H10719

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-10-24-96

Registery No. H-10719

LOCALITY

State Alaska

General Locality Southwest Prince William Sound

Sublocality Southern and Eastern Coast of Chenega Island

1996

CHIEF OF PARTY
CAPT Dean R. Seidel, NOAA

☆U.S. GOV. PRINTING OFFICE: 1985—566-054

NOAA FORM 77-28 (11-72) | U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION | REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-10719

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-10-24-96

State: Alaska

General locality: Southwest Prince William Sound

Locality: Southern and Eastern Coast of Chenega Island

Scale: 1:10,000 Date of survey: September 21-October 10, 1996

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

Vessel: RA-2(2122), RA-3(2123), RA-4(2124), RA-5(2125)

Chief of party: CAPT Dean R. Seidel, NOAA

Surveyed by: CAPT D. Seidel, LT G.Noll, LT M.Larsen, LT S.Lemke, LTJG J.Crocker CST J. Fleischmann

Soundings taken by echo sounder, ~~machine lead, pole~~ Side Scan DSF-6000N, EG&G Model 260, Model 272

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

Evaluation by: I. Almacen Automated plot by: HP Design Jet 650C

Verification by: E. Domingo, M. Bigelow, R. Mayor, J. Stringham

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

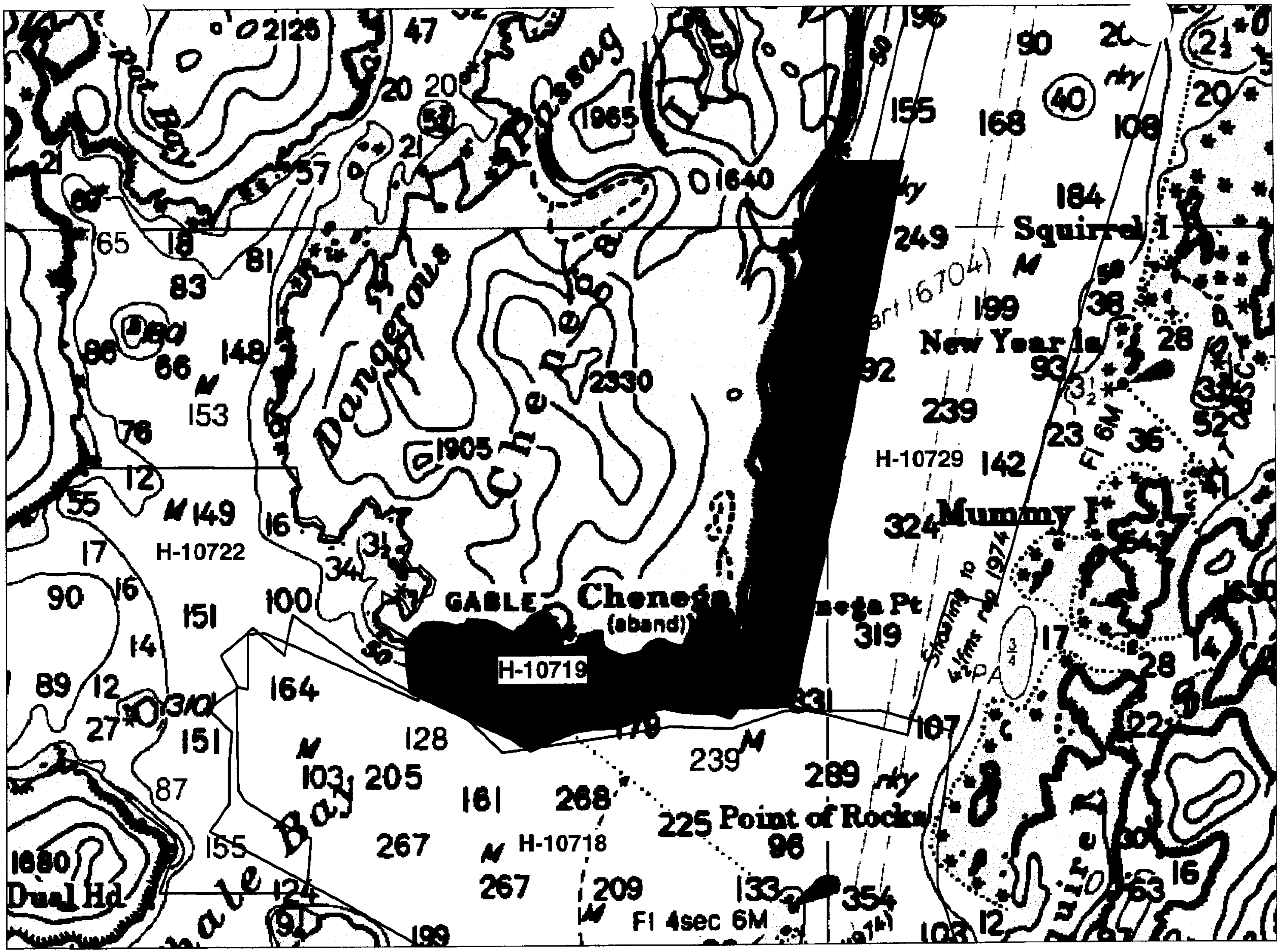
REMARKS: All times are UTC, revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

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

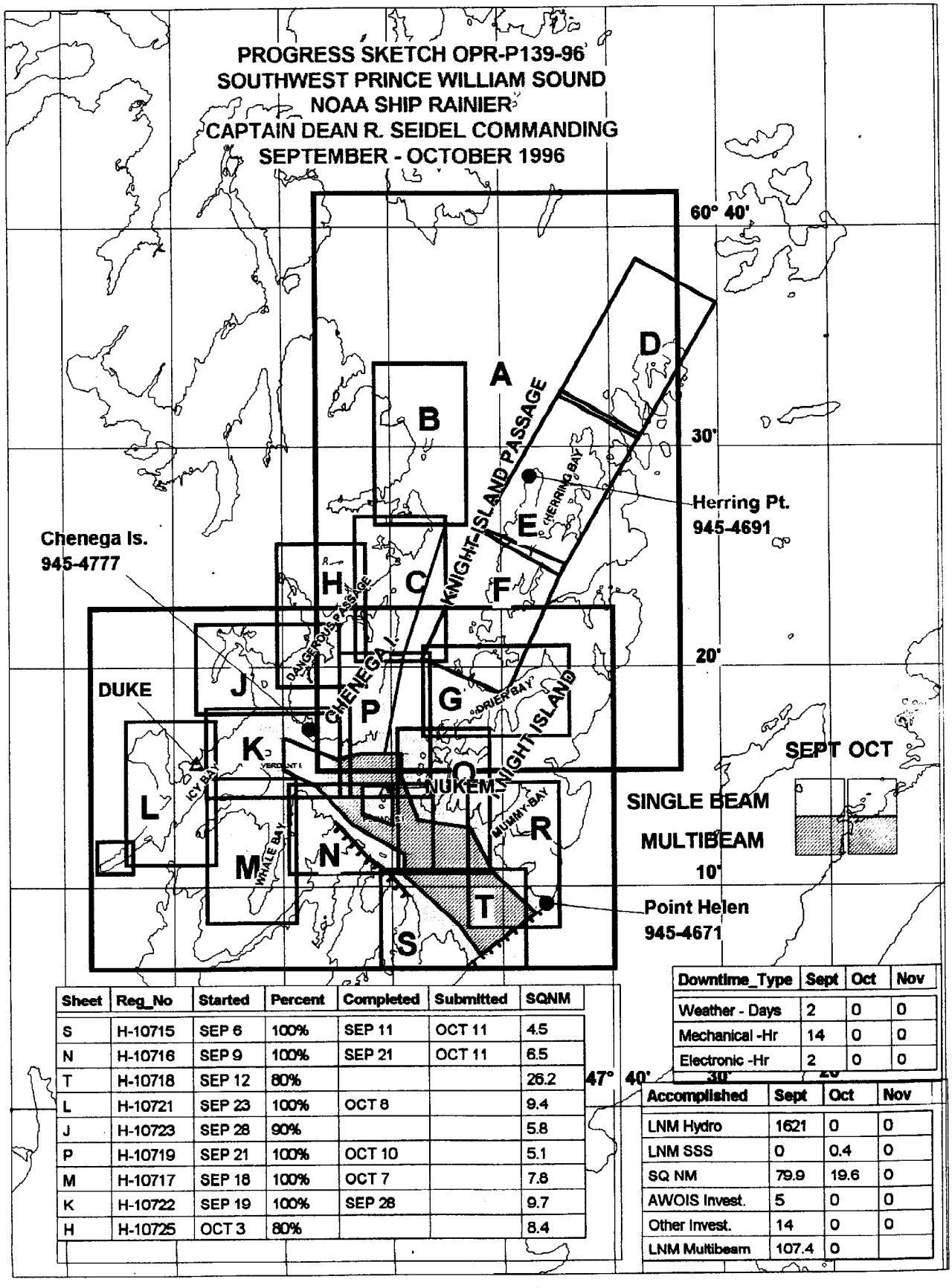
AWOIS/SURF 1/8/98 mcR

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

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



Dangerous Passage
Squirrel I
New Year Is
Mummy I
Chenega
(aband)
GABLE
Chenega Pt
H-10719
H-10722
H-10729
H-10718
Point of Rocks
Dual Hd
Fl 6M
Fl 4sec 6M
Shoaling to 4 1/2 fms rep 1974



Sheet	Reg_No	Started	Percent	Completed	Submitted	SQNM
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	80%			26.2
L	H-10721	SEP 23	100%	OCT 8		9.4
J	H-10723	SEP 28	90%			5.8
P	H-10719	SEP 21	100%	OCT 10		5.1
M	H-10717	SEP 18	100%	OCT 7		7.8
K	H-10722	SEP 19	100%	SEP 28		9.7
H	H-10725	OCT 3	80%			8.4

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

Accomplished	Sept	Oct	Nov
LNM Hydro	1621	0	0
LNM SSS	0	0.4	0
SQ NM	79.9	19.6	0
AWOIS Invest.	5	0	0
Other Invest.	14	0	0
LNM Multibeam	107.4	0	

Descriptive Report to Accompany Hydrographic Survey H-10719

Field Number RA-10-24-96
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-10719 corresponds to sheet P as defined in the sheet layout. This survey will provide data to supersede parts of two surveys performed in 1933 and 1957. Requests for hydrographic surveys and updated charts in this area have been received from the Defense Mapping Agency, the U.S. Coast Guard, the Southwest Alaska Pilot's Association, cruise ship lines, and local fishermen.

B. AREA SURVEYED (See EVAL RPT., Sec. B)

The survey area is Knight Island Passage along the southeast shore of Chenega Island. The survey's northern limit is latitude 60° 20' 34" N, the southern limit is 60° 15' 43" N, the western limit is 148° 07' 06" W and the eastern limit is 147° 58' 54" W. Data acquisition was conducted from September 21, 1996 (DN 265) to October 10, 1996 (DN 284).

C. SURVEY VESSELS ✓

Data were acquired by RAINIER survey launches as noted below:

Vessel	EDP #	Operation
RAINIER	2120	Sound Velocity Cast
RA-2	2122	Hydrography
RA-3	2123	Hydrography Shoreline Side Scan Sonar
RA-4	2124	Hydrography Shoreline Dive Investigations
RA-5	2125	Bottom Samples

✓

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

All data were acquired and processed using the Hydrographic Data Acquisition and Processing System (HDAPS.) A complete listing of software for HDAPS is included in Appendix VI. *

* Filed with the hydrographic data.

E. SONAR EQUIPMENT ✓

The survey vessel RA-3 is equipped with an EG&G model 260 slant range corrected Side Scan Sonar (SSS) recorder and model 272 dual frequency towfish. The towfish was deployed from the stern. All offset and layback information is provided in the offset table located in section IV* of the separates. The beam width is not adjustable on this unit. The grazing angle dip switches are normally set to 01, unless otherwise noted on the sonargram. All SSS data was collected using 100 kHz frequency. Confidence checks were obtained, and annotated on the sonargrams, by towing the side scan unit either past known items or linear bottom features. Required proof of sonar coverage is demonstrated through sonar coverage plots produced as HDAPS plots. Quality of bottom coverage to the outer edges of the sonargrams was assured during check scanning to the best of the hydrographers ability.

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 new problems which affect survey data were encountered. All DSF-6000N soundings were acquired in meters using the High + Low, high frequency digitized setting. Data was converted to fathoms during office processing and reflected on the smooth sheet.

G. CORRECTIONS TO ECHO SOUNDINGS ✓

Correctors for the velocity of sound through water were determined from the following casts. Velocity table 4 was applied to all sounding lines with depth greater than 354 m. A comparison between each cast showed the sound velocity profile to be in agreement for depths greater than 75 m.

Velocity Table #	DN	Cast Position	Deepest Depth (m)	Applicable DN
4	256	60° 14' 30" N 147° 59' 18"W	765.2	All depths > 354 m
6	264	60° 17' 00" N 148° 10' 00"W	354	264-270
8	276	60° 17' 06" N 148° 09' 54"W	358	271-278

✓

All sound velocity casts were taken outside of the survey area.

The sound velocity casts were 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".

* Filed with the hydrographic data.

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-P139-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.

Tide Correctors

Predicted tides for the project were provided on diskette by the Coastal and Estuarine Oceanography Branch (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-10719 are:

Zone	Time Correction	Height Correction
35	-0 hr 06 min	x0.95

Valdez, Alaska (945-4240) and Cordova, Alaska (945-4050) are 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. Five new bench marks were installed at Point Helen. Six of the seven historical benchmarks for Chenega were recovered. 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 EVAL RPT., Sec. H)

The horizontal datum for this project is NAD 83. One new station, NUKEM, as established on the northernmost rock of the Pleiades Islands using static GPS observations from station ROCK with a check to DUKE. The list of control stations used for this survey ~~are listed in Appendix III~~ is included in this Report. See the OPR-P139-RA-96 Horizontal Control Report for more information.

I. HYDROGRAPHIC POSITION CONTROL (See EVAL RPT., Sec. I)

All soundings were positioned using differential GPS. Primary control was a VHF differential reference station installed at NUKEM and repeated on a second VHF frequency by the ship. 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, NUKEM and DUKE or the US Coast Guard Beacon at CAPE HINCHINBROOK while the launches were rafted together with their GPS antennae within 2-3 meters of each other.

* Filed with the hydrographic data.

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 EVAL RPT., Sec. J)

The shoreline manuscript from Coastal Mapping survey CM-92012 (DM-10296) 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 0-5 meters of depth at Mean Lower Low Water. New offshore features were hydrographically positioned and are illustrated in black on the final field sheet. Features shown in pencil inshore of the NALL are the hydrographer's representation of the shoreline while slowly transiting along the shore. A DM rock located at latitude 60° 17' 26.915" N, longitude 148° 01' 08.995"W was not identified during shoreline verification and disproved by development on DN 284, VN 2124. The hydrographer recommends not charting this rock. concur.

Charted features were compared to enlargements of charts 16704, 11th Edition, April 21, 1990 and 16701, 15th Edition, July 1996 supplied by N/CS31. Charted shoreline features offshore of MLLW which were not found on the manuscript were verified by field positions. The charted rocks located at latitude 60° 20' 28" N, longitude 147° 59' 57"W were not observed and disproved DN 283, VN 2123, fix 30130 to 30133. The hydrographer recommends the charted rocks be removed from the chart. concur. All features (charted) originate with the 1933 and 1957 hydrographic surveys. Charted shoreline should be superseded by the manuscript shoreline and field work as shown on the final field Detached Position and Bottom Sample plot. Concur.

K. CROSSLINES

The heights of rocks located offshore of the NALL line are shown on the smooth sheet in FEET and have been corrected for approved tides. Heights of rocks located inshore of the NALL line were not determined during this survey.

Crosslines agreed within 1 meter with mainscheme hydrography, except in areas of steep bathymetry. There was a total of 12.3 nautical miles of crosslines, comprising 16.4% of mainscheme hydrography.

L. JUNCTIONS (See EVAL RPT., Sec. L)

This survey junctions with contemporary surveys H-10726, 1:10,000, 1996 on the north, H-10718, 1:40,000, 1996 on the south, H-10722, 1:10,000, 1996 on the west, and H-10729, 1:40,000, 1996 on the east. Soundings on these 1996 surveys were found to be in good agreement. Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after reduction to final vertical datum.

* Enlargement of Chart 16701, 16th Ed., June 1, 1996 was used during office processing.

M. COMPARISON WITH PRIOR SURVEYS (See EVAL RPT., Sec. M)

Prior surveys H-8388, 1:~~10,000~~ 12,500, 1957, H-5408, 1:~~10~~ 20.000, 1933, H-5409, 1:~~10~~ 20,000, 1933 and H-3027, 1:20,000, 1909 cover this survey area. The prior soundings agreed well with the present survey. One disproval of a shoaler prior depth was necessary. The 38 ~~fm~~ fm sounding* charted at latitude 60° 16' 16" N, longitude 148° 05' 46"W was developed with 25 m line spacing. The shoal sounding was not found and the hydrographer recommends this sounding be superseded by the soundings of this survey. (Concur) Final comparisons will be done at PHB after reduction to final sounding datum using tidal information collected concurrently with this survey. * The present survey found a depth of 39 fathoms near the charted 38.

N. ITEM INVESTIGATIONS ✓

Detailed Investigation Report:

ITEM: Pile	**CHART NO.:**	16701 (1:81,436)	16704 (1:20,000)
	EDITION:	16th Edition	11th Edition
	CHART DATE:	June 1, 1996	April 21, 1990

DESCRIPTION AND SOURCE OF ITEM:
A pile at latitude 60° 19' 36" N, longitude 148° 00' 27"W, charted from the survey H-5408, 1:10.000, 1933.

METHOD OF INVESTIGATION:
The area of the charted pile was searched by Side Scan Sonar using both the 75 and 100 meters range scales. Located off the mouth of a river, the area has a steep bottom slope and depths between 10 and 20 meters were maintained for SSS by transiting to the north and south along the depth contour.

RESULTS OF INVESTIGATION:
The pile was not found by Side Scan Sonar on DN 270, VN 2123 or during shoreline verification.

COMPARISON WITH PRIOR SURVEYS:
The pile was charted from H-5408, 1:10.000, 1933.

COMPARISON WITH THE CHART AND CHARTING RECOMMENDATIONS:
The hydrographer recommends deleting the pile symbol and accompanying text at position 60° 19' 36" N, longitude 148° 00' 27"W from charts 16701 and 16704. Concur.

O. COMPARISON WITH THE CHART (See EVAL RPT., Sec. O)

Comparison of soundings is described in Section M. Non-sounding features are discussed in Section J. Final sounding comparisons will be made at PHB after reduction to final vertical datum.

Dangers to Navigation ✓

(4)

Four dangers to navigation within the limits of H-10719 were reported to the Seventeenth Coast Guard District, October 6, 1996. Copies of the correspondence are attached to ~~can be found in Appendix I of~~ this report.

P. ADEQUACY OF SURVEY ✓

Survey H-10719 is complete and adequate to supersede prior soundings and features in their common areas. Concur.

Q. AIDS TO NAVIGATION ✓(See EVAL RPT., Sec. Q)

No Aids to Navigation exist within the survey area. Do not concur.

R. STATISTICS

NM Hydrography	147.3
Velocity Casts	3
Detached Positions	10
Selected Soundings	6657
Bottom Samples	15
Tide Stations	2
NM^2 Hydrography	5.1
Dives	3

S. MISCELLANEOUS ✓

Bottom samples were collected and sent to the Smithsonian in accordance with Project Instructions. No unusual tidal currents or magnetic variations were found during this survey. Secchi disk observations were performed and indicate that water visibility was approximately ten meters on the east end of the survey and reduced to the west.

T. RECOMMENDATIONS ✓

None.

U. REFERRAL TO REPORTS ✓

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

Title	Date Sent	Office
OPR-P139-RA Horizontal Control Report	November, 1996	N/CS34
OPR-P139-RA 1996 Coast Pilot Report	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,

James M. Crocker
Lieutenant (jg), NOAA

Approved and Forwarded,

Dean R. Seidel
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 9 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	147:38:48.000	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 6, 1996

ADVANCE INFORMATION

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

Dear Sir:

During the processing of hydrographic surveys H-10717 and H-10719 in Knight Island Passage, Prince William Sound, nine 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-10719:

Number	Edition	Date	Scale	Datum
16700	24th ED.	92/01	1:200,000	NAD83
16701	16th ED.	96/06	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

ADVANCE
INFORMATION

DANGERS TO NAVIGATION

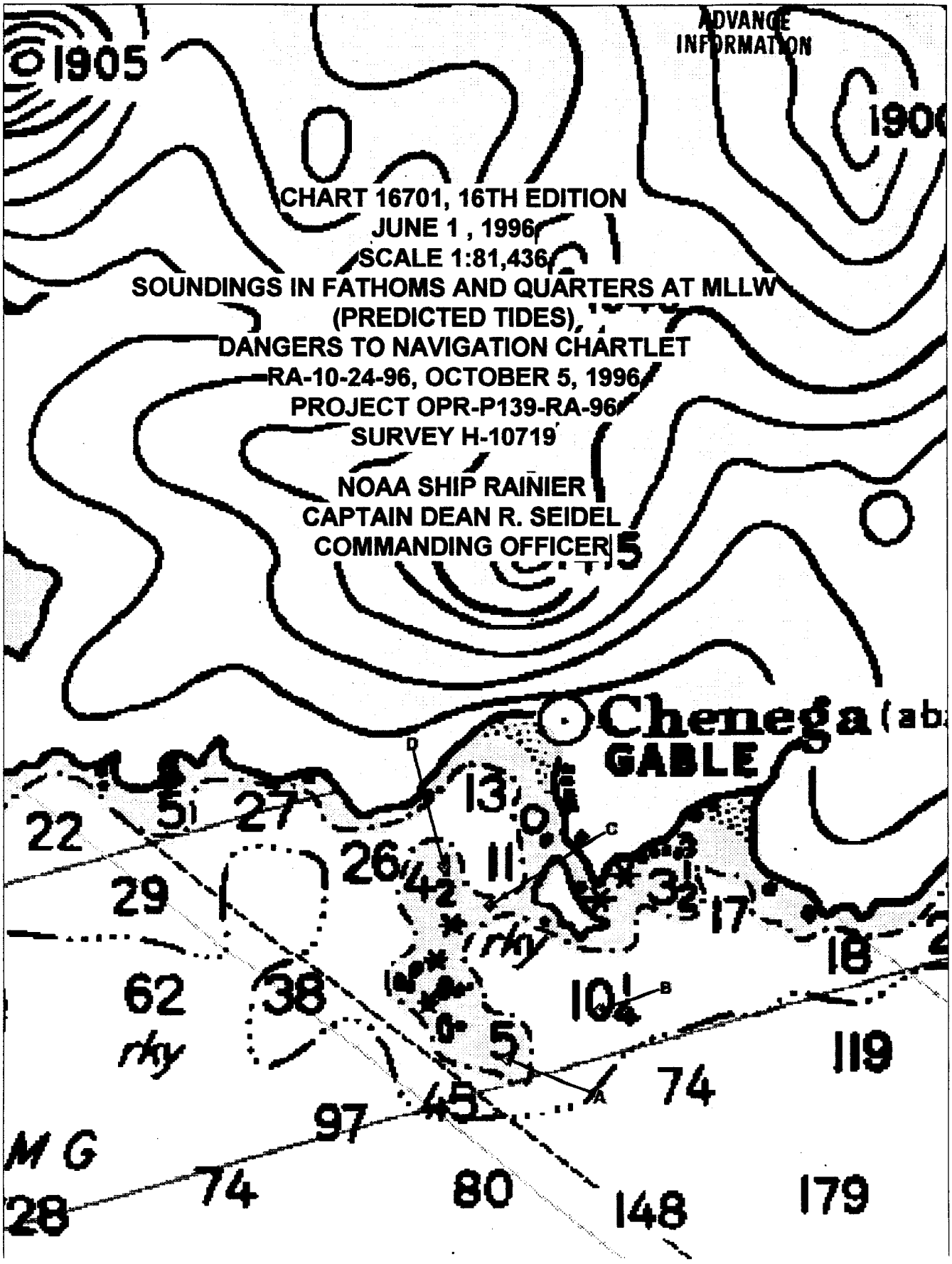
OPR-P139-RA SOUTHWEST PRINCE WILLIAM SOUND, AK

REGISTRY NUMBER H-10719

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

ITEM	DANGER	DEPTH	LATITUDE (N)	LONGITUDE (W)
A	SHOAL	3 FM	060:16:07.696	148:04:52.550
B	SHOAL	9 1/2 FM	060:16:13.613	148:04:29.999
C	SHOAL	3 1/4 FM	060:16:26.279	148:04:56.675
D	SHOAL	3 FM	060:16:30.948	148:05:07.753


ADVANCE
INFORMATION
1905
CHART 16701, 16TH EDITION
JUNE 1 , 1996
SCALE 1:81,436
SOUNDINGS IN FATHOMS AND QUARTERS AT MLLW
(PREDICTED TIDES)
DANGERS TO NAVIGATION CHARTLET
RA-10-24-96, OCTOBER 5, 1996
PROJECT OPR-P139-RA-96
SURVEY H-10719
NOAA SHIP RAINIER
CAPTAIN DEAN R. SEIDEL
COMMANDING OFFICER
Chenega (ab
GABLE
22
5
27
13
26
11
42
29
62
38
rky
10
5
74
97
45
MG
28
74
80
148
179
119
18
17
3

ADVANCE INFORMATION

P 061913Z OCT 96
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCCNAVWARN WASHINGTON DC//MCNM//
INFO NOAAMOP SEATTLE WA
BT
UNCLAS

DANGER TO NAV #: RA-14-96

NOAA SHIP RAINIER HAS LOCATED 4 DANGERS TO NAVIGATION IN SOUTHWEST PRINCE WILLIAM SOUND, AK (PROJECT: OPR-P139-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY H-10719.

THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

AFFECTED CHARTS:

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

ALL CHART DATUM ARE NAD83.

ITEM	DANGER	DEPTH	LATITUDE (N)	LONGITUDE (W)	FIX NUMBER
A	SHOAL	3 FM	060:16:07.696	148:04:52.550	40661+0
B	SHOAL	9 1/2 FM	060:16:13.613	148:04:29.999	20329+7
C	SHOAL	3 1/4 FM	060:16:26.279	148:04:56.675	40662+0
D	SHOAL	3 FM	060:16:30.948	148:05:07.753	40603+2

THIS IS ADVANCE INFORMATION SUBJECT OT OFFICE REVIEW.

QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE CHIEF, PACIFIC HYDROGRAPHIC BRANCH AT (206) 526-6835. A LETTER WITH ATTACHED CHARTLET WILL BE MAILED TO CONFIRM THIS MESSAGE.
BT

Limited Shoreline Verification: The New Rules

First, understand that the fundamental difference between last year and this year is that the amount of shoreline we must verify is determined by US, not strictly specified in the Project Instructions.

Procedures:

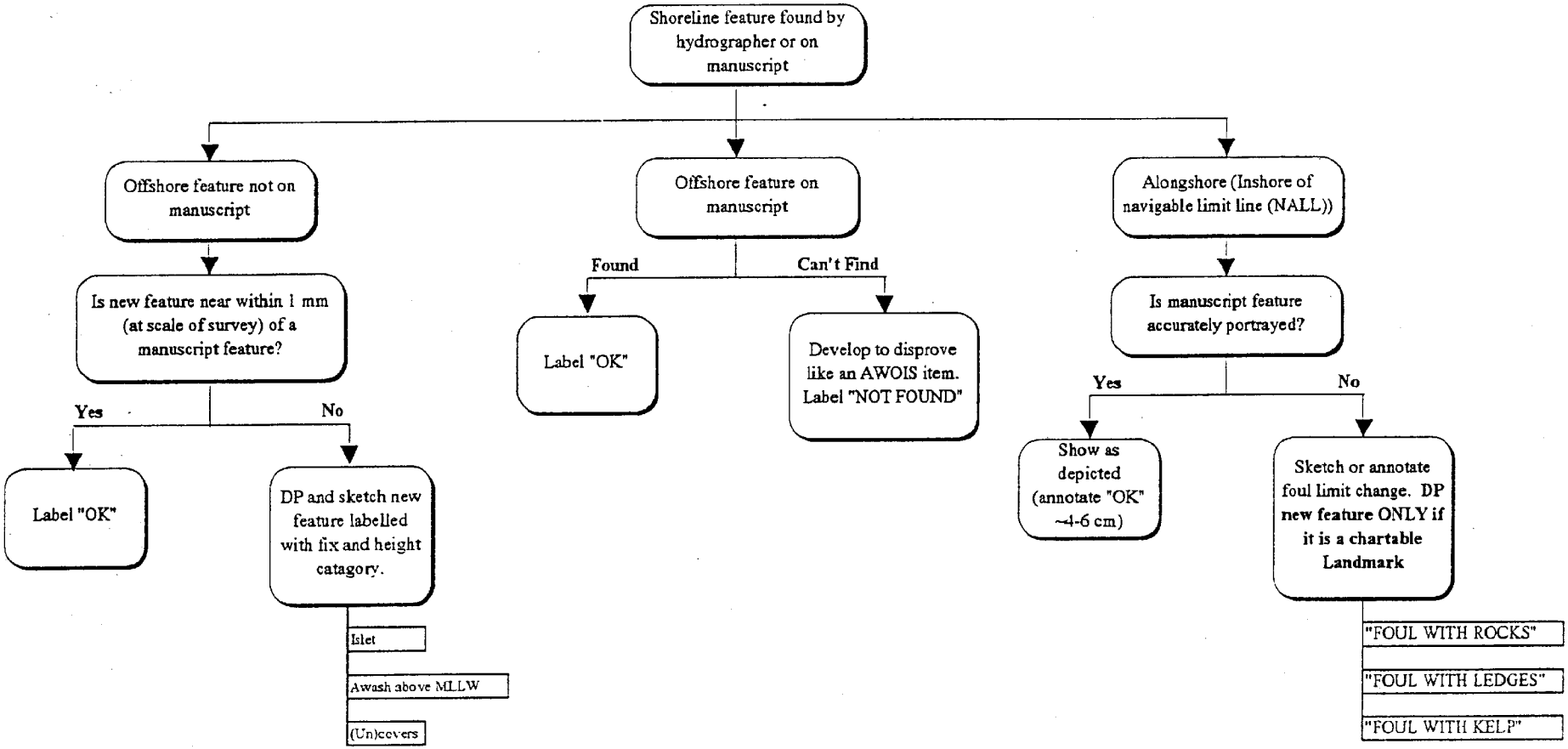
1) Determine distance from shore that is the MINIMUM working distance necessary for the survey. Take into account likely vessel traffic, bathymetry, complexity of the shoreline from prior surveys and the chart, and weather (sea) conditions experienced in the area. Use greater distances if shallow depths prevail, or if swell is severe. Even in steep foreshore bathymetry, do not go closer than 3 launch lengths (30 meters), unless vessel usage indicates that the area is used (e.g. a landing ramp is on shore, or an extremely narrow passage is used by fishing vessels to reach a certain bay.)

2) Draw the inshore limit determined in (1) on the boat sheet. Collecting data along this line may or may not be feasible, due to tides and project logistics, but the boat sheet line may be used to delimit mainscheme and development hydrography until such a "buffer" line is or may be needed.

3) Search for and develop all features seaward of the line drawn in (2). Use low water for this search, if possible. Combining this search with the acquisition of the data along the "buffer" line may be possible in areas which are not too complex. Detached positions are required only if a feature is found offshore of the NALL line and either more than 1 mm away from any manuscript feature or is mis-represented by the manuscript. If a charted or manuscript feature located offshore of the line is NOT found, a full disproval is required.

4) Annotate the field copies of the boat sheet (which by definition includes the charted, manuscript, and significant prior survey features) showing that the shoreline features offshore of the NALL each have a full disposition. These copies are bound and used to create the final field sheet, and submitted as official survey records.

Shoreline Decision Tree



Prepared by Mark S. Larsen

APPROVAL SHEET

for

H-10719

RA-10-24-96

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey 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

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10719

Name on Survey	A ON CHART NO. 16704, 16701, 16700	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ALASKA (title)	X		X							1
CHENEGA (aband)	X		X							2
CHENEGA ISLAND	X		X							3
CHENEGA POINT	X		X							4
KNIGHT ISLAND PASSAGE	X		X							5
~~NEW YEAR ISLANDS~~* ~~(title)~~	X		X							6
PRINCE WILLIAM SOUND	X		X							7
(title)										8
										9
										10
										11
										12
										13
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* Plots outside survey limits. Not part of survey title.

Approved:

Curtis C. Coy

Chief Geographer

DEC 20 1996

NOAA FORM 76-155 SUPERSEDES C&GS 197

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-10719

LOCALITY: Squire Island and Vicinity, Southwest Prince William Sound, Alaska

TIME PERIOD: September 21 - October 10, 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: PWS20, PWS34 & PWS35

Refer to attachment(s) for zoning information.

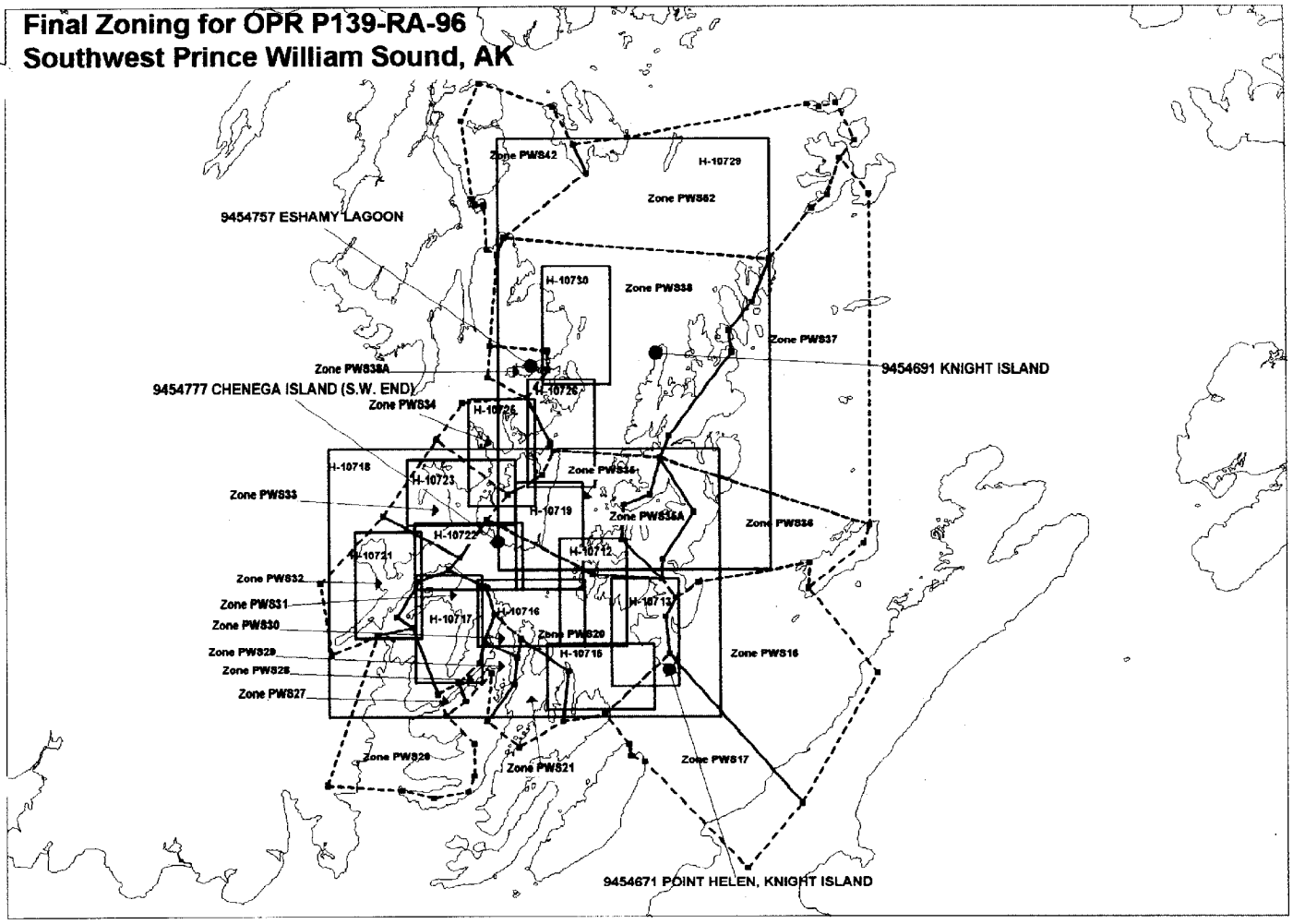
Note: Provided time series data are tabulated in metric units (meters) and on Greenwich Mean Time.

CHIEF, TIDAL ANALYSIS BRANCH

Final tide zone nodal point locations for OPR P139-RA-96.
Sheet H-10719

Format: Longitude in decimal degrees (negative value denotes Longitude West),
Latitude in decimal degrees
Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction

	Tide Station Order	AVG Time Correction	Range Correction
Zone PWS20			
-148.121387 60.20888	9454777	Direct	Direct
-148.138224 60.236579	9454671	Direct	1.03
-148.213991 60.255044	9454240	Direct	0.97
-148.192103 60.266795			
-148.135913 60.305498			
-147.921026 60.250008			
-147.781279 60.245812			
-147.752622 60.226545			
-147.77381 60.206587			
-147.766071 60.169257			
-147.897377 60.108049			
-147.983011 60.100932			
-147.971537 60.150964			
-148.067509 60.184539			
-148.121387 60.20888			
Zone PWS34			
-148.237563 60.386823	9454777	Direct	Direct
-148.185368 60.423755	9454691	Direct	0.98
-148.054039 60.428791	9454240	Direct	0.97
-148.006895 60.382627			
-148.00016 60.375912			
-148.023732 60.350731			
-148.094448 60.330586			
-148.237563 60.386823			
Zone PWS35			
-148.094448 60.330586	9454777	Direct	1.01
-148.023732 60.350731	9454691	Direct	0.99
-148.00016 60.375912	9454240	Direct	0.98
-147.78401 60.368002			
-147.804609 60.330991			
-147.858271 60.320562			
-147.862937 60.284639			
-147.781279 60.245812			
-147.921026 60.250008			
-148.135913 60.305498			
-148.094448 60.330586			



ZONE	TG1	TC1	RR1	TG2	TC2	RR2	TG3	TC3	RR3
PWS16	9454671	0	1.01	9454777	0	0.99	9454240	0	0.96
PWS17	9454671	0	1.00	9454777	0	0.98	9454240	0	0.95
PWS20	9454777	0	1.00	9454671	0	1.03	9454240	0	0.97
PWS21	9454671	-6	1.01	9454777	-6	0.99	9454240	-6	0.96
PWS26	9454671	-12	0.93	9454777	-12	0.91	9454240	-12	0.88
PWS27	9454671	-6	0.95	9454777	-6	0.93	9454240	-6	0.90
PWS28	9454671	0	0.97	9454777	0	0.95	9454240	0	0.92
PWS29	9454671	0	0.99	9454777	0	0.97	9454240	0	0.94
PWS30	9454671	0	1.00	9454777	0	0.98	9454240	0	0.95
PWS31	9454777	0	0.98	9454671	0	1.00	9454240	0	0.95
PWS32	9454777	0	0.97	9454671	0	0.99	9454240	0	0.94
PWS33	9454777	0	0.98	9454671	0	1.00	9454240	0	0.95
PWS34	9454777	0	1.00	9454691	0	0.98	9454240	0	0.97
PWS35	9454777	0	1.01	9454691	0	0.99	9454240	0	0.98
PWS36	9454671	0	1.03	9454691	0	0.98	9454240	0	0.97
PWS37	9454691	0	0.99	9454671	0	1.04	9454240	0	0.98
PWS38	9454691	0	1.00	9454777	0	1.02	9454240	0	0.99
PWS42	9454691	0	1.01	9454777	0	1.02	9454240	0	0.99
PWS52	9454691	0	0.99	9454777	0	1.01	9454240	0	0.98
PWS35A	9454777	0	1.03	9454691	0	1.01	9454240	0	1.00
PWS38A	9454757	0	1.00	9454691	0	0.95	9454777	0	0.97

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

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10719

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	2					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List):	DM-10296
PHOTOBATHYMETRIC MAPS (List):	NA
NOTES TO THE HYDROGRAPHER (List):	NA
SPECIAL REPORTS (List):	NA
NAUTICAL CHARTS (List):	Chart 16701, 16th Ed., June 1,1996, Chart 16704, 11th Ed., 4/21/90

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS VERIFICATION	AMOUNTS EVALUATION	AMOUNTS TOTALS
POSITIONS ON SHEET			
POSITIONS REVISED			
SOUNDINGS ~~XXXXXX~~ (selected)			6,657
CONTROL STATIONS REVISED			

	TIME-HOURS VERIFICATION	TIME-HOURS EVALUATION	TIME-HOURS 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	116.00		
COMPARISON WITH PRIOR SURVEYS AND CHARTS		7.0	7.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		12.0	12.0
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	116.0	19.0	135.0

Pre-processing Examination by: J. Stringham	*Beginning Date*: 10/29/96	*Ending Date*: 10/30/96
Verification of Field Data by: E.Domingo,M.Bigelow,R.Mayor, J. Stringham	*Time (Hours)*: 116.0	*Ending Date*: 5/19/97
Verification Check by: B. Olmstead	*Time (Hours)*: 4	*Ending Date*: 6/10/97
Evaluation and Analysis by: I. Almacen	*Time (Hours)*: 19.0	*Ending Date*: 5/29/97
Inspection by: B. Olmstead	*Time (Hours)*: 7	*Ending Date*: 6/24/97

EVALUATION REPORT

H-10719

A. PROJECT

Project information is discussed in the hydrographer's report.

B. AREA SURVEYED

The survey area is discussed in the hydrographer's report with the following supplemental information.

The area along the eastern shore is generally steep while the southern shore is indented by several small bays with ledges, off-lying islets, reefs and scattered rocks. The bottom is generally made up of pebbles, sand and mud mixed with broken shells. Depth range from 0.1 to 320.0 fathoms.

The hydrographer has determined during this survey the inshore limits of safe navigation by defining a Navigable Area Limit Line (NALL) within the area of the survey. Charted features and soundings inshore of this limit line have not been specifically addressed during survey operations and should be retained as charted. Page-size chartlets from charts 16701 and 16704 of the survey area indicating the limits of supersession are included in this report as Attachment A and B.

C. SURVEY VESSELS

Survey vessel information is found in the hydrographer's report.

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 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 MicrroStation 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 the Hydrographic Survey Guideline No. 75 and No. 35.

The field sheet parameters have been revised to center the hydrography on the office plot. Data is plotted using a Modified Transverse Mercator projection and are depicted on a single sheet.

E. SONAR EQUIPMENT

Side scan sonar was used during this survey. The sonar equipment operation and method of field data processing are adequately discussed in the hydrographer's report.

F. SOUNDING EQUIPMENT

Sounding equipment is discussed in the hydrographer's report.

G. CORRECTIONS TO SOUNDINGS

The sounding data have been reduced to Mean Lower Low Water (MLLW). The reducers include corrections for actual tide, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with present NOS specifications. Actual tide reduction is derived from Chenega Island, Southwest End, Alaska gage (945-4777) and Point Helen, Knight Island, Alaska gage (945-4671). Herring Point, Knight Island Passage, Alaska gage (945-4691) and Valdez, Alaska gage (945-4240) were listed on the approved tide note but not used for final sounding reduction. Refer to the approved tide note attached to this report concerning recommended tidal zoning.

H. CONTROL STATIONS

The control stations used during this survey are adequately discussed in the hydrographer's report.

The MicroStation generated smooth sheet is annotated with an NAD 27 adjustment tick based on values determined with NGS program NADCON.

Data based on NAD 27 may be referenced to this survey by applying the following corrections:

Latitude: -2.082 seconds (-64.442 meters)
Longitude: 7.459 seconds (114.545 meters)

I. HYDROGRAPHIC POSITION CONTROL

Hydrographic position control is adequately discussed in the hydrographer's report. A horizontal dilution of precision (HDOP) limits of 3.75 was computed for survey operations. The maximum HDOP allowable limit has not been exceeded during this survey and the quality of data obtained is considered good. The reference site confirmation test and the daily DGPS performance checks conducted in the field were adequate.

J. SHORELINE

The "limited" shoreline verification process conducted during this survey is adequately discussed in the hydrographer's report. The digitized shoreline file and the survey file were merged during Microstation processing.

There are no significant differences noted in the mean high water line configuration between the present and the previously compiled shoreline maps of the survey area. A few shoreline changes on charts 16701 and 16704 were noted during this survey particularly along the southern shore of the island. These changes could be attributed to the effect of the 1964 earthquake around this area of Prince William Sound and the differences in the source data accuracy of MHWL determination.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10719 junctions with the following surveys.

Survey	Year	Scale	Area
H-10718	1996	1:40,000	South
H-10722	1996	1:10,000	West
H-10726	1996	1:10,000	North
H-10729	1996	1:40,000	East

The junctions with surveys H-10718, H-10722, H-10726 and H-10729 are complete. Survey H-10718 and H-10729 are multi-beam hydrography conducted along the main portion of Knight Island Passage. The depth curves and soundings within the junction areas are in satisfactory agreement.

M. COMPARISON WITH PRIOR SURVEYS

Survey H-10719 was compared with the following prior surveys.

H-3027 (1909), scale 1:20,000
H-5408 (1933), scale 1:20,000
H-5409 (1933), scale 1:20,000
H-8388 (1956), scale 1:12,500

Surveys H-3027, H-5408, H-5409 and H-8388 are the prior USC&GS hydrographic surveys that cover the area. Survey H-8388 was originally accomplished in 1956 at the scale of 1:12,500 and presumed to have been later compiled on smooth sheet at the scale of 1:10,000 in 1957. Comparisons with these surveys are considered satisfactory. All depths originating from these prior surveys were adequately addressed during survey operations. A more thorough coverage of the area has been undertaken by the present survey. The present depths were found to be generally shoaler by about 1.0 to 10.0 fathoms. However, differences over twenty fathoms are noted along the east side of Chenega Island where the bottom falls off rapidly to over 300 fathoms. Similar depths are seen on the present survey within thirty meters of the prior survey soundings. Aside from the effects of the 1964 earthquake around the island, the changes noted in this survey can also be attributed to the increased bottom coverage and the application of more accurate positioning and sounding methods presently available in the field.

H-10719 is adequate to supersede the prior surveys within the common area.

T-9538 (1954), scale 1:10,000

The rock awash charted at latitude 60/16/48N, longitude 148/01/24W, originating from T-9538 was not mentioned in the hydrographer's report. This feature was depicted as a small islet on the latest shoreline manuscript. Delete the charted rock awash and chart an islet as shown on the present survey.

H-10719 is adequate to supersede the prior topographic survey within the common area.

M. ITEM INVESTIGATIONS

There are no AWOIS item investigations assigned to this survey.

O. COMPARISON WITH CHART

Survey H-10719 was compared with the following charts.

Chart	Edition	Date	Scale	Datum
16701	16th	June 1, 1996	1:81,436	NAD83
16704	11th	April 21,1990	1:10,000	NAD83

a. Hydrography

Charted hydrography originates with the previously mentioned prior hydrographic and topographic surveys. These prior surveys have been adequately addressed in the preceding section of this report and requires no further discussion.

The after effects of the 1964 Prince William Sound earthquake were considered in the comparison of the present survey in accordance with Hydrographic Survey Guideline No.39. No reasonable adjustment value could be established based on the prior survey information, however, according to the U.S. Coast Pilot report, the 1964 earthquake had caused a bottom uplift of 4.9 feet around Chenega Island.

Survey H-10719 is adequate to supersede charted hydrography within the common area of coverage.

b. Dangers to Navigation

Four (4) dangers to navigation were reported to the USCG, NIMA, N/CG261 and N/CS34 on October 6, 1996. A copy of the report is attached. There were no additional dangers to navigation identified during office processing.

P. ADEQUACY OF SURVEY

The hydrography on survey H-10719 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.

Hydrography on survey H-10719 was acquired in the field in metric units while the smooth sheet for this survey was compiled in fathoms to conform to the sounding unit of the

existing NOS nautical charts of the area.

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.

Survey H-10719 adequately complies with the project instructions.

Q. AIDS TO NAVIGATION

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

The existence of the gable charted at latitude 60/16/48N, longitude 148/04/39W, at the abandoned village of Chenega was not mentioned in the hydrographer's report. Based on the U.S. Coast Pilot information, a school and church were reported in ruins in 1966 and there is a prominent landslide back of the abandoned village. As per information from the field hydrographer, the charted gable still exists and this landmark should be retained as charted.

There are no other prominent features of landmark value located within the survey area.

R. STATISTICS

Statistics are itemized in the hydrographer's report.

S. MISCELLANEOUS

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

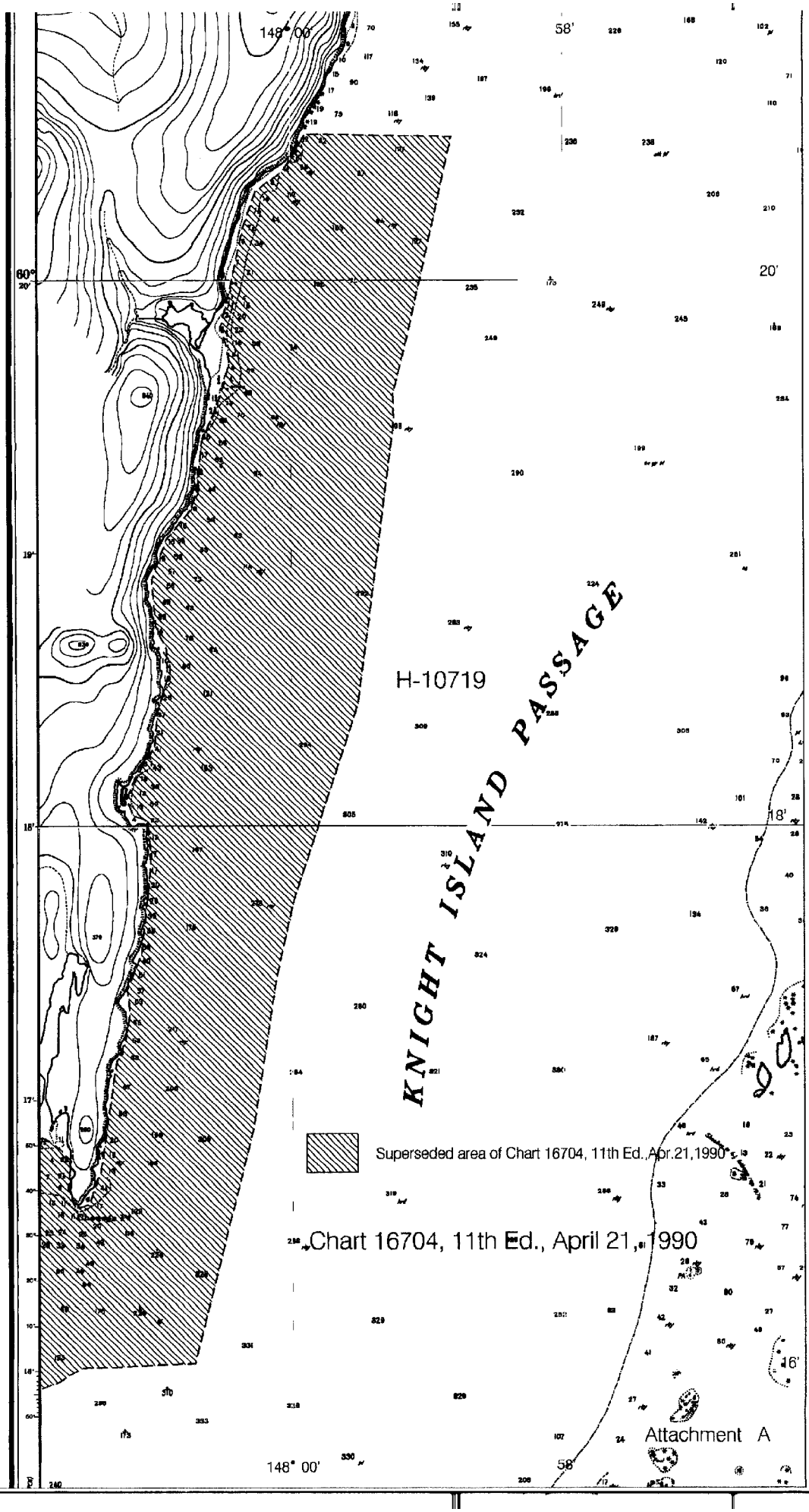
T. RECOMMENDATIONS

Survey H-10719 is a good hydrographic survey and no additional field work is required.

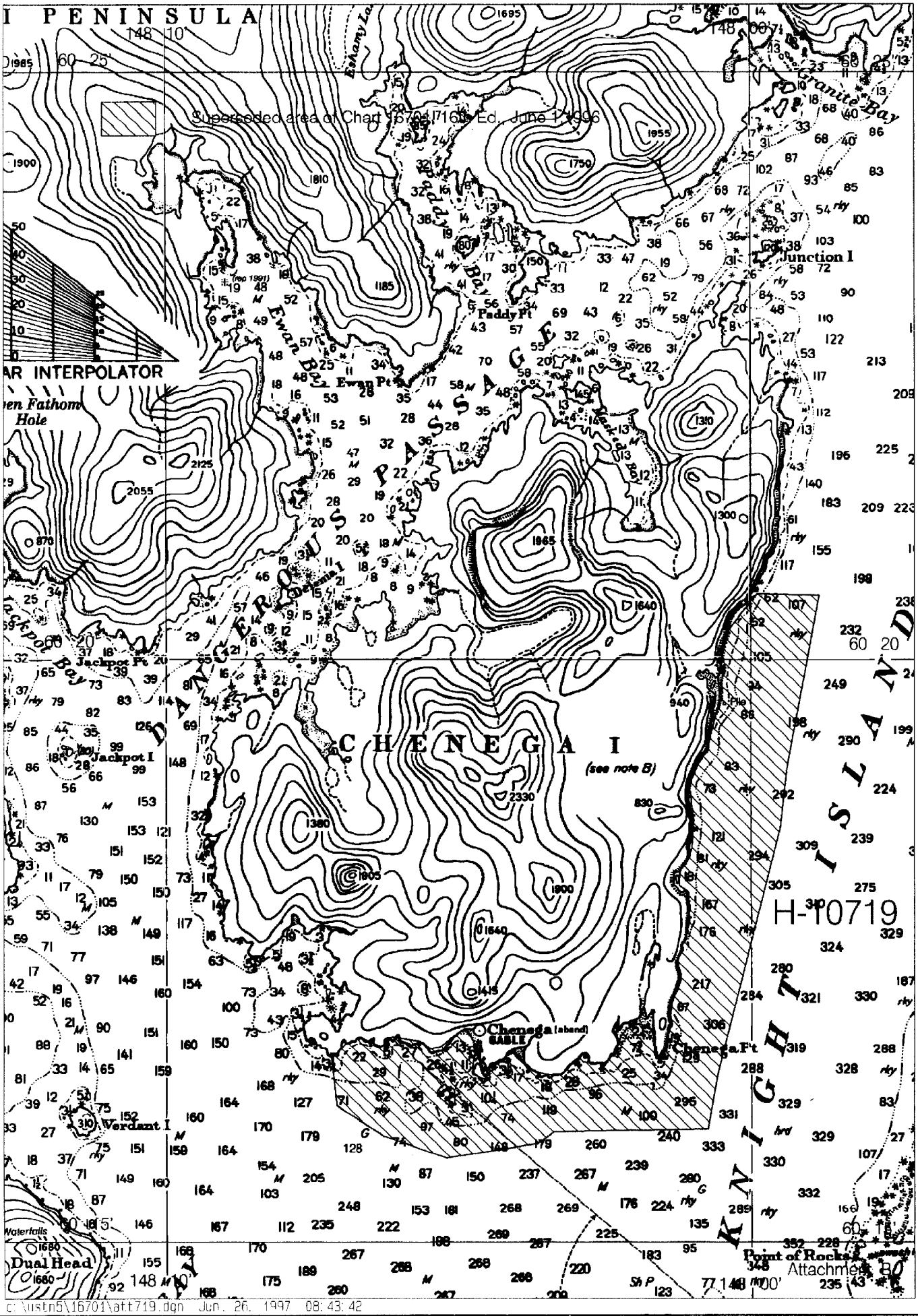
U. REFERRAL TO REPORTS

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

Isagani A. Almacen
Cartographer



Attachment A



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APPROVAL SHEET
H-10719

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: 6/24/97
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: 6/26/97
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

****

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-10719

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
16704	6/18/97		Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. Full application of soundings and curves from smooth sheet.
16701	8/6/97		
			Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application of
			Drawing No. Sounding and features 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
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			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Charts
			16704
			16703
			16701
			16700

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED