

H10777

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-10-27-97
Registry No. H-10777

LOCALITY

State Alaska.....
General Locality Northwest Prince William Sound
Sublocality Port Nellie Juan, Southwest of
Mink Island

1997

CHIEF OF PARTY
CAPT Alan D. Anderson, NOAA

LIBRARY & ARCHIVES

DATE JAN 27 1999

HYDROGRAPHIC TITLE SHEET

H-10777

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-10-27-97

State Alaska

General locality Northwest Prince William Sound

Locality Port Nellie Juan Southwest of Mink Island

Scale 1:10,000 Date of survey Sept. 15 to Oct. 22, 1997

Instructions dated August 27, 1997 * Project No. OPR-P125-RA

Vessel RA-1(2121), RA-3(2123), RA-5(2125)

Chief of party CAPT Alan D. Anderson, NOAA

Surveyed by CAPT A. Anderson, LT G. Noll, LCDR D. Kruth, LCDR T. Nichel, LT K. Bailey,
SST S. Baum, ST K. Callahan, ST J. Cheech, St J. Ruhland, ST K. Simmons, ST M. McMann

Soundings taken by echo sounder, hand lead, pole DSF-6000N, Knudsen 320M

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 M. Bigelow, D. Doles, E. Domingo, R. Mayor

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

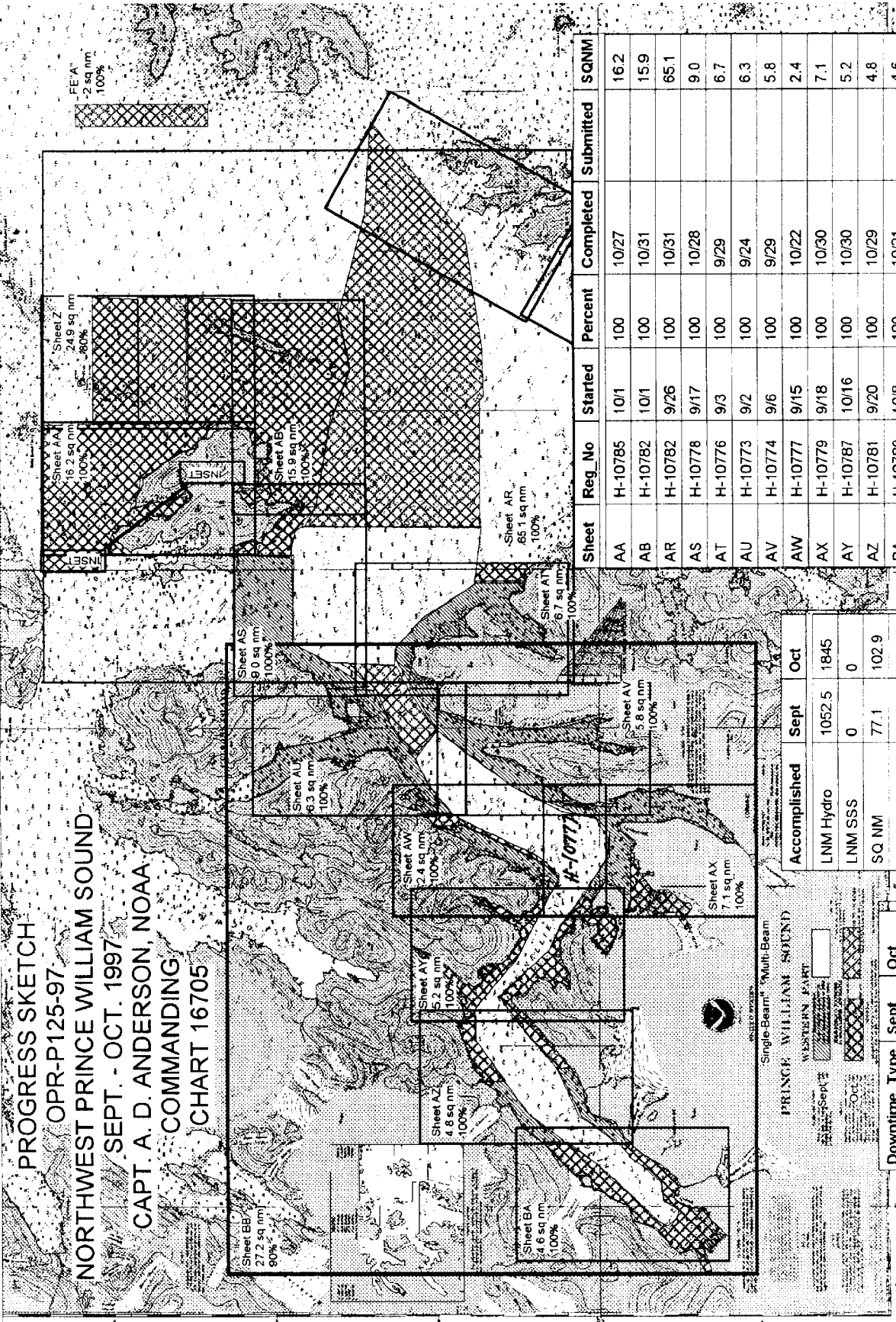
REMARKS: All times are UTC, revisions and marginal notes in black were
generated during office processing. All separates are filed
with the hydrographic data, as a result page numbering may be
interrupted or non-sequential.

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

* Change #1 dated October 1, 1997

AWOS/SURE 1/11/97
mcr

PROGRESS SKETCH
 OPR-P125-97
 NORTHWEST PRINCE WILLIAM SOUND
 SEPT. - OCT. 1997
 CAPT. A. D. ANDERSON, NOAA
 COMMANDING
 CHART 16705

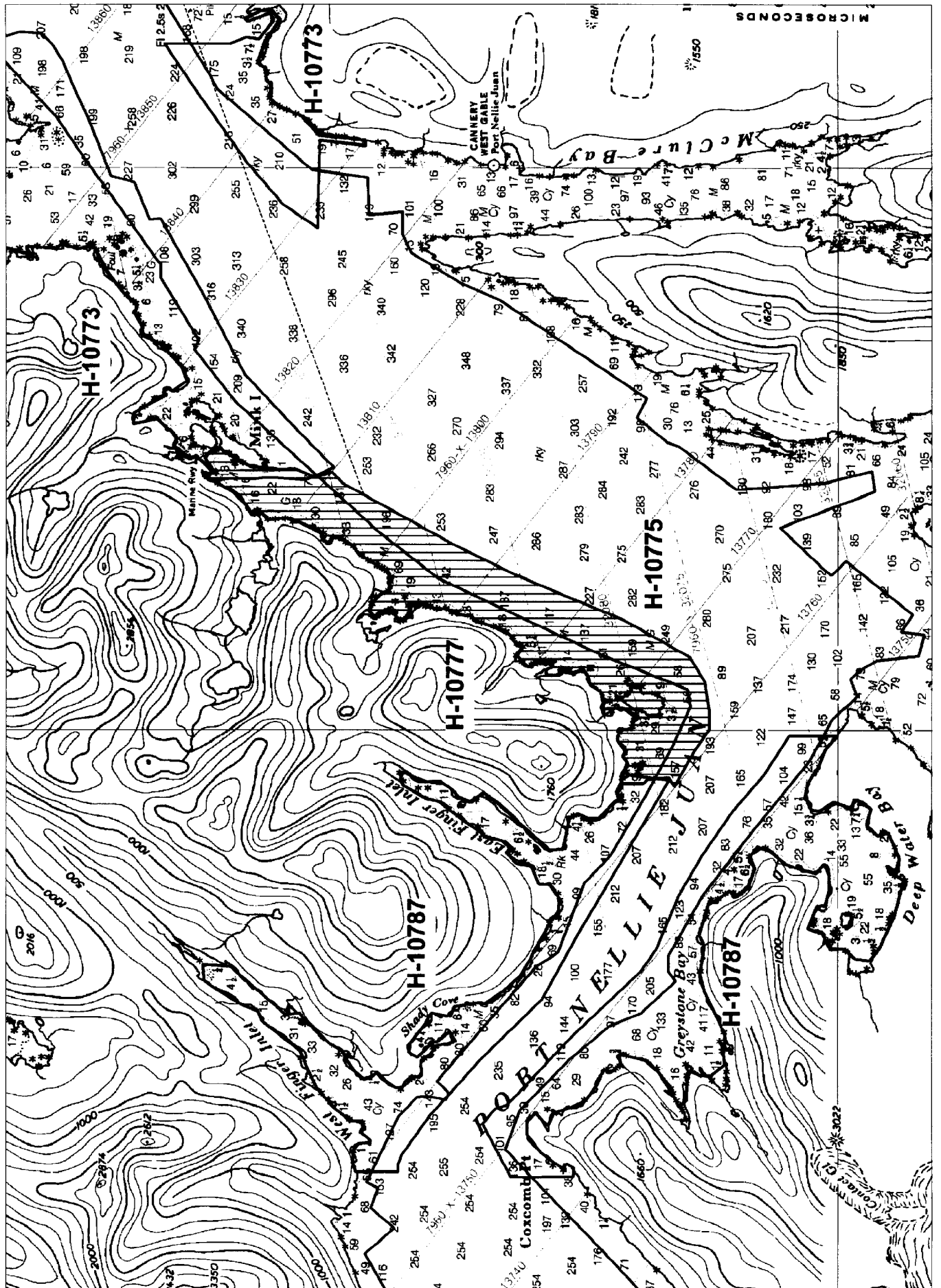


Sheet	Reg_No	Started	Percent	Completed	Submitted	SQNM
AA	H-10785	10/1	100	10/27		16.2
AB	H-10782	10/1	100	10/31		15.9
AR	H-10782	9/26	100	10/31		65.1
AS	H-10778	9/17	100	10/28		9.0
AT	H-10776	9/3	100	9/29		6.7
AU	H-10773	9/2	100	9/24		6.3
AV	H-10774	9/6	100	9/29		5.8
AW	H-10777	9/15	100	10/22		2.4
AX	H-10779	9/18	100	10/30		7.1
AY	H-10787	10/16	100	10/30		5.2
AZ	H-10781	9/20	100	10/29		4.8
BA	H-10789	10/8	100	10/21		4.6
BB	H-10775	9/11	100	10/21		27.2
Z	H-10791	9/11	80			24.9
FE"A	AR INSET	10/5	100	10/5		2.0

Accomplished	Sept	Oct
LNM Hydro	1052.5	1845
LNM SSS	0	0
SQ NM	77.1	102.9
AWOIS Invest	0	1
Other Invest	3	16
LNM Multibeam	164.4	241.5
Days At Sea	28	29

Downtime Type	Sept	Oct
Weather - Days	3	0
Mechanical - Hr	0	2
Electronic - Hr	0	1

16705 UNCLASSIFIED



Descriptive Report to Accompany Hydrographic Survey H-10777

Field Number RA-10-27-97

Scale 1:10,000

September 1997

NOAA Ship RAINIER

Chief of Party: Captain Alan D. Anderson, NOAA

A. PROJECT ✓

This basic hydrographic survey was completed in Northwest Prince William Sound as specified by Project Instructions OPR-P125-RA dated August 27, 1997. Survey H-10777 corresponds to sheet AW as defined in the sheet layout. This survey will provide data to supercede surveys performed in 1917, 1948 and 1961. 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.

* Change 1 dated 10/1/97 also applies to this survey.

B. AREA SURVEYED (See ENAL. RPT., SEC. B)

The survey area is Port Nellie Juan Southwest of Mink Island. The survey's northern limit is latitude $60^{\circ}35'38''$ N, the southern limit is $60^{\circ}33'15''$ N, the western limit is $148^{\circ}20'27''$ W and the eastern limit is $148^{\circ}15'04''$ W. The survey was confined to within a half nautical mile offshore, with the deep water covered on survey H-10775 using IDSSS multi-beam. Data acquisition was conducted from September 15 to October 22, 1997 (DN's 258-295).

C. SURVEY VESSELS ✓

Data were acquired by HYPACK survey launches (vessel numbers 2121 and 2123) as noted in the Survey Information Summary printout appended to this report. Bottom Samples were collected in HDAPS on survey launch number 2125.

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

All data were acquired using HYPACK version 997 and preliminary processing was accomplished with HPS and MapInfo. Final Detached Positions, Features, and Soundings based on predicted tides were saved in MapInfo 4.1 format. The MapInfo workspaces are described in Appendix VIII. VII *

E. SONAR EQUIPMENT ✓

Neither Side Scan Sonar or multi-beam echosounder equipment was used on this survey. CONCUR.

F. SOUNDING EQUIPMENT ✓

The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echosounder. The Knudsen 320M is a dual frequency, thermal, depth sounder and uses the same transducer frequencies. Serial numbers are included on the headers of the daily Raw Master Printouts. * DSF-6000N soundings were acquired in meters using the High + Low high frequency digitized setting except in depths over 300 meters where retention of the high frequency trace was problematic. Where this occurred, the low frequency sounding was substituted.

* Filed with the hydrographic data.

G. CORRECTIONS TO ECHO SOUNDINGS ✓

Three sound velocity casts were acquired within the survey limits as shown in the appended Survey Information Summary report. The sound velocity casts were acquired with SBE SEACAT Profiler (S/N 219), calibrated December 15, 1996. Velocity correctors were computed using the PC programs SEACAT and VELOCITY, version 3.3 (1997), in accordance with Field Procedures Manual (FPM) section 2.4.3. Printouts of the sound velocity profile, data, and correctors used in field processing are included in the "Separates to be Included with Survey Data, IV. Sounding Equipment Calibrations and Corrections". *

*** Casts were taken outside the survey limits.*

A static transducer depth was determined in the spring of 1997 using FPM Fig 2.2 for vessels 2121 and 2123. 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-P125-RA-97. The data for vessels 2121 and 2123 were collected in Shilshole Bay, Washington, in March 1997. Vessel 2125 was only used for bottom samples, so settlement and squat correctors don't apply to this vessel. All offset tables* contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 1 and 3 correspond to the last digit of the respective vessel number. The offset tables are included with project data for OPR-P125-RA-97.*The launches are not equipped with heave, roll and pitch sensors.

The Coastal and Estuarine Oceanography Branch (N/OES334) through N/CS31 provided predicted tides on diskette for the project for the Cordova, Alaska, reference station (945-4050). HDAPS listings of the data used in generating tidal correctors are included in Appendix V of this report. * Tidal correctors as provided in the project instructions for OPR-P125-RA-97 are shown on the appended Survey Information Summary report.

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 tide gages at Applegate Island (945-4794) on September 1, 1997 and at Blue Fiord (945-4818) on September 5, 1997, the gages were removed on October 30, 1997.

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 February 5, 1998 is attached.*

H. CONTROL STATIONS (See EVAL RPT., Sec. H)

The horizontal datum for this project is NAD 83. Station ROCK, recovered in 1996 and checked in 1997, was used to verify and establish local geodetic control for this survey. See the OPR-P125-RA-97 Horizontal Control Report for more information. *The list of control stations used for this survey is included in this report.*

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

All soundings were positioned using differential GPS. Primary hydrographic control was based on the USCG beacons located at the Kenai Peninsula and Cape Hinchinbrook. Stations on Kodiak Island and Potato Point were also received in this area. Correctors transmitted from VHF differential reference station ROCK were repeated on a second VHF frequency by RAINIER and these were used when possible.

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 while the launches were rafted together with their GPS antennae within 2-3 meters of each other. RAINIER also used SHIPDIM, version 2.2R (April 1996) with a Trimble Centurion P-code receiver and an Ashtech sensor (both differentially-corrected) to monitor the performance of the USCG Beacons. Periodic comparisons and occasional performance checks were logged with the SHIPDIM system. Some outliers were noted, but none indicated systematic or continuous errors in the beacons. The SHIPDIM OUTLIER.SUM results are included in the project data for OPR-P125-RA-97.

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

The shoreline manuscript from Coastal Mapping survey CM-92012 was supplied by N/CS341 in Standard Digital Data Exchange Format (SDDEF). The digital files from DM-10194 were projected to the survey grid using NOS program Shore.EXE and OPR-P125-RA-97 parameters.

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 5-50 meters offshore of apparent low tide, generally 3-10 meters of depth at Mean Lower Low Water. The hydrographer compared the shoreline manuscript with the existing shoreline while transiting slowly along shore and during mainscheme acquisition. Observations were digitally annotated on the shoreline manuscript using HYPACK. Observed discrepancies with the manuscript are depicted in red on the SHORELINE NOTES layer in the MapInfo workspace. *Field information collected by the hydrographer was analyzed during office processing and applied on the smooth sheet as warranted.*

Shoreline manuscript and field features were also compared to an enlargement of chart 16705, BSB version. The chart was registered in MapInfo for sounding and feature comparison. There were a few discrepancies between the chart and manuscript shoreline; discrepancies inshore of the NALL were resolved by observation during shoreline verification; discrepancies offshore of the NALL were resolved with development investigations. Several new features were located and positioned; these are plotted on the final field Detached Position and Bottom Sample Plot in red. There are no serious discrepancies between the manuscript and field high water line. However, in general, manuscript rocks were found to be high points of ledges. *CONCUR.*

	Fix number	Feature	Geographic Position	Depth / ^{Height} (fathoms)	
Reef	169	Uncharted reef- east end	60°31'50.09" N 148°20'11.76" W	0.1	
	2153 *	West end of reef	60°31'50.0" N 148°20'15.0" W	-0.2	reef (1)
Reef	336	Uncharted reef	60°31'52.86" N 148°19'23.62" W	-1.7 -3.0	reef (10)
	2183 **	North end of reef	60°32'00.26" N 148°19'35.06" W	-0.1 0.9	reef
Reef	2185	East offshore end of reef	60°31'59.25" N 148°19'37.28" W	-0.6 1.9	reef (9)
	2187	Inshore limit of reef	60°32'00.55" N 148°19'37.58" W	-0.5 2.4	
	2189	Inside edge of reef	60°32'01.16" N 148°19'36.5" W	-1.5 3.4	
Reef	2221	Offshore end of large reef rock	60°31'34.82" N 148°19'48.09" W	-0.7 1.2	

* Item 2153 (pos# 2153) was reported as DTON during this survey.
 ** pos # 2183 was duplicated and used to locate a DTON Reef @ Lat 60/31/42.6 N
 Long 148/20/33.4 W

Reef	2222 /	Offshore end of large ^{reef} rock /	60°31'32.98" N 148°19'49.36" W /	-0.8	(5)
Rk	2223 /	Rock awash /	60°31'32.46" N 148°19'46.61" W /	0.0 ✓	* (0)
Reef	2345 /	Offshore end of large reef /	60°32'22.44" N 148°18'51.72" W /	-0.8 -LZ	(5)
Reef	2265 /	High point of reef /	60°31'41.73" N 148°19'16.53" W /	-0.1 ✓	(1)
Disprovals	5065 /	Charted rock disproval /	60°31'54.9" N 148°19'26.46" W	14.7278 ✓	
	(a) 5066 /	Charted rock disproval /	60°31'59.64" N 148°19'28.95" W	16.5*30.8 ✓	
	5067 /	Charted rock disproval /	60°32'25.02" N 148°18'51.58" W	3.3*6.8	
	(b) 5069 /	Charted rock disproval /	60°34'01.38" N 148°17'37.82" W	3.1*6.7	
	(c) 3697 /	Charted rock disproval /	60°32'45.68" N 148°18'41.8" W /	0.5 LZ	
Rk	3707 /	Charted rock /	60°32'39.99" N 148°18'47.82" W /	-0.6 -LZ	* (A)

* Excessed for shoaler depth

K. CROSSLINES ✓

(a) These disproval rocks were charted within 30 meters of the recently compiled T-sheet rocks & ledge.
 (b) This rock from survey H-8606 was not found during this survey.
 (c) This rock was charted close to the presently compiled T-sheet rock.

Crosslines agreed within 2 meters with mainscheme hydrography, except in areas of steep bathymetry. There were a total of 9.44 nautical miles of crosslines, comprising 24.1% of mainscheme hydrography. *Crosslines differ by about 5-10 meters in depths along the steep and deep area of the survey.*

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

This survey junctions with the following 1997 surveys: H-10773, 1:10,000 on the northeast, H-10775, 1:40,000 on the east, ~~H-10779, 1:10,000 on the south,~~ and H-10787, 1:10,000 on the southwest. Soundings on these 1997 surveys were found to be in good agreement, matching within 3 fathoms, inshore of the ~~100~~ 100-fathom contour. Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after reduction to final vertical datum.

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

Prior surveys H-8594 (1:10,000, 1961), H-8606 (1:10,000, 1961), H-7794 (1:40,000, 1948) and H-3973 (1:20,000, 1917) cover this survey. The prior soundings agreed well with the present survey, except where shoaler depths were found during this survey with denser sounding coverage. Also, this survey has many deeper soundings found offshore of the 100 fathom curve compared to the prior surveys. *See discussion in evaluation report for more specific comparison with prior surveys.*

Representative samples of selected soundings from prior surveys are compared with the current survey below. Contours compared favorably between H-8594 and H-10777, but current contours are much more complex than depicted on survey H-3973 and H-7794. ^{Group} Shoreline was not depicted on survey H-7794. Shoreline features compared favorably between H-8594 and H-8606 and the current survey. *Concur*

Final comparisons will be done at PHB after reduction to final sounding datum using tidal information collected concurrently with this survey.

H-8594	H-10777	Geographic Position	H-10777 Fix Number
19 fm ✓	17.9 18 fm ✓	60°31'44.02" N 148°20'50.87" W ✓	1079 ✓
24 fm ✓	23.7 ² / ₃ fm *	60°31'27.84" N 148°19'07.59" W ✓	3171 ✓
22 fm ✓	20 fm ✓	60°32'12.17" N 148°18'47.44" W ✓	443 ✓
38 fm ✓	36.2 ¹ / ₂ fm ✓	60°32'32.62" N 148°18'22.38" W ✓	2689 ✓
17 fm ✓	16.4 ³ / ₄ fm *	60°32'45.06" N 148°18'21.02" W ✓	3070 ✓
50 fm ✓	45.2 ¹ / ₂ fm ✓	60°31'54.82" N 148°18'59.31" W ✓	1913 ✓
80 fm ✓	106.3 ¹ / ₂ fm ✓	60°31'31.28" N 148°18'47.09" W ✓	2793 ✓

H-8606	H-10777	Geographic Position	Fix Number
20 fm ✓	19.5 ³ / ₅ fm *	60°32'37.54" N 148°18'23.23" W ✓	5034 ✓
34 fm ✓	31.5 ⁶ / ₅ fm ✓	60°32'21.35" N 148°18'37.22" W ✓	5131 ✓
92 fm ✓	101.8 fm ✓	60°33'08.15" N 148°17'41.97" W ✓	659 ✓
192 fm ✓	202.8 ⁷ / ₈ fm ✓	60°33'19.34" N 148°17'03.59" W ✓	717 ✓
169 fm ✓	176 ^{5.9} / ₆ fm * ✓	60°33'36.76" N 148°16'33.75" W ✓	816 ✓
42 fm ✓	42 fm ✓	60°34'50.77" N 148°15'43.16" W ✓	2376 ✓
14 fm ✓	13.9 ⁷ / ₈ fm * ✓	60°35'17.71" N 148°15'28.25" W ✓	2494 ✓

* Excessed for shoaler depths.

Survey H-8594 and H-8606 are in good agreement with this survey with the exception of the depths deeper than the 100-fathom curve, where the prior has shoaler depths. These may be attributable to beam spreading as seen on contemporary surveys H-10776 and H-10781 ^{100m} side echos where the echo-sounder returns from a steep sloping bottom may not necessarily be from a point directly below the transducer or sounding vessel.

H-7794	H-10777	Geographic Position	H-10777 Fix Number
54 fm ✓	52.4 fm ✓	60°31'34.63" N 148°20'37.6" W ✓	128 ✓
45 fm ✓	40.9 fm ✓	60°31'29.45" N 148°18'57.03" W ✓	291 ✓
268 fm ✓	270.4 fm ✓	60°31'40.06" N 148°18'16.46" W ✓	369 ✓
57 fm ✓	56 fm ✓	60°31'13.83" N 148°19'25.37" W ✓	1192 ✓

H-3973	H-10777	Geographic Position	H-10777 Fix Number
17 fm ✓	16.9 ⁸ fm ✓	60°31'56.11" N 148°19'22.08" W ✓	1267 ✓
16 fm ✓	4.7 fm * ✓	60°31'52.58" N 148°19'21.65" W ✓	2292 ✓
7 fm ✓	6.2 ² fm ✓	60°32'43.53" N 148°18'23.85" W ✓	3346 ✓
23 fm ✓	22.3 ³ fm * ✓	60°33'02.65" N 148°18'01.71" W ✓	1399 ✓
18 fm ✓	17.4 ⁰ fm ✓	60°33'37.5" N 148°17'38.46" W ✓	735 ✓

* Excised for shoaler depths.

In the vicinity of latitude 60°33'44.48" N and longitude 148°17'23.94" W the prior survey H-3973 has shoaler soundings. The hydrographer believes H-10777, with survey line spacing of 50 meters, disproves this trend in this area; the prior soundings may have been miss-positioned due to poor sextant fix geometry. *Concur*.

N. ITEM INVESTIGATIONS ✓

None. *Concur*

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

(17th Ed., Sept. 27, 1997)

Chart 16705, 1:80,000, 16th Edition, August 24, 1996, is the largest scale chart covering the survey area. Soundings from this survey are in agreement or shoaler than charted soundings. 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.

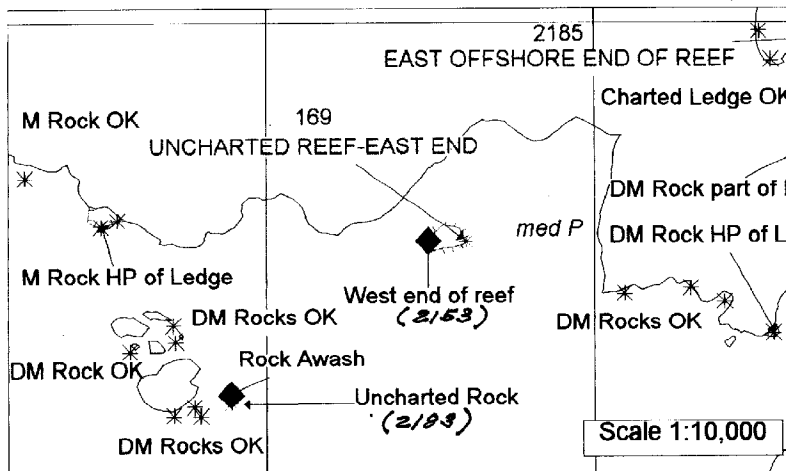
* Except in extremely steep and deep area where the present survey appears to be deeper.

Dangers to Navigation (See EVAL RPT., Sec. O6)

The following dangers to navigation were reported to the Seventeenth Coast Guard District on November 21, 1997. Copies of the correspondence can be found in Appendix I of this report. The danger to navigation with fix number 2153 is actually extended to the east 53.1 meters, to include the detached position (169) and depicts a small reef. *Concur*

Feature Type	Fix number	Geographic Position	Depth (fathoms)	Depth (meters)
West end of reef	2153	60°31'49.7" N 148°20'14.6" W ✓	-0.25 ✓	-0.3 ⁴
Rock Awash	2183	60°31'42.6" N 148°20'33.4" W	-1.5 ✓	-2.0 ²

* (2)



P. ADEQUACY OF SURVEY (See EVAL RPT, SEC. P)

Survey H-10777 is complete and adequate to supersede prior soundings and features in their common areas. *CONCUR.*

Q. AIDS TO NAVIGATION ✓

No navigational aids exist within the survey area. *CONCUR.*

R. STATISTICS ✓

Refer to the Survey Information Summary attached to this report.

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 eight meters, depending on the amount of ice and glacial sediment carried in the water column.

T. RECOMMENDATIONS ✓

None.

U. REFERRAL TO REPORTS ✓

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

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
OPR-P125-RA Horizontal Control Report	November, 1997	N/CS34
OPR-P125-RA 1997 Coast Pilot Report	December, 1997	N/CS26
Project related data for OPR-P125-RA	Incremental	N/CS34
Secchi Disk Observations for OPR-P125-RA	February, 1998	N/CS31

Survey Information Summary ✓

Project: OPR-P125-97 **Project Name:** NORTHWEST PRINCE WILLIAM SOUND

Instructions Dated: 8/27/97 **Project Change Info:**

Change #	Dated
1	9/24/97

Sheet Letter: AW **Registry Number:** H-10777

Sheet Number: RA-10-27-97

Survey Title: PORT NELLIE JUAN SOUTHWEST OF MINK ISLAND

Data Acquisition Dates: **From:** 15-Sep-97 258 **To:** 22-Oct-97 295

Vessel Usage Summary

VESNO	MS	SPLITS	DEV	XL	S/L	DP	BS	DIVE
2121	2	2	5	1	7	7		
2123	2	1	4		1	1		
2125							1	

Sound Velocity Cast Information

Launch Table #	Ship Table #	Cast DN	Max Depth	Position	Applicable DN
1		247	786.4	60/35/12	244-256
				148/12/54	
2		260	632	60/35/30	257-270
				148/10/20	
4		277	979	60/35/09	277-292
				147/44/27	

Tide Zone Information

Zone #	Time Corr.	Height Corr.
PWS40		X0.96

Tide Gage Information

Tide Gage #	Gage Name	Installed	Removed
945-4794	APPLEGATE ISLAND	9/1/97	10/30/97
945-4818	BLUE FIORD	9/5/97	10/30/97

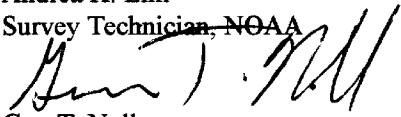
Statistics Summary

Type	Total:
BS	10
DEV	21.87
DP	18
MS	39.1
S/L	7.71
SPLIT	21.53
XL	9.44

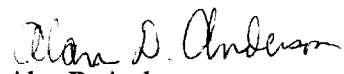
Percent XL:	24.1%
SQNM:	2.4

Respectfully Submitted,

Andrea K. Lim
Survey Technician, NOAA


Guy T. Noll
Lieutenant, NOAA

Approved and Forwarded,


Alan D. Anderson
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 9 Dec 1997 ✓

No	Type	Latitude	Longitude	H	Cart	Freq	Val Code	MM/DD/YY	Station Name
1		060:14:18.000	144:38:48.000	0	0	0.0	0.0	04/06/96	CAPE HINCHINSBROOK USCG BECON
2		060:27:20.117	148:39:54.333	0	0	0.0	0.0	10/01/97	00N DCPS
3		060:03:23.000	144:41:48.000	0	0	0.0	0.0	03/01/96	POTATO POINT USCG BEACON
4		060:39:17.513	147:58:24.500	18	0	0.0	0.0	00/00/00	ROCK



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

Commander (mon)
 Seventeenth Coast Guard District
 Post Office Box 25517
 Juneau, Alaska 99802-5517

NOAA Ship RAINIER
 November 21, 1997

**ADVANCE
 INFORMATION**

Dear CDR Hamblett:

The following dangers to navigation should be included in the Local Notice to Mariners. These features were positioned by the NOAA Ship RAINIER while conducting hydrographic surveys in western Prince William Sound, Alaska. The dangers are shown graphically on the two attached chartlets. They affect chart 16705, 16TH ED., 1996, 1:80,000, and chart 16700, 25TH ED, 1996, 1:200,000. All positions are on the NAD 83 datum and depths have been corrected to Mean Lower Low Water using predicted tides.

Feature Type	Depth (fm)	Latitude (N)	Longitude (W)	Position Number	Depth Meters	Survey Number
Rock	5.75	60:37:04.7	148:09:57.4	19077	10.9	H-10773
Rock	5.25	60:36:55.3	148:09:54.5	35885	9.6	H-10773
Rock	3.75	60:37:52.5	148:10:37.7	35886	7.2	H-10773
Shoal	3.25	60:31:18.0	148:13:57.4	40345+4	6.2	H-10774
Shoal	6.25	60:31:32.7	148:05:13.0	20631+5	11.7	H-10776
Shoal	8.25	60:32:01.1	148:04:03.8	40422+0	15.4	H-10776
Rock Awash <i>Reef</i>	-0.25	60:31:49.7	148:20:14.6	2153	-0.3	H-10777 ✓
Rock Awash	-1.5	60:31:42.6	148:20:33.4	2183	-2.6	H-10777 ✓
Shoal	3.25	60:28:41.3	148:14:16.1	60296+3	5.9	H-10779
Shoal	6.5	60:44:17.0	147:56:55.0	20132+6	11.9	H-10785
Rock	2.5	60:44:29.0	147:56:10.7	20285+3	4.5	H-10785
Shoal	4.25	60:43:13.1	147:55:48.2	20325+5	7.7	H-10785
Rock	0.75	60:45:53.9	147:55:18.2	41053+0	1.7	H-10785
Rock	2.5	60:45:18.4	147:54:42.9	41130+3	5	H-10785
Rock	0.75	60:42:33.2	147:52:07.9	41231+0	1.5	H-10785
Shoal	5.5	60:43:43.8	147:56:17.1	41232+0	10.3	H-10785
Rock	3.5	60:43:48.5	147:56:23.9	60262+3	6.6	H-10785
Shoal	5.5	60:43:29.7	147:55:56.3	60350+3	10.1	H-10785
Rock	0.25	60:42:56.0	147:55:48.4	60485+0	0.8	H-10785
Rock	3.75	60:39:23.2	147:46:35.0	16246	7	H-10786
Rock	1.5	60:40:37.2	147:44:57.2	18846	3.3	H-10786
Rock	2.5	60:40:28.4	147:44:50.5	18944	4.6	H-10786
Shoal	8.5	60:40:14.5	147:46:59.1	19596	15.7	H-10786
Rock Awash	0	60:40:09.9	147:53:47.9	20248	0.2	H-10786
Rock	2.5	60:41:05.1	147:45:45.7	21266	4.8	H-10786
Shoal	7.25	60:40:50.5	147:50:44.1	21310	13.7	H-10786
Rock	5.25	60:39:45.0	147:51:14.9	54206	9.5	H-10786



**ADVANCE
INFORMATION**

Feature Type	Depth (fm)	Latitude (N)	Longitude (W)	Position Number	Depth Meters	Survey Number
Rock	0.75	60:39:55.5	147:53:18.5	55197	1.7	H-10786
Rock Awash	-0.25	60:39:06.9	147:55:54.7	58138	-0.3	H-10786
Rock	6.5	60:39:18.9	147:55:12.0	58193	12.3	H-10786
Shoal	5.5	60:39:57.9	147:54:08.2	59548	10.4	H-10786
Rock	1.5	60:40:18.9	147:54:26.2	60113	2.7	H-10786
Shoal	6.25	60:40:10.4	147:54:42.7	90005	11.4	H-10786
Shoal	4.5	60:40:03.5	147:55:29.7	90007	8.6	H-10786
Rock	2.25	60:39:27.0	147:53:18.3	90010	4	H-10786
Rock	2.5	60:39:53.9	147:51:28.5	90011	4.5	H-10786
Rock	2.5	60:40:33.8	147:46:14.5	90013	4.6	H-10786
Shoal	3.5	60:32:46.5	148:21:55.1	20055+8	6.6	H-10787
Rock	1.25	60:34:32.2	148:26:08.8	61567+1	2.2	H-10787
Shoal	3.25	60:30:56.7	148:22:32.8	61679+3	5.8	H-10787
Shoal	8.75	60:41:56.2	147:43:54.7	20247+9	16.1	H-10791
Shoal	7.25	60:42:44.2	147:43:44.3	20468+3	13.5	H-10791
Rock	4	60:41:11.4	147:49:47.6	20578+3	7.4	H-10791
Rock	2.25	60:41:45.0	147:50:30.2	20630+3	4.2	H-10791
Rock Awash	-0.25	60:42:01.6	147:45:02.1	40244+0	-0.6	H-10791
Shoal	5.25	60:41:17.1	147:45:30.0	40323+2	9.8	H-10791
Shoal	6.5	60:42:08.6	147:44:06.5	40336+8	12.3	H-10791
Rock	1	60:42:02.5	147:44:41.2	40393+3	1.9	H-10791
Shoal	3.5	60:46:25.1	147:48:31.9	40459+1	6.5	H-10791
Shoal	3.25	60:44:25.0	147:49:08.0	41125+5	6.2	H-10791
Rock	0.5	60:44:49.6	147:49:02.6	41455+4	1.3	H-10791
Shoal	7.5	60:46:30.0	147:48:11.8	60637+6	13.8	H-10791

This is advance information subject to office review. Questions concerning this letter should be directed to the Chief, Pacific Hydrographic Branch, (206) 526-6835. Refer to survey project OPR-P125-RA-97 and Danger to Navigation message RA-7-97. More information on current RAINIER survey projects may be obtained by e-mail; contact the Field Operations Officer at FOO.RAINIER@NOAA.GOV.

Sincerely,



Alan D. Anderson
Captain, NOAA
Commanding Officer

Attachment

cc: NIMA
PMC
N/CS261
N/CS34

Author: FOO Rainier at Rainier
 Date: 11/21/97 11:32 AM
 Priority: Normal
 TO: akcgnav@alaska.net at RDC
 CC: dhill@pachydro.noaa.gov at RDC
 CC: ktimmons@pachydro.noaa.gov at RDC
 CC: navinfont@nima.mil at RDC
 CC: Lynn [NDS-NCG22] Preston at RDC
 CC: Chief Survey Technician Rainier
 CC: CO Rainier
 Subject: Dangers to Navigation for Prince William Sound 1997

----- Message Contents -----

The following dangers to navigation should be included in the Local Notice to Mariners. These features were positioned by the NOAA Ship RAINIER while conducting hydrographic surveys in western Prince William Sound, Alaska. The dangers are shown graphically on two chartlets in the hard copy version of this message forwarded separately. They affect chart 16705, 16TH ED., 1996, 1:80,000, and chart 16700, 25TH ED, 1996, 1:200,000. All positions are on the NAD 83 datum and depths have been corrected to Mean Lower Low Water using predicted tides.

Feature Type	Depth Fathoms	Latitude (N)	Longitude (W)	Position Number	Depth Meters	Survey Number
Rock	5.75	60:37:04.7	148:09:57.4	19077	10.9	H-10773
Rock	5.25	60:36:55.3	148:09:54.5	35885	9.6	H-10773
Rock	3.75	60:37:52.5	148:10:37.7	35886	7.2	H-10773
Shoal	3.25	60:31:18.0	148:13:57.4	40345+4	6.2	H-10774
Shoal	6.25	60:31:32.7	148:05:13.0	20631+5	11.7	H-10776
Shoal	8.25	60:32:01.1	148:04:03.8	40422+0	15.4	H-10776
<i>Reef</i> Rock Awash	-0.25	60:31:49.7	148:20:14.6	2153	-0.3	H-10777 ✓
Rock Awash	-1.5	60:31:42.6	148:20:33.4	2183	-2.6	H-10777 ✓
Shoal	3.25	60:28:41.3	148:14:16.1	60296+3	5.9	H-10779
Shoal	6.5	60:44:17.0	147:56:55.0	20132+6	11.9	H-10785
Rock	2.5	60:44:29.0	147:56:10.7	20285+3	4.5	H-10785
Shoal	4.25	60:43:13.1	147:55:48.2	20325+5	7.7	H-10785
Rock	0.75	60:45:53.9	147:55:18.2	41053+0	1.7	H-10785
Rock	2.5	60:45:18.4	147:54:42.9	41130+3	5.0	H-10785
Rock	0.75	60:42:33.2	147:52:07.9	41231+0	1.5	H-10785
Shoal	5.5	60:43:43.8	147:56:17.1	41232+0	10.3	H-10785
Rock	3.5	60:43:48.5	147:56:23.9	60262+3	6.6	H-10785
Shoal	5.5	60:43:29.7	147:55:56.3	60350+3	10.1	H-10785
Rock	0.25	60:42:56.0	147:55:48.4	60485+0	0.8	H-10785
Rock	3.75	60:39:23.2	147:46:35.0	16246	7.0	H-10786
Rock	1.5	60:40:37.2	147:44:57.2	18846	3.3	H-10786
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Shoal	8.5	60:40:14.5	147:46:59.1	19596	15.7	H-10786
Rock Awash	0	60:40:09.9	147:53:47.9	20248	0.2	H-10786
Rock	2.5	60:41:05.1	147:45:45.7	21266	4.8	H-10786
Shoal	7.25	60:40:50.5	147:50:44.1	21310	13.7	H-10786
Rock	5.25	60:39:45.0	147:51:14.9	54206	9.5	H-10786
Rock	0.75	60:39:55.5	147:53:18.5	55197	1.7	H-10786

**ADVANCE
INFORMATION**

Rock Awash	-0.25	60:39:06.9	147:55:54.7	58138	-0.3	H-10786
Rock	6.5	60:39:18.9	147:55:12.0	58193	12.3	H-10786
Shoal	5.5	60:39:57.9	147:54:08.2	59548	10.4	H-10786
Rock	1.5	60:40:18.9	147:54:26.2	60113	2.7	H-10786
Shoal	6.25	60:40:10.4	147:54:42.7	90005	11.4	H-10786
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Rock	2.25	60:41:45.0	147:50:30.2	20630+3	4.2	H-10791
Rock Awash	-0.25	60:42:01.6	147:45:02.1	40244+0	-0.6	H-10791
Shoal	5.25	60:41:17.1	147:45:30.0	40323+2	9.8	H-10791
Shoal	6.5	60:42:08.6	147:44:06.5	40336+8	12.3	H-10791
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Shoal	3.25	60:44:25.0	147:49:08.0	41125+5	6.2	H-10791
Rock	0.5	60:44:49.6	147:49:02.6	41455+4	1.3	H-10791
Shoal	7.5	60:46:30.0	147:48:11.8	60637+6	13.8	H-10791

This is advance information subject to office review. Questions concerning this letter should be directed to the Chief, Pacific Hydrographic Branch, (206) 526-6835. Refer to survey project OPR-P125-RA-97 and Danger to Navigation message RA-7-97. More information on current RAINIER survey projects may be obtained by e-mail; contact the Field Operations Officer at FOO.RAINIER@NOAA.GOV. Hard copy (letter) is being sent November 21, 1997 by regular mail.

/S/ Captain Alan D. Anderson, NOAA
Commanding Officer, NOAA Ship RAINIER

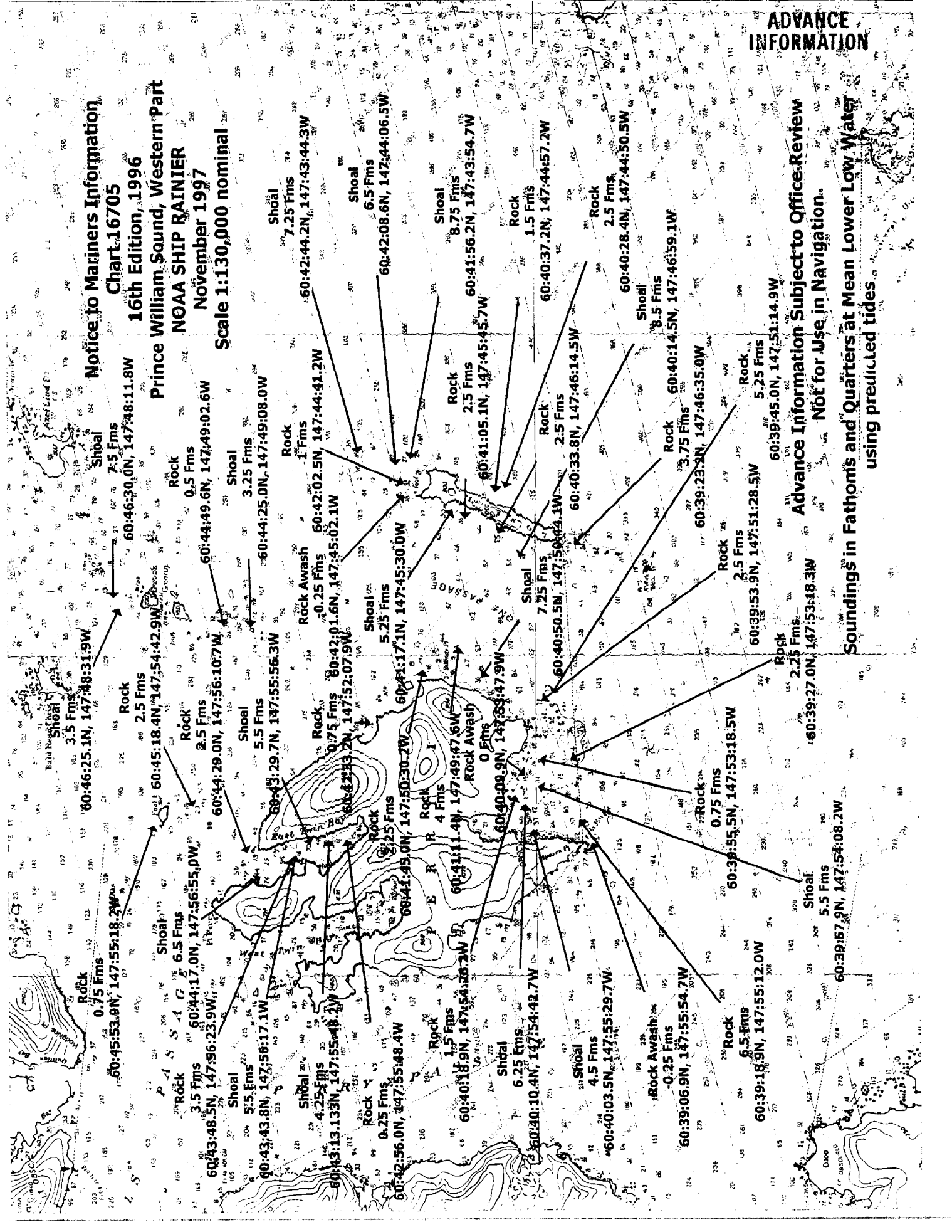
Notice to Mariners Information
Chart 16705
16th Edition, 1996

Prince William Sound, Western Part
NOAA SHIP RAINIER
November 1997
Scale 1:130,000 nominal

ADVANCE
INFORMATION

Advance Information Subject to Office Review
Not for Use in Navigation.

Soundings in Fathoms and Quarters at Mean Lower Low Water
using predicted tides

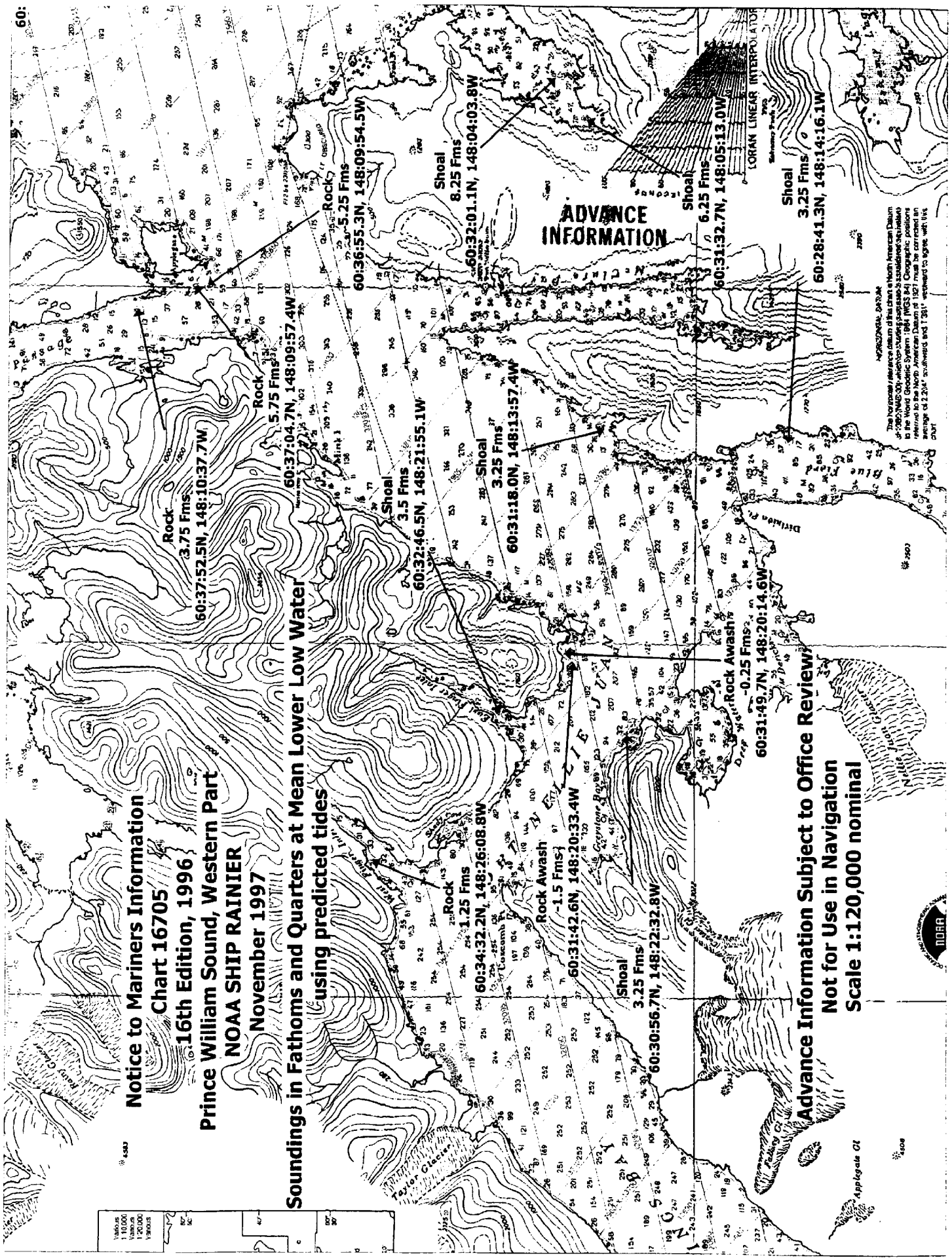


Notice to Mariners Information
Chart 16705
16th Edition, 1996
Prince William Sound, Western Part
NOAA SHIP RAINIER
November 1997

Soundings in Fathoms and Quarters at Mean Lower Low Water
using predicted tides

ADVANCE INFORMATION

Advance Information Subject to Office Review
Not for Use in Navigation
Scale 1:120,000 nominal



The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83). All other soundings (except those indicated otherwise) are in the World Geodetic System Datum (WGS 84). Chartographic positions are given in terms of latitude and longitude. The datum used for the average of 2.204' soundings and 1.281' soundings is WGS 84.



Aggregate Of

5008

APPROVAL SHEET


for

H-10777

RA-10-27-97

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.


Alan D. Anderson
Captain, NOAA
Commanding Officer



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: February 5, 1998

HYDROGRAPHIC BRANCH: Pacific

HYDROGRAPHIC PROJECT: OPR-P125-RA-97
HYDROGRAPHIC SHEET: H-10777

LOCALITY: Northwest Prince William Sound, AK

TIME PERIOD: Sep 15 - Oct 23, 1997

TIDE STATION USED: 945-4794 Applegate Island
Lat. 60° 37.4'N Lon. 148° 09.9'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.385 meters

TIDE STATION USED: 945-4818 Blue Fjord
Lat. 60° 29.5'N Lon. 148° 14.7'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.407 meters

TIDE STATION USED: 945-4951 Kings Bay Inside
Lat. 60° 27.4'N Lon. 148° 39.9'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.418 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: PWS39 & PWS40
Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (Meters), relative to MLLW and on Greenwich Mean Time.

Note 2: Use tide data from the appropriate station for each zone according to the order in which they are listed in the "Tidezone" corrector files. For example, tide station one (TS1) would be the first choice for an applicable zone followed by TS2, etc. when data are not available. All zones within a survey sheet may not have the same order of applicable tide stations.



CHIEF, OPERATIONAL ANALYSIS BRANCH



Final tide zone node point locations for OPR P125-RA-97,
 Sheet H-10777.

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 PWS39				
-148.114598	60.574838	945-4818	0	1.00
-148.135079	60.580714	945-4794	0	1.01
-148.237563	60.621003	945-4951	0	1.00
-148.288683	60.597501			
-148.274604	60.483349			
-148.296492	60.428791			
-148.133173	60.449775			
-148.114598	60.574838			
Zone PWS40				
-148.288683	60.597501	945-4818	0	1.00
-148.380845	60.567284	945-4951	0	1.00
-148.466181	60.516083	945-4794	0	1.01
-148.296492	60.428791			
-148.274604	60.483349			
-148.288683	60.597501			

GEOGRAPHIC NAMES

H-10777

Name on Survey	A ON CHART NO. 16700-16705 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 GRAND McNALLY ATLAS H U.S. LIGHT LIST K										
	A	B	C	D	E	F	G	H	K		
ALASKA (title)	X									1	
EAST FINGER INLET *	X		X							2	
KENAI PENINSULA	X		X							3	
MINK ISLAND	X		X							4	
PORT NELLIE JUAN	X		X							5	
PRINCE WILLIAM SOUND (title)	X		X							6	
										7	
										8	
										9	
* Plots outside the survey limits.										10	
										11	
										12	
										13	
										14	
										15	
										16	
										17	
										18	
										19	
										20	
										21	
										22	
										23	
										24	
										25	

Approved:

Dennis J. Rausberg
Chief Geographer

APR 2 1998

HYDROGRAPHIC SURVEY STATISTICS

H-10777

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

SHORELINE DATA	
SHORELINE MAPS (List):	DM-10194
PHOTOBATHYMETRIC MAPS (List):	NA
NOTES TO THE HYDROGRAPHER (List):	NA
SPECIAL REPORTS (List):	NA
NAUTICAL CHARTS (List):	16705, 17th Edition, September 27, 1997

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			
POSITIONS REVISED			
SOUNDINGS REVISED (Selected)			
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	98.0		98.0
COMPARISON WITH PRIOR SURVEYS AND CHARTS		7.0	7.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		32.0	32.0
GEOGRAPHIC NAMES			
OTHER (Chart Compilation)		44.5	44.5
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	98.0	83.5
			181.5

Pre-processing Examination by M. Bigelow	Beginning Date 4/16/98	Ending Date 4/17/98
Verification of Field Data by M. Bigelow, D.Doles, E.Domingo, R.Mayor	Time (Hours) 98.0	Ending Date 9/18/98
Verification Check by B. Olmstead	Time (Hours) 4	Ending Date 9/28/98
Evaluation and Analysis by I. Almacen	Time (Hours) 39.0	Ending Date 9/17/98
Inspecting by B. Olmstead	Time (Hours) 6	Ending Date 10/14/98

EVALUATION REPORT

H-10777

A. PROJECT

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

B. AREA SURVEYED

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

This survey covers the area about one half nautical mile off the north shore of Port Nellie Juan from the vicinity of Mink Island to latitude 60/31/15N to the south. Multi-beam hydrography (H-10775) adjoining this survey was conducted along the middle and deeper portion of Port Nellie Juan. The area along the coast are generally consist of ledges with a few off-lying islets, reefs and rocks. The bottom is primarily made up of mud, gravel and pebble. Depths range from the mean lower low water to over 250 fathoms.

The hydrographer has determined during this survey the Navigable Area Limit Line (NALL) in accordance with the Project Instructions and the "limited" shoreline verification rules adopted by the ship during field survey operations. A page size chartlet of the survey area indicating the specific limits of supersession is included in this report as Attachment A.

C. SURVEY VESSELS

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

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data was acquired in the field using HYPACK and processed with HPS. Office processing were accomplished utilizing the Hydrographic Processing System (HPS), and MicroStation 95.

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

The drawing files necessarily contain information which is not part of the HPS data set such as geographic names text, line-type data and symbolization. Cartographic codes used to describe the digital data are those authorized by Hydrographic Survey Guideline No. 35 and No. 75.

The field sheet parameters have been revised to center the hydrography on the office plot. The data is plotted using a Modified Transverse Mercator projection and are depicted on a single 1:10,000 scale sheet.

E. SONAR EQUIPMENT

Side Scan Sonar was not used on survey H-10777.

F. SOUNDING EQUIPMENT

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

G. CORRECTIONS TO SOUNDINGS

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

Predicted tides were used for the reduction of soundings during field processing. Actual tide reduction is derived from Applegate Island, Alaska, gauge 945-4794. Tide stations at Blue Fjord and Kings Bay were listed on the approved tide note but were 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 positions of horizontal control stations used during hydrographic operations are field values based on NAD 83. The geographic positions of all survey data are based on NAD 83. The smooth sheet is annotated with an NAD 27 adjustment tick based on values determined with the NGS program NADCON. Geographic positions based on NAD27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: -2.260 seconds (-69.944 meters)
Longitude: 7.402 seconds (112.803 meters)

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

I. HYDROGRAPHIC POSITION CONTROL

Hydrographic position control is adequately discussed in the hydrographer's report.

Differential GPS (DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The maximum (HDOP) allowable limit has not been exceeded during this survey and the quality of data obtained is good. The reference site confirmation test and the daily DGPS performance checks were conducted in the field and found adequate.

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

Information concerning specific control system type, calibrations and system checks can be found in the separates submitted from the field to accompany the hydrographer's report.

J. SHORELINE

The shoreline digital file DM-10194 originating from Coastal Mapping survey CM-92012 was compiled on NAD 83 and applied to this survey. The digitized shoreline files and the survey file were merged during MicroStation processing.

Shoreline verification was accomplished along the northern shores of Port Nellie Juan. There are no significant differences noted in the mean high water lines configuration between the present and the previously compiled shoreline. Most of the compiled rocks were found to be the offshore limits or the high points of the ledges and reefs located along the coast.

The charted shoreline should be revised based on the latest shoreline map information and the results of the field shoreline verification as depicted on the smooth sheet.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10777 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10773	1997	1:10,000	Northern Limits
H-10775	1997	1:40,000	Eastern Limits
H-10787	1997	1:10,000	Southern Limits

The junctions with surveys H-10773 and H-10787 are considered complete. "Joins" notes have been added to the smooth sheet on each of the junctional areas of the survey.

Multibeam survey H-10775 junctions with the present survey in depths generally ranging from 100-250 fathoms. Depths between the single beam and multibeam are within 1-2 fathoms. The multibeam depths are not consistently shoaler nor trending deeper. Several soundings have been transferred to the present survey to better delineate the bottom and depth curves within the common area. A "Joins" note has been added to the smooth sheet in the junction area.

M. COMPARISON WITH PRIOR SURVEYS

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Datum</u>
H-3973	(1917)	1:20,000	Valdez

The present soundings were found to be generally deeper from 2-10 fathoms than depths acquired in 1917 utilizing leadlines. Aside from the natural changes in the area, these differences could also be attributed to the better accuracy of the positioning and sounding methods used during this recent survey.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Datum</u>
H-7794	(1948)	1:40,000	Valdez
H-8594	(1961)	1:10,000	NAD 27
H-8606	(1961)	1:10,000	NAD 27

These prior surveys listed above provide the basic area coverage of the present survey. Sounding agreement is satisfactory with the present survey depths generally differ by 1-5 fathoms along the inshore areas. However, in areas where the bottom profile is extremely steep and deep the present survey appears to be deeper by about 15-45 fathoms. All charted depths and features originating from the prior hydrography were adequately addressed during survey

operations except as noted below. See the hydrographer's report, section M for additional comments.

A more thorough coverage of the area was undertaken on this recent survey. The changes noted could be attributed to the better survey coverage, improved positioning and sounding methods used and the relative accuracy of the data acquisition techniques.

An unidentified feature charted at latitude 60/33/39N, longitude 148/17/41W, originates from H-3973 and was not specifically addressed by the hydrographer. This feature appears to have been compiled as an islet. Present hydrography found depths of 10-15 fathoms in the area with no shoaling indicated. It is likely this feature was shown on the prior work to symbolize the foul nature of the inshore areas found by the present survey and should be deleted from the chart.

The submerged rock charted at latitude 60/32/09.5N, longitude 148/18/56.0W, originating from prior survey H-8594 was noted during field operations. No adequate investigation of this feature was accomplished during survey operation. However, an indication of shoaling was observed within its charted location. This submerged rock has been transferred in color to the smooth sheet and should be retained as charted.

The submerged rock charted at latitude 60/35/15.0N, longitude 148/15/17.5W, originating from survey H-8606 was not found. The recent hydrography conducted over this area reveals depths of about 6-14 fathoms with no indication of a submerged rock or shoal. A rock was located about 50 meters northeast of its charted location. It is recommended that this submerged rock be deleted and the area charted based on the present survey.

The rock charted at latitude 60/31/59N, longitude 148/19/28W, originating from prior survey H-8594 was not found. The present survey reveals depths of 13-19 fathoms over this area with no indication of rock or shoal. The charted rock has likely been generalized offshore from the surveyed position as shown on the prior survey. A reef uncovering 9 feet at MLLW was found on the present survey approximately twenty meters west of the prior rock and is likely the same feature. This feature should be removed and chart the area based on this recent survey.

In accordance with the Hydrographic Guideline No.39, the effect of the 1964 Prince William Sound earthquake were considered in the comparison of this survey. Prince William Sound experienced some bottom changes during the 1964 earthquake. However, due to the depths of water and the differences in data acquisition methods, no reasonable adjustment value for prior soundings could be determined.

With the exception of the item mentioned above, survey H-10777 is adequate to supersede the prior surveys within the area of common coverage.

N. ITEM INVESTIGATIONS

No item investigations were undertaken during this survey.

O. COMPARISON WITH CHART

Survey H-10777 was compared with the following charts.

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
16705	16th	Aug. 24, 1996	1:80,000	NAD 83
16705	17th	Sept. 27, 1997	1:80,000	NAD 83

a. Hydrography

Charted hydrography originates with the previously discussed prior surveys. The prior surveys have been adequately addressed in section M and require no further discussion. Comparison was also made with the 17th edition of the chart and no changes were noted between editions within the common area of the survey.

The application of this survey to charts of a scale less than 1:40,000 may require the generalization of features such as ledges and reefs. The recommended charting disposition of specific ledges or reefs is their depiction as isolated rocks. The application of this survey to charts of a scale greater than 1:40,000 may be accomplished without generalization of features. Features from survey H-10777 have been generalized on chart 16705 along the shoreline where applicable.

Except for the item mentioned in the preceding section of this report, survey H-10777 is adequate to supersede charted hydrography within the area of common coverage.

b. Dangers to navigation

Two (2) dangers to navigation were discovered during this survey and reported to the USCG, NIMA, N/CG261 and N/CS34 on November 21, 1997. A copy of the report is attached. No additional dangers were noted during office processing.

The reported feature at latitude 60/31/49.7N, longitude 148/20/14.6W, was identified in the field as a reef formation. However, due the scale of chart 16705, it has been generalized and compiled as a rock awash.

P. ADEQUACY OF SURVEY

Survey H-10777 is adequate to:

- a. delineate the bottom configuration, determine least depths, and draw the required depth curves;
- b. reveal there are no significant discrepancies or anomalies requiring further investigation; and
- c. show the survey was properly controlled and soundings are correctly plotted.

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, April 1994 Edition with the following exception.

In the event that the field units submission of survey data will exceed four weeks from the completion of field work, the Chief of Party will submit a written explanation for the delay indicating the anticipated transmittal date to the Chief of the appropriate processing section. Marine Center ships will forward their explanation through the Marine Center Director. Field work for survey H-10777 was completed October 22, 1997 but not transmitted for office processing until February 12, 1998.

Q. AIDS TO NAVIGATION

There are no fixed and floating aids to navigation within the limits of this survey.

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

R. STATISTICS

Statistics are adequately itemized in the hydrographer's report.

S. MISCELLANEOUS

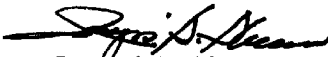
Miscellaneous information is adequately discussed in the hydrographer's report.

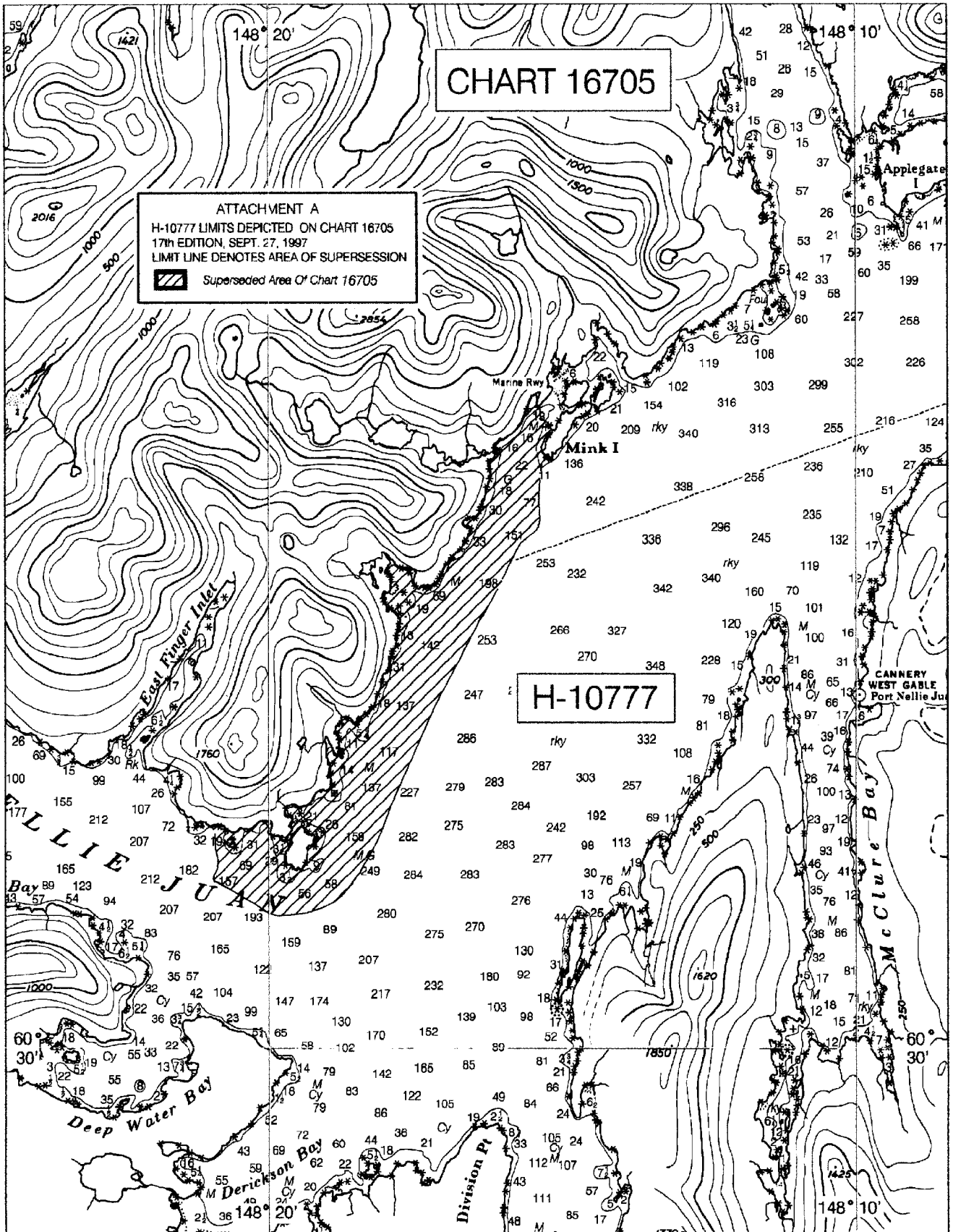
T. RECOMMENDATIONS

This is a good hydrographic survey and no additional field work is required.

U. REFERRAL TO REPORTS

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


Isagani A. Almacén
Cartographer



APPROVAL SHEET
H-10777

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: 10/14/98
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.

James C. Gardner Date: 12/21/98
James C. Gardner
Commander, NOAA
Chief, Pacific Hydrographic Branch

Final Approval

Approved:
Andrew A. Armstrong III Date: Jan 27, 1999
Andrew A. Armstrong III
Captain, NOAA
Chief, Hydrographic Surveys Division

