will be made at the Pacific Hydrographic Branch (PHB) after reduction to final datum.

M. COMPARISON WITH PRIOR SURVEYS See Evaluation Report, section M

Prior surveys H-8389, 1:10,000, 1957 and H-8390, 1:10,000, 1957 are the only surveys that cover this survey area. Prior survey soundings were found to be in good agreement with those from the current survey. No disprovals of shoaler prior survey depths were necessary. Final comparisons will be done at PHB after reduction to final sounding datum using tidal information collected concurrently with this survey. (Do not concur)

N. ITEM INVESTIGATIONS ✓

No AWOIS items were assigned to this survey. Concur

O. COMPARISON WITH THE CHART See Evaluation Report, section O

This survey was compared in the field to chart 16700, 24th Edition, January 11, 1992, 1:200,000 scale, (NAD 83), chart 16701, 15th Edition, July 21, 1990, 1:81,436 scale, (NAD 83), and chart 16683, 8th Edition, August 11, 1990, 1:81,436 scale, (NAD 83).

Comparison of charted soundings with the survey is discussed in Section M. Comparison with Prior Surveys, and requires no further discussion.

Charted features were compiled from chart 16683, 8th Edition, August 11, 1990 using MAPINFO version 4.0 and transferred to the boat sheets. Charted rocks offshore of the navigational area limit line were either identified as shoreline manuscript rocks or positioned as new rocks. Charted rocks inshore of the NALL were not positioned hydrographically; refer to the hydrographer's notes on the final Detached Position and Bottom Sample Plot. See comments on page 4, section T, shoreline, regarding limited shoreline verification.
A charted rock located at charted position latitude 60° 15' 52.7" N, longitude 148° 17' 23.7"W was not found during this survey. The location of the rock was surveyed using 50 meter line spacing and a drift search in depths of 30 to 60 meters with no indication of shoaling. The rock was not found during a visual search of the area at low water with 3 to 5 meter water visibility. A Detached Position (fix 40616), was taken at the center of the search area. The hydrographer recommends that this rock be removed from the chart. Concur

Three charted rocks located near the northern shore inside Gaamaak Cove near charted position latitude 60° 15' 30.0" N, longitude 148° 19' 00.0"W were not found during this survey. The location of the rocks were surveyed using 50 meter line spacing and drift searches in depths of 6 to 60 meters with no indication of shoaling. The rocks were not found during a visual search of the area at low water with 3 to 5 meter water visibility. Detached Positions (fix 40617, 40618, and 29903), were taken at the center of each search area. The hydrographer recommends that these rocks be removed from the chart. Concur

Final comparisons will be made at PHB after application of real tide correctors.

Dangers to Navigation ✓

Four dangers to navigation within the limits of H-10721 were reported to the Seventeenth Coast Guard District, October 20, 1996. (Letter attached)

P. ADEQUACY OF SURVEY ✓

Survey H-10721 is complete and adequate to supersede prior soundings and features in their common areas. Concur

Q. AIDS TO NAVIGATION ✓

There were no aids to navigation on H-10721. Concur

R. STATISTICS ✓

NM Hydrography	318.5
Velocity Casts	2
Detached Positions	12
Selected Soundings	14,135
Bottom Samples	41
Tide Stations	2
NM^2 Hydrography	9.4
Dives	0

S. MISCELLANEOUS ✓

Bottom samples were collected and sent to the Smithsonian Institution in accordance with Project Instructions. No unusual tidal currents were found during the time of this survey. Secchi disk observations were performed during hydrographic data operations, and results will be forwarded upon completion of this project. General water visibility was 3 to 5 meters.

T. RECOMMENDATIONS ✓

It would be helpful to local mariners if Icy Bay was portrayed as an inset on chart 16701. The bay is presently depicted only on charts 16700 and 16683. Chart 16683 is primarily a Seward approach chart and is discontinuous for the Icy Bay approach. Chart 16701 only shows the approaches to the bay and the mariner must switch to 16683 south of Gaamaak Bay. The evaluator recommends that the Marine Chart Division consider this recommendation for future charting requirements.

U. REFERRAL TO REPORTS

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

Title	Date Sent	Office
Fall 1996 Horizontal Control Report for OPR-P139-RA.	November, 1996	N/CS34
Fall 1996 Coast Pilot Report for OPR-P139-RA.	November, 1996	N/CS26
Project related data for OPR-P139-RA.	Incremental	N/CS34
Secchi Disk Observations for OPR-P139-RA	November, 1996	N/CS31

Respectfully Submitted,

Steven A. Lemke
Lieutenant, NOAA

Approved and Forwarded,

Dean R. Seidel
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 28 Oct 1996 ✓

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
1	G	060:14:26.408	148:00:42.205	18	250	0.0	0.0		09/03/96	NUKEM
2	G	060:15:37.435	148:18:06.007	18	250	0.0	0.0		10/07/96	DUKE
3	L	060:09:11.260	147:45:58.680	27	257	0.0	0.0		10/07/96	PT. HELEN LIGHT LL#25925
4	L	060:18:46.233	147:55:04.532	23	257	0.0	0.0		10/07/96	NEW YEAR ISLAND LIGHT LL#25915
5	L	060:14:22.912	148:00:37.765	26	257	0.0	0.0		10/07/96	PLEIADES LIGHT LL#25920
6	B	060:14:18.000	148:38:48.000	0	250	0.0	0.0		00/00/00	CAPE HINCHINBROOK ✓ USCG BEACON
7	B	061:03:24.000	146:41:48.000	0	250	0.0	0.0		00/00/00	POTATO POINT USCG BEACON

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

October 20, 1996

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

ADVANCE INFORMATION

Dear Sir:

During the processing of hydrographic surveys H-10717 and H-10721 in Knight Island Passage, Prince William Sound, four new, and four additional dangers to navigation have been discovered. These dangers affect the following charts:

For H-10717:

Number	Edition	Date	Scale	Datum
16700	24th ED.	92/01	1:200,000	NAD83
16701	16th ED.	96/06	1:81,436	NAD83
16702	9th ED.	90/07	1:40,000	NAD83

For H-10721:

Number	Edition	Date	Scale	Datum
16700	24th ED.	92/01	1:200,000	NAD83
16701	16th ED.	96/06	1:81,436	NAD83
16683	8th ED.	90/08	1:81,436	NAD83

It is recommended that these 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) 526-6835.

Sincerely,

Dean R. Seidel
Captain, NOAA
Commanding Officer
NOAA Ship RAINIER

Enclosure

cc: DMA/HTC
PMC
N/CS262

DANGERS TO NAVIGATION

OPR-P139-RA SOUTHWEST PRINCE WILLIAM SOUND, AK

REGISTRY NUMBER: H-10721

AFFECTED CHARTS:

CHART	EDITION NUMBER	DATE	SCALE
16700	24 TH ED.	92/01	1:200,000
16701	16 TH ED.	96/06	1:81,436
16683	8 TH ED.	90/08	1:81,436

ADVANCE INFORMATION

ITEM	FIX #	DANGER	CHART DEPTH	DEPTH (M)	LATITUDE (N)	LONGITUDE (W)
A	31168+2	SHOAL	8 1/2 FM	15.9	060:15:27.393	148:19:05.699
B	30915+0	SHOAL	4 1/2 FM	8.4	060:14:11.737	148:20:15.212
C	40135+5	ROCK	COVERS 1 1/2 FM	3.1	060:12:16.454	148:21:05.768
D	40313+6	SHOAL	3 3/4 FM	7.1	060:14:32.666	148:18:53.509

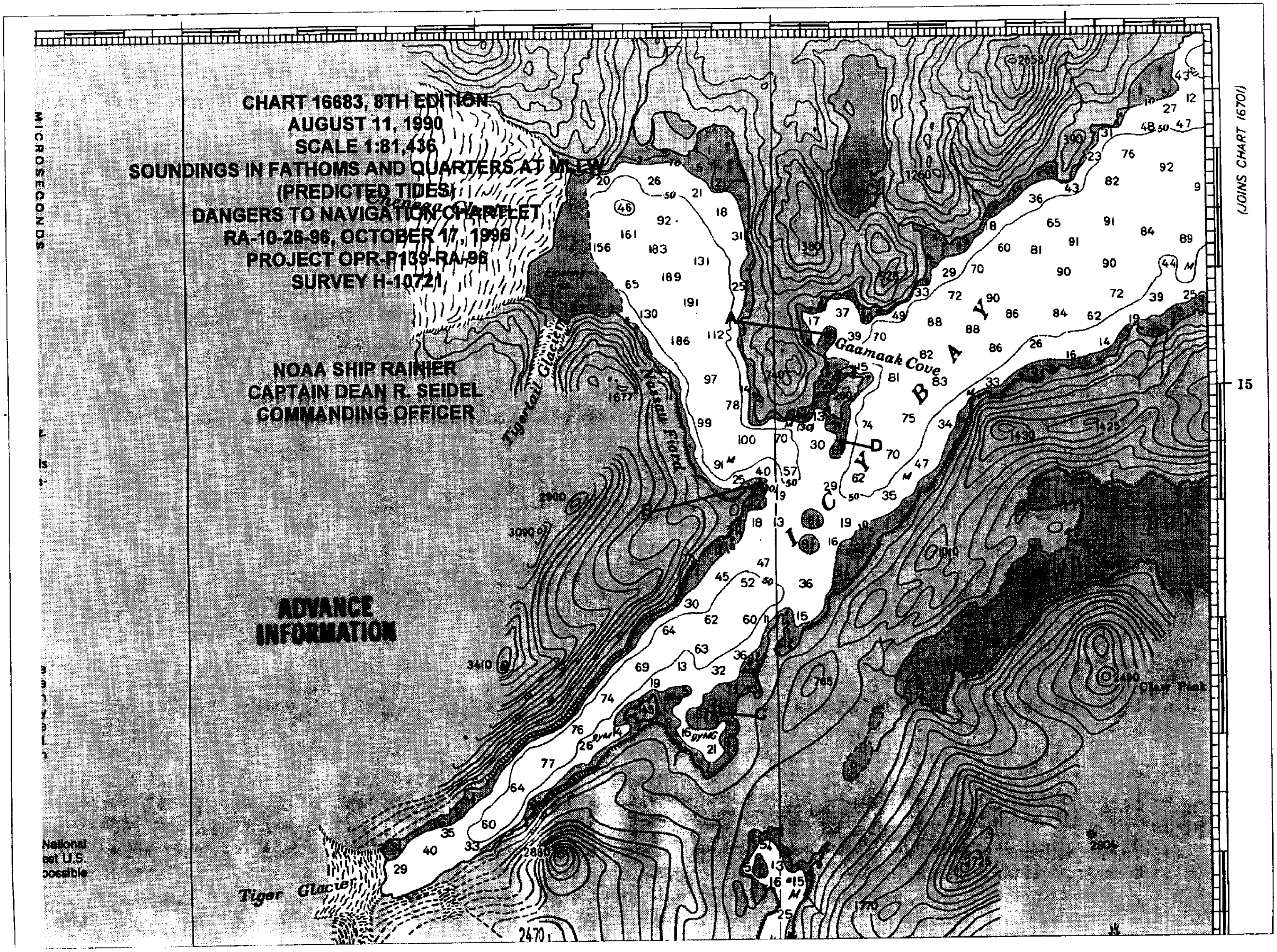


CHART 16683, 8TH EDITION
AUGUST 11, 1990
SCALE 1:81,436
SOUNDINGS IN FATHOMS AND QUARTERS AT MLLW
(PREDICTED TIDES)
DANGERS TO NAVIGATION CHARTLET
RA-10-26-96, OCTOBER 17, 1996
PROJECT OPR-P139-RA-96
SURVEY H-10721
NOAA SHIP RAINIER
CAPTAIN DEAN R. SEIDEL
COMMANDING OFFICER
ADVANCE
INFORMATION
ICY BAY
Gaamaak Cove
Nassau Fiord
Tigertail Glacier
Tiger Glacier
Claw Peak
MICROSECONDS
(JOINS CHART 16701)
15

APPROVAL SHEET

for

H-10721

RA-10-25-96

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Guidelines; and the 1994 version of 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.

Dean R. Seidel
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

DATE: January 16, 1997

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P139-RA
HYDROGRAPHIC SHEET: H-10721

LOCALITY: Icy Bay and Nassau, Southwest Prince William Sound, Alaska

TIME PERIOD: September 23 - October 16, 1996

TIDE STATION USED: 945-4777 Chenega Island, Southwest End, AK
Lat. 60° 17.2'N Lon. 148° 07.2'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.300 meters

TIDE STATION USED: 945-4671 Point Helen, Knight Island, AK
Lat. 60° 09.2'N Lon. 147° 46.0'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.240 meters

TIDE STATION USED: 945-4691 Herring Point, Knight Island Passage, AK
Lat. 60° 28.5'N Lon. 147° 47.5'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.362 meters

TIDE STATION USED: 945-4240 Valdez, AK
Lat. 61° 07.5'N Lon. 146° 21.7'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.389 meters

REMARKS: RECOMMENDED ZONING

Use zones identified as: PWS26, PWS31, PWS32 & PWS33

Refer to attachment(s) for zoning information.

Note: Provided time series data are tabulated in metric units (meters) and on Greenwich Mean Time.

CHIEF, TIDAL ANALYSIS BRANCH

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10721

Name on Survey	A ON CHART NO. 16683, 16700, 16701	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ALASKA (title)	X		X							1
CHENEGA GLACIER	X		X							2
GAAMAAK COVE	X		X							3
ICY BAY	X		X							4
NASSAU FIORD	X		X							5
PRINCE WILLIAM SOUND	X		X							6
(title)										7
TIGER GLACIER	X		X							8
TIGERTAIL GLACIER	X		X							9
										10
										11
										12
										13
										14
										15
										16
										17
										18
					Approved:					19
										20
					Chief Geographer					21
										22
					FEB 28 1997					23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H) (9-83) | U.S. DEPARTMENT OF COMMERCE | REGISTRY NUMBER

HYDROGRAPHIC SURVEY STATISTICS

H-10721

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

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

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	3					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES				1		

SHORELINE DATA

SHORELINE MAPS (List): DM 10295, DM 10298

PHOTOBATHYMETRIC MAPS (List): NA

NOTES TO THE HYDROGRAPHER (List): NA

SPECIAL REPORTS (List): NA

NAUTICAL CHARTS (List): Chart 16683 8TH ED., Chart 16701 16TH ED.

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	107		107
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		22	22
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	107	22	129

Pre-processing Examination by M. Bigelow	*Beginning Date* 3/5/97	*Ending Date* 3/12/97
Verification of Field Data by R. Davies	*Time (Hours)* 129	*Ending Date* 9/16/97
Verification Check by B. Olmstead	*Time (Hours)* 5	*Ending Date* 8/30/97
Evaluation and Analysis by R. Davies	*Time (Hours)* 22	*Ending Date* 9/22/97
Inspection by B. Olmstead	*Time (Hours)* 10	*Ending Date* 9/22/97

EVALUATION REPORT

H-10721

A. PROJECT

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

B. AREA SURVEYED

Survey H-10721 was conducted in Alaska's southwest Prince William Sound, in Icy Bay and Nassau Fjord.

The hydrographer has determined the inshore limits of safe navigation by defining a Navigable Area Limit Line throughout the survey area. Charted features and soundings inshore of this limit line have not been specifically addressed during survey operations and should be retained as charted. A page-size plot of the charted area depicting the limits of supersession accompanies this report as Attachment 1.

The bottom consists mainly of gray mud. Depths range from zero to 182 fathoms.

C. SURVEY VESSELS

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

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data were processed using the same Hydrographic Data Acquisition/Processing System (HDAPS) software used by the hydrographer, the Hydrographic Processing System (HPS), AutoCad (Version 12.0) and MicroStation 95.

At the time of the survey certification the format for transmission of digital data had not been formally approved. In the interim, digital data for this survey exists in the standard HPS format which is a database format using the .dbf extension. In addition, the sounding plot was created with .dbf (extension) and enhanced using the MicroStation system, are filed both in the MicroStation drawing format, .dgn (extension); and in the more universally recognized graphics transfer format, .dxf (extension). Copies of these files will be retained at PHB until data transfer protocols are developed and approved.

The drawing files necessarily contain information which 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 field sheet parameters have been revised to center the hydrography on the office plot. The data is plotted using a Modified Transverse Mercator projection and are depicted on a single sheet.

E. SONAR EQUIPMENT

Sonar equipment was not used on survey H-10721.

F. SOUNDING EQUIPMENT

The hydrographer's report contains a discussion on sounding equipment.

G. CORRECTIONS TO SOUNDINGS

The sounding data have been reduced to Mean Lower Low Water (MLLW). The reducers include corrections for an actual tide, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with NOS specifications.

Predicted tides were used for reduction of soundings during field processing. During office processing, tide reductions were derived from approved hourly heights zoned direct from the following tide gages: Chenega Island, Southwest End, Alaska, gage 945-4777, Point Helen, Knight Island, Alaska, gage 945-4671, Herring Point, Knight Island Passage, Alaska, gage 945-4691, Valdez, Alaska, gage 945-4240.

H. CONTROL STATIONS

Section H and I of the hydrographer's report contain adequate discussions of horizontal control and hydrographic positioning.

The positions of horizontal control stations used during hydrographic operations are published values based on NAD 83. The geographic positions of all survey data are 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:	-2.399 seconds	(-74.239 meters)
Longitude:	7.331 seconds	(112.766 meters)

The year of establishment of control stations originate with the horizontal control records for this survey.

I. HYDROGRAPHIC POSITION CONTROL

Differential GPS (DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The quality of several 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, suggests that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with the surrounding information. These fixes are considered acceptable. DGPS performance checks were conducted in the field and found adequate.

NAD 83 is used as the horizontal datum for plotting and position computations.

Additional information concerning calibrations and system checks can be found in the hydrographer's report and in the separates related to horizontal position control and corrections to position data.

J. SHORELINE

Shoreline maps DM-10295 and DM-10298, scale 1:20,000 were compiled on NAD 83 and apply to this survey. Shoreline drawn on the smooth sheet originates from 1:20,000 scale digital files provided by the Coastal Mapping Program. The digitized files and the survey file were merged during MicroStation processing.

Several new rocks were found by the hydrographer inshore of the NALL line and near the mean high water line. However, these features were not positioned during survey operations and have not been shown on the smooth sheet.

There were three MHW revisions on this survey. These revisions have been depicted on the smooth sheet and are adequate to supersede prior photogrammetric shoreline maps. These revisions are centered at the following positions:

Latitude(N)	Longitude(W)
60/10/52	148/25/37
60/12/00	148/20/47
60/16/36	148/23/39

The shoreline map and the results of the fieldwork as portrayed on the smooth sheet should supersede charted shoreline.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10721 junctions with the following survey:

Survey	Year	Scale	Area
H-10722	1996	1:10,000	East

The junction with survey H-10722 was not formally completed as this survey was previously processed and approved for charting. Soundings and depth curves are in satisfactory agreement. However, H-10721 should be used within the common area. An "Adjoins" note has been shown on the survey.

M. COMPARISON WITH PRIOR SURVEYS

H-8389 (1957) 1:10,000
H-8390 (1957) 1:10,000

Prior surveys H-8389 and H-8390 cover the entire area of the present survey. The shoreline in the area has remained relatively stable throughout the years. There is no consistent pattern in the depth changes between the two prior surveys and the present survey. In Nassau Fiord, depths range from 1 to 10 fathoms deeper than the priors. In Icy Bay the range is between 0 to 9 fathoms shoaler. This area has experienced earthquakes, possible isostatic rebound and natural accretion and erosional processes. These differences may also be attributed to greater sounding coverage, improved positioning and sounding methods and relative accuracy of the data acquisition techniques.

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

Survey H-10721 is adequate to supersede the prior surveys within the common area.

N. ITEM INVESTIGATIONS

There were no AWOIS items assigned to this survey.

O. COMPARISON WITH CHART

Survey H-10721 was compared with the following chart:

Chart	Edition	Date	Scale	Datum
16683	8th	Aug. 21, 1990	1:81,436	NAD83
16701	16th	June 1, 1996	1:81,436	NAD83

a. Hydrography

Charted Hydrography originates with the previously discussed prior surveys and miscellaneous source data. The prior surveys have been adequately addressed in section M and require no further discussion.

Survey H-10721 is adequate to supersede charted hydrography within the common area.

b. Dangers To Navigation

Four dangers to navigation were discovered during survey operations and reported to the USCG on October 20, 1996. No additional dangers to navigation were found during office processing. Copy of the report is attached.

P. ADEQUACY OF SURVEY

Hydrography contained on survey H-10721 is adequate 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 1994 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 itemized in the hydrographer's report.

S. MISCELLANEOUS

Miscellaneous information is discussed in the hydrographer's report. No additional miscellaneous items were noted during office processing.

T. RECOMMENDATIONS

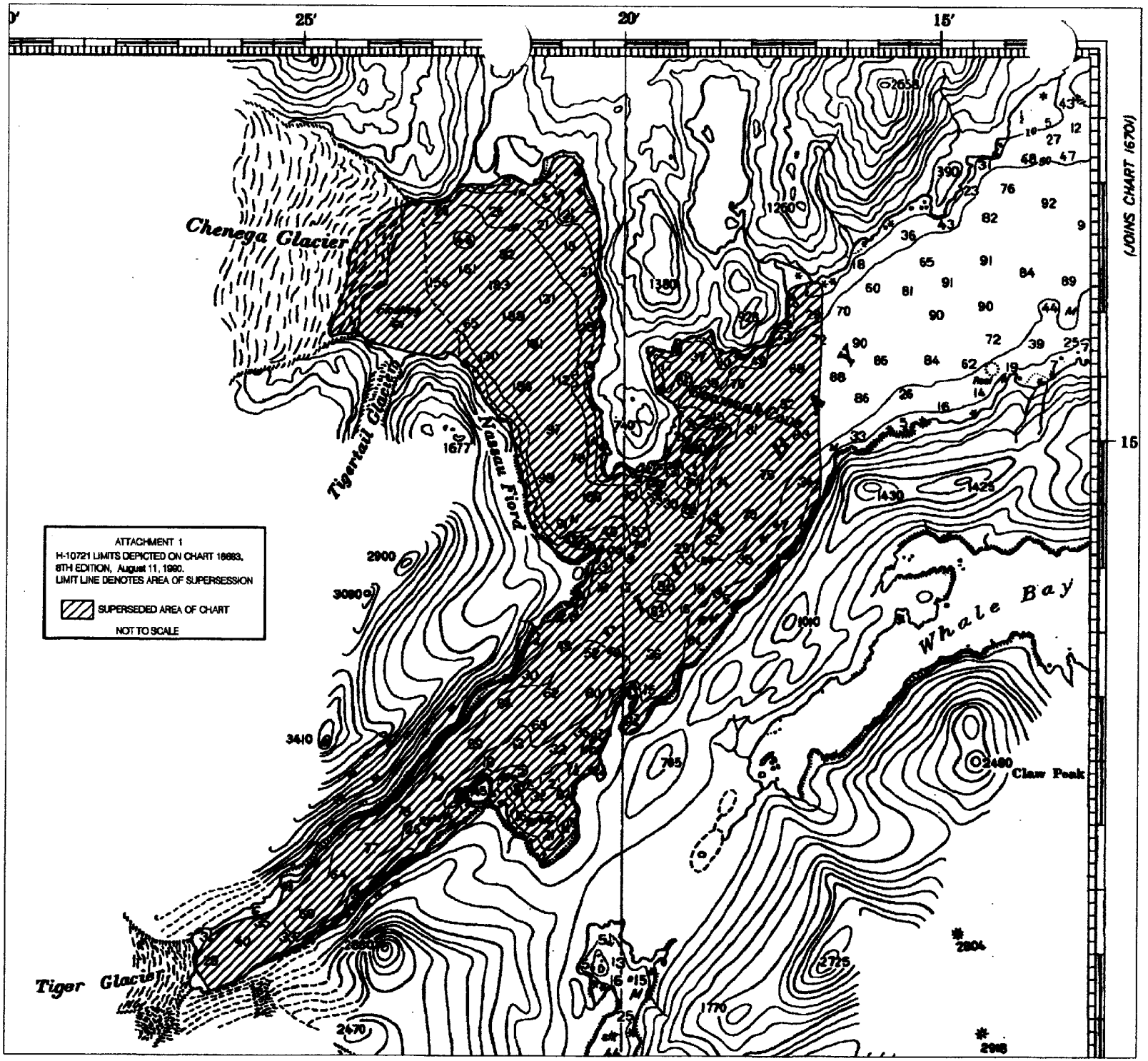
This is a good hydrographic survey. No additional work is recommended.

U. REFERRAL TO REPORTS

Referral to reports is discussed in the hydrographer's report.

Charles R. Davies

C.R. Davies
Cartographer


25'
20'
15'
(JOINS CHART 16700)
Chenega Glacier
Tigertail Glacier
Nassau Fiord
Whale Bay
Claw Peak
Tiger Glacier
ATTACHMENT 1
H-10721 LIMITS DEPICTED ON CHART 16683,
8TH EDITION, August 11, 1990.
LIMIT LINE DENOTES AREA OF SUPERSESSION
SUPERSEDED AREA OF CHART
NOT TO SCALE

APPROVAL SHEET
H-10721

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.

Bruce A. Olmstead Date: 9/22/97
Bruce A. Olmstead
Senior Cartographer, Cartographic Section
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.

Kathy Timmons Date: 9/27/97
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

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Final Approval

Approved:

Andrew A. Armstrong III Date: Feb 19, 1998
Andrew A. Armstrong III
Captain, NOAA
Chief Hydrographic Surveys Division

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10721

INSTRUCTIONS

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

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

CHART	DATE	CARTOGRAPHER	REMARKS
16683	8/6/91	Charles	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. Full application of soundings and curves from smooth sheet.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
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			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED