H10713

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-10-19-96

Registry No. H-10713

LOCALITY

State Alaska

General Locality Southwest Prince William Sound

Sublocality Knight Island from Point Helen to Lucky Bay

1996

CHIEF OF PARTY
CAPT Dean R. Seidel, NOAA

LIBRARY & ARCHIVES

DATE MAR 6 1998

☆U.S. GOV. PRINTING OFFICE: 1987—756-980

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H-10713

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-10-19-96

State: Alaska

General locality: Southwest Prince William Sound

Locality: Knight Island from Point Helen to Lucky Bay

Scale: 1:10,000 Date of survey: September 3-12, 1996

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

Vessel: RA-2(2122),RA-3(2123),RA-4(2124),RA-5(2125),RA-6(2126)

Chief of party: CAPT Dean R. Seidel, NOAA

Surveyed by: CAPT D.Seidel, LT M.Larsen,LT S.Lemke,LTJG J.Crocker, ENS E. Christensen, SST J. Jacobson

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

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, D. Doles, R. Mayor, J. Stringham

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

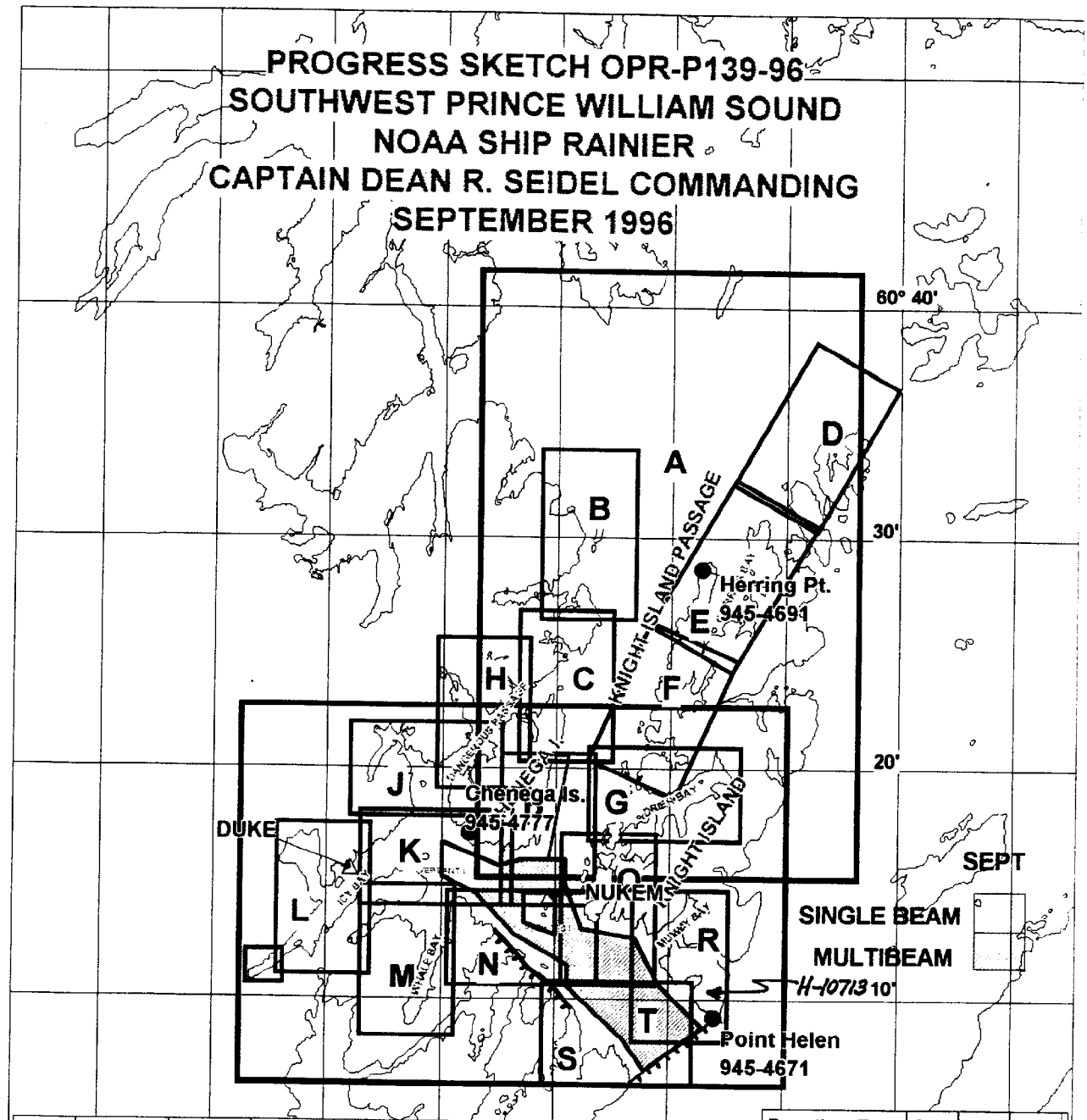
REMARKS: All times are UTC, revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

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

AWOIS / SURF 12/3/97 mcR

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

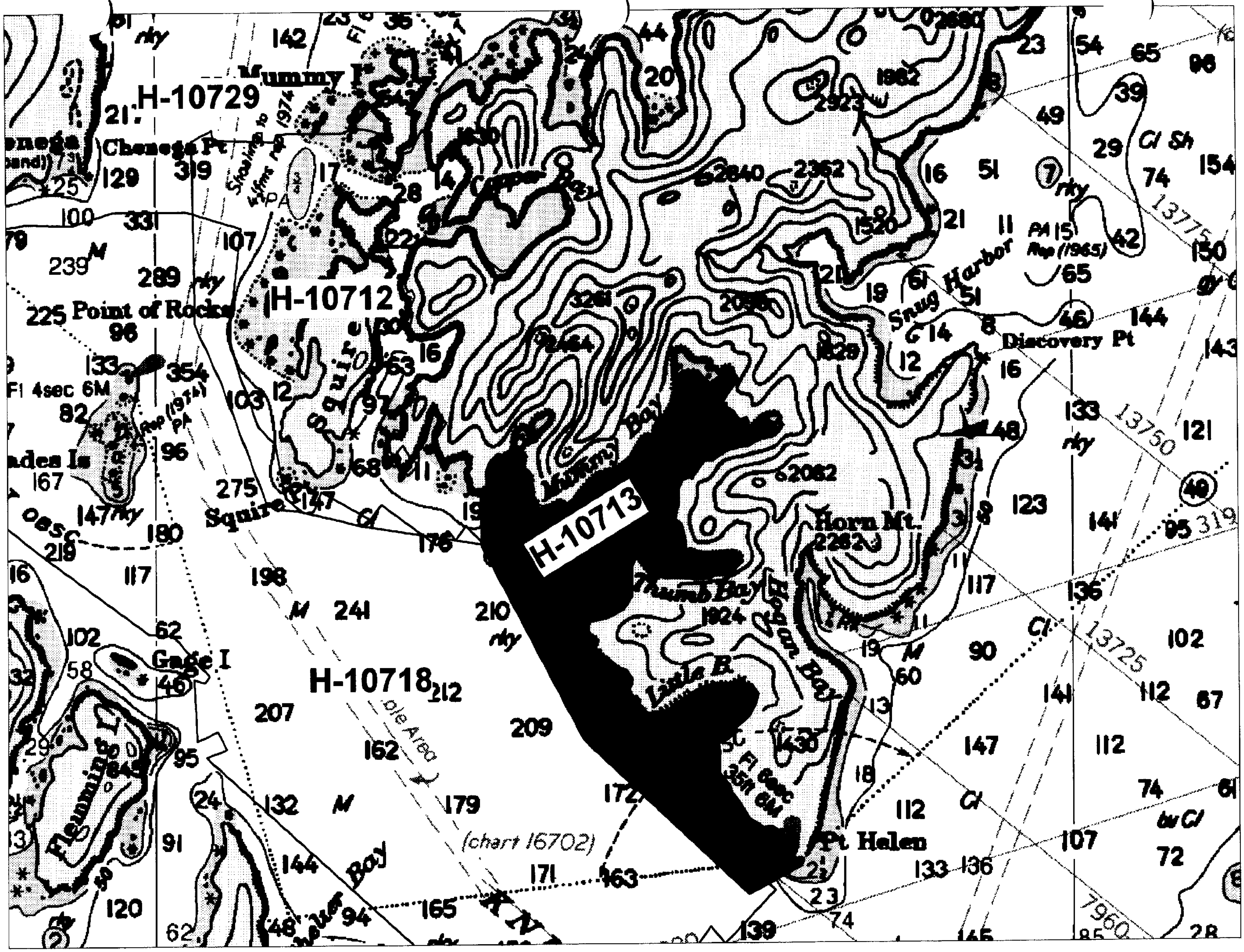
PROGRESS SKETCH OPR-P139-96
SOUTHWEST PRINCE WILLIAM SOUND
NOAA SHIP RAINIER
CAPTAIN DEAN R. SEIDEL COMMANDING
SEPTEMBER 1996



Sheet	Reg_No	Started	Percent	Completed	Submitted	SQNI
Q	H-10713	SEP 3	100%	SEP 24		10.4
R	H-10712	SEP 3	100%	SEP 12		5.8
S	H-10715	SEP 6	100%	SEP 11		4.5
N	H-10716	SEP 9	100%	SEP 21		6.5
T	H-10718	SEP 12	80%			26.2
L	H-10721	SEP 23	60%			5.6
J		SEP 28	10%			.5
P	H-10719	SEP 21	90%			4.6
M	H-10717	SEP 18	100%			7.8
K	H-10722	SEP 19	90%			8.7

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	0
SQ NM	79.9	0	0
AWOIS Invest.	5	0	0
Other Invest.	14	0	0
LNM Multibeam	107.4		


H-10729
Mummy I
Chenega Pt
H-10712
Point of Rocks
Squire
Snug Harbor
Discovery Pt
H-10713
Horn Mt.
Thumb Bay
Hogan Bay
Little B.
Pt Helen
Gage I
H-10718
(chart 16702)
Fl 4sec 6M

Descriptive Report to Accompany Hydrographic Survey H-10713

Field Number RA-10-19-96
Scale 1:10,000
September 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-10713 corresponds to sheet R as defined in the sheet layout. This survey will provide data to supersede parts of a survey performed in 1908 and 1909. 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., Sec. B)

The survey area is located in Knight Island Passage from Point Helen to Lucky Bay, Southwest Prince William Sound, Alaska. The survey's boundaries are defined shoreward to Knight Island from the following points: from 60° 09' 07"N, 147° 46' 10"W, to 60° 08' 52"N, 147° 47' 15"W, to 60° 10' 56"N, 147° 50' 45"W, to 60° 12' 30"N, 147° 53' 00"W, to 60° 13' 08"N, 147° 53' 00"W. Data acquisition was conducted from September 3, 1996 (DN 247) to September 12, 1996 (DN 256).

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
RA-2	2122	Hydrography Shoreline Verification Detached Positions
RA-3	2123	Hydrography Detached Positions
RA-4	2124	Hydrography Shoreline Verification Detached Positions
RA-5	2125	Hydrography Detached Positions Bottom Samples

✓

Vessel	EDP #	Operation
RA-6	2126	Hydrography Shoreline Verification Detached Positions Dive Investigations

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-10713. 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 problems which affect survey data were encountered.

G. CORRECTIONS TO ECHO SOUNDINGS ✓

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

Velocity Table #	Cast #	DN	Cast Position	Deepest Depth (m)	Applicable DN
1	16	247	60° 12' 12" N 147° 58' 36"W	563.9	All

Cast #16 was taken outside of the survey area.

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".*

A static transducer depth was determined using FPM Fig 2.2 for vessels 2122-2126 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 2122-2126 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 2-6 correspond to the last digit of the vessel number. The offset tables are included with project data for OPR-P139-RA.

* Filed with the hydrographic data.

The launches are not equipped with heave, roll and pitch sensors. Concur.

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-10713 are:

Zone	Time Correction	Height Correction
PWS20	-0 hr 12 mins	x0.93

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. Five new bench marks were installed at Point Helen, and the gage was not running well during this survey, so the hydrographer recommends using Chenega for datum recovery for this survey. 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. Second Order station DUKE and newly established NUKEM were the basis for control for this survey. The list of control stations is included in this report ~~are listed in Appendix III~~. See the OPR-P139-RA-96 Horizontal Control Report for station recovery notes, closure results, and other information.

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

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 Beacon at Potato Point, Alaska. No multi-path or other systematic error was indicated for either reference station.

* Filed with the hydrographic data.

See the OPR-P139-RA-96 Horizontal Control Report for further information.

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 DGPS base stations, DUKE or NUKEM and POTATO POINT while the launches were rafted together with their GPS antennae within 2 meters of each other.

J. SHORELINE (See EVAL RPT., Sec. J)

The shoreline manuscript from Coastal Mapping survey CM-92012 {DM-10299 DM-10300 ✓ 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.

The manuscript high water line was the seaward extent of flora in most areas of the survey, with predominantly steep sloping bedrock and occasional narrow sand, gravel, and rock beaches fronting this foliage.

Charted Features were compared to an enlargement of chart 16702, 9th Edition, July 21, 1990 supplied by N/CS31. Charted rocks offshore of the navigational area limit line were either identified as shoreline manuscript rocks or positioned as new rocks. Manuscript rocks inshore of the NALL were not positioned hydrographically; refer to the hydrographer's notes on the final Detached Position and Bottom Sample Plot.

Two charted rocks located at charted position latitude 60° 09' 31" N, longitude 147° 47' 09"W were not found during this survey. The location of the rocks was surveyed using 50 meter line spacing* in depths of 6 to 16 meters with no indication of shoaling. A visual search of the area at low water with 7 to 9 meter water visibility proved unsuccessful. A Detached Position (fix 40277 for the off shore rock and fix 40278 for the in shore rock), was taken at the center of the search area. The hydrographer recommends that these rocks be removed from the chart. Concur.
* In addition, ten meter line spacing was conducted in this area with no indication of the charted rocks.
A charted rock located at charted position latitude 60° 09' 46.8" N, longitude 147° 47' 39.7"W was not found during this survey. The location of the rock was surveyed using 50 meter line spacing in depths of 4 to 6 meters with no indication of shoaling. A visual search of the area at low water with 7 to 9 meter water visibility proved unsuccessful. A Detached Position (fix 60621), was taken at the center of the search area. The hydrographer recommends that this rock be removed from the chart. Concur.

A charted rock located at charted position latitude 60° 11' 55.3" N, longitude 147° 49' 57.5"W was not found during this survey. The location of the rock was surveyed using 50 meter line spacing in depths of 4 to 6 meters with no indication of shoaling. A visual search of the area at low water with 7 to 9 meter water visibility proved unsuccessful. A Detached Position (fix 60628), was taken at the center of the search area. The hydrographer recommends that this rock be removed from the chart. Concur. (A newly compiled islet is located about 50 m. East of this charted rock)

K. CROSSLINES ✓

Crosslines agreed within 1 meter with mainscheme hydrography. Crossline mileage was 13.1 nautical miles or 9.4 % of total mainscheme hydrography.

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

This survey junctions survey H-10712, 1:10,000, 1996 on the northwest portion of the survey and survey H-10718, 1:40,000, 1996 west of the survey boundary line. 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 EVAL RPT., Sec. M)

Prior surveys H-3027, 1:20,000, 1909 and H-2983, 1:20,000, 1908 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.

N. ITEM INVESTIGATIONS ✓

No AWOIS Items were assigned to this survey: Concur.

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

This survey was compared in the field to chart 16702, 9th Edition, July 21, 1990, 1:40,000 scale, (NAD 83). In addition, an enlargement of this chart was used to compare features and soundings (converted to meters) on the boat sheet.

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

List of new rocks located during this survey.

Item	Latitude (N)	Longitude (W)	Height (Meters)	Fix Number	Heights (Feet)
✓ New Rock	60° 14' 14" N	147° 48' 05"W	-1.0 ?	30163	* (5)
✓ New Rock	60° 09' 57" N	147° 47' 48"W	-1.2 '	60161	*(4)
✓ New Rock	60° 09' 49" N	147° 47' 50"W	5.0 4.9	60622	2?*

✓New Rock	60° 10' 20" N	147° 48' 16"W	1.4	60623	0 rk
✓New Rock	60° 11' 38" N	147° 50' 55"W	-0.1	50507	*(1)
✓New Rock	60° 11' 07" N	147° 50' 20"W	0.3	60626	*(0)
✓ New Rock	60° 11' 37" N	147° 51' 02"W	3.8	60627	1 rk

A ledge extending from an area containing manuscript and charted rock was located at latitude 60° 11' 25" N, longitude 147° 50' 46"W (fixes 50495 and 50496). Concur. Chart the area based on the present survey.

A foul area that includes a number of manuscript and charted features was located at latitude 60° 13' 25" N, longitude 147° 52' 25"W (fixes 60547 through 60550). Concur. Chart the area based on the present survey.

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

Dangers to Navigation ✓

(5)
Five dangers to navigation within the limits of H-10713 were reported to the Seventeenth Coast Guard District, September 24, 1996.

P. ADEQUACY OF SURVEY ✓

Survey H-10713 is complete and adequate to supersede prior soundings and features in their common areas. Concur.

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

One fixed aid to navigation exists within the examination area, Point Helen Light. See Section Q, Descriptive Report Insert, ~~Appendix II~~. (included in this report)

R. STATISTICS ✓

NM Hydrography	212.0
Velocity Casts	1
Detached Positions	30
Selected Soundings	10,252
Bottom Samples	24
Tide Stations	2
NM^2 Hydrography	5.8
Dives	5

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 10 to 15 meters.

T. RECOMMENDATIONS

None.

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 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	148:38:48.000	0	250	0.0	0.0		00/00/00	CAPE HINCHENBROOKM 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

NOAA FORM 76-40
(8-74)

Repalces C&GS Form 567

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [x] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [x] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
RAINIER	ALASKA	Knight Island from Point Helen to Lucky Bay Prince William Sound	8-Oct-96

The following objects HAVE [ ] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-P139-RA		H-10713	

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° '	LATITUDE " D.M. Meters	LONGITUDE ° '	LONGITUDE " D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
L.L.# 25925	Point Helen Light Fl W 6s	60 09	11.26 351	147 45	58.68 903	F-GPS-L 10/8/96		16700 16701 16702 16704

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	**NAME**	**ORIGINATOR**
OBJECTS INSPECTED FROM SEAWARD		☐ PHOTO FIELD PARTY ☐ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER
POSITIONS DETERMINED AND/OR VERIFIED	Capt. D.R. Seidel	FIELD ACTIVITY REPRESENTATIVE LT. G.T. Noll OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64)

OFFICE

1. OFFICE IDENTIFIED AND LOCATED OBJECTS
   Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.
   EXAMPLE: 75E (C) 6042
   8 - 12 - 75

FIELD

1. NEW POSITION DETERMINED OR VERIFIED
   Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

   A. Field positions* require entry of method of location and date of field work.
   EXAMPLE: F - 2 - 6 - L
   8 - 12 - 75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont.)

   B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.
   EXAMPLE: P - 8 - V
   8 - 12 - 75
   74L (C) 2982

II. TRIANGULATION STATION RECOVERED
   When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.
   EXAMPLE: Triang. Rec.
   8 - 12 - 75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH
   Enter 'V-Vis.' and date.
   EXAMPLE: V-Vis.
   8 - 12 - 75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

SUPERSEDES NOAA FROM 76-40 (2-71) WHICH IS OBSOLETE, AND
EXISTING STOCK SHOULD BE DESTROYED UPON RECEIPT OF REVISION.

☆ U.S. GPO: 1975-0-665-080/1155

Section Q: Descriptive Report Insert

Name of Aid: Point Helen Light
Light List #: 25925

Method of Positioning GPS: [X] DGPS: [ ] Other: _____

Positioning Information

	Latitude (N)	Longitude (W)
Charted Pos.	60/09/09	147/46/03
Survey Pos.	60/09/11.3	147/45/58.7
Light List Pos.	60/09.2	147/46

	Easting	Northing
Charted Pos.	62913.5	17013
Survey Pos.	62979.9	17083.1

Difference between Charted and Surveyed Position: Distance: 97 meters
(Bearing from Surveyed to Charted Position) Bearing: 223 deg T

Characteristics
Do characteristics match Light List? Yes [X] No [ ]
If no, what are the characteristics? _____

Does the aid adequately serve its apparent purpose? Yes [X] No [ ]
If no, why not? _____

New/Uncharted Aids (if information is known or easily obtained)
Date Est: _____
Maintained By: _____ Private? Yes [ ] No [ ]
Is aid seasonally maintained? Yes [ ] No [ ]
Frequency of Maintenance: _____

Apparent Purpose: _____

Other Information:

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

ADVANCE INFORMATION

September 18, 1996

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

Dear Sir:

During the processing of hydrographic surveys H-10713 and H-10715 in Knight Island Passage, Prince William Sound eight dangers to navigation have been discovered. These dangers affect the following charts:

Number	Edition	Date	Scale	Datum
16700	24th ED.	92/01	1:200,000	NAD83
16701	15th ED.	90/07	1:81,436	NAD83
16702	9th ED.	90/07	1:40,000	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

REGISTRY NUMBER: H-10713

AFFECTED CHARTS:

Chart	ED. Num.	ED. Date	Scale
16700	24	92/01	1:200,000
16701	15	90/07	1:81,436
16702	9	90/07	1:40,000

ITEM	FIX #	DANGER	CHART DEPTH	DEPTH (M)	LATITUDE (N)	LONGITUDE (W)
A	60587+4	SHOAL	4 FM	7.5	060:12:43.968	147:51:57.873
B	60630+0	SHOAL	2 3/4 FM	5.2	060:13:08.963	147:52:13.463
C	60626+0	ROCK	COVERS 1/4 FM	0.5	060:11:07.436	147:50:19.725
D	60623+0	ROCK	COVERS 3/4 FM	1.4	060:10:20.290	147:48:15.876
E	30058+2	ROCK	COVERS 1 FM	2.2	060:10:01.872	147:48:04.670

ADVANCE INFORMATION

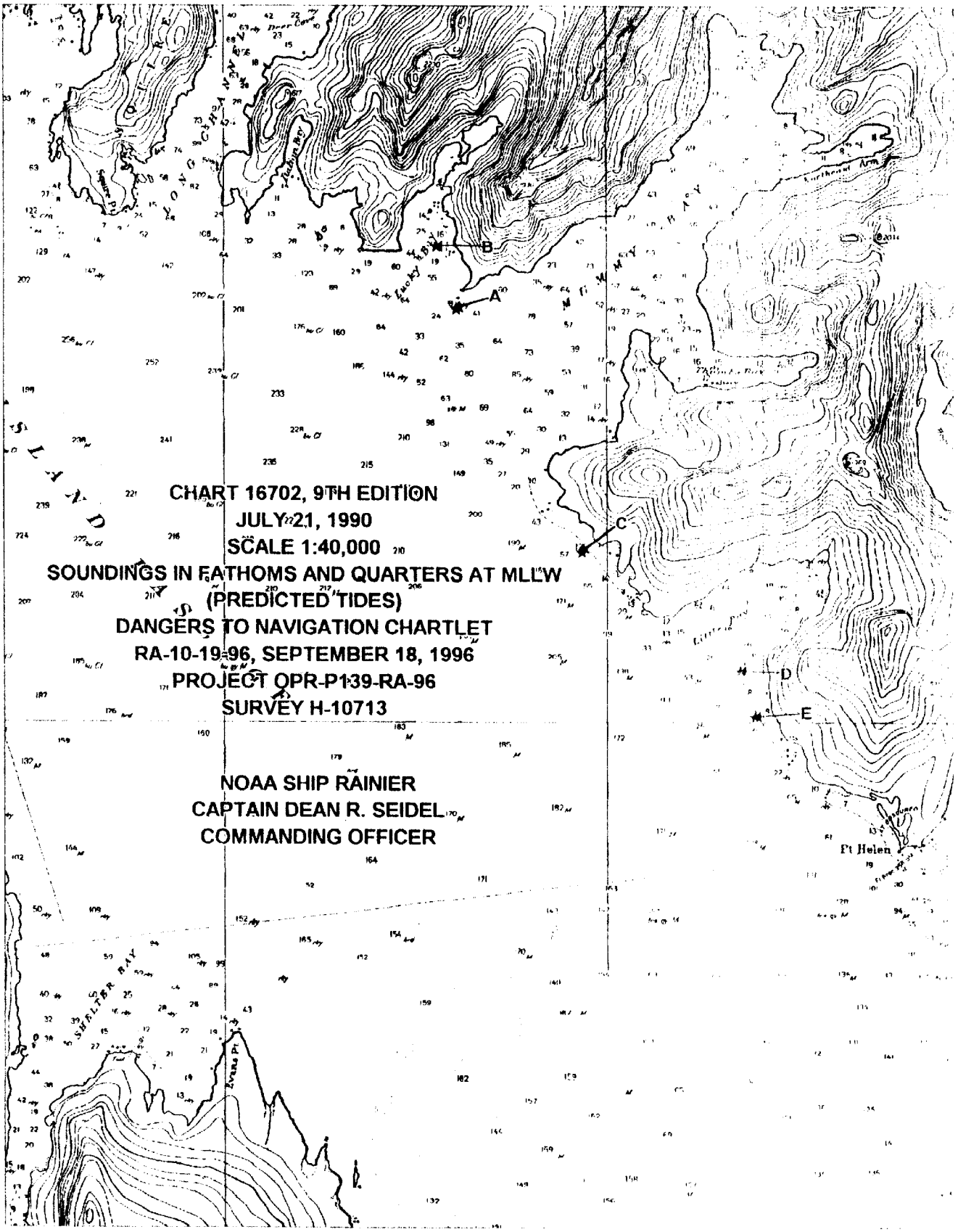


CHART 16702, 9TH EDITION
JULY 21, 1990
SCALE 1:40,000
SOUNDINGS IN FATHOMS AND QUARTERS AT MLLW
(PREDICTED TIDES)
DANGERS TO NAVIGATION CHARTLET
RA-10-19-96, SEPTEMBER 18, 1996
PROJECT OPR-P139-RA-96
SURVEY H-10713

NOAA SHIP RAINIER
CAPTAIN DEAN R. SEIDEL
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

June 12, 1997

Commander (OAN)
Seventeenth Coast Guard District
P.O. Box 25517
Juneau, AK 99802

Dear Sir:

During office review of hydrographic survey H-10713, Alaska, Southwest Alaska Peninsula, Knight Island, from Point Helen to Lucky Bay, additional dangers to navigation have been identified and are considered potential dangers to navigation affecting the following chart:

Chart	Edition/Date	Scale	Datum
16702	9th/Jul. 21, 1990	1:40,000	NAD 83

The attached information is provided for publication in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Branch at (206) 526-6835.

Sincerely,

Kathryn Simmons

Kathryn Simmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

Enclosures

cc: NIMA
N/CS261

REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H-10713

Survey Title:
State: ALASKA
Locality: SOUTHWEST ALASKA PENINSULA
Sublocality: KNIGHT ISLAND FROM POINT HELEN TO LUCKY BAY

Project Number: OPR-P139-RA, NOAA Ship RAINIER

Survey Date: September 3-12, 1996

Features are reduced to Mean Lower Low Water (MLLW) using approved tides and are positioned on NAD 83.

Chart affected: 16702, 9th Edition/July 21, 1990, scale 1:40,000, NAD 83

DANGER TO NAVIGATION	LATITUDE(N)	LONGITUDE(W)
Rock, covers 2 1/2 fathoms	60/09/48.9	147/47/50.2
Rock, covers 1 3/4 fathoms	60/11/37.4	147/51/01.5
Shoal, covers 8 3/4 fathoms	60/10/39.5	147/47/56.7
Shoal, covers 4 1/4 fathoms	60/10/58.5	147/47/39.2
Shoal, covers 7 1/4 fathoms	60/10/36.5	147/49/18.2
Shoal, covers 7 3/4 fathoms	60/12/27.6	147/49/15.6
Shoal, covers 9 1/2 fathoms	60/13/10.5	147/50/25.0
Shoal, covers 1 1/4 fathoms	60/13/35.8	147/48/06.9
Shoal, covers 2 fathoms	60/13/43.4	147/47/36.0
Shoal, covers 2 3/4 fathoms	60/13/55.0	147/47/44.2

Questions concerning this report should be directed to the Chief, Pacific Hydrographic Branch at (206)526-6835.

16702

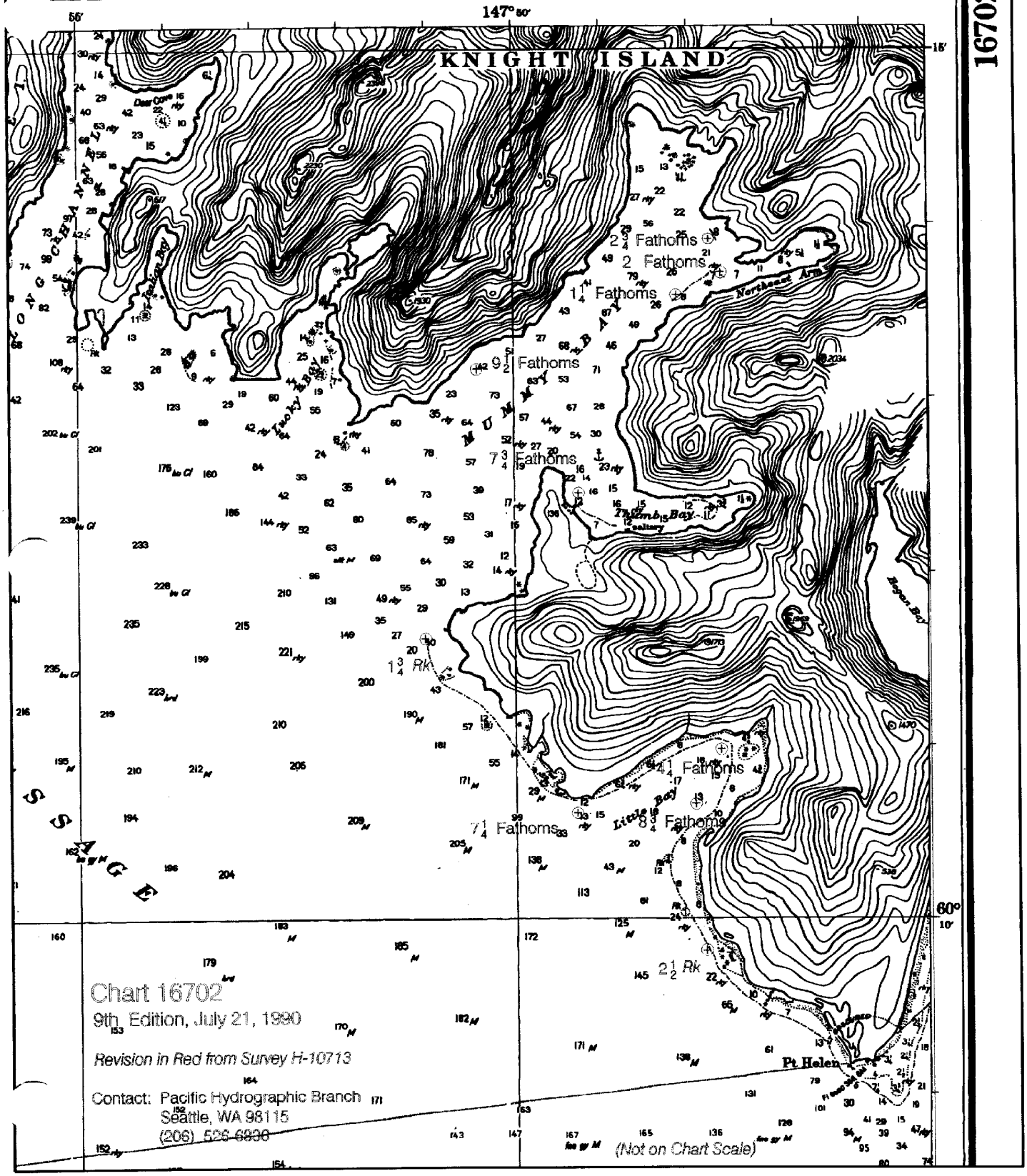


Chart 16702

9th Edition, July 21, 1990

Revision in Red from Survey H-10713

Contact: Pacific Hydrographic Branch
Seattle, WA 98115
(206) 526-6806

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:

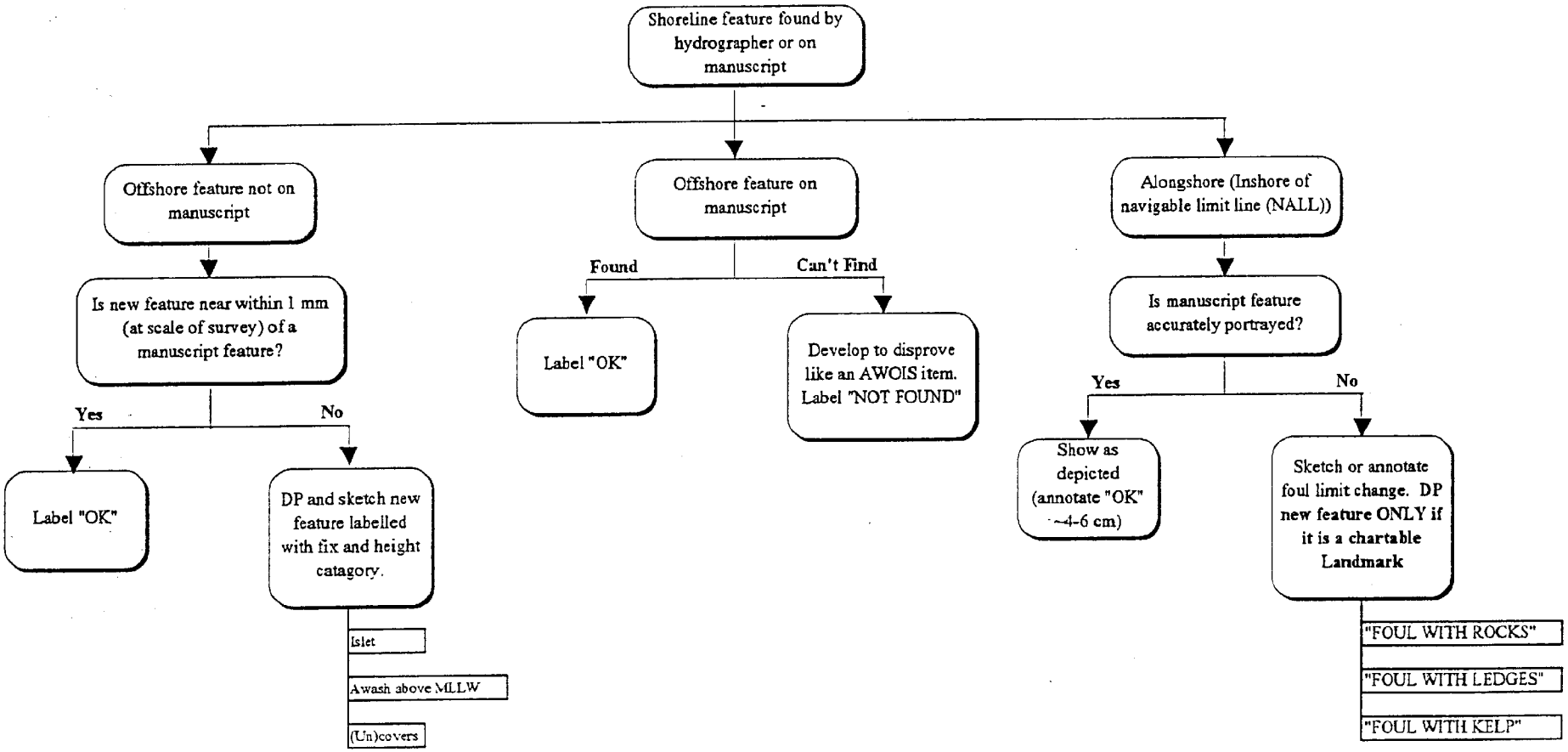
1) Determine distance from shore that is the MINIMUM working distance necessary for the survey. Take into account likely vessel traffic, bathymetry, complexity of the shoreline from prior surveys and the chart, and weather (sea) conditions experienced in the area. Use greater distances if shallow depths 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-10713

RA-10-19-96

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-10713

LOCALITY: Knight Island from Point Helen to Lucky Bay, Southwest Prince William Sound, Alaska

TIME PERIOD: September 3 - 12, 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: PWS16, PWS17, PWS20 & PWS36
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

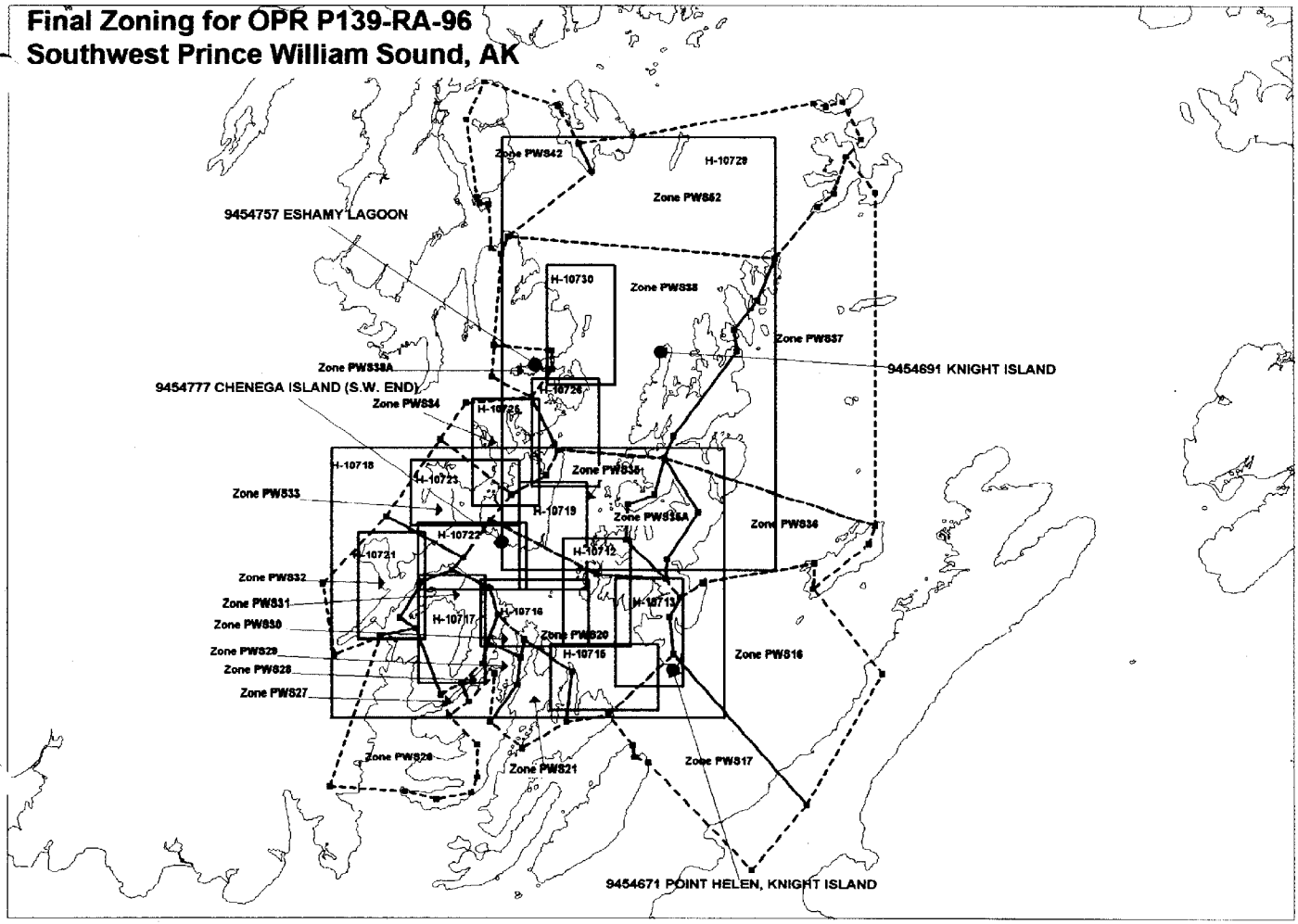
Final tide zone nodal point locations for OPR P139-RA-96.
Sheet H-10713

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 PWS16			
-147.496732 60.017507	9454671	Direct	1.01
-147.343164 60.149285	9454777	Direct	0.99
-147.483114 60.235739	9454240	Direct	0.96
-147.481428 60.261107			
-147.706694 60.241614			
-147.752622 60.226545			
-147.77381 60.206587			
-147.766071 60.169257			
-147.496732 60.017507			
Zone PWS17			
-147.766071 60.169257	9454671	Direct	Direct
-147.897377 60.108049	9454777	Direct	0.98
-147.848528 60.077316	9454240	Direct	0.95
-147.844895 60.06532			
-147.817231 60.05974			
-147.607856 59.951198			
-147.496732 60.017507			
-147.766071 60.169257			
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 PWS36			
-147.37047 60.281064	9454671	Direct	1.03
-147.358524 60.29953	9454691	Direct	0.98
-147.78401 60.368002	9454240	Direct	0.97
-147.715614 60.31296			

-147.779595 60.265117
-147.781279 60.245812
-147.752622 60.226545
-147.706694 60.241614
-147.481428 60.261107
-147.483114 60.235739
-147.37047 60.281064

Final Zoning for OPR P139-RA-96
Southwest Prince William Sound, AK



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 76-155
(11-72)

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

SURVEY NUMBER

H-10713

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 16702, 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
KNIGHT ISLAND	X		X							2
KNIGHT ISLAND PASSAGE	X		X							3
LITTLE BAY	X		X							4
LUCKY BAY	X		X							5
MUMMY BAY	X		X							6
NORTHEAST ARM(MUMMY BAY)	X		X							7
POINT HELEN	X		X							8
PRINCE WILLIAM SOUND	X		X							9
(title)										10
THUMB BAY	X		X							11
										12
										13
										14
										15
										16
										17
										18
					Approved:					19
										20
					Chief Geographer					21
					NOV 25 1996					22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

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

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10713

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-10299 and DM-10300
PHOTOBATHYMETRIC MAPS (List):	NA
NOTES TO THE HYDROGRAPHER (List):	NA
SPECIAL REPORTS (List):	NA
NAUTICAL CHARTS (List):	Chart 16702, 9th Ed., July 21, 1990

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			
OSITIONS REVISED			
SOUNDINGS ~~REVISED~~ (Selected)			10,250
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	108.5		108.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		8.0	8.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		16.0	16.0
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	108.5	24.0	132.5

Pre-processing Examination by: Pacific Hydrographic Branch	*Beginning Date*: 10/16/96	*Ending Date*: 10/17/96
Verification of Field Data by: E. Domingo, D. Doles, R. Mayor, J. Stringham	*Time (Hours)*: 108.5	*Ending Date*: 5/19/97
Verification Check by: B. Olmstead	*Time (Hours)*: 10	*Ending Date*: 5/28/97
Evaluation and Analysis by: I.Almacen	*Time (Hours)*: 24.0	*Ending Date*: 5/16/97
Inspection by: B. Olmstead	*Time (Hours)*: 13	*Ending Date*: 6/12/97

EVALUATION REPORT

H-10713

A. PROJECT

Project information is discussed in the hydrographer's report.

B. AREA SURVEYED

The survey area is discussed in the hydrographer's report and supplemented as follows:

The inshore areas are generally comprised of islets, scattered rocks and ledges. The bottom is generally made up of pebbles, sand and mud mixed with broken shells. Depths range from 0.1 to 203.0 fathoms.

During this survey, the hydrographer has determined 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. A page-size chartlet of the survey area indicating the limits of supersession is included in this report as Attachment A.

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) and AutoCad, Version 12.

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 plot is filed both in the AutoCad drawing format, i.e., .dwg (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 not used during this survey.

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). Refer to the approved tide note attached to this report concerning recommended tidal zoning.

H. CONTROL STATIONS

Control stations are adequately discussed in the hydrographer's report.

The AutoCAD 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: -2.098 seconds (-64.921 meters)
Longitude: 7.364 seconds (113.473 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 using the program MONITOR and the daily DGPS performance checks conducted in the field were adequate. Information concerning calibrations and systems checks can be found

in the hydrographer's report and in the separates related to horizontal position control.

J. SHORELINE

The "limited" shoreline verification procedure is adequately discussed in the hydrographer's report. The digitized shoreline file and the survey file were merged during AutoCad 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. However, a comparison with chart 16702 shows a shift and change in the HWL configuration particularly around the area of Lucky Bay. The changes noted during this survey could be attributed to the effect of earthquake occurrences in the area, differences in the source data accuracy of MHWL determination and the probable discrepancies in the shoreline compilation to the chart.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10713 junctions with the following surveys.

Survey	Year	Scale	Area
H-10712	1996	1:10,000	West
H-10718	1996	1:40,000	Southwest

The junctions with surveys H-10712 and H-10718 are complete. Survey H-10718 is a 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-10713 was compared with the following prior surveys.

H-2983 (1908), scale 1:20,000
H-3027 (1909), scale 1:20,000

Surveys H-2983 and H-3027 are the prior USC&GS hydrographic surveys that cover the area. Comparisons with these surveys are considered satisfactory. All depths originating from the prior surveys were adequately addressed during survey operations. A more thorough development by the present survey has resulted in the discovery of a few more

shoal areas not found in the earlier surveys. The present depths were found to be generally shoaler by about 1.0 to 5.0 fathoms which seems to indicate an uplifting trend common around this area of Prince William Sound. Aside from the changes caused by earthquake occurrences in the area, the changes noted in this survey could also be due to the increased bottom coverage and the application of more accurate positioning and sounding methods presently available in the field.

The existence of the two (2) submerged rocks originating from survey H-3027 (1909) and charted at latitude 60/13/45.5N, longitude 147/46/50.0W, were visually verified during this survey. These features were carried forward on the smooth sheet as depicted on the prior survey.

With the exception of the features mentioned above, H-10713 is adequate to supersede the prior surveys within the common area.

T-12911 (1964) 1:10,000
T-12912 (1964) 1:10,000

These topographic maps depict the mean high water line, isolated rocks, islets and foul limits within the common area of coverage of the present survey. Most of these features were either depicted on the latest shoreline maps or adequately defined and developed during survey operations. However, the prior topographic features falling inside the NALL line and not superseded by the latest shoreline maps should be retained as charted.

H-10713 is adequate to supersede the prior topographic survey within the common area.

N. ITEM INVESTIGATIONS

There were no AWOIS item investigations assigned to this survey.

O. COMPARISON WITH CHART

Survey H-10713 was compared with the following edition of chart 16702.

Chart	Edition	Date	Scale	Datum
16702	9th	July 21, 1990	1:40,000	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 require no further discussion.

The charted anchorage and saltery at latitude 60/12/39N, longitude 147/49/02W and latitude 60/12/14N, longitude 147/48/43W, respectively, were not mentioned in the hydrographer's report. The present depths around the charted area of anchorage ranged from 19 to 22 fathoms and still considered suitable for its intended usage. It is recommended that these features be retained as charted.

The two (2) rocks charted at latitude 60/11/07.5N, longitude 147/49/58.0W and latitude 60/11/06.0W, longitude 147/49/52.5W, originating from miscellaneous sources were visually verified by the hydrographer during this survey. These features should be retained as charted.

In accordance with Hydrographic Survey Guideline No.39, the effects of the 1964 Prince William Sound Earthquake were considered in the comparison of this survey. No reasonable adjustment value for prior soundings could be determined. However, the 1964 earthquake caused a bottom uplift of 4.9 feet at Chenega Island which is about five nautical miles northwest of the survey area.

With the exception of the features mentioned above, survey H-10713 is adequate to supersede charted hydrography within the common area of coverage. Considering the close proximity of the NALL line to the shore and the scale of the existing chart, the present survey is also considered adequate to supersede the area inshore of the NALL line, with the exception of a few charted ledges and rocks not shown on this survey.

b. Dangers to Navigation

Five (5) dangers to navigation were reported to the USCG, NIMA, N/CG261 and N/CS34 on September 18, 1996. An additional ten (10) dangers to navigation were identified during office processing. Copies of both reports are attached.

P. ADEQUACY OF SURVEY

The hydrography on survey H-10713 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-10713 was acquired in the field in metric units while the AutoCAD generated 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-10713 adequately complies with the project instructions.

Q. AIDS TO NAVIGATION

Point Helen Light (LL#25925) was positioned during this survey at Latitude 60/09/11.26N, Longitude 147/45/58.68W. See attached NOAA Form 76-40 and descriptive report supplemental section Q, for survey position and agreement with the chart.

There are no 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

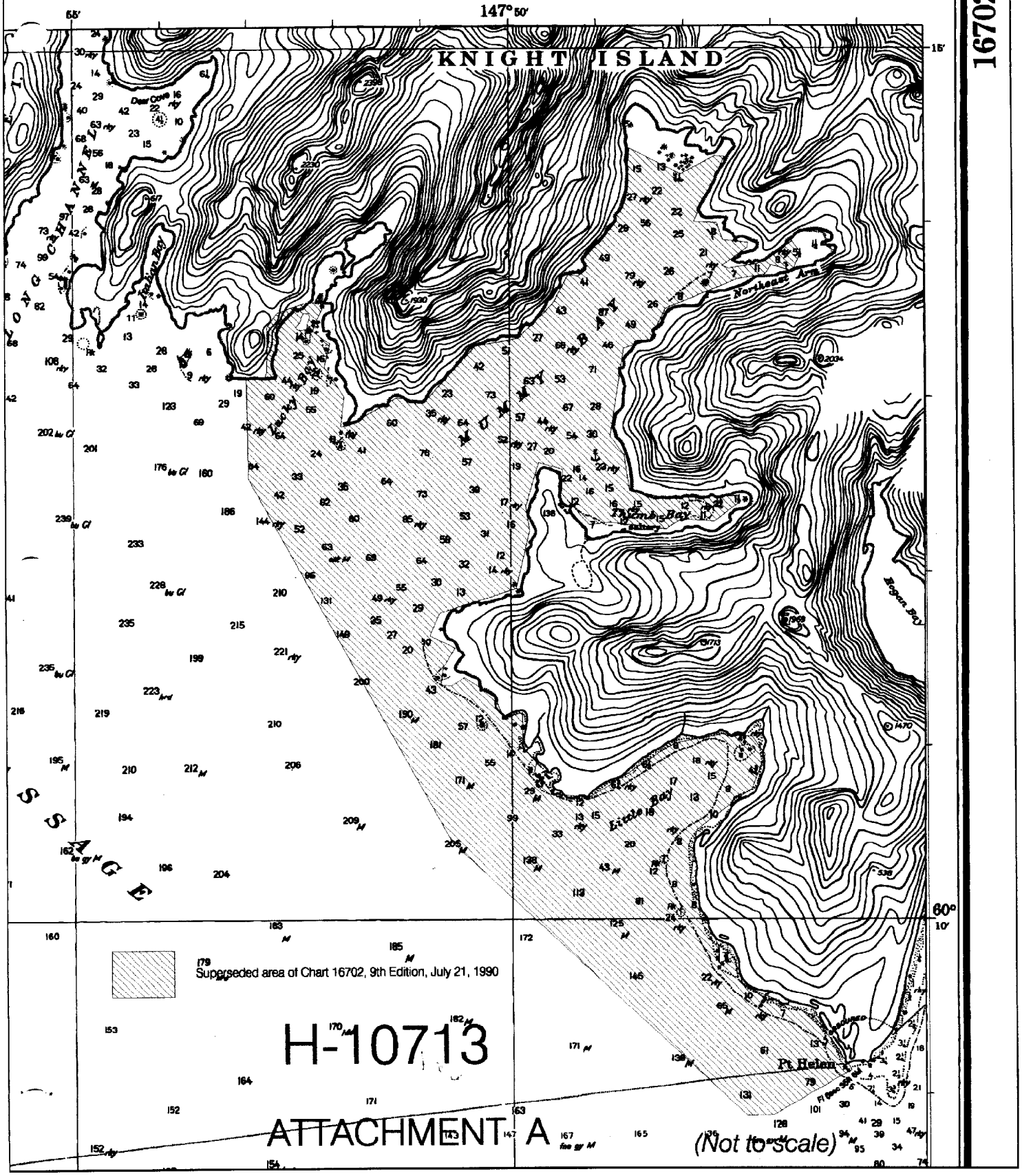
Survey H-10713 is a good hydrographic survey and no additional field work is required.

U. REFERRAL TO REPORTS

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

Isagani A. Almacen
Cartographer

16702


147° 50'
55'
15'
KNIGHT ISLAND
Deal Cove
Talkin Bay
Northeast Arm
Pinnacle Bay
Little Bay
Pt Helen
SSAGE
60°
10'
Superseded area of Chart 16702, 9th Edition, July 21, 1990
H-10713
ATTACHMENT A
(Not to Scale)

APPROVAL SHEET
H-10713

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: 6/13/97
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: 6/25/97
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

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Final Approval

Approved:

Andrew A. Armstrong III Date: Feb 2, 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-10713

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
16702	6/4/91		Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. Full application of soundings 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
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.