10154

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 Hydrographic

Field No. RA-10-1-84

Office No. H-10154

LOCALITY

State Alaska

General Locality Behm Canal

Locality Hassler Pass to Shrimp Bay

1984

CHIEF OF PARTY
CDR J.P. Vandermeulen

LIBRARY & ARCHIVES

DATE January 9, 1986

☆U.S. GOV. PRINTING OFFICE: 1980—766-230

10154

Area 5
Charts
17422
17420
17360-16

TO SIGN OFF SEE "RECORD OF APPLICATION TO CHART"

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-10154

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 10-1-84

State: Alaska

General locality: Behm Canal

Locality: Hassler Pass to Shrimp Bay

Scale: 1:10,000 Date of survey: Sept. 5 - 20, 1984

Instructions dated: August 9, 1984 Project No.: OPR-O168-RA-84

Vessel: NOAA Ship RAINIER (S221), Launches 2123, 2124, 2125, and 2126

Chief of party: CDR J. P. Vandermeulen, NOAA

Surveyed by: LT T. Rulon, LTJG S. Konrad, ENS D. LaReau, ENS T. Porta, ENS C. Wilson, ENS J. Griffin, ENS M. Pickett

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

Graphic record scaled by: RAINIER Survey Department

Graphic record checked by: RAINIER Survey Department

Verification ~~Protracted~~ by: R. Mueller, P. Niland Automated plot by: PMC Xynetics Plotter

Evaluation ~~Verification~~ by: Gordon E. Kay

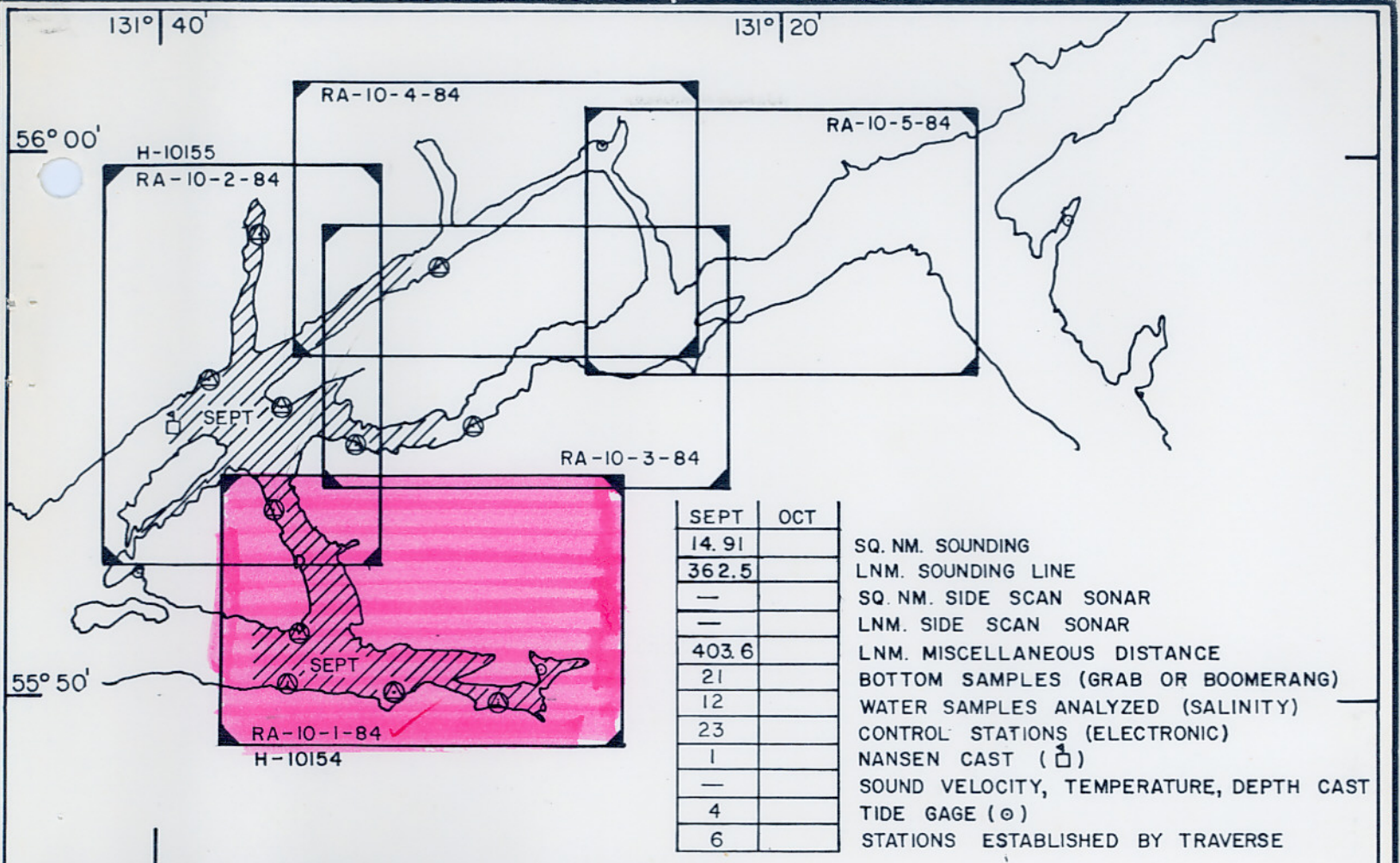
Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW

REMARKS: Marginal notes in black were made during the evaluation phase of H-10154 at the Pacific Marine Center, Seattle, Washington. Separates are filed in the back of the accordian file folder.

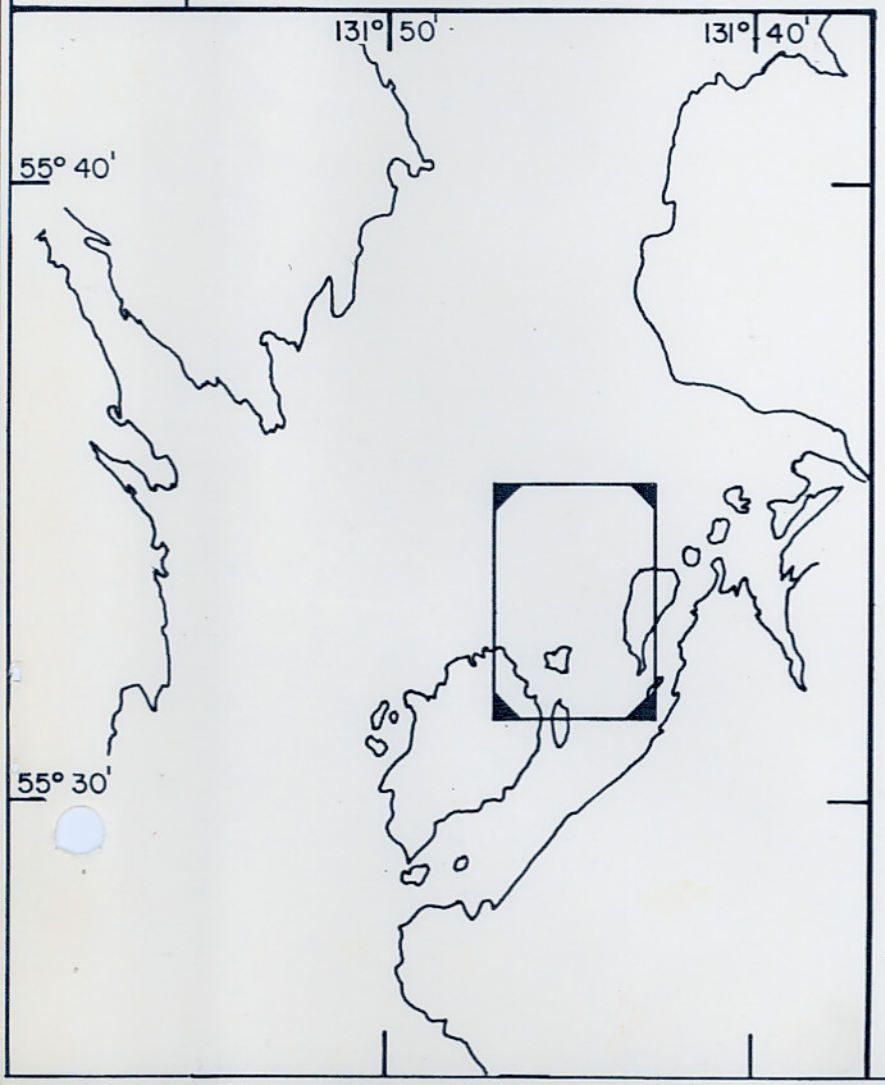
AWOIS/Surf Charts MSM 4-2-86

SC 4-21-97

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-665-010-1174



SEPT	OCT	
14.91		SQ. NM. SOUNDING
362.5		LNM. SOUNDING LINE
—		SQ. NM. SIDE SCAN SONAR
—		LNM. SIDE SCAN SONAR
403.6		LNM. MISCELLANEOUS DISTANCE
21		BOTTOM SAMPLES (GRAB OR BOOMERANG)
12		WATER SAMPLES ANALYZED (SALINITY)
23		CONTROL STATIONS (ELECTRONIC)
1		NANSEN CAST (⏃)
—		SOUND VELOCITY, TEMPERATURE, DEPTH CAST
4		TIDE GAGE (⊙)
6		STATIONS ESTABLISHED BY TRAVERSE



PROGRESS SKETCH

OPR-0168-RA-84

HYDROGRAPHIC SURVEY

BEHM NARROWS, ALASKA

SEPT 4 - SEPT 30, 1984.

NOAA SHIP RAINIER

JOHN P. VANDERMEULEN, CDR., NOAA
COMD'G

FROM CHART 17420

A. PROJECT

This basic hydrographic survey was accomplished in accordance with Project Instructions OPR-0168-RA-84, Behm Narrows, Alaska, dated August 9, 1984, Change No.1, dated August 17, 1984. ✓

B. AREA SURVEYED

This survey, conducted from September 5 to September 20, 1984, includes the area from Hassler Pass to Shrimp Bay, Alaska, bounded by latitudes 55/53/30 N and 55/49/40 N and longitudes 131/37/00 W and 131/26/00 W. ✓

C. SOUNDING VESSEL

Sounding data for this survey were obtained by vessels RA-3 (2123), RA-4 (2124), and RA-6 (2126). Bottom samples were obtained by RA-5 (2125) and RAINIER (2120). No unusual sounding vessel configurations or problems occurred during hydrographic data collection. ✓

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Survey launches were equipped with Raytheon DSF-6000N dual beam echo sounders and depths on this survey ranged from 0 fathoms to 190 fathoms. ✓

VESSEL		SOUNDING EQUIPMENT	SERIAL NO
RA-3	(2123)	Raytheon DSF-6000N	A119N
RA-4	(2124)	Raytheon DSF-6000N	A117N
RA-5	(2125)	Raytheon DSF-6000N	A123N
RA-6	(2126)	Raytheon DSF-6000N	A103N

✓

The DSF-6000N echo sounders were operated primarily in the dual beam high frequency digitized mode. In order to ensure that high and low frequency beams were tracking the steep contours of the bottom close to shore the launches were operated at low speeds (700-1500 rpm). The high and low frequency gain controls and the phase controls were operated manually because the high frequency beam could not track the bottom when these controls were in the automatic mode. Nevertheless, approximately 5 percent of the time the high frequency trace could not track the bottom. When this occurred the depth values were scanned from the low frequency beam trace. There were no discrepancies at the junctions of the high and low frequency beams data as the two traces were in close agreeement at the points of changeover. In depths of over 100 fms the 6DB+ boost was used when needed. Reference Fauerbach letter Dec. 3, 1984, Special Report on DSF-6000N attached. Special attention items, #10-12

On September 6 (JD 250) the high frequency board was removed from the DSF-6000N echo sounder (S/N A119N) on launch 2123. The malfunctioning board was discovered after the bar check. The soundings that day were collected in the low frequency digitized mode. These soundings are accurate due to the fact that as mentioned above the junction between the low and high frequency beams were in close agreement in that area on previous and subsequent days. The TRA for launch 2123 with the new high frequency board equaled its historical value, therefore the new board added no instrument error.

All soundings were taken from the launches under Mini-Ranger Range-Range or Range-Azimuth control. Since the echo sounding transducers on launches are directly below the the Mini-Ranger R/T units the ANDIST associated with these survey data is 0.0 meters. The final field sheets were plotted with this Andist value.

Bar checks were conducted at least once daily for both beams of the DSF-6000N echo sounder as per the Provisional Operating and Processing Instructions for the DSF-6000N Echo Sounder. All bar checks were performed within the survey area. The bar checks were used to confirm proper system function, and bar check data were combined with velocity data to determine launch TRA correctors. The TRA for the wide and narrow beams were within 0.1 fathom of each other and were averaged together to obtain a single TRA value. These TRA calculations show a 0.3 fathom TRA for all launches and the final smooth sheets were plotted with this value.

Velocity corrections were derived from two Nansen casts taken during the survey as listed below. One table of velocity corrections was created averaging both Nansen casts.The survey was plotted with a preliminary velocity correction table made from the first Nansen cast. Printouts of velocity tables are included in the separates following the text.

Filed with separates. See digital hydrographic file for final corrections

VELOCITY CASTS

CAST NUMBER	DATE	LATITUDE	LONGITUDE
1 (Nansen)	18 SEPT (262)	55-55-00N	131-39-36W
2 (Nansen)	10 OCTOBER (284)	55-59-12N	131-15-42W

TC/TI tapes were made in accordance with PMC OPORDER, Appendix Q. Printouts of the TC/TI tapes are included in the separates following the text. For further information and details relating to correction to echo soundings see Corrections to Echo Soundings Report, OPR-0168-RA-84.

E. HYDROGRAPHIC SHEETS

Two 1:10,000 scale field sheets designated RA-10-1E-84 and RA-10-1W-84 were prepared on the RAINIER using the PDP/8/E Hydroplot system which produces modified transverse Mercator projections. Three 1:2,500 scale expansion sheets were prepared for areas of dense line spacing. Smooth field sheets were plotted by SST Hastings. A list of parameters used to define these field sheets is provided in the separates following the text.

All data and accompanying field records will be sent to Pacific Marine Center for verification.

F. CONTROL STATIONS

Position control for survey H-10154 consisted of establishing two triangulation marks, two temporary points, and recovering existing stations. Stations GAY 1984 and SPARKY 1984 were positioned by Third order traverse methods. Stations BOOP TP and KLU TP were spurred off station SPARKY 1984 and have no-check positions. Both TP's were established to provide control in Klu Bay, a small cove adjacent to Shrimp Bay. To have established the TP's with a check would have required a substantial amount of additional work, and considering the small amount of hydrography to be run off the TP's, it was decided to spur them off a established Third order station. See the Horizontal Control Report, OPR-0168-RA-84, for details. All existing stations recovered were Third order.

#	STATIONS RECOVERED (adjusted)
100	CON 1930
102	FIN 1930
101	DRESS 1930
113	SHRIMP 1930
103	HASSLER 1930
109	FOR 2 1929
111	MY 1891

NEW STATIONS (field positions)	
116	GAY 1984
117	SPARKY 1984
118	BOOP TP
119	KLU TP

G. HYDROGRAPHIC POSITION CONTROL

Range/Range and Range/Azimuth were the methods used for hydrographic positioning. Motorola Mini-Ranger III and Wild Theodolites were the instruments used. The following tables summarize the serial numbers and locations of all mobile and shore positioning equipment.

WILD THEODOLITE S/N

T-1: 14055, 65516
T-2: 57259, 73226, 68648, 75599

MINI-RANGER MOBILE EQUIPMENT

VESSEL	CONSOLE	R/T S/N	DATES
2123	720	713370	249-263
2124	B0269	B1388	249-264
2125	715	911615	260
2126	711	B1405	257-262

MINI-RANGER SHORE EQUIPMENT

CODE	TRANSPONDER S/N	CODE	TRANSPONDER S/N
A	1645	0	C1789
D	1569	1	C1883
E	911721	2	B1106
F	911711		

The following table summarizes the locations and dates for all Mini-Ranger mobile equipment.

STATION NUMBERS

		100	101	102	103	109	113	116	117	118	119
J	249	2	0	A							
U	250	2		A	1						
L	255	2			1						
I	256	2		1							
A	257	2		1							
N	258						1				
	259								1		
D	260	2		A					1		
A	261	1		D	1			D	D	D	D
T	262					F			D		
E	263				F						
S	264				E						

CALIBRATIONS AND PERFORMANCE

Mini-Ranger calibrations and systems checks were performed in accordance with PMC OPORDER, Appendices M and S. Initial baseline calibrations for this project were conducted on the Homer Spit, Homer, Alaska on 25 August 1984. Ending baseline calibrations will be conducted at Lake Union, Seattle, Washington in early November 1984.

Only initial correctors were used to plot the smooth field sheet. The initial calibrations also determined the minimum signal strength cut off values for each system. For more information regarding systems checks and calibrations, refer to the Electronic Control Report, OPR-0168-RA-84.

Daily static calibrations for each code used were performed at Third-order Class I stations along the water's edge in the project area. This satisfied the requirement for weekly critical and daily non-critical systems checks

Bottom samples obtained by the RAINIER on JD 252 were positioned via radar fixes converted to GP's.

Mini-Ranger performance was generally very good. All transponders were set up on Third-order, Class I ~~(or better)~~ geodetic stations.

H. SHORELINE

Shoreline was applied to the field sheets from enlargements of 1:20,000 scale registered shoreline map TP-01160,01159. Field edit was not conducted. Rocks, ledges, and new features located by the hydrographer are shown in red on the smooth sheet. Reference numbers for shoreline verification were used by the hydrographer.

I. CROSSLINES

A total of 15.0 nautical miles of crosslines were run during the survey, representing 8.8 % of the mainscheme mileage. Agreement of soundings at crossings was good, generally within 1 fathom and not exceeding 5 fathoms in areas of steep bottom gradients.

J. JUNCTIONS

This survey junctions to the west with contemporary survey H-10121, a 1:10,000 scale survey done in 1983. This survey also junctions to the north with RA-10-2-84, H-10155. All sounding comparisions were within 2 fathoms and contour lines continued in a smooth line with no abrupt changes.

K. COMPARISON WITH PRIOR SURVEYS

This survey was compared to the following prior surveys:

SURVEY	SCALE	YEAR
H-5103	1:20,000	1930
H-5105	1:20,000	1930

All sounding comparisons were good, within 1 or 2 fathoms, except as stated below.

H-5105

The following table shows soundings that were not in agreement and should be superseded by the present survey:

Prior Depth(fm)	Present Depth(fm)	Prior survey Location	Charted	Position Number
19	~~15~~ 14	55/50/28 131/27/40	YES	#4484/1
108	103	55/52/20 131/34/14	YES	#4365/2
7.5	~~3.5~~ 7.7	55/52/46 131/33/58	NO	#3651
* 4.6	3.7 4RK	55/51/~~47~~ 16.43 131/33/49	YES	#3271/3
11	8.~~6~~7	55/51/11 131/33/47	YES	#4097/4
10	~~3.6~~ 6.5	55/51/14 131/33/46	NO	#3571

AWOIS Item 50586, a 69 fathom depth at latitude 55/50/24.5 N and longitude 131/36/24.0 W, was verified by echo sounding. This depth is part of a slope which protrudes in this area and does not occur as shown on prior survey H-5105 (1930). Chart according to this survey.

* A dive investigation was made on this submerged rock pinnacle on JD 260.

L. COMPARISON WITH CHART

H-10154 was compared to the following:

Chart Number	Scale	Edition	Date
17422	1:79,000	6th	Aug.15,1981

Present charted soundings originate with the prior surveys discussed in section K. There are no dangers to navigation identified or reports submitted by the ship for this survey.

M. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede all prior surveys for charting purposes.

N. AIDS TO NAVIGATION

There are no Aids to Navigation within the limits of this survey.

O. STATISTICS

Sounding Vessel	Linear Nautical Miles of Hydro	Square Natical Miles of Hydro	Number of Positions
2123	90.7		~~816~~ 775
2124	44.8		~~428~~ 387
2125	-		15
2126	34.1		~~59~~ 53
TOTAL	169.6	6.50	~~1828~~ 1738

Vessel/2120 = 2

Bottom Samples: 14
Velocity Casts: 2
Tide Stations : 2

P. MISCELLANEOUS

No anomalous currents were observed or reported during this survey. No Loran-C data was collected. Bottom samples were submitted to the Smithsonian Institude.

Q. RECOMMENDATIONS

This survey is complete and no additional field work is recommended.

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished in accordance with the Hydrographic Manual (Fourth Edition), Manual of Automated Hydrographic Surveys, the PMC OPORDER, Hydrographic Survey Guidelines and the Hydrographic Data Requirements for 1984.

Soundings and positions were collected by a Hydroplot system using Hyperbolic Range/Range Hydroplot program RK 112 and Range-Azimuth Hydroplot program RK 116. Daily master tapes and corresponding corrector tapes include the TRA for the sounding vessels, electronic control baseline correctors for Mini-Ranger consoles and R/T units, and all depth corrections. Velocity tapes were generated from SV/D and Nansen cast data. The following is a list of all computer programs and version dates used for data acquisition or processing:

Number	Description	Version
RK 112	Hyperbolic, R/R Hydroplot	4/23/84
RK 116	Range-Azimuth Hydroplot	4/28/84
RK 201	Grid, Signal, and Lattice Plot	4/18/75
RK 211	Range/Range Non-Real Time Plot	2/13/84
RK 212	Visual Station Table Load	4/01/74
RK 216	Range/Azimuth Non-Real Time Plot	2/24/84
RK 300	Utility Computations	10/21/80
RK 330	Reformat and Data Check	5/04/76
PM 360	Electronic Corrector Abstract	2/02/76
RK 407	Geodetic Inverse/Direct Computation	9/25/78
AM 500	Predicted Tide Generator	11/10/72
RK 530	Layer Corrections for Velocity	5/10/76
RK 561	H/R Geodetic Calibration	12/01/82
AM 602	Elinore-Line Oriented Editor	12/08/82
AM 606	Tape Duplicator	8/22/74
AM 607	Self-Starting Binary Loader	8/10/80
RK 610	Binary Tape Duplicator	12/01/82
RK 612	Line Printer List	3/22/78
RK 900	Plot Test Tape Generator for AM902	5/07/76
RK 901	Core Check	3/01/72
AM 902	Real Time Checkout	11/10/72
DA 903	Diagnostic-Instruction Timer	2/27/76
RK 905	Hydroplot Controller Checkout	3/18/81
RK 935	Hydroplot Hardware Tests	3/15/82

The HP9815A and HP97 programmable calculators were used to compute the geographic positions of control stations.

S. REFERENCES TO OTHER REPORTS

The following reports contain information related to this survey.

Echo Sounding Report	OPR-0168-RA-84
Electronic Control Report	OPR-0168-RA-84
Horizontal Control Report	OPR-0168-RA-84
Coast Pilot Report	OPR-0168-RA-84

Respectfully submitted,

Mark H Pickett
ENS NOAA

National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

NOAA Ship FAIRWEATHER
1801 Fairview Ave. E.
Seattle, WA 98102

3 December 1984 1703-01.05

FEB 28 1985

TO : N/MOP - Robert Sandquist

FROM : S220 - Commanding Officer Christian Andreasen

SUBJECT: Special Report on Raytheon DSF-6000N Depth Sounder

As per the request from the Chief, Nautical Charting Division (N/CG2) the following special evaluation report on the DSF-6000N depth sounder has been compiled.

The Raytheon DSF-6000N depth sounders were installed on FAIRWEATHER and her survey launches on 19 September 1984. After the completion of one project these new depth sounders have proven to be both a blessing and a hinderence to operations. They are a great improvement over the older Ross fathometers previously used, however many perplexities still exist.

Operational and maintenance training on the DSF-6000N depth sounders was minimal before receiving the equipment. One to two-day classes were given to the anticipated operators and the electronic repair technicians nine to ten months before actual field use began. This time lag was due to a lack of DSF-6000N operational units for installation aboard FAIRWEATHER and our desire to continue using the Ross for the Shelikof Strait project where the bottom is characterized by extreme peaks which undoubtedly would have created problems with such a new system. In retrospect we are happy that we did so. This time lag between instruction and deployment made it difficult for personnel to begin using the system, i.e., the first couple of days in the field off Santa Barbara.

The problem was then alleviated through "in field training" furnished by LCDR Dean Seidel and Mr. Phil Libraro from the Office of Marine Operations along with EEB's Mike Webb. This additional "hands on" instruction was a great assistance to both operators and repair technicians. Procedures and problems not documented but known to these people were passed on to ship personnel.

Operational procedures for the DSF-6000N seem to be fairly well written, whereas the maintenance and repair instructions are lacking documentation. The depth sounders given to FAIRWEATHER in September were not adequately tuned (high and low receivers were misaligned) and would not have been realized by onboard Electronic Technicians since such procedures are not documented. The problem was remedied by the OMO personnel. Also, no preventive maintenance plan appears to be in existence at this time.

Difficulties encountered during field use are as follows:

1. The greatest problem experienced with the DSF-6000N echo sounders is it's inability to distinguish between fish and peaks or shoals. Schools of fish at or near the bottom present a trace that is, for all practical purposes, identical to that produced by a shoal area. Indications of shoals/peaks have appeared on sounding lines which when immediately re-run gave no evidence of the features. This will create serious problems with shoreside data processing and review in that once such a trace is recorded the natural inclination is to chart it to be "safe" unless the field unit can positively disprove the item. This is frustrating in the field and many hours have been spent running developments in order to do so. Even then some of the suspected shoals/peaks will ultimately be charted. (Examples of analog traces are attached to this report.)

2. The DSF-6000N will also digitize on small items in the water column producing a large number of missed depths. This has required additional processing hours necessary to re-scan all echo sounding data.

3. The DSF-6000N will not sound less than 0.7 to 0.9 fathoms depending on the unit. The requirement for the zero fathom curve when performing a basic hydrographic survey cannot be met with this instrument. In order to adequately develop the inshore areas, it is necessary to equip a skiff with a portable echo sounder. Since this data must be hand logged, once again processing time is increased. It is far preferable for the launches to have the capability of defining the zero fathom curve.

4. When running in shoal waters (less than five fathoms) the operator is required to raise receiver gain levels. In order to maintain a consistent bottom trace when approaching shallower depths, the gain is increased which saturates the record. This excessive noise causes difficulties in analog interpretation as well as mis-digitization of actual depth.

5. The bottom trace will vary in depth depending on the amount of receiver gain that is set on the depth sounder. This can easily be seen when recording depths in units of feet. In 10 fathoms or greater, the appearence of the erroneous trace experienced by FAIRWEATHER personnel is equivalent to that produced by the low frequency alone. The appearence was not determined for shoal waters. When the quality of the depth sounder's analog trace is poor, distinguishing between the two can be a problem.

6. No in-between sounding marks are produced by the DSF-6000N when using an ASI Logger or the on-line logger programs. This is extremely inconvenient when scanning data and inserting peaks or deeps.

7. Whenever there is inadequate space for the DSF-6000N to automatically record fix numbers such as when two fixes are taken almost simultaneously, the second fix number is not annotated by the depth sounders. This occurs quite often at the end of a sounding line. In these cases, the last fix mark should take precedence.

8. The analog trace on the data record will override the printed depth scales when the two coincide. Many times the depth scale will stop at the edge of the trace, giving the appearance of a peak. It would be more

advantageous if the scales did not print within the limits of the specified gate width.

9. The 2.5, 7.5, etc., fathom grid marks on the analog record are highlighted the same as the 5.0 fathom increment marks. This has caused many misdepths to be recorded when scaling values from the analog trace.

10. The instrument's automatic gain control does not work with the precision necessary to keep a continuous acceptable bottom trace. This requires the operator to adjust the gain when the depth varies more than 30% of the phase.

11. On the average, the auto phase control does not switch scales fast enough to prevent missed depths when operating across steep slopes. The echo sounder loses the bottom trace, causing a time consuming process (usually longer than the sounding interval) to re-establish contact.

12. Occasionally, the gate will wander away from the bottom trace for no apparent reason whether in auto or manual mode. This causes a loss of digitized depths when the trace is easily readable.

13. The LCD digital readout on the instrument is difficult to read especially when the launch cabin lighting is very bright.

14. Styluses are used up at a fast rate. A hardy stock must be kept on hand for an entire field season of use.

Electronic problems that have been encountered during times of operations have been relatively minor however, there seems to be a fair amount of time spent on maintaining and adjusting the DSF-6000N's by the Electronics Department onboard the ship. Included in these problems have been failure of low and high frequency boards, bent styluses, broken stylus belts, event marks continuously printing due to electrical shorts in the launch systems, take up mechanisms sticking, and an intermittent wavy analog trace.

In general the Raytheon DSF-6000N depth sounders have been an improvement over previous echo sounders. Operator on line annotation has significantly decreased thus fewer annotating errors have occurred. It has reduced launch personnel workload when running deep, open water areas. Time lost to bar checks has diminished since only one depth is required. Bar checks may also soon be eliminated due to the use of the depth simulators. Elimination of bar checks is valuable on line time gained. Also, if some of the above problems can be resolved, our situation of scanning fathograms will be much improved.

Basically, the DSF-6000N as a system has a lot going for it, but it is essential that we overcome the nagging problems that remain. Utmost among these is the "fish finding" aspect. It is far better to minimize the potential for false returns and minimize the necessity for re-runs/developments/sweeps/dives to disprove them than to collect them in the first place.

APPROVAL SHEET

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY

H-10154

RA-10-1-84

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, PMC OPORDER, Hydrographic Survey Guidelines, 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.

John P. Vandermeulen, CDR, NOAA
Commanding Officer
NOAA Ship RAINIER

MASTER STATION LIST
OPR-0168-RA-84
BEHM NARROWS, ALASKA

RA-10-1-84 (H-10154)

FINAL VERSION

100 1 55 50 12216 131 35 51175 250 0002 000000
/CON 1930 NGS LISTING

101 1 55 51 09986 131 33 38395 250 0001 000000
/DRESS 1930 NGS LISTING

102 1 55 51 10860 131 35 39329 250 0004 000000
/FIN 1930 NGS LISTING

103 1 55 53 28240 131 36 24290 250 0001 000000
/HASSLER 1930 NGS LISTING

109 1 55 55 20167 131 36 30035 250 0001 000000
/FOR 2 1929 NGS LISTING

111 1 55 54 45440 131 38 12198 250 0002 000000
/MY 1891 NGS LISTING

113 1 55 50 08147 131 32 35794 250 0002 000000
/SHRIMP 1930 NGS LISTING

116 1 55 50 21808 131 30 22417 250 0001 000000
/GAY 1984 RAINIER

117 1 55 49 54105 131 29 04109 250 0001 000000
/SPARKY 1984 RAINIER

118 1 55 50 15407 131 27 48598 254 0000 000000
/BOOP TP RAINIER

119 1 55 50 32672 131 27 00534 254 0003 000000
/KLU TP RAINIER

122 SWIPE Point Light
55 55 30576 131 36 47563

FIELD TIDE NOTE
RA-10-1-84
H-10154

Field tide reduction of soundings was based on predicted tides from Ketchikan, Alaska (945-0460). Corrections were obtained from Preliminary Tidal Zoning OPR-0168-RA-84. The predicted tides were derived using program AM500.

Two Bristol Bubbler tide gages were installed at two locations in the project area. Location and period of operation are as follows:

SITE	LOCATION	PERIOD
Convenient Cove	55/52.1 N 131/41.3 W	Sept.4 - Oct.17, 1984
Klu Bay	55/50.5 N 131/27.8 W	Sept.4 - Sept.20, 1984

CONVENIENT COVE used for smooth tides on H-10154

Gage (S/N 63A2921) was installed and began operation September 4, 1984. The staff was also installed and leveled September 4. Excellent records were obtained with no interuptions. The marigram reads 6.0 ft greater than the staff.

KLU BAY

Gage (SN 63A2928) was installed and levels were run September 4, 1984. No staff was installed, therefore, levels were run from reference mark BM3 to the waters edge. Excellent records were obtained with no interuptions.

LEVELS

The reference station at Ketchikan was leveled September 10, 1984. Final levels were run October 19, 1984. Initial and final levels compared very well.

Final levels on the two subordinate stations at Klu Bay and Convenient Cove were run September 20, and October 17, 1984 respectively.

DATE: 1/4/85

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Marine Center: Pacific

OPR: 0168

Hydrographic Sheet: H-10154

Locality: Gedney Pass to Shrimp Bay, Alaska

Time Period: September 5-20, 1984

Tide Station Used: 945 0807 Convenient Cove, Alaska

Plane of Reference (Mean Lower Low Water): 14.58 ft.

Height of Mean High Water Above Plane of Reference: 14.8 ft.

Remarks: Recommended Zoning:

Zone Direct

James R. Hubbard
Chief, Tidal Datums Section

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10154

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 8MK1172	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)										1
DRESS POINT										2
FIN POINT										3
GEDNEY PASS										4
HASSLER ISLAND										5
HASSLER PASS										6
KLAM CREEK										7
KLU BAY										8
KLU CREEK										9
ORCHARD CREEK										10
REVILLAGIGEDO ISLAND										11
SHRIMP BAY										12
										13
										14
										15
										16
										17
										18
					Approved:					19
										20
					Charles E. Harrington					21
					Chief Geographer			N CG2x5		22
					OCT 29 1984					23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

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

HYDROGRAPHIC SURVEY STATISTICS

H-10154

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	6
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	2

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES						
ENVELOPES						
VOLUMES	1					
CAHIERS	2					
BOXES						

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List): Chart Enlargement of Chart 17442 6th Edition August 15, 1981

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS VERIFICATION	AMOUNTS EVALUATION	AMOUNTS TOTALS
POSITIONS ON SHEET			1738
POSITIONS REVISED			
SOUNDINGS REVISED			163
CONTROL STATIONS REVISED			
	TIME-HOURS VERIFICATION	TIME-HOURS EVALUATION	TIME-HOURS TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	72.0		72
VERIFICATION OF SOUNDINGS	88.5		88.5
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET /Verification Report	30.0		30
COMPARISON WITH PRIOR SURVEYS AND CHARTS		15	15
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		24	24
GEOGRAPHIC NAMES			
OTHER* Digitizing			16
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	190.5	39	245.5

Pre-processing Examination by M. Kenny	*Beginning Date* 1/9/85	*Ending Date* 1/15/85
Verification of Field Data by R. Mueller, P. Niland	*Time (Hours)* 190.5	*Ending Date* 10/15/85
Verification Check by B.A. Olmstead, J.S. Green, J. Stringham	*Time (Hours)* 53	*Ending Date* 11/6/85
Evaluation and Analysis by G.E. Kay	*Time (Hours)* 36	*Ending Date* 11/1/85
Inspection by D.J. Hill	*Time (Hours)* 2	*Ending Date* 11/6/85

☆ U.S. GOVT. PRINTING OFFICE 1983: 764-006/6061

PACIFIC MARINE CENTER
EVALUATION REPORT
H-10154

1. INTRODUCTION

H-10154 was accomplished by the NOAA Ship RAINIER (S-221) in accordance with the following project instructions:

OPR-0168-RA-84, dated August 9, 1984
Change No. 1, dated August 17, 1984

This is a basic survey situated in the northwest area of Behm Canal, between Hassler Island and Revillagigedo Island, Alaska. H-10154 encompasses Klu Bay, which connects to Shrimp Bay and then continues westward into Gedney Pass, where it adjoins H-10121 (1983) at longitude 131°37'00" west. Eastward approximately 1.5 nautical miles from the survey limit in Gedney Pass is the entrance to Hassler Pass. This entrance is flanked by Fin Point to the west and Dress Point to the east. The survey continues north-northwestward 2.0 nautical miles where it then ends and joins H-10155 (1984) at latitude 55°53'15" north.

The area is heavily wooded with trees extending downward to the rocky shoreline. The subsurface terrain drops off quickly producing a steep gradient toward the ocean floor.

Offshore depths in the passes range from 190 fathoms in Gedney Pass to a shoal of 26 fathoms in Hassler Pass. The shoalest of the two bays is Klu Bay, with a maximum depth of 22 fathoms. Shrimp Bay is deeper and reaches a maximum depth of 84 fathoms.

Predicted tides based on Ketchikan, Alaska (945-0460) were used for field processing. Tide correctors used for the reduction of final soundings reflect approved hourly heights and are zoned directly from Convenient Cove, Alaska, (945-0807).

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The electronic correctors have been revised during office processing to reflect final baseline corrections. The revised data is listed in the smooth position/sounding printout.

The following features have been added to the smooth sheet from the field sheet without supporting positional information.

Feature	Latitude North	Longitude West
Ledge (centered at)	55°52'51"	131°35'54"
Ledge (centered at)	55°51'38"	131°33'21"

The digital file for this survey has been generated and includes categories of information required to comply with N/CG2 Hydrographic Survey Guideline No. 23, Completion of Digital Hydrographic Surveys, September 7, 1983. Certain descriptive information, however, may not be included in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Hydrographic control and positioning are adequately discussed in section F and G of the hydrographer's report and Horizontal and Electronic Control Reports for OPR-0168-RA-84.

Horizontal control station positions used during hydrography are either published or field positions based on the North American 1927 datum.

Applicable shoreline manuscripts are TP-01159 and TP-01160. These maps are registered, Class III and originate from photography dated June 1982.

3. HYDROGRAPHY

Soundings at line crossings are in good agreement.

Delineation of the bottom configuration, determination of least depths, and development of standard depth curves are adequate except for the three, two, one and zero-fathom curves which were not completely defined because of the steep, sloping bottom.

4. CONDITION OF SURVEY

The hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change 3, except as noted in the Preprocessing Examination Report, dated December 11, 1984.

5. JUNCTIONS

H-10154 junctions with the following surveys:

Survey	Year	Scale	Note	Color	Area
H-10121	1983	1:10,000	Adjoins	Violet	Southwest
H-10155	1984	1:10,000	Joins	Red	Northwest

The junction has been adequately effected with H-10155.

H-10121 has been verified and submitted to Rockville for charting. Junction comparisons were made using a copy. Soundings are in agreement but soundings were transferred from H-10121 in violet to justify depth curves in the junction area. The chart compiler should use the depth curves on H-10154 in the junction area.

6. COMPARISON WITH PRIOR SURVEYS

H-5103 (1930) 1:20,000
H-5105 (1930) 1:20,000

Present survey data generally compares well with the prior surveys. The development of prior soundings and features is adequate with the exception of a rock awash located by H-5105 at latitude 55°49'52"N, longitude 131°29'42.5"W. This feature was not verified or disproven and has been carried forward to the present survey. For additional information refer to section K of the hydrographer's report. AWOIS item #50586, a 69-fathom shoal, is adequately discussed in section K.

H-10154 is adequate to supersede the prior surveys, within areas of common coverage.

7. COMPARISON WITH CHART

Chart 17422, 6th Edition, dated August 15, 1981; scale 1:79,334.

a. Hydrography - Most charted information originates with the prior surveys discussed in section 6 of this report. Other soundings and charted features originate with miscellaneous sources not readily ascertainable. For more detail see section L of the hydrographer's report, supplemented as follows:

Charted depths greater than 17 fathoms compare well with present survey depths. Charted depths less than 17 fathoms do not compare well with present survey depths. This poor comparison is attributed to the cartographic offset of the charted depths from the shoreline due to scale and the steeply sloping bottom.

Geographic names appearing on the smooth sheet originate with this chart.

H-10154 is adequate to supersede charted hydrography within the common area.

There have been no dangers to navigation identified or reports submitted by the hydrographer or during office processing.

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

c. Aids to Navigation - There are no fixed or floating aids within the limits of this survey.

8. COMPLIANCE WITH INSTRUCTIONS

H-10154 adequately complies with the project instructions noted in section 1 of this report.

9. ADDITIONAL FIELD WORK

This is an adequate basic survey. No additional field work is recommended.

Gordon E. Kay
Cartographer

This survey has been verified and evaluated and it meets Charting and Geodetic Services standards and requirements for use in nautical charting. The survey is recommended for approval.

Dennis Hill
Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10154

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.

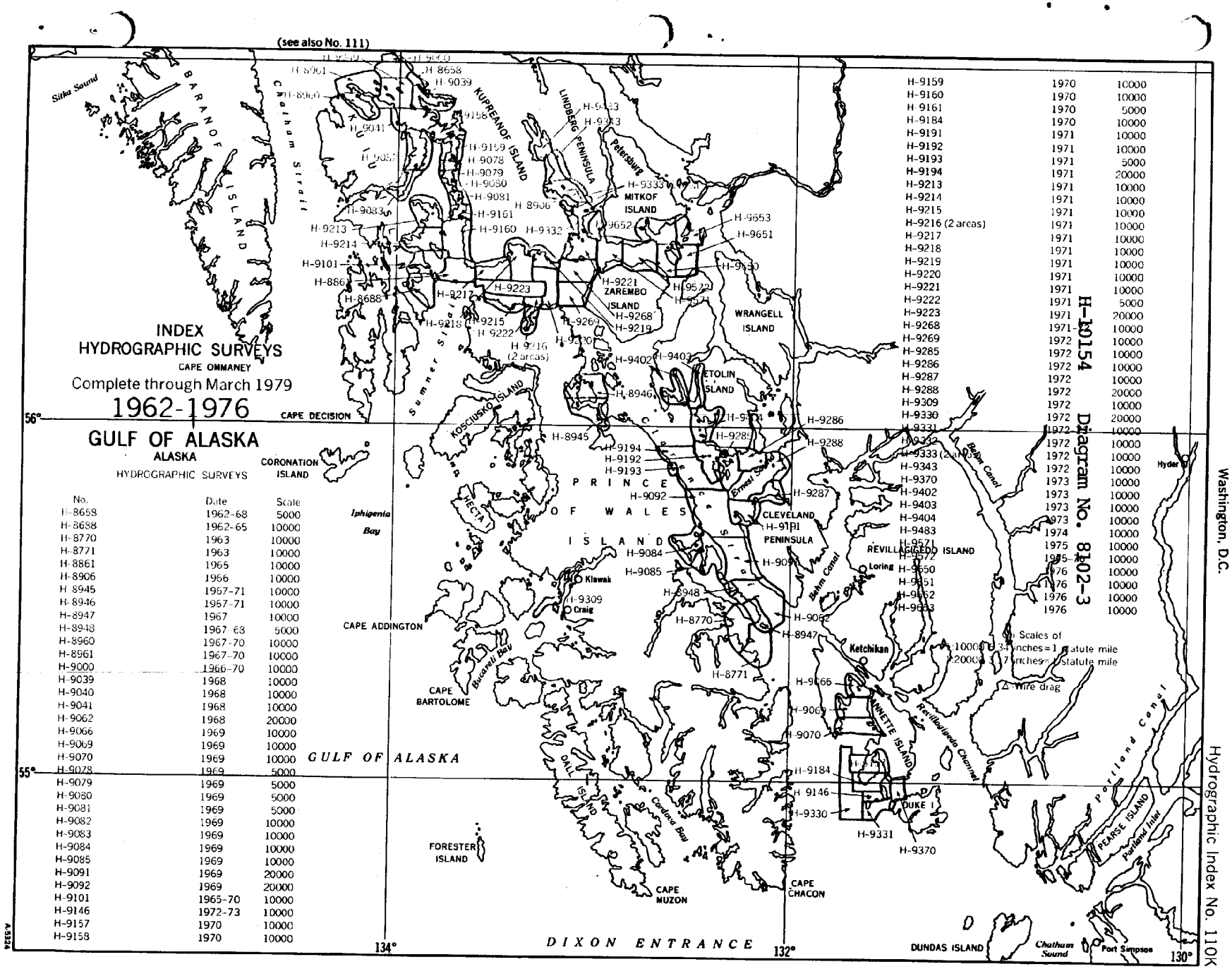
12-6-85
Chief, Nautical Chart Branch (Date)

CLEARANCE: SIGNATURE AND DATE:

N/MOP2:LWMordock 12-6-85

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.

12-6-85
Director, Pacific Marine Center (Date)



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	1957-71	10000
H-8946	1957-71	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
H-9159	1970	10000
H-9160	1970	10000
H-9161	1970	5000
H-9184	1970	10000
H-9191	1971	10000
H-9192	1971	10000
H-9193	1971	5000
H-9194	1971	20000
H-9213	1971	10000
H-9214	1971	10000
H-9215	1971	10000
H-9216 (2 areas)	1971	10000
H-9217	1971	10000
H-9218	1971	10000
H-9219	1971	10000
H-9220	1971	10000
H-9221	1971	10000
H-9222	1971	5000
H-9223	1971	20000
H-9268	1971	10000
H-9269	1972	10000
H-9285	1972	10000
H-9286	1972	10000
H-9287	1972	10000
H-9288	1972	20000
H-9309	1972	10000
H-9330	1972	20000
H-9331	1972	10000
H-9332	1972	10000
H-9333 (2 areas)	1972	10000
H-9343	1973	10000
H-9370	1973	10000
H-9402	1973	10000
H-9403	1973	10000
H-9404	1974	10000
H-9483	1975	10000
H-9571	1976	10000
H-9572	1976	10000
H-9650	1976	10000
H-9651	1976	10000
H-9652	1976	10000
H-9653	1976	10000

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

H-10154 Diagram No. 8202-3

Hydrographic Index No. 110K

A-552A

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-10154

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
17422	3/28/89	ALMACEN	Full ~~Part Before~~ After Marine Center Approval Signed Via full application of
			Drawing No. soundings from SS.
17420	3/30/89	ALMACEN	Full ~~Part Before~~ After Marine Center Approval Signed Via full application of
			Drawing No. soundings thru SS & 17422.
			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
			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
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.

Appd to Stds 1-13-86 Bgr