

# H-10047

Diagram No. 8002-2 & 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. .... RA410-4-82 .....  
Office No. .... H-10047 .....

### LOCALITY

State ..... Alaska .....  
General Locality ..... Behm Canal .....  
Locality ..... Smeaton Bay and Approaches .....

1982

CHIEF OF PARTY  
CAPT R.J. Land

### LIBRARY & ARCHIVES

DATE ..... March 19, 1984 .....

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

H-10047

ARL 11

CH 22

17434

17424

17424

16913

Received by Application

**HYDROGRAPHIC TITLE SHEET**

H-10047

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-10-4-82

State Alaska

General locality Behm Canal

Locality Smeaton Bay and Approaches

Scale 1:10,000

Date of survey 13 Sept. - 26 Sept., 1982

Instructions dated June 2, 1982

Project No. OPR-0361-RA-82

Vessel NOAA Ship RAINIER and Launches 2123, 2124, 2125, and 2126

Chief of party Capt. Ralph J. Land, NOAA

Surveyed by Lt. J. O'Clock, Lt. S. Ludwig, Ens. M. Mathwig, Ens. R. Koehler,  
Ens. B. Postle, Ens. W. Logue, Ens. J. Judson

Soundings taken by echo sounder, hand lead, ~~and~~ Ross Finline Fathometer Systems

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

*EVALUATION*

~~Plotted~~ by Gordon E. Kay

Automated plot by PMC Xynetics Plotter

Verification by John E. Lotshaw and Thelma O. Jones

Soundings in fathoms feet at MLW MLLW \_\_\_\_\_

REMARKS: Marginal notes in black were made by the evaluator

STANDARDS CK'D 3-21-84

C. Kay

AWOIS - 6/28/84 JMF

KWW 11/2/82

A. PROJECT

This Navigable Area Survey was accomplished in accordance with Project Instructions OPR-0361-RA-82, Smeaton Bay and Boca De Quadra, Alaska dated June 2, 1982; Change No. 1, dated July 28, 1982; and Change No. 2, dated August 23, 1982. ✓

B. AREA SURVEYED

The survey was conducted within the navigable areas of Smeaton Bay and its entrance. The western survey limit was defined by a line joining Point Trollop ( $55^{\circ} 18.8' N$ ,  $130^{\circ} 52.2' W$ ) and Point Nelson ( $55^{\circ} 18.1' N$ ,  $130^{\circ} 54.6' W$ ), and the eastern limit by longitude  $130^{\circ} 43' 30''$  West. The inshore limit was defined by the one fathom curve where possible. Because of the very steep inshore bottom gradient, the one fathom curve was unfeasible on several lines. However, the inshore lines were always less than 100 meters from shore, thus meeting the requirement stated in section 4.11.2.1 of the Hydrographic Manual. ✓

C. SOUNDING VESSELS

Four Hydrographic survey launches were used in conducting the survey. They were RA-3 (2123), RA-4 (2124), RA-5 (2125) and RA-6 (2126). No unusual sounding vessel configuration or problems were encountered. ✓

D. SOUNDING EQUIPMENT

Introduction

All information contained in this section is applicable to survey H-10047. 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. ✓

Sounding Equipment

Echo soundings obtained during survey H-10047 were taken by RAINIER launches RA-3, RA-4, RA-5, and RA-6 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>	<u>2126</u>
Tranceiver	1041	1080	1040	1042
Analog Recorder	1071	1046	1042	1070
Digitizer	1041	1080	1040	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>
September 20, 1982	55 <sup>0</sup> 18.7' N 130 <sup>0</sup> 54.4' W	7
September 25, 1982	55 <sup>0</sup> 20.5' N 130 <sup>0</sup> 40.2' W	7

Water samples obtained from the Nansen casts were analyzed for salinity using a Beckman model No. RS-7B 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 corrections were tabulated by inputting the Nansen cast results into computer program RK530: Velocity Correction Computations (May 10, 1976 version) which was run on the RAINIER's PDP 8/e digital computer system.

The standard velocity correctors for this survey were obtained from a graph depicting actual depths minus velocity corrections versus velocity correction and picking off depths that corresponded to standard correction intervals (see Hydrographic Manual, Fourth Edition). 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 meaningful 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 side scan sonar on this launch.

During the course of the survey, an error was detected in the length of the bar used on launch RA-6. The error indicated a 0.2 fathom difference in the historical TRA value. The bar was remarked and the bar check data on the raw printouts were corrected. *see Helicopter Report station # 2*

All smooth field sheets were 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 0.5.

### 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 to obtain new settlement and squat values for RA-3 only, after the side scan sonar equipment was installed. 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 sheets of this survey. All soundings were obtained at speeds for which the corrector equaled 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 changed. 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 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 the PMC OORDER. ✓

#### Manual Sounding Correctors

Manual soundings were obtained by use of hand-held lead lines where required. Depth markings on these lead lines were compared with a steel measuring tape prior to survey operations and were found to be accurate. ✓

#### Special Analog Interpretation Problems

Fathograms were scanned on-line and again at the end of each work day for peaks and deeps. All fathograms were scanned at least one additional time. This procedure was found to be necessary due to the abundance of side echoes caused by the steepness of the bottom topography. 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 problems may still exist in areas where side echoes were prevalent. *see Volume Report Section 4*

#### E. HYDROGRAPHIC SHEETS

Hydrographic field sheets based on a modified transverse mercator projection were prepared for this survey using the PDP 8/e Hydroplot system on board the RAINIER. A list of parameters used to define each field sheet is attached in the separates following the text. One 1:10,000 scale field sheet designated RA-10-4-82 was used to cover the survey area. Three expansion sheets were used for clarity in plotting shoal and shelf area developments. The shoalest soundings of the expansion sheets were all transferred to the 1:10,000 scale smooth sheet. ✓

Expansion sheet No. 1 is a 1:5,000 scale development of two shoal areas northwest of Carp Island. Fifty meter split development lines were run over the shoal areas to determine fathometer least depths of: 1.25 fathoms located at  $55^{\circ} 18' 02''$  N Lat.,  $130^{\circ} 53' 28''$  W Long., and 4.79 fathoms located at  $55^{\circ} 18' 07''$  N Lat.,  $130^{\circ} 53' 32''$  W Long.

Expansion Sheet No. 2 is a 1:2,500 scale development of two shoal areas to the southeast of Carp Island. Ten meter split development lines were run to define the shoal area and locate the following least depths; a fathometer least depth of 2.87 fathoms at 55° 17' 50" N Lat., 130° 53' 00" W Long., and a leadline least depth of 0.16 fathoms at 55° 17' 48" N Lat., 130° 52' 57" W Long. *Post # 3144/7*  
*Post # 6227*

Expansion Sheet No. 3 is a 1:2,500 scale development of a shoal and a shelf area in the vicinity of 55° 18' 15" N Lat., and 130° 45' 15" W Long. The shelf area, a possible anchorage site, was developed with 50 meter split lines, delineating the 40 fathom contour 0.15 NM offshore. The shoal least depth of 10.3 fathoms was determined by leadline, and located at 55° 18' 11" N Lat., 130° 45' 11" W Long. *Post # 6467*  
*10.31*

The maximum line spacing required in the Project Instructions is 200 meters, however, due to the relative narrowness of the fiord, the maximum line spacing for this survey was 100 meters. There are extremely limited anchorage areas in Smeaton Bay. Areas that indicated possible anchorages were developed to 50 meter, or less, line spacing. ✓

All data and accompanying field records were forwarded to the Pacific Marine Center, Seattle, Washington for verification.

#### F. CONTROL STATIONS

No new horizontal control stations were established. All visual and electronic control utilized existing Third Order stations on the North American 1927 Datum. The following stations were recovered for this survey:

URN 1891  
TROL 1931  
CARP 1931  
SERAG 2 1931  
~~LOP 1931~~  
REAP 2 1931  
~~FLEET 1931~~  
CHANG 1931  
SHORT 1931  
~~MID 1931~~  
TREE 2 1931  
BUOY 2 1931  
HOPE 2 1931  
NAVA 2 1931  
CLUMP 2 1931  
HOOP 2 1931  
TEAM 2 1931

G. HYDROGRAPHIC POSITION CONTROL

Electronic range/range and range/azimuth methods were used for hydrographic position control. Motorola Miniranger III positioning systems and Wild Theodolites were used. The tables below summarize the location of all miniranger mobile and shore equipment.

TABLE I

Miniranger Mobile Equipment

<u>Vessel</u>	<u>Console S/N</u>	<u>R/T S/N</u>
2123	720	2710
<del>2124</del>	30269	1636
2125	715	1557
2126	711	1646

TABLE II

Miniranger Shore Equipment

<u>Code</u>	<u>Transponder S/N</u>	<u>Station Number</u>
* A	1573	100
B	4951	100
C	1628	100, 101, 102, 103
D	1569	110
E	911721	112
F	911711	102, 107, 112
O	911632	102, 103, 104, 107
I	C1680	105

\* Magnetron failure on JD 256. Repaired and awaiting calibration.

Although ending baseline calibrations were not used for smooth plotting, ending calibrations were conducted at a later date. For more information concerning initial and ending calibrations, refer to the Electronic Control Report OPR-0361-RA-82.

Miniranger Calibration and System Check

System checks were performed daily. These checks were completed by observing horizontal sextant angles to visible Third Order, Class I or better geodetic stations. On JD 268 survey launches RA-4 (2124) and RA-6 (2126) performed static calibrations. This was accomplished



at high water when the launches came alongside a calibration signal. Several readings were compared to the inverse distance between the calibration station and the miniranger station. The launch R/T unit was less than one meter from the station.

Miniranger baseline calibrations for this survey were performed on August 30, 31 and September 1, 1982. These calibrations took place at Sand Point, Seattle, Washington. 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. ✓

#### Miniranger Performance

All shore stations were positioned on Third Order, Class I or better geodetic control stations. Power was supplied by two or four 12-volt batteries connected in series and/or parallel. 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. Therefore, on the final smooth sheet it was necessary to adjust sounding positions. It is difficult to determine whether shoreline discrepancies are the result of the inaccuracies inherent in the enlargement processes or misrepresentation of actual features. In at least one case, where the current chart No. 17424, Fifth Edition, August, 1977, shows two small islets and a rock to the west of Carp Island, and the transferred shoreline shows three small islets, neither of the representations are correct. There are three small islets but their positions are in error.

Another major error was noted on the U.S. Geological Shoreline Sheets. The bottom characteristic chart symbol, "rky" was misinterpreted as a "rock awash" (\*) symbol, and was transferred as such to the shoreline manuscripts. These "rock awash" symbols were deleted from the smooth field sheets. There are many other similar discrepancies and it is recommended that the shoreline be updated with photogrammetry in the near future. ✓

*see Evaluation Report Section 6*

## I. CROSSLINES

A total of 19.1 nautical miles of crosslines were run during the survey, representing 17.1% of the mainscheme mileage. Of 85 crossline to mainscheme sounding comparisons, 95% were within the comparison criterion limits, as stated in Section 1.1.2, Part B.II.1 of the Hydrographic Manual. The maximum comparison discrepancies were three to five fathoms located inshore in areas of steep gradient. ✓

## J. JUNCTIONS

This survey junctions with one contemporary survey; H-10048, 1:10,000 to the east. Of 14 sounding comparisons with H-10048, 78% meet the comparison criteria referenced in Section I. Comparisons were not in agreement in areas of steep gradient, differing by as much as 14 fathoms. In all areas without closely spaced depth contours, the comparisons showed excellent agreement. ✓

## K. COMPARISON WITH PRIOR SURVEYS

H-10047 was compared to the following prior surveys; H-5176 at 1:20,000 (1931), and H-5205 at 1:20,000 (1931). Both prior surveys were enlarged to 1:10,000 scale for comparison purposes.

### H-5176

Of 15 sounding comparisons, 100% meet the Hydrographic Manual comparison criteria. The 20 and 50 fathom contour lines in the vicinity of Carp Island show excellent agreement. *see Evaluation Report section 6*

### H-5205

Of 89 sounding comparisons, 67% meet the Hydrographic Manual comparison criteria. Agreement was generally not good due to comparison discrepancies in inshore areas of steep gradient. The steepness of inshore ledges throughout the survey area within Smeaton Bay belies the use of the 1.5 fm allowable horizontal displacement criterion for sounding comparisons. It is virtually impossible to make a definitive statement on nearshore sounding comparisons. *see Evaluation Report section 6*

## L. COMPARISON WITH THE CHART

The survey was compared to enlargements, to 1:10,000, of NOS Charts; No. 17424, Fifth Edition, August 1977 and No. 17434, Ninth Edition, February 1981. The following discussion pertains directly to Chart No. 17424 but applies equally to Chart No. 17434 as the representation of the survey area on the two charts is identical. In general, the

comparison between H-10047 and charted soundings showed good agreement except in nearshore areas where steep gradients and the distortion of the chart enlargements invalidate sounding comparisons. Both the 100 fm contour in Smeaton Bay and the 20 fm contour in the region of Carp Island show good agreement with the charted contours.

The following sounding comparison discrepancies were noted in areas where bottom gradients should not have affected the comparisons:

No. 17424 Charted Depth	<i>Post #</i>	Location	H-10047 Survey Depth	Comments
21 fm	<i>4081/6</i>	55° 17.9' N 130° 52.3' W	31 fm	The charted sounding is in the vicinity of an 18 fm sounding displaced .04 NM south and should be changed to reflect the shoaler depth.
5½ fm	<i>3995/7</i>	55° 18.1' N 130° 53.6' W	Shoal least depth 4.7 <sup>9</sup> fm at 55° 18.1' N, 130° 53.5' W.	
2½ fm	<i>4081/1</i>	55° 18.1' N 130° 53.4' W	Shoal least depth of 1.2 <sup>1.3</sup> fm at 55° 18.0' N, 130° 53.4' W.	
150 fm	<i>6097/2</i>	55° 18.1' N 130° 47.7' W	138 fm	Replace 150 fm.
136 fm	<i>6122/3</i>	55° 18.1' N 130° 47.1' W	132 fm	Replace 136 fm.
150 fm	<i>6593/7</i>	55° 18.2' N 130° 43.6' W	145 fm	Replace 150 fm.

*See Evaluation Report section 6*

In addition, there are two least depths in shoal areas developed during the survey which should be added to the chart; a 2.67 fm sounding located at 55° 17' 50" N, 130° 53' 00" W, and a ~~0.0~~ 0.1 fm sounding located at 55° 18' 11" N, 130° 45' 11" W. *Post # 4467*

There are three charted rocks which were not found during the survey. One rock charted at 55° 17' 50" N, 130° 53' 50" W is *Post # 6211* located at a H-10047 survey depth of 0.3 fm and should have been apparent at low tides but was not found. A rock charted at 55° 17' 48" N, 130° 52' 57" W was developed as a shoal (Expansion sheet No. 2) with a least depth of 0.4 fm at the same position, the charted rock should be replaced by the shoal sounding. A rock charted at 55° 17' 44" N, 130° 51' 27" W was not found except as a possible shoal sounding displaced 0.04 NM to the east at a *Post # 3012/1* least depth of 0.9 fm. All other charted rocks were located, although their positions may be slightly displaced from the charted location as noted in Project Instructions OPR-0361-RA-82, Change No. 1, Para. 4, dated July 28, 1982.

M. ADEQUACY OF SURVEY

This survey is complete and sufficient to supercede all prior surveys for charting purposes. ✓

N. AIDS TO NAVIGATION

There are no floating or fixed aids to navigation in the survey area. ✓

O. STATISTICS

<u>Survey Launch</u>	<u>Linear Nautical Miles</u>	<u>Square Nautical Miles</u>	<u>Number of Positions</u>
RA-3 (2123)	37.2	---	<del>336</del> 299
RA-4 (2124)	21.2	---	<del>208</del> 187
RA-5 (2125)	4.0	---	<del>82</del> 78
RA-6 (2126)	65.0	---	<del>643</del> 628
TOTAL	127.4	4.75	<del>1269</del> 1186

BOTTOM SAMPLES: 27

P. MISCELLANEOUS

In response to section 8.2.2. of the Project Instructions, currents were visually noted throughout the survey. It is estimated that between 0.5 and 1.0 knots of current run with the flood and ebb in Smeaton Bay. One exception is near the mouth of Smeaton Bay where the surface current appears to always be in the direction of the ebb, due possibly to fresh water runoff out of the bay. ✓

No anomalies from the Tidal Current Tables were evident at the four stations noted in the Project Instructions.

Q. RECOMMENDATIONS

It is recommended that the shoreline within the survey area be recompiled, and that in the future any enlargements forwarded to the ship for shoreline transfer<sup>should</sup> be at the scale of the survey to which they apply. ✓

R. AUTOMATED DATA PROCESSING

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

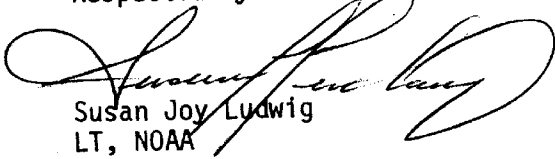
The HP97 and HP9815A programmable calculators were used to compute geographic positions of electronic control stations and visual signals for calibrations.

#### 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,



Susan Joy Ludwig  
LT, NOAA

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PARAMETER TAPE LISTING  
RA-10-4-82 (H-10047)

RA-10-4-82  
SKEW: 0,19,52  
SCALE: 1:10,000

FEST=30000  
CLAT=6086000  
CMER=130/50/0  
GRID=30  
PLSCL=10000  
PLAT=55/17/00  
PLON=130/55/00  
VESNO=2123  
YR=82  
ANDIST=0.0

EXPAN NO. 1  
SKEW: 35,4,4  
SCALE: 1:5,000

FEST=30000  
CLAT=6086000  
CMER=130/50/0  
GRID=15  
PLSCL=5000  
PLAT=55/17/56  
PLON=130/53/38  
VESNO=2123  
YR=82  
ANDIST=0.0

EXPAN NO. 2  
SKEW: 333,4,6  
SCALE: 1:2,500

FEST=30000  
CLAT=6086000  
CMER=130/50/0  
GRID=10  
PLSCL=2500  
PLAT=55/17/43  
PLON=130/53/09  
VESNO=2123  
YR=82  
ANDIST=0.0

EXPAN NO. 3  
SKEW: 0,8,9  
SCALE: 1:2,500

FEST=30000  
CLAT=6086000  
CMER=130/50/0  
GRID=10  
PLSCL=2500  
PLAT=55/18/07  
PLON=130/45/38  
VESNO=2123  
YR=82  
ANDIST=0.0



### FIELD TIDE NOTE

Field tide reduction of soundings for H-10047 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.  $55^{\circ} 19.95' N$ , Long.  $131^{\circ} 37.5' W$ , was leveled on October 2, 1982. These levels agreed with the historical record.

Two subordinate tide stations provided data for survey H-10047. The Wilson Arm gage (945-0475), Lat.  $55^{\circ} 22.5' N$ , Long.  $130^{\circ} 37.7' W$ , was installed on September 13, 1982. Initial and final levels for this gage were run on September 13, 1982 and September 25, 1982, covering the period of hydrography. The staff value of the zero line on the tide record was -7.2 feet and the time meridian for records annotation was  $0^{\circ}$  (UTC).

The RAINIER hired a tide observer for this gage since the ship left the Smeaton Bay working area before the thirty day time period elapsed. A gage malfunction occurred on October 4, 1982, which the tide observer was unable to fix, and due to poor communications, the RAINIER was not notified until 11 days later. The Wilson Arm gage was intended to be a thirty day gage, however, only twenty-two days of data were recoverable from the gage.

The tide gage at the entrance to Smeaton Bay (945-0435), Lat.  $55^{\circ} 17.6' N$ , Long.  $130^{\circ} 51.3' W$ , was installed on September 11, 1982. Initial and final levels were run on September 12, 1982 and September 24, 1982, covering the period of hydrography. This gage was left on line during the entire Smeaton Bay project, and allowed to run after the RAINIER left the area, to provide additional data. For this gage, the staff value of the zero line on the tide record was -9.8 feet and the time meridian for records annotation was  $0^{\circ}$  (UTC).

DATE: December 20, 1982

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): 945-0435 Short Point, Smeaton Bay, Alaska  
945-0475 Smeaton Bay, Wilson Arm, Alaska

Period: September 13-26, 1982

HYDROGRAPHIC SHEET: H-10047

OPR: 0361

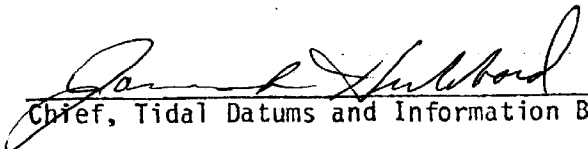
Locality: Smeaton Bay, Alaska

Plane of reference (mean lower low water): 945-0435 = -4.05 ft.  
945-0475 = 0.96 ft.

Height of Mean High Water above Plane of Reference is 945-0435 = 14.4 ft.  
945-0475 = 14.2 ft.

REMARKS: ~~Recommended~~ Zoning:

1. West of longitude 130°45' zone direct on 945-0435, Short Point, Smeaton Bay, Alaska.
2. East of 130°45'
  - a. south of latitude 55°19' zone direct on 945-0435, Short Point, Smeaton Bay, Alaska.
  - b. north of 55°19' zone direct on 945-0475 Smeaton Bay, Wilson Arm, Alaska.

  
Chief, Tidal Datums and Information Branch

GEOGRAPHIC NAMES

H-10047

Name on Survey  
ALASKA, BEHM CANAL  
SMEATON BAY AND APPROACHES

ON CHART NO. 17434  
17474  
ON PREVIOUS SURVEY NO.  
D FROM U.S. QUADRANGLE MAPS  
E FROM LOCAL INFORMATION  
F ON LOCAL MAPS  
G P.O. GUIDE OR MAP  
H GRAND McNALLY ATLAS  
K U.S. LIGHT LIST

	A	B	C	D	E	F	G	H	K	
ALASKA (Title)										1
BEHM CANAL	X									2
CARP ISLAND	X									3
POINT TROLLOP	X									4
SHORT POINT	X									5
SMEATON BAY	X									6
										7
										8
										9
										10
										11
										12
										13
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										25

Approved:

*Charles E. Harrington*  
Chief Geographer - N/C42x5

29 JULY 1983

MASTER STATION LIST  
OPR-0361-RA-82  
SMEATON BAY AND BOCA DE QUADRA, ALASKA

FINAL VERSION

100	3	55	18	59399	130	57	33653	250	0029	000000	
/URN 1891											
NGS COMPUTER LISTING											
101	6	55	18	01097	130	53	07831	250	0000	000000	
/CARP 1931											
NGS COMPUTER LISTING											
102	2	55	18	47447	130	52	06313	250	0000	000000	
/TROL 1931											
NGS COMPUTER LISTING											
103	6	55	17	44489	130	51	34500	250	0000	000000	
/SERAG 2,1931											
NGS COMPUTER LISTING											
104	3	55	18	05829	130	49	46919	250	0000	000000	
/HOOP 2,1931											
NGS COMPUTER LISTING											
105	6	55	17	33019	130	48	50499	250	0000	000000	
/REAP 2,1931											
NGS COMPUTER LISTING											
106	1	55	18	25978	130	47	20910	250	0000	000000	
/CLUMP 2,1931											
NGS COMPUTER LISTING											
107	6	55	17	48729	130	47	36352	250	0000	000000	
/CHANG 1931											
NGS COMPUTER LISTING											
108	6	55	17	50411	130	46	47888	250	0000	000000	
/SHORT 1931											
NGS COMPUTER LISTING											
109	1	55	18	44690	130	45	47292	250	0000	000000	
/NAVA 2,1931											
NGS COMPUTER LISTING											
110	6	55	18	09530	130	45	05415	250	0000	000000	
/TEAM 2,1931											
NGS COMPUTER LISTING											
111	1	55	18	21437	130	43	33580	139	0000	000000	
/HOPE 2,1931											
NGS COMPUTER LISTING											
112	6	55	18	08913	130	42	27621	250	0000	000000	
/BOUY 2,1931											
NGS COMPUTER LISTING											

113 3 55 18 44899 130 42 45931 <sup>139</sup> 250 0000 000000  
/NEAP 2,1931 NGS COMPUTER LISTING

114 3 55 19 22545 130 42 17910 <sup>139</sup> 250 0000 000000  
/COY 2,1931 NGS COMPUTER LISTING

~~115 3 55 20 06103 130 41 48990 139 0000 000000~~  
~~/HELP 1931 NGS COMPUTER LISTING~~

~~116 3 55 20 03616 130 41 21910 250 0000 000000~~  
~~/NET 2,1931 NGS COMPUTER LISTING~~

~~117 1 55 21 02811 130 40 00410 250 0000 000000~~  
~~/TON 1931 NGS COMPUTER LISTING~~

~~118 3 55 21 11236 130 39 24345 139 0000 000000~~  
~~/ROUND 1931 NGS COMPUTER LISTING~~

~~119 2 55 19 11876 130 50 56017 250 0000 000000~~  
~~/SME RM 1~~

120 3 55 21 48628 130 38 48603 <sup>139</sup> 250 0000 000000  
/ASP 2,1931 NGS COMPUTER LISTING

121 1 55 22 19602 130 37 56940 <sup>139</sup> 250 0000 000000  
/FINAL 1931 NGS COMPUTER LISTING

~~122 4 55 19 20993 130 41 06881 250 0001 000000~~  
~~/EVEN 1931 NGS COMPUTER LISTING~~

~~123 7 55 20 27512 130 39 43215 250 0000 000000~~  
~~/STOP 1931 NGS COMPUTER LISTING~~

~~124 4 55 21 42914 130 38 05366 250 0000 000000~~  
~~/QUAD 1931 NGS COMPUTER LISTING~~

125 7 55 19 56757 130 40 42143 <sup>139</sup> 250 0000 000000  
/ARM 2 1931 NGS COMPUTER LISTING

200 6 55 17 54815 130 43 02270 139 0000 000000  
/TREE 2 1931 NGS COMPUTER LISTING

TRA (TC/TT) TAPE: VESSEL 2123 (RA-3) SURVEY RA-10-4-82 (A-10047) PATHOMETER S/N 1046 YR 82 PAGE 1 OF 1

From TIME	TRA CORR.	DAY	VEL. TBL.	TRA corr. is the algebraic sum of these columns				COMMENTS	
				INITIAL	SCALE-PHASE	DRAFT	F. ARC		S./ SQUAT
195922	0.54	257	7	0.0	0.0	0.5	0.0	0.0	HYDRO BEGINS.
170027	0.0	264	0	0.0	0.0	0.0	0.0	0.0	D.P ON ROCK
170724	0.54	264	7	0.0	0.0	0.5	0.0	0.0	HYDRO
190439	0.0	264	0	0.0	0.0	0.0	0.0	0.0	D.P ON ROCKS.
202042	0.54	264	7	0.0	0.0	0.5	0.0	0.0	HYDRO
232700	0.54	264	7	0.0	0.0	0.5	0.0	0.0	HYDRO ENDS.

3-32



TRA (TC/TI) TAPE: VESSEL 2125(RA-S) SURVEY PA-10-4-82 FATHOMETER S/N 1071 YR 82 PAGE 1 OF    

FROM TIME	TRA CORR.	DAY	VEL. TBL.	TRA CORR. IS THE ALGEBRAIC SUM OF THESE COLUMNS				COMMENTS	
				INITIAL	SCALE-PHASE	DRAFT	F. ARC		S./ SQUAT
204130	0.0	256	0	0.0	0.0	0.0	0.0	0.0	BOTTOM SAMPLES
213440	0.3	263	7	0.0	0.0	0.3	0.0	0.0	HYDRO
161213	0.0	264	0	0.0	0.0	0.0	0.0	0.0	BOTTOM SAMPLES
163000	0.0	265	0	0.0	0.0	0.0	0.0	0.0	" " END.





VELOCITY CORRECTOR TAPE LISTING  
RA-10-4-82(H-10047)  
RA-10-5-82(H-10048)

TABLE NO.7

UNIT - FATHOMS

000040	0	0000	0007	001	000000	000000
000125	0	0001				
000215	0	0002				
000310	0	0003				
000410	0	0004				
000515	0	0005				
000625	0	0006				
000740	0	0007				
000860	0	0008				
000970	0	0009				
001080	0	0010				
001400	0	0012				
001600	0	0014				
001785	0	0016				
001985	0	0018				
002160	0	0020				
999999	0	0022				

ABSTRACT OF POSITIONS  
RA-10-4-82 (H-10047)

VESSEL: 2124 (RA-4)

ANDIST: 0.0

<u>DAY</u>	<u>POSITIONS</u>	<u>CTRL</u>	<u>S1 M S2</u>	<u>REMARKS</u>
256	4000-4038	11	100-R/AZ	Mainscheme Hydro. Pos. 4014-4016, 4028-4032 Inside Expansion No. 1, Scale 1:5,000. Pos. 4033 Duplicate Same Position this Julian Day.
258	4161-4245	11	104-R/AZ	Mainscheme Hydro. Pos. 4039-4160 was used by 2123 (RA-3) on JD 257.
259	4246-4253	04	105-104	Shoreline.
268	4254-4271	11	107-R/AZ	Development Lines on Expansion No.3, Scale 1:2,500.
268	4272-4289	11	107-R/AZ	Radial Crosslines. Pos. 4272-4279 Inside Expansion No.3.
269	4290-4329	11	102-R/AZ	Split Lines.

REJECTED POSITIONS: 4004-4012; 4018-4025; 4039-4160 (NOT USED BY RA-4 (2124)); 4194 (NOT USED); 4226; 4326.

VESSEL: 2123 (RA-3)

ANDIST: 0.0

<u>DAY</u>	<u>POSITIONS</u>	<u>CTRL</u>	<u>S1 M S2</u>	<u>REMARKS</u>
257	4040-4160	11	101-R/AZ	Mainscheme Hydro. Pos. 4046-4047 Inside Expansion No. 1, Scale 1:5,000.
258	3000-3052	11	101-R/AZ	Mainscheme Hydro.
258	3053-3074	11	101-R/AZ	Crosslines.
258	3075-3108	11	100-R/AZ	Mainscheme Hydro. Pos. 3107-3108 Inside Expansion No. 1.
259	3113-3131	11	102-R/AZ	Shoreline.
264	3132-3140	11	102-R/AZ	Mainscheme Hydro.
264	3141	11	102-R/AZ	D.P. on Rock.
264	3142-3151	11	102-R/AZ	Crosslines. Pos. 3146-3150 Inside Expansion No.2.
264	3152-3155	11	100-R/AZ	D.P. on Rocks.
264	3156-3199	11	100-R/AZ	Mainscheme Hydro. Pos. 3163-3164, 3167-3169, 3171-3173, 3187-3189, 3190-3195, 3198-3199 Inside Expansion No. 1.
264	3201-3217	11	103-R/AZ	Mainscheme Hydro.

REJECTED POSITIONS: 4039; 4099-4101; 3079-3104; 3109-3112; 3183-3186; 3200; 3205-3207.

ABSTRACT OF POSITIONS  
RA-10-4-82 (H-10047)

VESSEL: 2126 (RA-6)

ANDIST: 0.0

<u>DAY</u>	<u>POSITIONS</u>	<u>CTRL</u>	<u>S1 M S2</u>	<u>REMARKS</u>
263	6000-6054	11	104-R/AZ	Mainscheme Hydro.
264	6055-6104	11	104-R/AZ	Mainscheme Hydro pos. 6104 duplicate position.
264	6104-6105	11	104-R/AZ	D.P. on rock. Pos. 6104-6105 are duplicate positions.
264	6105-6144	11	104-R/AZ	Mainshceme Hydro.
264	6145-6181	11	104-R/AZ	Crossline.
264	6182-6192	11	104-R/AZ	Mainscheme Hydro.
264	6193-6210	11	104-R/AZ	Crosslines.
265	6211-6216	11	102-R/AZ	Mainscheme Line.
265	6217-6226	11	102-R/AZ	Development Lines. Expansion No. 2.
265	6227	11	102-R/AZ	Leadline D.P. on Shoal.
265	6228-6243	11	102-R/AZ	Development Lines. Expansion No. 1, Scale 1:5,000. Position 6242 is a duplicate position.
265	6244-6248	11	102-R/AZ	Crossline.
265	6249-6300	11	103-R/AZ	Crossline. Pos. 6256-6259 inside Expansion No. 3.
265	6301-6303	11	104-R/AZ	Mainschem Line.
265	6304-6332	11	104-R/AZ	Radial Crosslines.
265	6333-6340	11	104-R/AZ	Split Lines.
265	6341-6346	11	104-R/AZ	Crossline.
266	6347-6354	11	103-R/AZ	Mainscheme Line.
266	6355-6420	11	107-R/AZ	Mainscheme Lines.
266	6421-6424	11	107-R/AZ	D.P. on Rocks.
267	6425-6430	11	107-R/AZ	Mainscheme Line.
267	6431-6441	11	107-R/AZ	Crosslines.
267	6442-6466	11	107-R/AZ	Mainscheme Lines. Pos. 6442-6443, 6449-6450, 6452-6455, 6460-6466 inside Expansion No. 3.

VESSEL: 2126 (RA-6)

ANDIST: 0.0

<u>DAY</u>	<u>POSITIONS</u>	<u>CTRL</u>	<u>S1 M S2</u>	<u>REMARKS</u>
267	6467	11	107-R/AZ	Leadline D.P. inside Expansion No.3.
267	6468-6473	11	107-R/AZ	Development Lines. Expansion No. 3.
267	6474-6529	11	107-R/AZ	Mainscheme Lines.
267	6530-6568	11	107-R/AZ	Crosslines.
268	6589-6643	11	112-R/AZ	Mainscheme Lines. Pos. 6643 is a Duplicate Position.
268	6643-6663	11	112-R/AZ	Crosslines.

REJECTED POSITIONS: 6002; 6006; 6010; 6019; 6024; 6028; 6033; 6038;  
6079; 6167-6174; 6569-6588 (NOT USED).

VESSEL: 2125 (RA-5)

ANDIST: 0.0

<u>DAY</u>	<u>POSITIONS</u>	<u>CTRL</u>	<u>S1 M S2</u>	<u>REMARKS</u>
256	5000-5002	04	101-100	Bottom Samples.
256	5003-5007	04	102-106	- do -
257	5008-5010	04	108-105	- do -
257	5011-5013	04	108-106	- do -
257	5014-5015	04	110-109	- do -
258	5016	04	112-110	- do -
263	5017-5039	11	102-R/AZ	Mainscheme Hydro. Pos. 5023-5027; 5031-5035 Inside Expansion No.2.
263	5040-5056	11	102-R/AZ	Shoreline.
263	5057-5068	11	102-R/AZ	Crosslines. Pos. 5060-5061 Inside Expansion No. 2.
263	5069-5071	11	102-R/AZ	Mainscheme Hydro.
264	5072-5075	04	102-103	Bottom Samples.
264	5076-5077	04	108-105	- do -
264	5078	04	108-109	- do -
265	5079-5081	04	108-109	- do -

1672

NOAA FORM 75-44 (11-72)		OCEANOGRAPHIC LOG SHEET - M BOTTOM SEDIMENT DATA										U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		
SERIAL NO.	DATE	PROJ. NO.		YEAR	CHECKED BY		DATE CHECKED	REMARKS (Unusual conditions, observations, depth of cutter, stat. no., type of bottom relief, i.e., slope, plain, disposition, etc.)	FIELD DESCRIPTION	COLOR OF SEDIMENT	LENGTH OF CORE	AP. PROX. PENETRATION	WEIGHT OF SAMPLER	OR. INIT.
		LATITUDE	LONGITUDE		DEPTH (Fathoms)	DEPTH								
2125	(AA-5)	OPR-P0361-AA-82		1982	AA-10-4-82									
		55°N	130°W											
5000	9/13/82	18/38.41	52/17.46	92.7	45/16		gn	crs P, M						J.W.
5001	"	18/17.95	51/12.23	98.8	"		gn	M						"
5002	"	17/55.14	52/00.75	69.8	"		gn	fine S						"
5003	"	18/09.34	53/44.01	37.1	"		gn	fine S, M						"
5004	"	17/46.42	50/44.28	41.8	"		gn	fine S, M						"
5005	"	17/57.89	49/45.60	77.6	"		gn	fine S, M, crs P						"
5006	"	17/46.14	49/29.10	59.0	"		gn	fine S, crs P						"
5007	"	17/42.35	48/44.11	49.6	"		gn	fine S						"
5008	9/14/82	18/17.17	48/14.81	76.6	"		gn	fine S, crs P, M						"
5009	"	17/51.83	47/39.45	28.3	"		gn	fine S						J.J.
5010	"	18/25.50	47/00.53	79.6	"		gn	M, fine S						"
5011	"	18/00.49	46/11.72	88.3	"		gn	M, fine S						"
5012	"	18/36.39	46/15.55	82.3	"		gn	M, fine S						"
5013	"	18/14.80	45/10.29	29.2	"		gn	fine S, med P						"
5014	"	18/38.35	44/22.56	97.4	"		gn	fine S, M						"
5015	"	17/55.40	43/49.81	53.2	"		gn, bk	fine S, crs P, crs S, M						"
5016	9/15/82	18/17.25	43/42.50	100.8	"		gn	fine S						"

Use more than one line per sample if necessary.

2 of 2

NOAA FORM 75-44 (11-72)		U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION										
OCEANOGRAPHIC LOG SHEET - M BOTTOM SEDIMENT DATA												
VESSEL	DATE	PROJ. NO.	YEAR		DEPTH	WEIGHT ON SAMPLER	AP. PENETRATION	LENGTH OF CORE	COLOR OF SEDI- MENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, depth cutter, size, no., type of bottom relief, etc., slope, plate, disposition, etc.)	OBS. INIT
			DEPTH (Fathoms)	YEAR								
SERIAL NO.	LATITUDE	LONGITUDE	DEPTH	YEAR	DEPTH	WEIGHT	AP.	LENGTH	COLOR	FIELD DESCRIPTION	REMARKS	OBS.
2125	1982	099-P0361-RA-82	1982	1982	99.0	45.16			gn	M	not plotted see log # 5072	JJ.
5072	9/21/82	18/42.80	52/20.91	1982	99.0	45.16			gn	M		
5073	"	18/15.72	53/09.48	1982	91.0	"			gn	M, P, S		"
5074	"	17/43.07	51/08.78	1982	57.8	"			gn	med P. fine spk S		"
5075	"	17/56.97	50/44.95	1982	77.3	"			gn	M, S, St, P		"
5076	"	18/05.59	49/21.17	1982	60.4	"			gn	M, S		"
5077	"	18/19.40	47/51.78	1982	70.9	"			gn	M, St, P		"
5078	"	18/20.31	45/06.21	1982	81.5	"			gn	M, fine P, S	not plotted see log # 5013	"
5079	9/22/82	18/20.29	45/28.28	1982	64.1	"			gn	fine spk S, sml Sh	" " " " #5081	"
5080	"	18/20.17	45/32.37	1982	69.2	"			gn	M, spk S, P	marked and displaying organic material	"
5081	"	18/19.58	45/28.89	1982	59.2	"			gn	M, fine spk S, sml Sh	marked and displaying organic material	"

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2123

SHEET : RA-10-4-82

TIME	DAY	PATTERN 1	PATTERN 2
		-00001	
195922	257	+00000	-07201
234600		+00000	+00000
164836	258	+00000	-10175
231600		+00000	+00000
175056	259	+00000	+78328
180500		+00000	+00000
164130	264	+00000	-86072
170027		+00000	-71133
170724		+00000	-57033
190439		+00000	+96160
202042		+00000	+96362
230314		+00000	+55005
232700		+00000	+00000
		-10001	

FOR RANGE AZIMUTH HYDRO DISREGARD PATTERN 2 CORRECTORS.



ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2124

SHEET : RA-10-4-82

TIME	DAY	PATTERN 1	PATTERN 2
203401	256	+00002	+96511
230700		+00000	+00000
191841	258	+00001	-12097
234800		+00000	+00000
170553	259	+00001	+00001
211948	268	+00002	-44109
222200		+00000	+00000
172823	269	+00002	-72013
190500		+00000	+00000

FOR RANGE AZIMUTH HYDRO DISREGARD PATTERN 2 CORRECTORS.

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2125

SHEET : RA-10-4-82

TIME	DAY	PATTERN 1	PATTERN 2
204130	256	+00000	+00000
201721	257	+00000	+00000
225104	258	+00001	+00002
161213	264	+00000	+00000
164845		+00000	+00001
171535		+00000	+00000
155704	265	+00000	+00000
213440	263	+00000	-72547
232500		+00000	+00000

ABOVE CORRECTORS ARE FOR BOTTOM SAMPLES AND RANGE  
 AZIMUTH HYDRO. DISREGARD PATTERN 2 CORRECTORS FOR  
 R/AZ CONTROL.

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2126

SHEET : RA-10-4-82

TIME	DAY	PATTERN 1	PATTERN 2
214752	263	-00004	-56000
233000		+00000	+00000
162937	264	-00004	+90415
191200		-00004	+25287
194441		-00004	+57050
231000		+00000	+00000
161023	265	-00004	-52308
171242		-00004	-31582
180433		-00004	-61000
201348		-00004	-53043
213623		-00004	-15263
224800		+00000	+00000
163735	266	-00003	-89314
214008		-00003	-82150
225000		+00000	+00000
161420	267	-00004	-29177
174233		-00004	-78561
175455		-00004	-78563
214000		+00000	+00000
171946	268	-00004	-48337
211100		+00000	+00000

FOR RANGE AZIMUTH HYDRO DISREGARD PATTERN 2 CORRECTORS.

APPROVAL SHEET

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY

H-10047

RA-10-4-82

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, PMC OORDER, Hydrographic Survey Guideline, 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  
Captain, NOAA  
Commanding Officer

HYDROGRAPHIC SURVEY STATISTICS

H-10047

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		4	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		10	
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1					
VOLUMES						
BOXES						

T-SHEET PRINTS (List) N/A

SPECIAL REPORTS (List) N/A

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			1186
POSITIONS CHECKED		1186	1186
POSITIONS REVISED		1444	1444
SOUNDINGS REVISED		54	54
SOUNDINGS ERRONEOUSLY SPACED		-0-	-0-
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		-0-	-0-

TIME - HOURS

CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	6	*(Ver)	(Eva)	6
VERIFICATION OF CONTROL		5	8	13
VERIFICATION OF POSITIONS		14	6	20
VERIFICATION OF SOUNDINGS		157	18	175
COMPILATION OF SMOOTH SHEET		25	12	37
APPLICATION OF TOPOGRAPHY		-0-	-0-	-0-
APPLICATION OF PHOTOBATHYMETRY		-0-	-0-	-0-
JUNCTIONS		2	3	5
COMPARISON WITH PRIOR SURVEYS & CHARTS		-0-	34	34
VERIFIER'S REPORT		2	28	30
OTHER		-0-	11	11
<i>Digitization</i>				
<b>TOTALS</b>	<b>6</b>	<b>205</b>	<b>120</b>	

Pre-Verification by <b>James S. Green</b>	Beginning Date 11/26/83	Ending Date 11/26/83
Verification by <b>John E. Lotshaw, Thelma O. Jones/Gordon Kay</b>	Beginning Date 3/14/82-11/28/83	Ending Date 9/27/83 - 1/13/84
Verification Check by <b>James Stringham and James S. Green</b>	Time (Hours) 23	Date 1/23/84
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 (Eva)

PACIFIC MARINE CENTER  
EVALUATION REPORT

REGISTRY NO: H-10047

FIELD NO: RA-10-4-82

Alaska, Behm Canal, Smeaton Bay and Approaches

SURVEYED: September 13 - 26, 1982

SCALE: 1:10,000

PROJECT NO: OPR-0361-RA-82

SOUNDINGS: Ross Fineline Fathometer

CONTROL: Motorola Mini-  
Ranger III  
Range/Range  
Range/Azimuth

Chief of Party..... Capt. Ralph J. Land

Surveyed By..... Lt. J. O'Clock  
Lt. S. Ludwig  
Ens. M. Mathwig  
Ens. R. Koehler  
Ens. B. Postle  
Ens. W. Logue  
Ens. J. Judson

Automated Plot By..... PMC Xynetics Plotter

Verified By..... John E. Lotshaw and  
Thelma O. Jones

Evaluated By..... Gordon E. Kay

1. INTRODUCTION

H-10047 (1983) is a Navigable Area Survey (N.A.S.) conducted by the NOAA Ship RAINIER (S-221) in accordance with the following:

- o Project Instructions OPR-0361-RA-82, Smeaton Bay and Boca de Quadra , Alaska, dated June 2, 1982.
- o Change No. 1 dated July 28, 1982
- o Change No. 2 dated August 23, 1982

H-10047 is situated in Smeaton Bay just off of the Behm Canal on Revillagigedo Island, Alaska. The survey extends into Smeaton Bay (a submerged formerly glaciated valley) and joins H-10048 (1982). Smeaton Bay has an extremely steep mountainside which extends downward almost vertically past the shoreline to depths of over 50 fathoms.

During verification, evaluation/quality control, the following data was changed:

- a. Projection parameters were changed to center the hydrography on the smooth sheet and to change the projection to polyconic.
- b. Tide level corrections used on H-10047 are from observed tides, (see Tide Note for Hydrographic ~~Sketch~~ Sheet (H-10047) attached).
- c. The TC/Tl Correctors for vessel 2123 were changed to reflect a TRA of 0.4 fathoms.

## 2. CONTROL AND SHORELINE

Horizontal control and hydrographic positioning are discussed in paragraph F and G of the Ship's Descriptive Report and in the Electronic and Horizontal Control Report for OPR-0361-RA-82.

The smooth sheet was plotted using geographic positions from the published geodetic control station listings of N.G.S., on the North American Datum of 1927.

Shoreline is not shown on H-10047 because of conflict with the supplied USGS Quad enlargements and the nautical chart (in accordance with Hydrographic Guideline #17, section 6).

The ship's descriptive report, paragraph H, talks about a conflict with the chart and a transferred shoreline, citing that there are three small islets, but their positions are in error. No D.P.'s are given for these features, which are outside of the N.A.S. limits. The prior survey (H-5205) indicates two islets and two rocks. The two rocks have been transferred onto H-10047 as follows:

Feature	Latitude North	Longitude West
rock awash	55°17'54"	130°53'15"
rock awash	55°17'56"	130°53'17"

## 3. HYDROGRAPHY

Soundings at crosslines are in good agreement. The hydrography contained in the survey, H-10047, is adequate to determine the bottom configuration and least depths.

Standard depth contours were adequately drawn and developed with the exception of the 0-fathom, 1-fathom, 2-fathom, 3-fathom and 5-fathom depth contour, where hydrography was terminated at the limits required by N.A.S, and because of the extremely steep coastline., One brown supplemental depth contour was added at latitude 55°17'45" North, longitude 132°52'36" West to emphasize a 6.8 fathom sounding (Position #5063/4).

#### 4. CONDITION OF SURVEY

The hydrographic records and final reports adequately conform to the requirements of the Hydrographic Manual, 4th Edition, revised through change 3, with the following exceptions:

a. Addressing crosslines, junctions and comparison with prior surveys only by numerical percentages and tabulations does not meet the requirements set forth by the Hydrographic Manual as referenced below:

Crosslines - Hydrographic Manual 5.3.4.I

Junctions - Hydrographic Manual 5.3.4.J

Prior Surveys - Hydrographic Manual 5.3.4.K

The Ship's Descriptive Report references Hydrographic Manual, Section 1.1.2, Part B.II.1, as complying with the requirements needed for the above comparisons. This cited reference by the ship pertains only to the allowable error in specifications and does not address significance, changes, trends, - nor does not address recommendations which are required in the above Descriptive Report paragraphs.

b. Hydrography was accomplished parallel to the shoreline in an area at Latitude 55°18'51"N, Longitude 130°52'15"W. This sounding scheme provided for a poor delineation of the subsurface terrain.

"Regularly spaced sounding lines, normal to the depth contours..." H.M. 4.3.5.1.

c. Fathogram interpretation note:

The Ship's Descriptive Report, paragraph D, discussed a problem dealing with the interpretation of fathograms, and further stated that many problems still have not been resolved. Such discrepancies are best resolved in the field where personnel and equipment are available to investigate a given area.

#### 5. JUNCTIONS

H-10047 junctions H-10048 along the entire eastern (mutually common) area in Smeaton Bay. No problems were encountered in making a junction. Problems encountered during shipboard processing were resolved by the application of real tides and final electronic and sounding correctors. Depth contours are in coincidence and junctional notes have been inked in red. No junction has been made at the western limits of H-10047 (which is the entrance into Smeaton Bay from Behm Canal), because of the present limit of contemporary hydrographic coverage.

#### 6. COMPARISON WITH PRIOR SURVEY

H-10047 was compared with the following prior surveys:



H-5176 1:20,000 (1931) compares well to H-10047. Differences are of slight magnitude  $\pm 1$  fathom, as compared to the present survey. These differences are attributed to data acquisition techniques on the prior survey. One rock was transferred, latitude  $55^{\circ}17'50''N$ , longitude  $130^{\circ}53'52''W$ , in violet from H-5176 onto H-10047.

The present survey, H-10047, should supersede H-5176 over its common area.

H-5205 1:20,000 (1931) compares well to H-10047. Differences range around  $\pm 1$  to  $\pm 2$  fathoms when compared to present depths. These differences are attributed to the extreme steep and sloping bottom configuration coupled with variances with data acquisition techniques on the prior surveys.

Two least depths were transferred onto H-10047 as follows:

H-5205		H-10047		Latitude North	Longitude West
Feature	Depth	Feature	Depth		
rock	1.0 ft	sounding	0.6 fm	$55^{\circ}17'48''$	$130^{\circ}52'57''$
sounding	21 fm	sounding	2.7 fm	$55^{\circ}17'51''$	$130^{\circ}52'59''$

H-5205 does not extend inshore much further than the present N.A.S., H-10047. Thirty-eight (38) soundings and eight (8) rocks were transferred in brown from H-5205 onto H-10047. With the transfer of the above data, H-5205 is superseded by H-10047 from its western limits to longitude  $130^{\circ}43'30''W$ .

Note to Compilers: With the data transferred onto these surveys, H-10047 and H-10048 totally supersede H-5205 over its entire area.

Note: The shoreline on H-5205 is more consistent with the hydrography on this survey than the charted shoreline or the USGS quads.

There are no Presurvey Review Items contained within the limits of H-10047.

#### 7. COMPARISON WITH CHART

H-10047 was compared to the following:

Chart Number	Scale	Edition	Date
17424	1:80,000	5th	6 August 1977
17434	1:80,000	9th	14 February 1981

The areas covered by H-10047 on both of these charts are identical, so for the sake of brevity, the following comparison applies to both charts.

a. Hydrography. Present charted soundings came from the before mentioned prior surveys (see enclosed chartlet). Present survey depths compare very well to the chart with the 50 and 100 fathom depth contour falling in coincidence with the present survey.

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

It was noticed during evaluation of prior surveys and the chart that the compiler used his "cartographic licenses" very liberally in positioning near shore features. This put the field at a disadvantage in attempting to locate and dispose of the charted rocks.

H-10047 is adequate to supersede chart 17424 and chart 17434 over their common areas.

b. Controlling Depths- There are no controlling depths within the limits of H-10047.

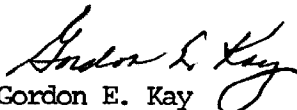
c. Aids-to-Navigation- There are no fixed aids or floating aids to navigation contained within the limits of H-10047.

8. COMPLIANCE WITH INSTRUCTIONS

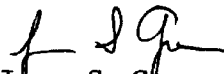
H-10047 complies with the project instructions and changes listed in section 1 of this report.

9. ADDITIONAL FIELD WORK

H-10047 is a good Navigable Area Survey. Additional field work is not recommended at this time.

  
Gordon E. Kay  
Cartographer - Evaluation  
January 16, 1984

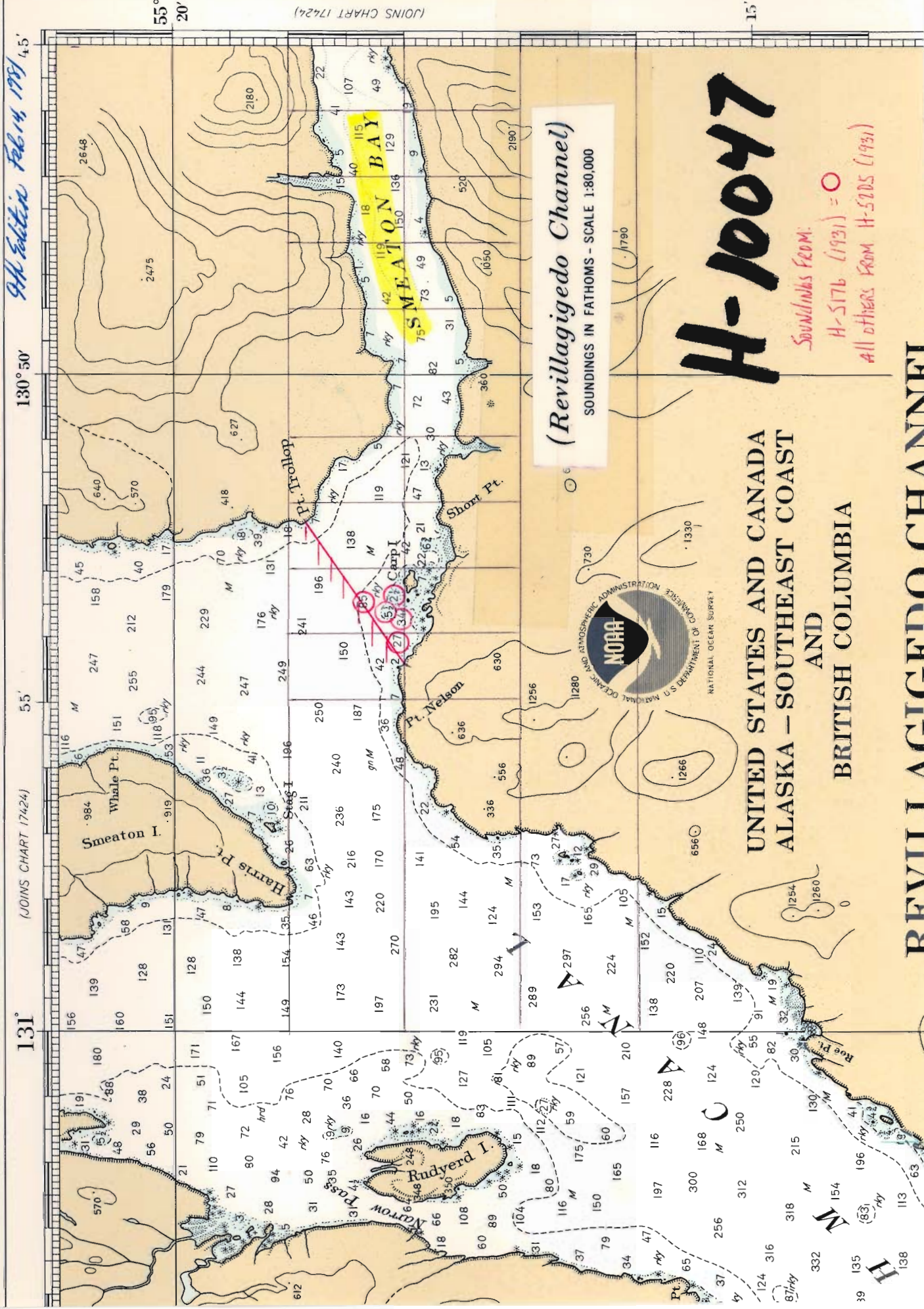
This survey has been verified and evaluated. I have examined this survey and it meets charting and Geodetic Services survey standards and requirements for use in nautical charting. This survey is recommended for approval.

  
James S. Green  
Cartographer  
Quality Control Supervisor

17434

Nautical Chart Catalog No. 3, Panel R

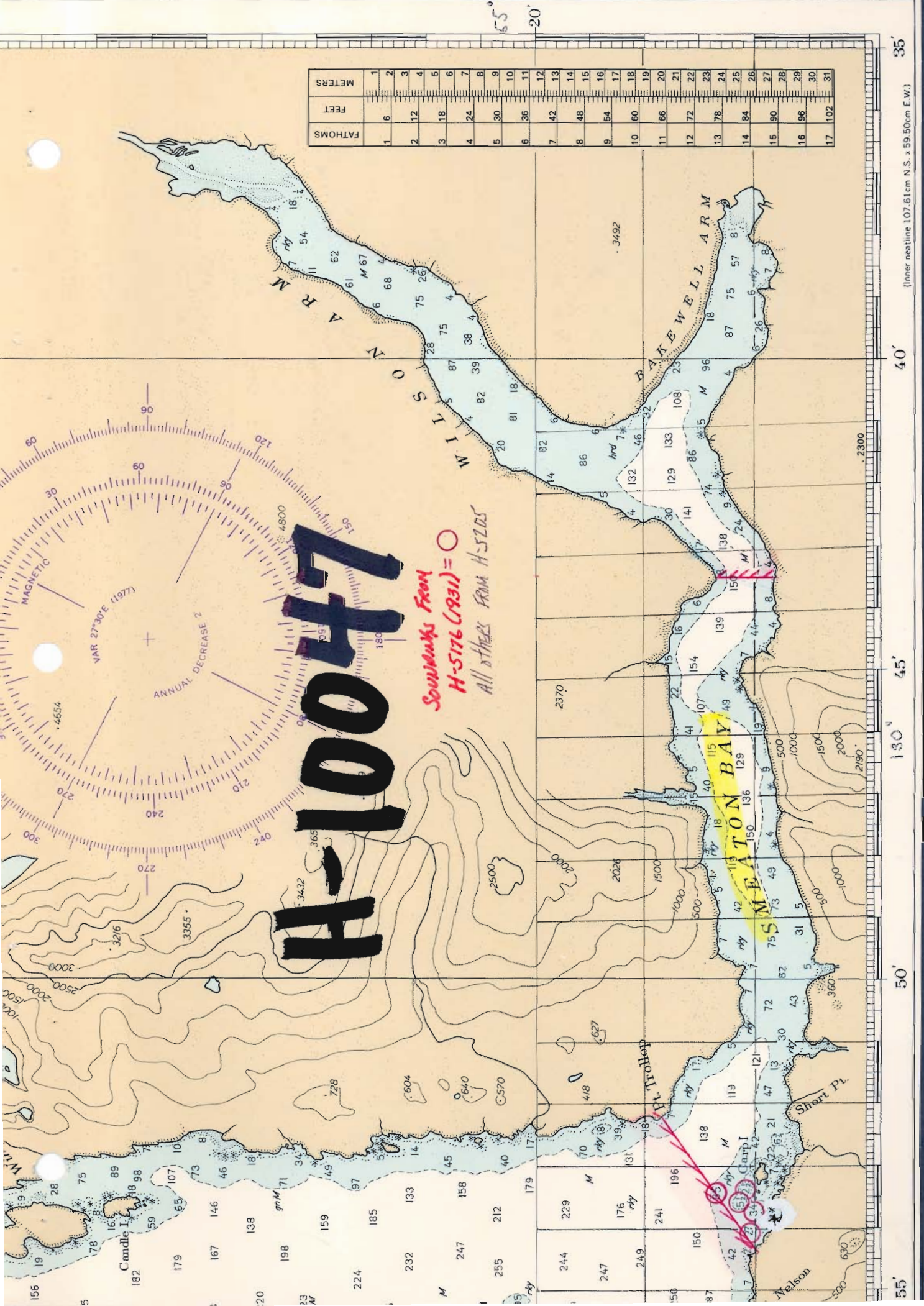
SOUNDINGS IN FATHOMS



**H-10047**

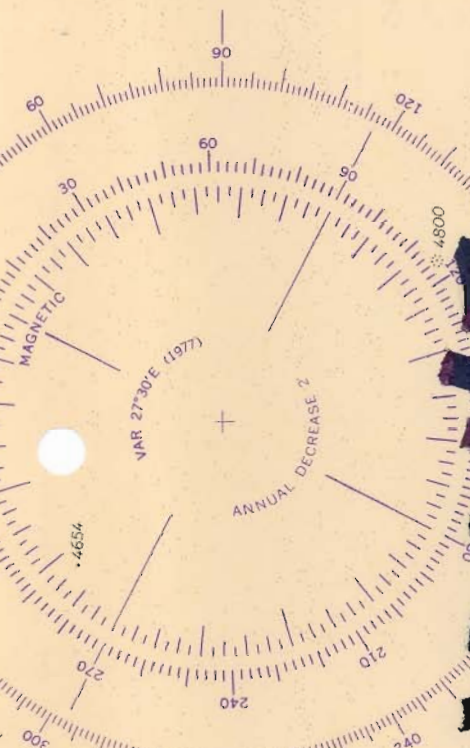
SOUNDINGS FROM:  
H-5176 (1931) = O  
All others FROM H-5205 (1951)

REVILLAGIGEDO CHANNEL



**H-10047**

*Soundings From  
H-5176 (1931) = O  
ALL OTHERS FROM H-5120S*



FATHOMS	FEET	METERS
1	6	1
2	12	2
3	18	3
4	24	4
5	30	5
6	36	6
7	42	7
8	48	8
9	54	9
10	60	10
11	66	11
12	72	12
13	78	13
14	84	14
15	90	15
16	96	16
17	102	17

35

40

45

50

55

(Inner neathline 107.61 cm N.S. x 59.50cm E.W.)

*EDITION 5th. August 1977*

**(Eastern Part of Behm Canal)**  
SOUNDINGS IN FATHOMS - SCALE 1:80,000

**17424**  
(formerly C&GS 8078)

ISTRATION

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10047

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.

*David W. Yeager* 2/28/84  
Chief, Nautical Chart Branch (Date)

CLEARANCE:

N/MOP2:LWMordock

SIGNATURE AND DATE:

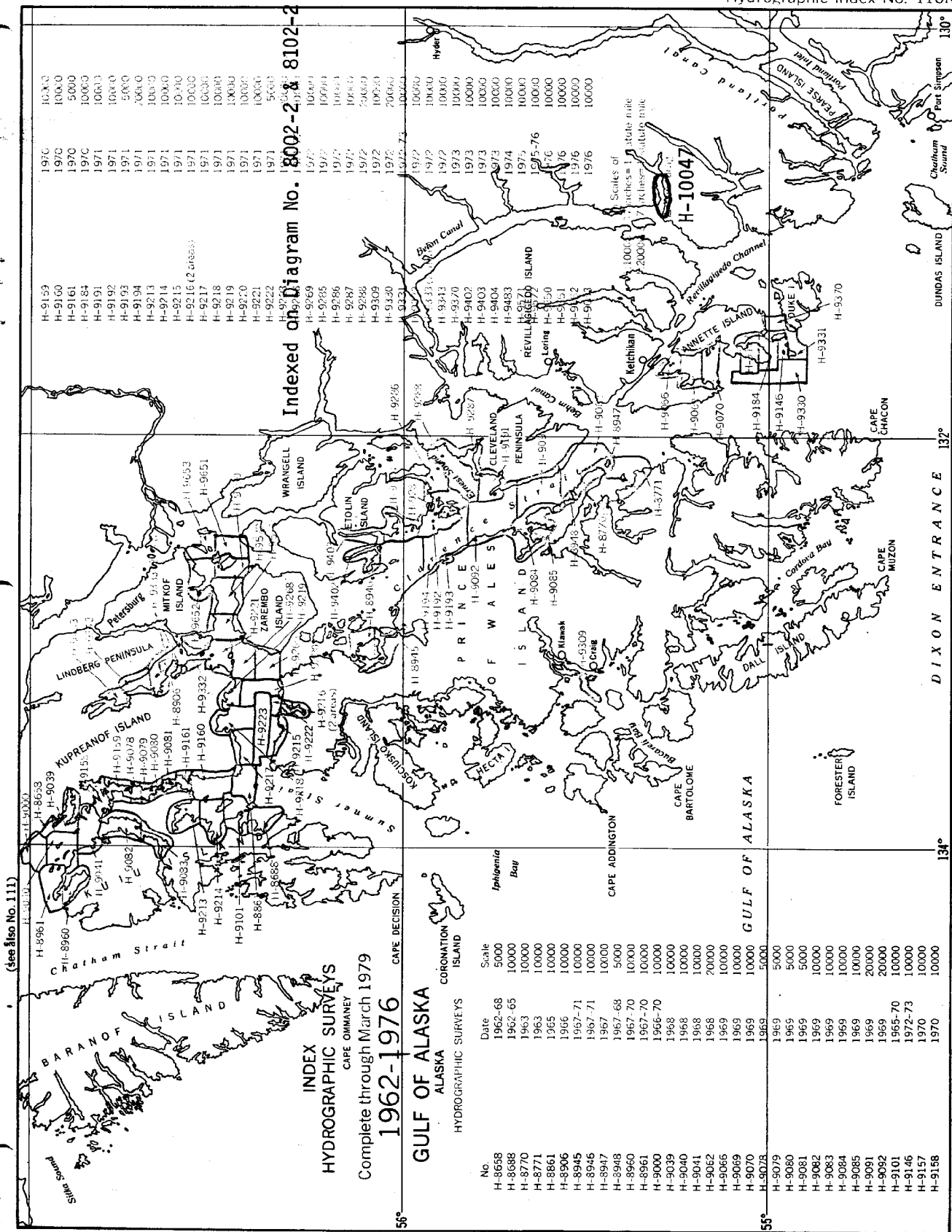
*Larry Mordock* 2/29/84

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 Townsend* 3/2/84  
Director, Pacific Marine Center (Date)

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

Hydrographic Index No. 110K



(see also No. 111)

INDEXED on Diagram No. 8002-2 & 8102-2

INDEX  
HYDROGRAPHIC SURVEYS  
CAPE OMMANNEY  
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-9065	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-10047

**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 EVALUATION
17420	12/3/84	J. Bailey	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 32 Exam. for critical corrs. NO corr.
17434	3-6-89	B. Adams	(Full) Part Before After Verification Review Inspection Signed Via Drawing No. 18/18m
17424	8/10/89	ALMAGEN	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. full application of soundings from SS.
17420	10-16-92	John Thomas J. Emmerich	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. 3A Full application thru chart 17424, No. 9
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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