

# H-10065

Diagram No. 8102-3

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT

Type of Survey ... Navigable Area Hydrographic ...  
Field No. .... RA-10-11-82 .....  
Office No. .... H-10065 .....

### LOCALITY

State ..... Alaska .....  
General Locality Boca De Quadra .....  
Locality ..... Head of Boca De Quadra .....

1982

CHIEF OF PARTY  
CAPT R.J. Land

### LIBRARY & ARCHIVES

DATE ..... March 1, 1984 .....

☆U.S. GOV. PRINTING OFFICE: 1980-768-230

H-10065

AREA 6

CATS:

17427 }  
17420 }

to sign off see  
Record of Application

HYDROGRAPHIC TITLE SHEET

H-10065

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-10-11-82

State Alaska

General locality Boca De Quadra

Locality Head of Boca De Quadra

Scale 1:10,000 Date of survey November 10-19, 1982

Instructions dated June 2, 1982 Project No. OPR-0361-RA-82

Vessel NOAA Ship RAINIER and Launches 2123, 2124, 2125

Chief of party CAPT R. J. Land

Surveyed by LT J. O'Clock, Lt S. Ludwig, ENS R. Koehler, ENS J. Judson,  
ENS B. Postle, ENS W. Logue

Soundings taken by echo sounder, ~~back to back~~ ~~side~~ Ross Fathometer

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Verified ~~XXXXXXXXXX~~ by R. Shipley Automated plot by PMC Xynetics Plotter

Evaluated ~~XXXXXXXXXX~~ by K. M. Scott

Soundings in fathoms ~~DMK~~ at MLLW ~~MLLW~~

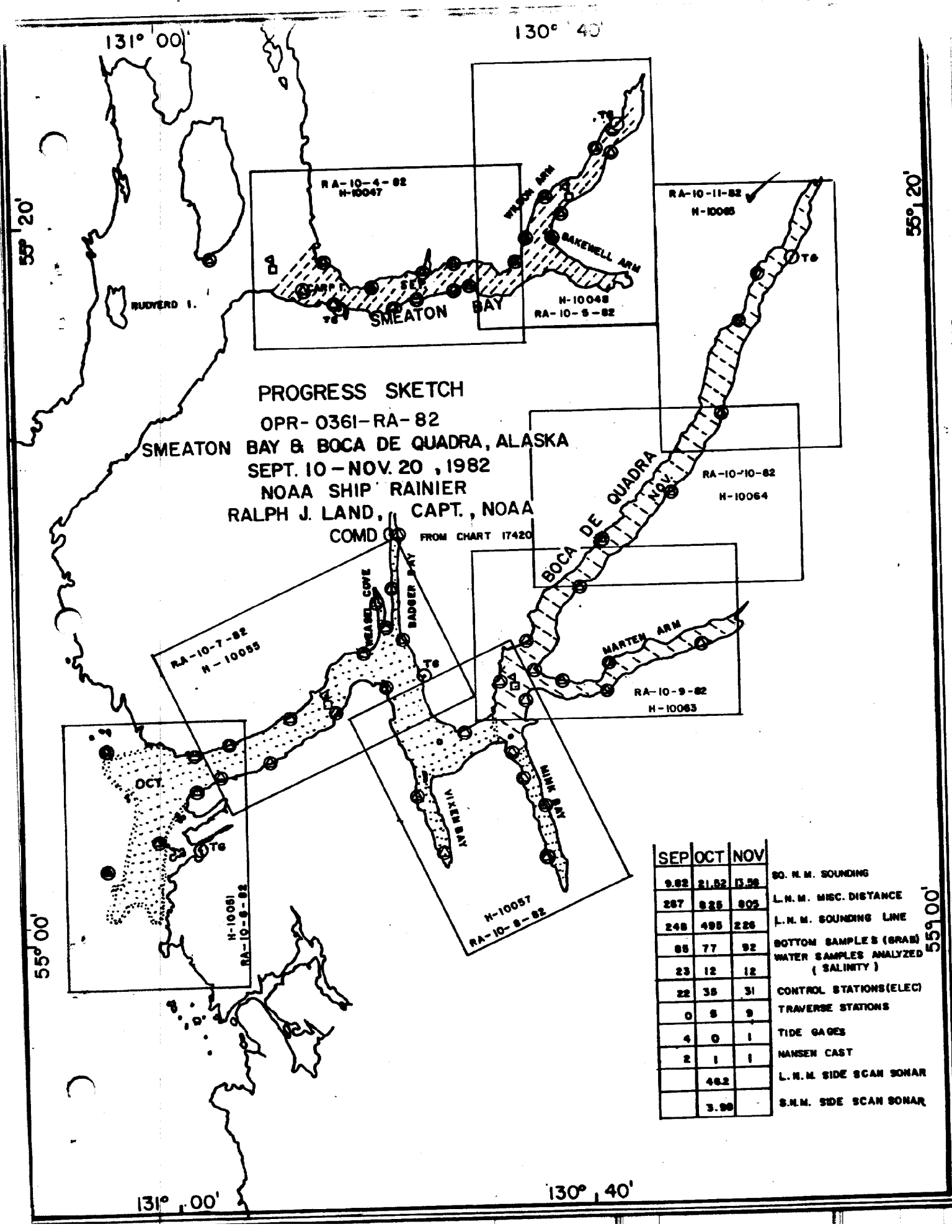
REMARKS: Comments in black ink were made by the Evaluator.

3-5-84 STANDARDS OK'D

C. Loy

AWD/S - 6/28/84 ~~mgf~~

04-22-97



PROGRESS SKETCH  
 OPR-0361-RA-82  
 SMEATON BAY & BOCA DE QUADRA, ALASKA  
 SEPT. 10 - NOV. 20, 1982  
 NOAA SHIP RAINIER  
 RALPH J. LAND, CAPT., NOAA  
 COMD FROM CHART 17420

SEP	OCT	NOV	
9.82	21.82	15.58	90. N.M. SOUNDING
287	825	805	L.N.M. MISC. DISTANCE
248	495	226	L.N.M. SOUNDING LINE
65	77	92	BOTTOM SAMPLES (GRAB)
23	12	12	WATER SAMPLES ANALYZED (SALINITY)
22	35	31	CONTROL STATIONS (ELEC)
0	8	9	TRAVERSE STATIONS
4	0	1	TIDE GAGES
2	1	1	HANSEN CAST
	46.2		L.N.M. SIDE SCAN SONAR
	3.98		S.N.M. SIDE SCAN SONAR

55° 20'

55° 00'

A. PROJECT

Hydrographic survey H-10065 (RA-10-11-82) was conducted in accordance with Project Instructions OPR-0361-RA-82, Smeaton Bay and Boca de Quadra, Alaska dated June 2, 1982, with the following changes: Change No. 1, Supplement to Instructions, dated July 28, 1982, and Change No. 2, Amendment to Instructions, dated August 23, 1982.

B. AREA SURVEYED

The northern arm of Boca de Quadra was surveyed from approximately 55°14.1'N to the end of the arm at approximately 55°19.7'N. Dates of this survey were JD 314 to JD 323.

C. SOUNDING VESSELS

All sounding data, detached positions and bottom samples were obtained by RAINIER hydrographic launches RA-3 (2123), RA-4 (2124), and RA-5 (2125). RA-5 collected all bottom samples.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Introduction

All information contained in this section is applicable to survey H-10065. Sounding equipment is discussed as well as corrections, which include sound velocity, draft, settlement and squat, instrument corrections for blanking, and phase and initial drift errors. Analog interpretation problems are also discussed.

Sounding Equipment

Echo soundings obtained during survey H-10065 were taken by RAINIER launches RA-3 (2123), RA-4 (2124), and RA-5 (2125). RA-5 was used for bottom sampling only. Each launch was equipped with Ross Fineline Fathometer systems. These systems include the following Ross components: model 400 transceivers, model 5000 analog trace recorders, model 6000 digitizers, and 100 khz transducers. The serial numbers of these components are summarized in Table I.

TABLE I  
Echo Sounding Component Serial Numbers

<u>Launch</u>	<u>2123</u>	<u>2124</u>	<u>2125</u>
Transceiver	1041	1040	1042
Analog	1071	1042	1070
Digitizer	1041	1080	1042

### Sound Velocity Corrections

Two Nansen casts were performed in order to determine sound velocity corrections. Table II summarizes the Nansen cast data.

TABLE II  
Nansen Cast Data

<u>Date</u>	<u>Location</u>	<u>Velocity Table</u>
18 OCT 82	55°06.5'N 130°52.6'W	8
18 NOV 82	55°06.9'N 130°43.3'W	8

Water samples obtained from the Nansen casts were analyzed for salinity using a Beckman model No. RS-713 salinometer (S/N 59265) and standard laboratory procedures (see H.O. 607, Instruction Manual for Obtaining Oceanographic Data, Third Edition, U.S. Naval Oceanographic Office, 1968). The salinometer was last calibrated in April, 1982 by the Northwest Regional Calibration Center, Bellevue, Washington. The calibration results are provided in the separates following the text.

Velocity correction tables were yielded by inserting the Nansen cast results into computer program RK530: Velocity Correction Computations (May 10, 1976 version) which was run on RAINIER's PDP 8/e digital computer system.

The standard velocity corrections for this survey were obtained by graphing the actual depths minus velocity corrections versus velocity correction and picking off depths that corresponded to standard correction intervals (see Hydrographic Manual, Fourth Edition, 1976). A list of computed correctors is provided in the separates following the text.

### Launch Draft Corrections

Corrections for launch draft were determined from standard bar checks (see Hydrographic Manual, Fourth Edition, 1976). Bar checks were performed daily, except when wind or rough seas prevented launch personnel from obtaining accurate bar check data.

Mean fathometer depth values were corrected for velocity and subtracted from the true bar depths. The resulting values agreed with the historic value of 0.3 fathoms for the survey launch's TRA's except for RA-3. The TRA for RA-3 was computed to be 0.45 fathoms which agrees with the prior TRA, computed since the installation of the side scan sonar equipment on this launch.

The smooth field sheet for this survey was plotted using a launch TRA value of 0.3 fathoms except for soundings obtained by RA-3. These soundings were plotted using a launch TRA value of 0.8 fathoms.

#### Launch Settlement and Squat Corrections

Settlement and squat tests were conducted at Shilshole Bay Marina in Puget Sound, Washington on April 2 and April 6, 1982 and at Port Chatham, Alaska on July 23, 1982. The second location was used to obtain new settlement and squat values for RA-3, after the installation of the side scan sonar equipment. A leveling rod was located over the transducer on each launch. An observer on shore sighted through a level to the rod and recorded the readings at various speeds. These readings were taken at speeds increasing from 0 RPM to 2600 RPM (full ahead) for each launch except RA-4, which went to 2800 RPM. A second set of readings was taken at speeds decreasing from full ahead to 0 RPM. The two sets of readings were then averaged to yield the final settlement and squat correctors. A list of the final correctors is included in the separates following the text.

Settlement and squat correctors were not applied to the final smooth field sheet of this survey. All soundings were obtained at speeds for which the corrector equalled 0.0 fathoms.

#### Sounding Instrument Correctors

During survey operations the blanking depth was set to a value shoaler than the shoalest bottom expected and was adjusted as the depth changes. Corresponding analog trace depths were substituted for missing digital soundings as a part of standard scanning procedures.

The initial trace on the analog recorders was continuously monitored to prevent any error caused by a drifting initial. Phase calibrations were also performed to prevent belt tension error and stylus/paper misalignment on launch fathometers in accordance with PMC OORDER.

#### Special Analog Interpretation Problems

Fathograms were scanned for peaks and deeps on-line and again at the end of each work day as part of standard scanning procedures. Due to the steepness of the bottom topography, side echoes were prevalent in the area of this survey. The side echo problem was enhanced when sounding parallel to a steep bottom gradient. The fathometers were operated using the manual gain control rather than the automatic gain control (AGC) to help keep the occurrence of side echoes to a minimum. Digital depths were replaced by analog depths whenever they were found to represent side echoes rather than the true bottom. However, due to the difficulty of interpreting side echoes, some interpretation discrepancies may still exist in areas where side echoes were prevalent.

E. HYDROGRAPHIC SHEETS

Smooth hydrographic sheets were prepared by the PDP 8/e complot system aboard the RAINIER. A modified transverse mercator projection was used for plotting data. A list of parameters used to define the projections are included in the separates following the text. Soundings on the smooth sheet have been corrected for predicted tides, launch draft, preliminary velocity correctors and Mini-Ranger baseline calibration correctors.

One field sheet, RA-10-11-82, covered the entire survey area. Field records will be forwarded to the Pacific Marine Center, Seattle, Washington for verification.

200 meter line spacing was used for this survey. Due to the extreme steepness of the inshore area, depths of 20 fathoms or more often occurred just 10-20 meters offshore. Launches would begin and end lines as close to shore as possible.

Any indication of shoaling or potential anchorage areas were developed. Also at the northern end of the survey area, a shoreline was run to help delineate the shore.

F. CONTROL STATIONS

The following stations were established using Third Order, Class I specifications. The method used for establishing the four control stations was brace triangulation. The North American 1927 Datum was used. For more information refer to the Horizontal Control Report, DPR-0361-RA-82.

QUADRA

JUDY

ROSIE

BILLY

G. HYDROGRAPHIC POSITION CONTROL

Range/azimuth was the only method used for hydrographic position control. Motorola Mini-Ranger III positioning systems and Wild Theodolites were used. The tables below summarize the location of all Mini-Ranger mobile and shore equipment.

TABLE I  
Mini-Ranger Mobile Equipment

<u>Vessel</u>	<u>Console S/N</u>	<u>R/T S/N</u>
2123	720	2710 ✓
2124	30269	1636
2125	715	1660
<del>2126</del>	<del>711</del>	<del>1646</del>

TABLE II  
Mini-Ranger Shore Equipment

<u>Code</u>	<u>Transponder S/N</u>	<u>Station #</u>
A	1645	Not Used
B	4951	210,211,212,213
C	1628	209,210
D	1569	211 ✓
E	911721	Not Used
F	911711	Not Used
2	B1106	Not Used

Ending calibration for these codes occurred in Seattle, Washington on November 30, 1982. For more information concerning initial and ending calibrations, refer to the Electronic Control Report OPR-0361-RA-82.

Mini-Ranger Calibration and System Check

System checks for this survey were completed by either static or baseline crossing methods.

Mini-Ranger baseline calibrations for this survey were performed on October 29-30, 1982 and November 30, 1982. These calibrations took place in Ketchikan, Alaska and Seattle, Washington, respectively. Only the initial correctors were used to plot the smooth field sheet. The initial baseline calibration for each R/T console pair and transponder combination also determine minimum signal strength cutoff values for each system. The data for all baseline calibrations are included in the Electronic Control Report.



### Mini-Ranger Performance

All shore stations were positioned on Third Order, Class I or better geodetic stations. Power was supplied by two 12-volt batteries connected in series. Overall, shore transponder units performed very well with few problems as did all mobile equipment.

### H. SHORELINE

The shoreline for this survey was transferred from enlargements of U.S. Geological Survey Quadrangle Maps at 1:63,360 scale. The enlargements initially provided were not at the correct scale and had to be enlarged a second time to 1:10,000 by an enlargement projector at Pacific Marine Center, Seattle. This resulted in a large amount of distortion rendering the shoreline inaccurate. It is difficult to determine whether shoreline discrepancies are the result of the inaccuracies inherent in the enlargement processes or misrepresentation of actual features.

See  
Eval Rpt  
Sect. 2

In addition, the U.S. Geological Quadrangle Maps do not agree with the prior survey or the charted shoreline. (Plane table survey methods were most likely the source for this old shoreline). The current quadrangles are very much closer to the actual shoreline and it is recommended that the shoreline be updated with photogrammetry in the near future. A good check on the accuracy of the shoreline is the fact that nearly all of the geodetic stations are located very near the tree line, which is also basically the mean high water line in this area.

Rocks and ledge areas on the present survey were positioned and delimited.

### I. CROSSLINES

Crossline comparisons were excellent with all soundings within 1 fathom except at  $55^{\circ}16'30''N$ ,  $130^{\circ}32'30''W$ . These comparisons are located on a steep bottom gradient and a small position change could cause a large depth difference.

### J. JUNCTIONS

Junction comparisons were excellent. All depths over 100 fathoms compared within 3 fathoms. Four soundings located in the area of  $55^{\circ}14'09''N$ ,  $130^{\circ}34'36''W$  vary in comparisons by as much as 7 fathoms. (50 vs 43). However, this area is on a very steep gradient and small position differences can result in large depth difference.

See  
Eval Rpt  
Sect. 5

K. COMPARISONS WITH PRIOR SURVEYS

The only prior survey for this survey is H-2149 (1892) and consists of three reconnaissance lines. These lines are parallel to the shore and extend up the north arm of Boca de Quadra. ✓

The shoreline greatly varies from the U.S.G.S. Quadrangles used (see Section H). However, if certain prominent shore features are aligned, surrounding soundings agreed very good. It is recommended that survey RA-10-11-82 be used to update the next edition chart. ✓

In 1982 Tetra Tech, Inc. completed bathymetric surveys for sections of Boca de Quadra. Survey BDQ-2 applies to this hydrographic survey. Generally the soundings agreed. Line spacing was greater than what is recommended in the NOS Hydrographic Manual. Survey BDQ-2 does not meet NOS hydrographic standards but is useful to obtain an idea of the submarine topography. ✓

L. COMPARISONS WITH THE CHART

Comparisons were made to NOS Chart 17427. The entire arm is misplaced according to the latitude and longitude grid lines. Since the data comes from Survey H-2149 using reconnaissance and most likely plane table surveying methods, it is not surprising that this discrepancy exists. For discussion of soundings see section K. ✓

M. ADEQUACY OF SURVEY

Survey H-10065 is complete and adequate to supercede all prior surveys for charting. ✓

N. AIDS TO NAVIGATION

No aids to navigation, floating or fixed, were located in the survey area. ✓

O. STATISTICS

<u>Launch</u>	<u>Linear/Nautical Miles of Hydrography</u>	<u>Square Miles</u>	<u>Positions</u>
2123	50.1		373 <sup>3</sup>
2124	11.0		85 III
<del>2125</del> Total		3.5	<del>27</del> 570

Launch 2125 collected all 17 bottom samples.

P. MISCELLANEOUS

A yellow spherical mooring buoy was located at 55°19'11"N, 130°28'22"W. This is a temporary buoy used by the R/V REDOUBT.

There were no dangers to navigation reported in the survey area.

- R. Data acquisition and processing were accomplished per instructions in the Hydrographic Manual (Fourth Edition), Manual of Automated Hydrographic Surveys, the PMC OORDER, Hydrographic Survey Guidelines and the Hydrographic Data Requirements for 1982.

Soundings and positions were taken by an ASI Logger and a Hydroplot system using range azimuth program FA181. There are daily master tapes and corresponding corrector tapes which include the TRA for the launches and electronic control baseline correctors for Mini-Ranger consoles and R/T units and all depth corrections. Velocity tapes were generated from Nansen cast data. The following is a list of all computer programs and version dates used for data acquisition or processing:

	<u>PDP 8/e Programs</u>	<u>Version Date</u>
FA181	Range-Azimuth Hydrolog	02/23/78
RK201	Grid, Signal and Lattice Plot	04/18/75
RK212	Visual Station Table Load	04/01/74
RK216	Range Azimuth Non-Real Time Plot	02/09/81
RK300	Utility Computations	10/21/80
RK330	Reformat and Data Check	05/04/76
PM360	Electronic Corrector Abstract	02/02/76
RK407	Geodetic Inverse/Direct Computation	09/25/78
AM500	Predicted Tide Generator	11/10/72
RK530	Layer Corrections for Velocity	05/10/76
RK561	H/R Geodetic Calibration	02/19/75
AM602	Elinore-Line Oriented Editor	05/20/75
AM603	Tape Consolidator	10/10/72
RK606	Tape Duplicator	08/22/74
	Focal	1969
	Nansen Cast Calculations	8/15/79

The HP97 and HP9815A programmable calculators were used to compute geographic positions of electronic control stations and visual signals for calibrations.

S. REFERRAL TO REPORTS

The following reports contain information related to this survey:

Echo Sounding Report	OPR-0361-RA-82
Electronic Control Report	OPR-0361-RA-82
Horizontal Control Report	OPR-0361-RA-82
Coast Pilot Report	OPR-0361-RA-82

Respectfully submitted,

*Richard B. Koehler*

Richard B. Koehler  
ENS, NOAA

## FIELD TIDE NOTE

Field tide reduction of soundings for Survey H-10065 was based on predicted tides from Ketchikan, Alaska. Corrections were obtained from Preliminary Tidal Zoning OPR-0361-RA-82. The predicted tides were derived using program AM500. The reference station, Ketchikan, Alaska (945-0460), Lat.  $55^{\circ}19.5'N$ , Long.  $131^{\circ}37.5'W$ , was leveled on October 2 and November 12, 1982. These levels agreed with the historical records.

Two subordinate tide stations provided data for Survey H-10065. The Kestrel Tide Gage (945-0305), Lat.  $55^{\circ}07.1'N$ , Long.  $130^{\circ}47.9'W$ , was installed on September 28, and removed on November 20, 1982. Initial and final levels for this gage were run on September 28 and November 17, 1982. The staff value of the zero line on the tide record was +5.0 feet and the time meridian for records annotation was  $0^{\circ}$  (UTC). The gage operated very well the entire period.

The Boca de Quadra, Northeast Arm Tide Gage (945-0398), Lat.  $55^{\circ}18.7'N$ , Long.  $130^{\circ}29.5'W$ , was installed on November 3 and removed on November 20, 1982. Initial and final levels for this gage were run on November 3 and 18, 1982. The staff value of the zero line on the tide record was +1.7 feet and the time meridian for records annotation was  $0^{\circ}$  (UTC).

Both the Kestrel and Boca gages operated very well.

GEOGRAPHIC NAMES

H-10065

Name on Survey	A	B	C	D	E	F	G	H	K
	ON CHART NO. 17427	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP ATLAS	GRAND McNALLY ATLAS	U.S. LIGHT LIST	

ALASKA (title)										1
BOCA DE QUADRA	X									2
										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
								Approved:		19
										20
								<i>Charles E. Harrington</i>		21
								Chief Geographer - N/C62x5		22
								9 SEPT. 1983		23
										24
										25

VELOCITY CORRECTOR TAPE LISTING  
OPR-0361-RA-82  
BOCA DE QUADRA, ALASKA

ALL SHEETS

TABLE NO. 8  
UNIT - FATHOMS

000045	0	0000	0008	001	000000	000000
000120	0	0001				
000215	0	0002				
000290	0	0003				
000365	0	0004				
000445	0	0005				
000525	0	0006				
000610	0	0007				
000690	0	0008				
000785	0	0009				
000880	0	0010				
000980	0	0011				
001070	0	0012				
001350	0	0014				
001540	0	0016				
001720	0	0018				
001910	0	0020				
002095	0	0022				
002270	0	0024				
999999	0	0026				

TC/TI TAPE LISTING  
RA-10-11-82(H-10065)

LAUNCH - 2123(RA-3)

FATHOMETER S/N - 1071

184353 0 00040008 314 212300 000000  
182900 0 00040008 323 000000 000000

LAUNCH - 2124(RA-4)

FATHOMETER S/N - 1042

221738 0 0003 0008 319 212400 000000  
234917 0 0000 0000 319 000000 000000  
225315 0 0003 0008 319 000000 000000  
174500 0 0003 0008 323 000000 000000

LAUNCH - 2125(RA-5)

BOTTOM SAMPLES ONLY

222130 0 0000 0000 319 212500 000000  
202000 0 0000 0000 321 000000 000000



ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2124

SHEET : RA-10-11-82

TIME	DAY	PATTERN 1	PATTERN 2
221738	319	+00002	-04073
224917		+00002	-35511
225315		+00002	-39142
232000		+00000	+00000
193608	321	+0000 <sup>2</sup>	-01225
204000		+00000	+00000
174609	322	+0000 <sup>2</sup>	-48148
192700		+00000	+00000
171753	323	+0000 <sup>2</sup>	-58404
174500		+00000	+00000

FOR RANGE AZIMUTH HYDRO DISREGARD PATTERN 2 CORRECTORS.

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2123

SHEET : RA-10-11-82

TIME	DAY	PATTERN 1	PATTERN 2
184353	314	<del>-0000</del>	-42443
230500		+00000	+00000
183052	320	+00000	-57515
230400		+00000	+00000
181851	321	+00000	-44252
231800		+00000	+00000
180942	322	+00000	-36573
233300		+00000	+00000
170656	323	+00000	-34578
182900		<del>+00000</del>	+00000
		-00001	

FOR RANGE AZIMUTH HYDRO DISREGARD PATTERN 2 CORRECTORS.

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2125

SHEET : RA-10-11-82

TIME	DAY	PATTERN 1	PATTERN 2
222130	319	+0000 <sup>2</sup>	-24527
183653	320	+00004	-32047
220749		+0000 <sup>2</sup>	+97257
180344	321	+00000	-64182
202000		+00000	+00000

FOR RANGE AZIMUTH HYDRO DISREGARD PATTERN 2 CORRECTORS.  
 ABOVE CORRECTORS ARE FOR BOTTOM SAMPLES ONLY.

MASTER STATION LIST  
 DPR-2361-RA-82  
 BOCA DE QUADRA, ALASKA

FINAL VERSION

<del>193</del>	<del>3</del>	<del>55</del>	<del>07</del>	<del>19260</del>	<del>130</del>	<del>49</del>	<del>50353</del>	<del>250</del>	<del>0000</del>	<del>000000</del>
<del>/PEGLEG</del>										
199	1	55	07	25753	130	41	16127	139	0000	222000
/PIRANO										
201	4	55	01	26576	131	03	29334	139	0016	000000
/BLACK ROCK LIGHT 1929 NGS COMPUTER LISTING										
202	0	55	05	13432	131	03	04294	250	0010	000000
/SLATE ISLANDS LIGHT										
203	0	55	07	32707	130	38	53123	250	0000	000000
/GEORGE										
204	3	55	08	05233	130	37	18095	139	0000	000000
/MARTEN										
205	6	55	07	59034	130	34	31700	250	0000	000000
/HARVEY										
206	6	55	06	46485	130	39	03001	250	0000	000000
<del>/JUNE</del>										
207	0	55	11	02360	130	39	0783 <sup>2</sup> <del>1</del>	250	0000	000000
/CAROLINE, 1982										
<del>208</del>	<del>4</del>	<del>55</del>	<del>07</del>	<del>45306</del>	<del>130</del>	<del>40</del>	<del>18814</del>	<del>250</del>	<del>0000</del>	<del>000000</del>
<del>/BOGA</del>										
209	7	55	12	2033 <sup>8</sup> <del>0</del>	130	35	5624 <sup>6</sup> <del>4</del>	250	0000	000000
/DE, 1982										
210	4	55	14	2314 <sup>2</sup> <del>0</del>	130	33	1243 <sup>9</sup> <del>3</del>	250	0000	000000
/QUADRA, 1982										
211	3	55	16	5926 <sup>4</sup> <del>2</del>	130	32	094 <sup>25</sup> <del>1</del>	250	0000	000000
/JUDY, 1982										
212	3	55	18	1480 <sup>5</sup> <del>2</del>	130	31	0264 <sup>53</sup> <del>0</del>	250	0000	000000
/ROSIE, 1982										
213	4	55	18	4163 <sup>3</sup> <del>2</del>	130	29	270 <sup>62</sup> <del>54</del>	250	0000	000000
/BILLY, 1982										

OCEANOGRAPHIC LOG SHEET - M  
BOTTOM SEDIMENT DATA

VESSEL SERIAL NO.	DATE	PROJ. NO.		YEAR	DEPTH (Fathoms)	WEIGHT OF SAM- PLER	AP- PROX. PER- TRA- TION	LENGTH OF CORE	COLOR OF SED- IMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, density, clutter, size, no., type of bottom relief, etc.)	OBS. INIT
		LONGITUDE	LATITUDE									
2125 (RA-5)	NOV 1982	082-0361-RA-82	180° W	1982								
											BOCA DB QUADRA, ALASKA RA-10-11-82 (H-10065)	11/12/82
5000	15	19 18.22	29 05.44	25.0	25.4					ers S G		JJ
5001	"	19 36.47	29 01.61	22.2	"					S P		"
5002	"	19 16.68	29 33.15	43.2	"					M		"
5003	"	18 57.09	29 19.73	55.4	"					M		"
5004	15	18 42.25	29 55.89	64.7	"					M		"
5005	16	17 06.96	31 34.65	65.6	"				gn	M crs SP sm Sh		JJ
5006	"	16 52.97	32 08.98	74.6	"				brgn	M		"
5007	"	16 29.80	32 08.19	68.5	"				gn	M S sm Sh		"
5008	"	16 10.19	32 37.21	59.6	"				gn	M fine S		"
5009	"	15 50.44	32 57.05	82.8	"				gn	M S P		"
5010	16	15 32.15	32 45.06	40.0	"					fine spk S med P		"
5011	"	17 38.06	31 48.34	41.2	"				gn	M S		"
5012	"	17 42.09	30 59.03	81.5	"				gn	M fine S		"
5013	"	17 56.47	31 18.78	58.4	"				gn	M fine S		"
5014	"	18 00.21	30 32.11	85.6	"				gn	M		"
5015	"	18 24.26	30 43.11	47.3	"				gn	M fine S		"
5016	16	18 23.45	30 00.39	82.8	"				gn	M		JJ

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M  
BOTTOM SEDIMENT DATA

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

VESSEL	SERIAL NO.	DATE	PROJ. NO.		YEAR	DEPTH (Fathoms)	WEIGHT OF SAM- PLER	APX. PEN- ETRA- TION	LENGTH OF CORE	COLOR OF SED- IMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dented cutter, stat. no., type of bottom, relief i.e., slope, plain, disposition, etc.)	OBS. INIT.
			2125 (RA-5)	02R-034-RA-82									
		SAMPLE POSITION		BOCA DE QUADRA, ALASKA		RA-10-11-82 (H-10065)		CHECKED BY		DATE CHECKED			
		LATITUDE	LONGITUDE										
		55°N	130°W	1982									
5017	17	16 30.99	32 43.47	54.4	25/65				gn	M P S			11/12/82
5018	"	16 13.09	33 10.67	58.2	"				gn	M S			
5019	"	15 42.65	33 30.06	56.8	"				gn	S P			
5020	"	15 25.40	33 29.72	79.8	"				gn	M fine S			
5021	"	15 07.51	33 57.09	89.0	"				gn	M S			
5022	"	15 02.29	33 42.65	99.5	"				gn	M bk CI			
5023	"	14 42.57	33 02.10	99.0	"				gn	fine S			
5024	"	14 38.75	34 01.03	93.1	"				gn	M S			
5025	"	14 13.07	33 34.30	104.3	"				gn	M S			
5026	17	14 14.00	34 15.00	77.3	"				gn	S P St			

APPROVAL SHEET

DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SURVEY  
H-10065  
RA-10-11-82

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, PMC OORDER, Hydrographic Survey Guidelines, 1982 Data Requirements Letter, and the Instruction Manual for Automated Hydrographic Surveys. The data was examined daily during the execution of the survey.

The boatsheet and the accompanying records have been examined by me, are considered complete and adequate for charting purposes, and are approved.



Ralph J. Land  
Commander, NOAA  
Commanding Officer

**HYDROGRAPHIC SURVEY STATISTICS**

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS	1
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS	6

DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS						
VOLUMES						
BOXES			1			

T-SHEET PRINTS (List)

SPECIAL REPORTS (List)

**OFFICE PROCESSING ACTIVITIES**

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

PROCESSING ACTIVITY	AMOUNTS		
	PRE-VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			510
POSITIONS CHECKED		510	
POSITIONS REVISED			
SOUNDINGS REVISED		30	
SOUNDINGS ERRONEOUSLY SPACED			
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED			
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	02	* (VER)/(EVAL)	02
VERIFICATION OF CONTROL		03/01	04
VERIFICATION OF POSITIONS		07/01	08
VERIFICATION OF SOUNDINGS		26/01	27
COMPILATION OF SMOOTH SHEET		11/28	39
APPLICATION OF TOPOGRAPHY		00/00	00
APPLICATION OF PHOTOBATHYMETRY		00/00	00
JUNCTIONS		01/01	02
COMPARISON WITH PRIOR SURVEYS & CHARTS		00/01	01
VERIFIER'S REPORT		01/03	04
OTHER			
<b>TOTALS</b>	<b>02</b>	<b>49/36</b>	<b>87</b>

Pre-Verification by <b>J. L. Stringham</b>	Beginning Date <b>4/5/83</b>	Ending Date <b>4/5/83</b>
Verification by <b>R. A. Shipley</b>	Beginning Date <b>8/9/83</b>	Ending Date <b>12/20/83</b>
Verification Check by <b>J. S. Green, J. L. Stringham</b>	Time (Hours) <b>14</b>	Date <b>12/29/83</b>
Marine Center Inspection by	Time (Hours)	Date
Quality Control Inspection by	Time (Hours)	Date
Requirements Evaluation by	Time (Hours)	Date

\*Time in this column is for Verification (VER) and Evaluation (EVAL).



PACIFIC MARINE CENTER  
EVALUATION REPORT

REGISTRY NO: H-10065

FIELD NO: RA-10-11-82

Alaska, Boca De Quadra, Head of Boca De Quadra

SURVEYED: November 10-19, 1982

SCALE: 1:10,000

PROJECT NO: OPR-0361-RA-82

SOUNDINGS: Ross Fineline Fathometer

CONTROL: Mini-Ranger  
Range/Azimuth

Chief of Party.....CAPT R. J. Land

Surveyed By.....LT J. O'Clock  
LT S. Ludwig  
ENS R. Kochler  
ENS J. Judson  
ENS B. Postle  
ENS W. Logue

Automated Plot By.....PMC Xynetics Plotter

Verified By.....R. Shipley

Evaluated By.....K. M. Scott

1. INTRODUCTION

H-10065 is a navigable area survey accomplished by the NOAA Ship RAINIER launches in accordance with Project Instructions OPR-0361-RA-82 dated June 2, 1982, Change No. 1 dated July 28, 1982, and Change No. 2 dated August 23, 1982.

Predicted tides based on the Ketchikan gage with time and range adjustments were utilized during shipboard processing. Tide correctors used for the reduction of final soundings are computed from approved hourly heights zoned direct from the N.E. Arm Boca De Quadra gage (945-0398). (See appended Tide Note.)

The electronic correctors were revised during verification to reflect the mean of baseline correctors applicable to the appropriate Mini-Ranger transponder unit. Correctors applied to the survey data are included in the smooth printouts.

2. CONTROL AND SHORELINE

Geodetic positions for control stations governing hydrography are field positions computed from published positions for previously established stations referenced to North American 1927 datum.

In accordance with Hydrographic Guideline No. 17, shoreline is not shown on the smooth sheet because of conflict with U.S.G.S. Quads and charted shoreline.

### 3. HYDROGRAPHY

Crosslines incorporated within this survey are in good agreement. Discrepancies are attributed to the nature of the bottom.

The bottom configuration, development of shoal soundings, determination of least depths, and delineation of standard depth curves are adequate.

### 4. CONDITION OF SURVEY

The hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual of July 4, 1976.

### 5. JUNCTIONS

H-10065 joins H-10064 (1:10,000) 1982 to the south. Soundings, depth curves, and junction note are inked in agreement.

### 6. COMPARISONS WITH PRIOR SURVEYS

H-2149 (1:20,000) 1892

Prior survey soundings are comparable, indicating a very stable bottom.

Differences in methods of shoreline delineation, sounding acquisition and datum adjustments account for any differences.

There are no presurvey review items within the survey limits.

H-10065 is adequate to supersede all prior survey data within the common area.

### 7. COMPARISON WITH CHART

17427 (4th Ed., July 7, 1979)

a. Hydrography - Charted information originates with the prior survey discussed previously.

The appended chartlet shows the survey area.

There have been no dangers to navigation identified or reports submitted by the ship or PMC during processing of this survey.

H-10065 is adequate to supersede charted hydrography within the common area.

b. Controlling Depths - There are no controlling depths within the limits of this survey.

c. Aids to Navigation - There are no aids to navigation within the limits of the survey.

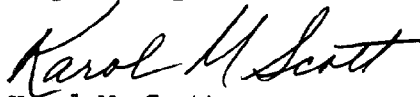
8. COMPLIANCE WITH PROJECT INSTRUCTIONS

H-10065 (RA-10-11-82) adequately conforms to the project instructions as amended and noted in section 1 of this report.

9. ADDITIONAL FIELD WORK

This is a good navigable area survey. No additional field work is required.

Respectfully submitted,



Karol M. Scott  
Cartographer  
December 28, 1983

This survey has been verified and evaluated. I have examined the survey and it meets Charting and Geodetic Services survey standards and requirements for use in nautical charting except as noted in the Evaluation Report. The survey is recommended for approval.



James S. Green  
Supervisory Cartographer

DATE: February 8, 1983

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 945-0398 NE Arm Boca De Quadra, Alaska

Period: November 10-19, 1982

HYDROGRAPHIC SHEET: H-10065

OPR: 0361

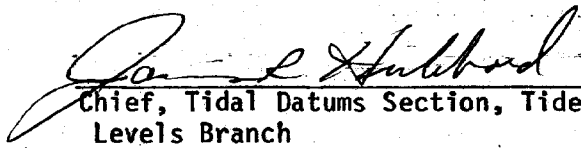
Locality: Boca De Quadra, Alaska

Plane of reference (mean lower low water): 5.8 ft.

Height of Mean High Water above Plane of Reference is 14.2 ft.

REMARKS: Recommended Zoning:

Zone Direct

  
Chief, Tidal Datums Section, Tides & Water  
Levels Branch

40'

35'

130° 30'



UNITED STATES AND CANADA  
ALASKA - SOUTHEAST COAST  
AND  
BRITISH COLUMBIA

# DIXON PORTLAND CANAL ENTRANCE TO HATTIE ISLAND

4th Ed., July 1979

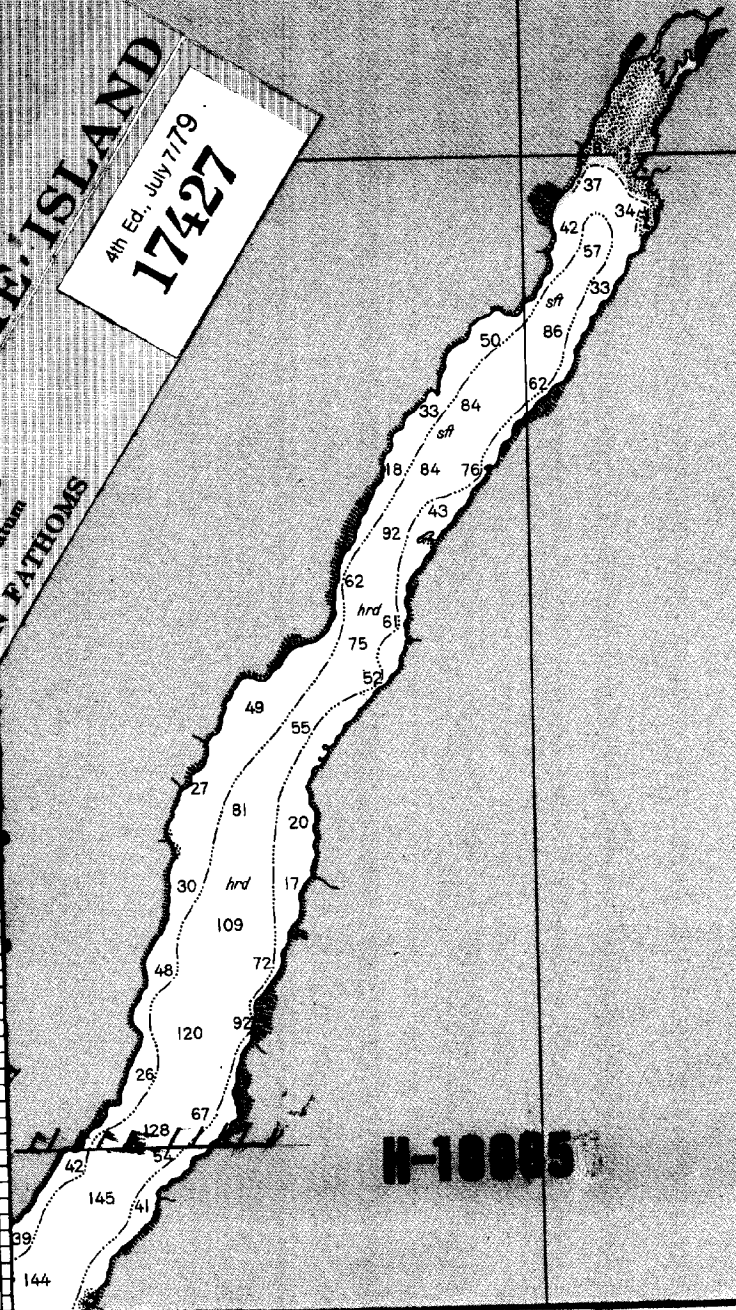
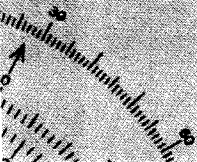
## 17427

Mercator Projection  
Scale 1:80,000 at Lat. 55° 20'  
North American 1927 Datum

SOUNDINGS IN FATHOMS

515'

H-10005



ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10065

I have reviewed the smooth sheet, accompanying data, and reports of this hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.

*H. C. Austin* 1/27/84  
Chief, Nautical Chart Branch (Date)

CLEARANCE:

N/MOP2:LMMordock

SIGNATURE AND DATE:

*L. M. Mordock* 1/31/84

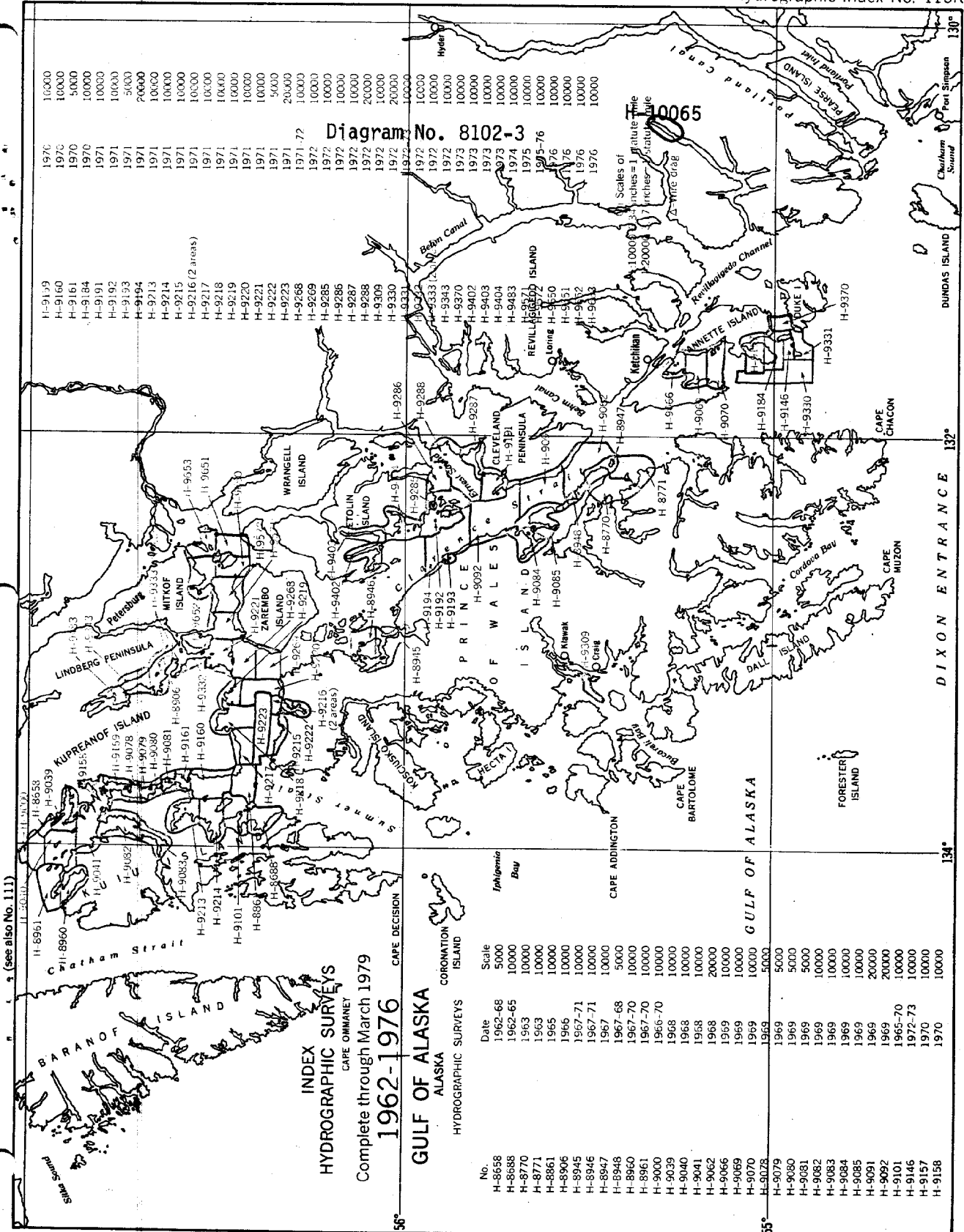
After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

*Charles V. Farnand* 2/3/84  
Director, Pacific Marine Center (Date)

DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Ocean Survey  
Washington, D.C.

Hydrographic Index No. 110K

Diagram No. 8102-3



INDEX  
HYDROGRAPHIC SURVEYS  
CAPE OMMANEY  
Complete through March 1979  
1962-1976

GULF OF ALASKA  
ALASKA  
HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-8658	1962-68	5000
H-8688	1962-65	10000
H-8770	1963	10000
H-8771	1963	10000
H-8861	1965	10000
H-8906	1966	10000
H-8945	1967-71	10000
H-8946	1967-71	10000
H-8947	1967	10000
H-8948	1967-68	5000
H-8960	1967-70	10000
H-8961	1967-70	10000
H-9000	1966-70	10000
H-9039	1968	10000
H-9040	1968	10000
H-9041	1968	10000
H-9062	1968	20000
H-9066	1969	10000
H-9069	1969	10000
H-9070	1969	10000
H-9078	1969	5000
H-9079	1969	5000
H-9080	1969	5000
H-9081	1969	5000
H-9082	1969	10000
H-9083	1969	10000
H-9084	1969	10000
H-9085	1969	10000
H-9091	1969	20000
H-9092	1969	20000
H-9101	1965-70	10000
H-9146	1972-73	10000
H-9157	1970	10000
H-9158	1970	10000

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10065

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
<i>17427</i>	<i>4/14/84</i>	<i>T. Alexander</i>	<del>Full Part Before After Verification Review Inspection Signed Via</del> <i>Drawing No. 12 Exam for critical corr's</i> <i>only. No corr's</i>
<i>17420</i>	<i>11/30/84</i>	<i>J. Bailey</i>	<del>Full Part Before After Verification Review Inspection Signed Via</del> <sup>EVALUATION</sup> <i>Drawing No. 32 Exam. for critical corr's thru</i> <i>Drwg. 17427 #12. No corr.</i>
<i>17427</i>	<i>10/27/89</i>	<i>ALMAGEN</i>	<del>Full Part Before After Verification Review Inspection Signed Via</del> <i>Drawing No. full application of sidsgs from SS.</i>
			<del>Full Part Before After Verification Review Inspection Signed Via</del> <i>Drawing No.</i>
			<del>Full Part Before After Verification Review Inspection Signed Via</del> <i>Drawing No.</i>
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