

9770

Diag. Cht. Nos. 8553 & 8554-2,

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. FA-20-2-78.....

Office No..... H-9770.....

LOCALITY

State Alaska.....

General Locality Cook Inlet.....

Locality Vicinity of Redoubt Point.....

19 78

CHIEF OF PARTY

B. I. Williams.....

LIBRARY & ARCHIVES

DATE Feb. 8, 1980.....

☆U.S. GOV. PRINTING OFFICE: 1980-888-537

02216

Area - 6

CH+5

16660

16640

531

INT500

HYDROGRAPHIC TITLE SHEET

H-9770

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.

FA-20-2-78

State ALASKA

General locality COOK INLET

Vicinity of
Locality REDOUBT POINT

Scale 1:20,000 Date of survey 26 June - 23 August 1978

Instructions dated 17 April 1978 Project No. OPR-P114-FA-78

Vessel NOAA Ship FAIRWEATHER(2020), launches FA-3(2023) & FA-4(2024), Whaler 1 (2027) and whaler 2 (2028)

Chief of party CDR B.I. Williams

Surveyed by LT A. Yanaway, ENS M. Finke, ENS L. Roberts

Soundings taken by echo sounder, ~~hand lead, pole~~ XXXXXXXXXXXX Ross Fathometers (1046, 1047, 1054)

Graphic record scaled by Ross Digitizers (1054 & 1046) and Ship's Personnel

Graphic record checked by Ship's Personnel

Positions verified

~~Plotted~~ by Isagani A. Almacen Automated plot by PMC Xynetics Plotter

Soundings verified

~~Verification~~ by Isagani A. Almacen

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

REMARKS: All survey records were kept on GMT. The mean longitude of this survey is 152°25'00"W. The ^{smooth} field sheet is complete and adequate for charting.

Applied to plots 2/24/81
AB

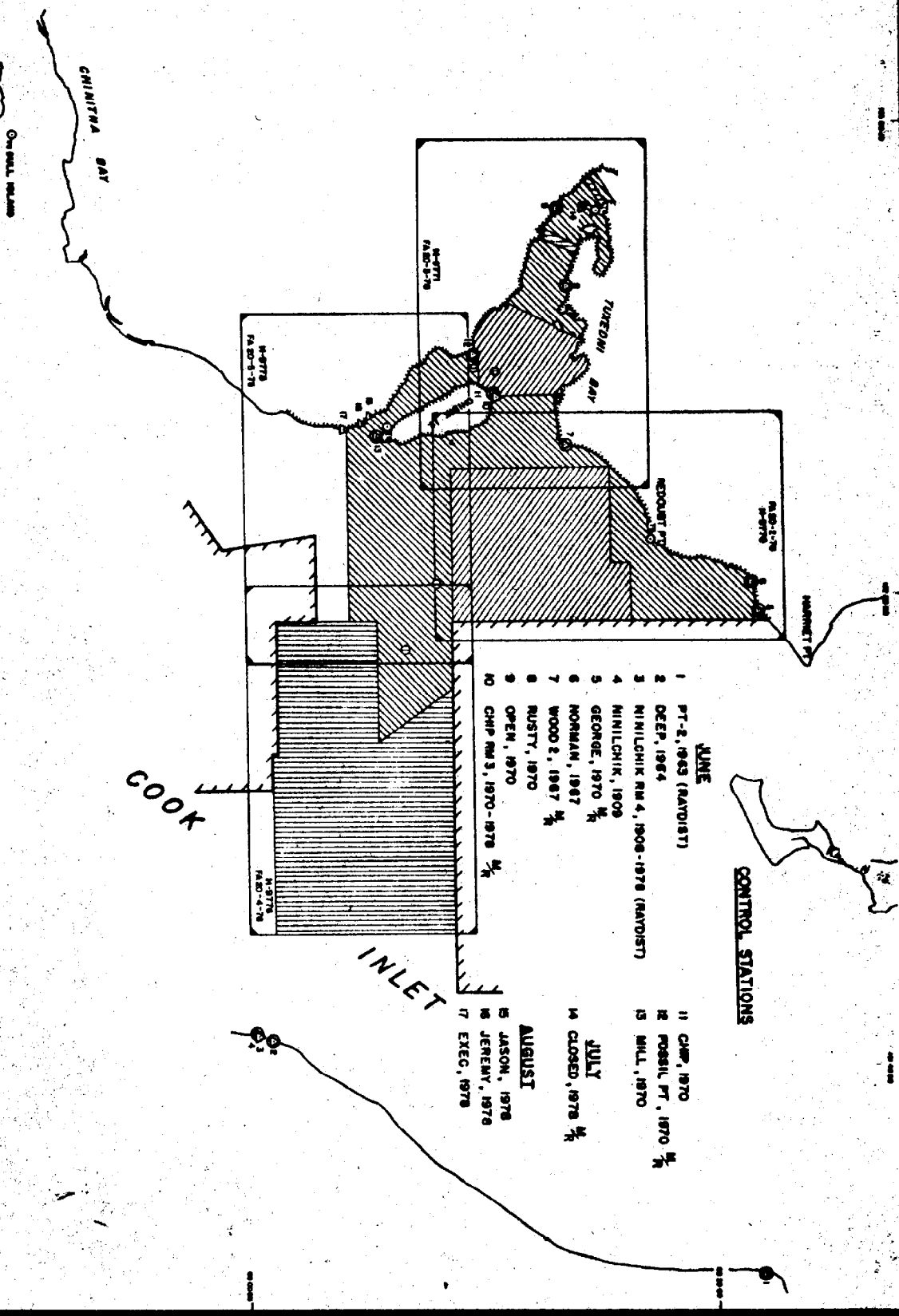
	JUNE	JULY	AUGUST
LNM SOUNDING LINE	549.8	928.0	1100.0
SO NM SOUNDING LINE	50.8	70.0	85.0
STD CAST (MARTER)	0	1	2
BOTTOM SAMPLE	0	67	167





- STATIONS RECOVERED
- △ STATIONS ESTABLISHED
- TIDE GAUGE
- MARTER CAST
- FIELD EDT

PROGRESS SKETCH
 OPR-PI14-RA, FA-78
 SOUTHERN COOK INLET, ALASKA
 NOAA SHIP FAIRWEATHER S220
 CDR BRUCE L WILLIAMS, CMDG
 SCALE OF NOS CHARTS 16660 - 16640
 -1978-



F. CONTROL STATIONS

The control stations used for this survey were PT-2 1963, Red Raydist and Ninilchik RM4, Green Raydist, ⁽¹²⁴⁾ For further details, see Horizontal Control Report, OPR-P114-FA-78. ⁽¹²⁵⁾ ✓

G. HYDROGRAPHIC POSITION CONTROL

The sole method of sounding line position control used for this survey was Range-Range Raydist. All data with dubious position control was rejected and redone. On JD 209, FA-3 struck a rock with sufficient force to knock loose the phase meters. There was no indication of any lane jumps on the strip chart, so the data was kept and the morning correctors were applied. For further details, see the note at the end of the raw data printout for FA-20-2E-78, FA-3, JD208-209, fix #3390-3573. ✓
For a list of electronic positioning equipment, see appendix D3. One calibration point was used : Tide Monster Calibration Pole. For details, see Electronic Control Report, OPR-P114-FA-78, or the Calibration Point diagrams - appendices E2 & E3.

H. SHORELINE

Shoreline details were obtained from the field manuscripts TP-12349 and TP-12354. Existing shoreline details were verified by field edit. Changes were made as necessary and transferred to the field sheets. For details, see Field Edit Report, OPR-P114-FA-78. ✓

I. CROSSLINES

The 61.4 n.m. of crossline accounts for 9.1% of the 674.8 n.m. of sounding lines run on this survey. Crossings for soundings less than 11 fm agreed to within 0.3 fm. ✓

J. JUNCTIONS

This survey junctions with the prior survey H-9435, 1:20,000, 1974 and the contemporary surveys H-9771(FA-20-3-78) and H-9773(FA-20-5-78). The soundings at the junctions with the prior survey and with the contemporary surveys agree to less than 1 fm for depths greater than 11 fm and within 0.3 fm for depths less than 11 fm. ✓

K. COMPARISON WITH PRIOR SURVEYS

Pre-survey Review item #5, updated March 10, 1978, "sunken rock", was investigated by running a development over its charted position (see FA-20-2W-78, fix #3691-3722). No indication of a sunken rock was found. The sunken rock originates with the survey
lat. 60°12'06", long. 152°30'24" ✓

H-3318, 1:40,000, 1911, from a remark in a sounding volume :
 "swirl, apparently rock, 10 ^meters to starboard". This area was
 observed by the field edit party near a minus one fathom tide
 and no rock was seen. In this area, the depths range from 0.8 fm
 to 1.8 fm at MLLW and there are numerous swirls caused by tidal
 currents. The sunken rock symbol should be removed from the chart. *Concur/delete from chart*
 Pre-survey Review unnumbered item, updated March 10, 1978, 18 fm *H-3355 (911) RWD 6/80*
 sounding at 60°11.55'N, 152°17.8'W was extensively developed
 (see FA-20-2E-78, fix # 3783-3809, 3841-3999, 8000-8032) and
 and the least depth found was 2A³ fm. ~~Information as to the origin~~
~~of the 18 fm sounding was not furnished.~~ The 18 fm sounding
 should be deleted from the chart. (*Concur*) See Verifier's Report, para 6, PRI.

L. COMPARISON WITH THE CHART

Comparison was made with the soundings from Chart 16660, 1:194,154,
 Cook Inlet, Northern Part, Alaska - South Coast, 19th edition,
 September 10, 1977. Variation was less than 1 fm. ✓

M. ADEQUACY OF SURVEY

This survey is complete and adequate to supercede prior surveys
 for charting. ✓

N. AIDS TO NAVIGATION

There are no aids to navigation on this survey. ✓

O. STATISTICS

	FA-3	FA-4
Total number of positions	1505	1074
n.m. of soundings	405.2	269.6
Total area - 61.0 sq.n.m.		
Total bottom samples - 70		
Martek casts within survey area - 0		
Tide gauges - 1		

P. MISCELLANEOUS

Greenwich Mean Time was used for all survey records. ✓

Q. RECOMMENDATIONS

This survey should be accepted and used for charting purposes. ✓

R. AUTOMATED DATA PROCESSING

All hydrography was acquired using RK-111, Range-Range Real Time Hydroplot, version 1-30-76. The semi-smooth and smooth field sheets were plotted using RK-211 Range-Range Non-Real Time Plot, version 1-30-76. ✓

S. REFERRAL TO REPORTS

Report On Corrections To Echo Soundings, OPR-P114-FA-78
Horizontal Control Report, OPR-P114-FA-78
Electronic Control Report, OPR-P114-FA-78
Field Edit Report, OPR-P114-FA-78

Submitted by:

Lee Anne Roberts

Ensign LeeAnne Roberts, NOAA

B.

-6-
FIELD TIDE NOTE
OPR-P114-FA-78

(H-9770), (H-9771), (H-9773), (H-9776)

Field tide reductions, of soundings, were based on the reference station at Seldovia, based on predicted tides for 1978 adjusted using factors supplied by Pacific Tides Party. The values were interpolated by the PDP-8e computer using program AM 500, Predicted Tide Generator. In all cases, GMT was used. The time and height corrections, applied to the Seldovia predicted tides, were as follows:

<u>FIELD SHEET</u>	<u>HEIGHT (ratio)</u>	<u>HIGH WATER</u>	<u>LOW WATER</u>
FA-20-2-78 (H-9770)	0.90	+1Hr 28M	+1Hr 34M
FA-20-3-78 (H-9771)	0.90	+1Hr 28M	+1Hr 34M
FA-20-4-78 (H-9776)	0.97	+1Hr 01M	+1Hr 14M
FA-20-5N-78 (H-9773)	0.87	+1Hr 14M	+1Hr 20M

The final field smooth sheets were plotted using these predicted tides.

Two bubbler gages and two ADR gages were installed by FAIRWEATHER Personnel and one gage at Ninilchik was installed and tended by RAINIER personnel. (Refer to FIELD TIDE NOTE OPR-P114-RA-78). The following gages were installed by FAIRWEATHER personnel as per project instructions:

<u>SITE</u>	<u>LOCATION</u>	<u>PERIOD OF OPERATION</u>
• SNUG HARBOR 945-6173 ADR Gage	LAT 60°06.5'N LONG 152°34.7'W	6-20-78 - 8-21-78
REDOUBT POINT 945-6094 ADR Gage	* LAT 60°18'07"N LONG 152°23'08"W * Does not agree with smooth sheet.	6-25-78 - 8-16-78 <i>Gage near HWL orifice extended approx 1000 feet into water.</i>
CHINITNA BAY 945-6357 Bristol Bubbler Gage	LAT 59°50.3'N LONG 153°00.0'W	7-10-78 - 8-22-78

In addition, to further clarify the tidal effect in the Tuxedni River, a tide gage was located upriver as follows:

MEADOW ISLAND Bristol Bubbler Gage	LAT 60°14.7'N LONG 152°52.5'W	7-22-78 - 8-18-78
---------------------------------------	----------------------------------	-------------------

REDOUBT POINT

ADR gage S/N 7403A3402M12, replaced by ADR gage S/N 7601A469M20, was installed on a portable pole mounted on a railroad wheel similar to the installation made at Fire Island during OPR-SP-207-FA-78 earlier in June, 1978. The original gage was installed and operational on 26 June. But on 27 June, the gage jammed at 1524 GMT. The gage was restarted the same day at 2154 GMT. Again on 28 June, the gage jammed at 1118 GMT and was restarted on 13 July at 2218 GMT. On 16 July, the gage jammed at 2000 GMT and was restarted on 20 July at 2106 GMT. The gage jammed one more time on 28 July at 2318 GMT and was replaced on 2 August at 2018 GMT. The new gage ran without incident until its removal on 16 August at 2006 GMT. The fact that the original gage jammed four times was probably due to the free motion of water in the floatwell. Originally, the floatwell had several intakes drilled at different levels of the pipe to prevent a single intake from becoming clogged. But the multiple intake caused too much rapid swell and chop action on the float, and the water level changed too rapidly for the punch to operate properly. The rapid water level changes caused the punch blocks to jam. When the gage was replaced on 2 August, several small rocks were dropped into the floatwell and these rocks retarded the water motion in the floatwell. After this modification of the intakes, no difficulties were encountered at this gage. On installation of the gage, observation records were kept at the gage, but rain destroyed the first observation record, so after 13 July, all records were kept on the ship.

Zero staff level to marigram comparisons:

13 July 21.3 feet

23 July 14.5 feet

2 Aug. 42.5 feet

SNUG HARBOR

Fisher Porter ADR gage S/N 6903A5568M13 was installed on 20 June, and operated properly until its removal on 21 August, 1978. The floatwell was affixed to a 24 foot diameter piling on the Snug Harbor Pier which supplied an excellent observing platform. The staff stop was a fixed point on the piling casing and its value was set at 50.00 feet which led to a zero foot staff to marigram relation of 3.1 feet.

CHINITNA BAY

Bristol Bubbler gage S/N 67A10292 range 0-30 feet, was installed on 10 July, 1978. On 3 August, the marigram jammed and the tidal record was lost until 5 August when the gage was reset. The gage operated well until 10 August when the bubbler tubing parted. Only 6 hours lapsed before the tubing was spliced and from this time until the gage was removed on 22 August, no difficulties were encountered. Zero-staff level to marigram relation- 6.1 feet.

MEADOW ISLAND

Bristol Bubbler gage S/N 64A11032, range 0-30 feet, was installed at the discretion of the Commanding Officer because it appeared that the Tuxedni River was not affected by all stages of the tidal range. No difficulties were encountered from the gage's installation on 22 July to its removal on 18 Aug., 1978. The zero-foot staff to marigram relation was 5.0 feet.

LEVELS

Snug Harbor was leveled to 5 existing bench marks upon installation of the gage and again on the gage's removal. Apparently, an error was made while leveling to the CANNERY 1970 bench mark. If this mark is not included in the comparisons, the staff stop settled 0.029 feet from the time of gage installation to the time of gage removal.

Redoubt Point was leveled to five existing bench marks upon installation of the original gage and again on removal of the second gage. There is an apparent error in the leveling to BM 3. If this bench mark is ignored, there is a staff stop change of approximately 0.025 feet.

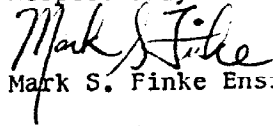
Chlnitna Bay was leveled to five existing bench marks upon installation of the gage and again upon its removal. If the change of all five marks is averaged, the staff apparently changed 0.016 feet during the period of gage operation.

As required for tide stations established for less than 30 days, the Meadow Island tide station was leveled to three recoverable temporary bench marks, two eyebolts and a pointed rock painted yellow. There was good agreement between the opening levels of 22 July and the closing levels of 18 August.

MISCELLANEOUS

The ADR gage at Snug Harbor should be used to rectify any questionable data from other gages in the survey area because this gage operated without problems for the entire period of Field Edit and Hydrography.

Respectfully Submitted;



Mark S. Finke Ensign NOAA

D1. Velocity Table

The following sound velocity correctors are to be applied to all soundings on survey FA-20-2-78 (H-9770).

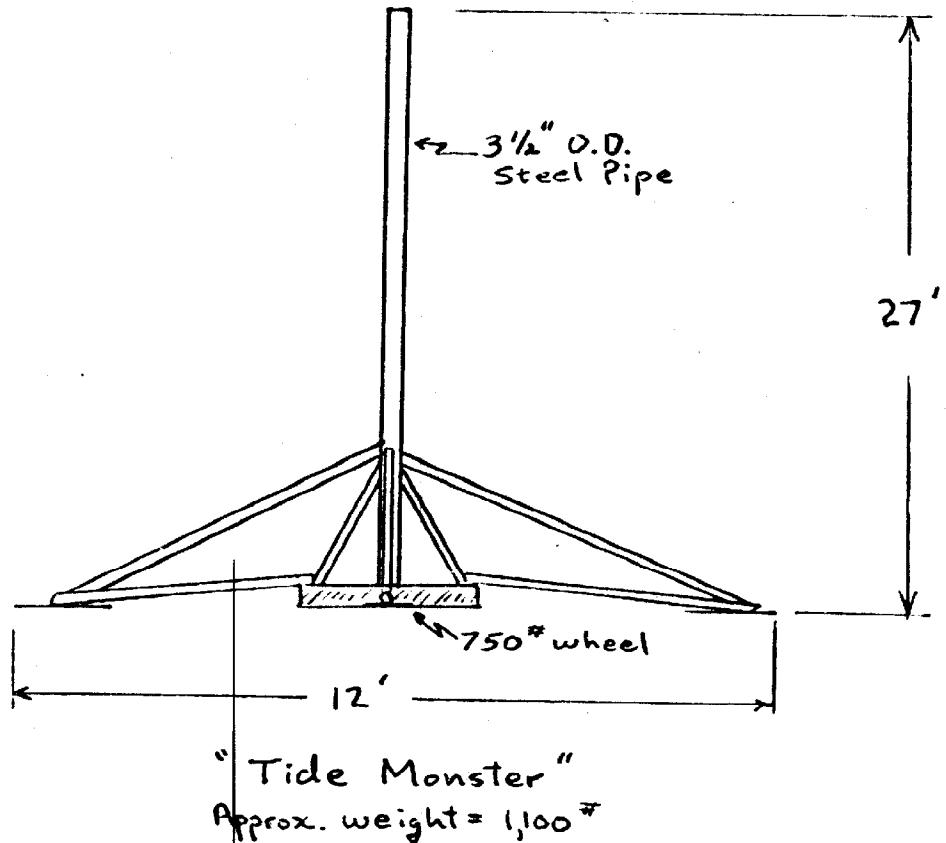
Depth (fm)	Corrector (fm)
0.0 - 3.5	+0.0
3.6 - 9.5	0.1
9.6 - 15.6	0.2
15.7 - 21.7	0.3
21.8 - 27.7	0.4
27.8 - 34.0	0.5
34.1 - 40.1	0.6
40.2 - 46.2	0.7
46.3 - 52.5	0.8
52.6 - 58.5	0.9
58.6 - 64.8	1.0
64.9 - 70.7	1.1
70.8 - 76.9	1.2
77.0 - 83.0	1.3

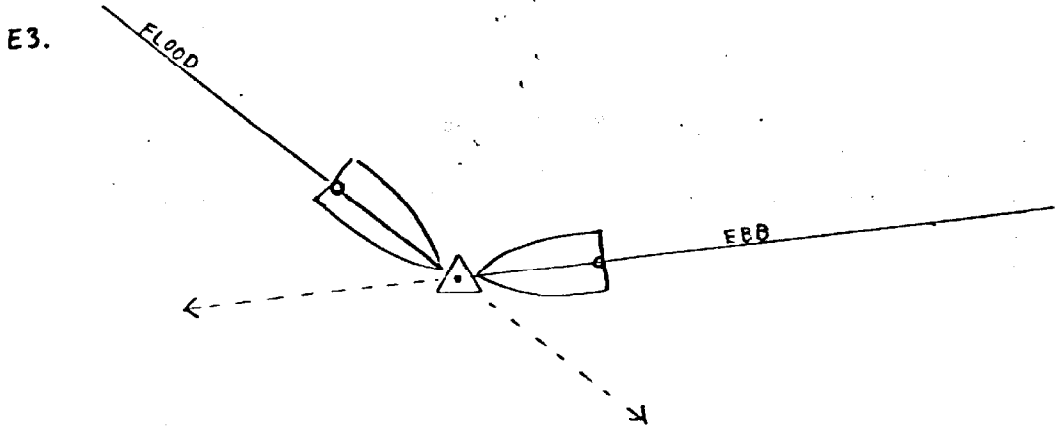
E2.

CALIBRATION RANGES

Calibration of Raydist and check calibration for Mini-Ranger III systems was done at a steel pole (signal 055) implanted north of Chisik Island. The object was given the name "Tide Monster" by most of the FAIRWEATHER personnel because the steel pipe was originally constructed for mounting an ADR tide gage system. The pipe assembly is attached to a railroad wheel at its base along with support legs extending 6 feet outward at 90 degree angles on a horizontal plane. The object is heavy and required two survey launches to remove it from the mud at the project close.

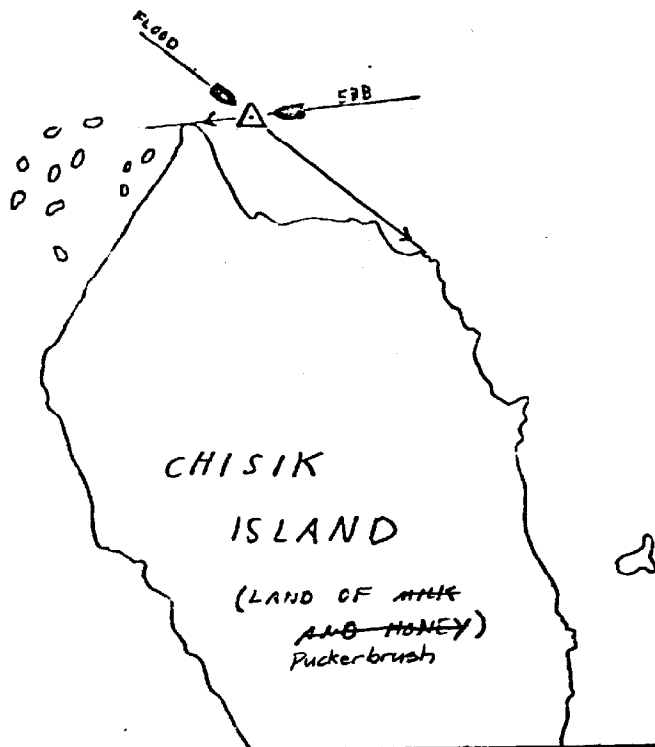
The appended signal to calibration pole range list is to be used for Mini-Ranger III check calibrations. Also appended are sketches of the Raydist lanes at the calibration pole. Below is a sketch of the "Tide Monster".





CALIBRATION RATES

	LEFT PATTERN	RIGHT PATTERN
TIDE MONSTER CALIBRATION PT	1566.61	1175.95
LAUNCH ANTENNA FLOOD POSITION	1566.73	1176.16
LAUNCH ANTENNA EBB POSITION	1566.41	1175.77



F. LIST OF STATIONS

010	1	60	13	37159	152	46	16282	139	0018	000000
015	0	60	13	47718	152	32	48754	139	0009	000000
019	3	60	11	00901	152	37	00566	250	0005	000000
020	7	60	11	02844	152	37	00332	250	0004	000000
021	0	60	11	02842	152	37	00163	243	0004	000000
025	3	60	09	59725	152	40	33994	250	0014	000000
030	3	60	14	16898	152	52	38734	250	0004	000000
035	3	60	21	39621	152	18	40264	139	0003	000000
040	3	60	21	27739	152	21	08903	139	0003	000000
045	0	60	04	22737	152	34	09608	250	0003	000000
050	0	60	05	44223	152	33	46484	250	0007	000000
055	0	60	11	03599	152	36	23968	243	0000	000000
060	0	60	06	21437	152	33	53267	250	0159	329646
124	0	60	21	55694	151	22	27250	250	0015	330040
125	0	60	00	33344	151	42	48441	250	0089	330040

010 - RUSTY 1970
015 - WOOD 2.1967
019 - CHIP 1970
020 - CHIP 1970 RM3
021 - CHIP 1970 RM3 FIELD EDIT OFFSET
025 - FOSSIL PT. 1970
030 - CLOSED (ESTB. 1978)
035 - GEORGE 1967
040 - NORMAN 1967
045 - EXEC 1978
050 - MILL 1970
055 - TIDE MONSTER CALIBRATION POLE
060 - RAINIER RED RAYDIST 1978 (SNUG HARBOR)
124 - PT-2 1963 (RED RAYDIST)
125 - NINILCHIK R44 (GREEN RAYDIST)

APPROVAL SHEET

Field Number : FA-20-2-78
Register Number : H-9770

This field sheet and all accompanying records are hereby approved.
This survey was conducted under my supervision and the survey
is complete and adequate for charting purposes.

Bruce I. Williams

CDR Bruce I. Williams
Commanding Officer
NOAA Ship FAIRWEATHER S220

April 19, 1979 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): 945-6094 Redoubt Point, AK
945-6173 Snug Harbor, AK

Period: June 22 - August 20, 1978

HYDROGRAPHIC SHEET: H-9770

OPR: P114

• Locality: Southern Cook Inlet, AK

Plane of reference (mean lower low water): 1.17 ft. - Redoubt Point
26.84 ft. - Snug Harbor

Height of Mean High Water above Plane of Reference is
16.3 ft. - Redoubt Pt.: 15.0 ft. Snug Harbor

Remarks: Recommended zoning: (on Redoubt Point)

- (1) North of 60°12.5' zone direct. Zone 3
- (2) South of 60°12.5' apply -15 minute time correction. Zone 4

When data is not available for Redoubt Point, zone on Snug Harbor applying the following corrections.

- (1) North of 60°12.5' apply +20 minute time corrections and range ratio x1.08.
- (2) South of 60°12.5' apply +5 minute time correction and range ratio x1.08.

James R. Hubbard
Chief, Datums and Information Branch

D3. Equipment List

Sounding Equipment

<u>Instrument</u>	<u>FA-3</u>	<u>FA-4</u>
Ross Fineline Fathometer	(JD 177-179) 1054 (JD 180-217) 1046	1047 1047
Ross Digitizer	1054	1046
Ross Transceiver	1047	1046
Ross Invertor	1046	1103

Mobile Raydist Equipment

<u>Instrument</u>	<u>Ship</u>	<u>FA-3</u>	<u>FA-4</u>
Navigator model TA-96B	16 (330/490 Hz) (JD 235)	16 (330/490 Hz) (JD 177-181)	18 (370/450 Hz)
		21 (435/385 Hz) (JD 203-217)	
Transmitter model ZA-75C	96 (JD 235) (3300.520KHz)	96 (JD 177-181) (3300.520KHz)	90 (3300.400KHz)
		83 (JD 203-217) (3300.465KHz)	

Raydist Shore Equipment

Red Raydist Base Station- S/N 124 - pattern 1 - frequency 1650.015KHz
PT-2, 1963.

Green Raydist Base Station - S/N 125 - pattern 2
frequency 1650.425KHz - Ninilchik RM4.

GEOGRAPHIC NAMES

H-9770

Name on Survey	Source of Name									
	A	B	C	D	E	F	G	H	K	
	ON CHART NO. 16660	ON PREVIOUS SURVEY	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	RAND McNALLY ATLAS	U.S. LIGHT LIST	Sheet	
COOK INLET	X								X	1
REDOUBT POINT	X								X	2
POLLY CREEK		X							X	3
LITTLE POLLY CREEK		X							X	4
Duck Island	X									5
										6
										7
										8
										9
										10
										11
										12
										13
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										23
										24
										25

Approved:

Chris P. Harrington
Chief Geographer - C3x5

9 Dec. 1980

APPROVAL SHEET
FOR
SURVEY H- 9770

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position print-out has been made. A new final sounding print-out has been made.
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the verifier's report.

Date: 4 Dec 1979

Signed: _____

Title: Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS

H-9770

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		4 & 5
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS ² ARC, EXCESS ³		5

DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	2- with printouts					
VOLUMES	1					
BOXES			1- Smooth			

T-SHEET PRINTS (List) T-12349 & T-12354

SPECIAL REPORTS (List) 1- contour plot.

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			2714
POSITIONS CHECKED		2714	
POSITIONS REVISED		724	
SOUNDINGS REVISED		221	
SOUNDINGS ERRONEOUSLY SPACED		---	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		---	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	4		
VERIFICATION OF CONTROL		6	
VERIFICATION OF POSITIONS		132	
VERIFICATION OF SOUNDINGS		180	
COMPILATION OF SMOOTH SHEET		40	
APPLICATION OF TOPOGRAPHY		16	
APPLICATION OF PHOTOBATHYMETRY		---	
JUNCTIONS		4	
COMPARISON WITH PRIOR SURVEYS & CHARTS		18	
VERIFIER'S REPORT		12	
OTHER		8	
TOTALS	4	416	420

Pre-Verification by James S. Green	Beginning Date 9/28/78	Ending Date 9/28/78
Verification by Isagani A. Almacen	Beginning Date 1/3/79	Ending Date 11/14/79
Verification Check by Stanley H. Otsubo & James S. Green	Time (Hours) 26	Date 11/20/79
Marine Center Inspection by HIT	Time (Hours) 17	Date 1/7/80
Quality Control Inspection by Robert W. Derkazarian	Time (Hours) 122	Date 9/25/80
Requirements Evaluation by D. Hill	Time (Hours) 4	Date 12/30/80

D.K. Maysen 27 hrs 10/29/80

REGISTRY NO. 9770

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. _____

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9770

FIELD NO. FA-20-2-78

Vicinity of -
Alaska, Cook Inlet, ^ Redoubt Point

SURVEYED: 26 June - 23 August 1978

SCALE: 1:20,000

PROJECT NO. OPR-P114

SOUNDINGS: Ross Fineline Fathometer

CONTROL: Range/Range,
Range/Azimuth, Visual

Chief of Party.....CDR Bruce I. Williams
Surveyed by.....LT A. Yanaway, ENS M.
Finke, ENS L. Roberts

Automated plot by.....PMC Xynetics Plotter
Verified by.....Isagani A. Almacen
13 November 1979

1. INTRODUCTION

This is a basic hydrographic survey of the southern portion of Cook Inlet off Redoubt Point covering the area bounded by the shoreline on the north, Latitude 60 09'00"N on the south, Longitude 152 18'00"W on the east and Longitude 152 32'00"W on the west. ✓

Hydrography was conducted from 26 June 1978 to 23 August 1978 by NOAA Ship FAIRWEATHER. ✓

Hydrography was controlled using Teledyne-Hastings Raydist in range/range mode of operation. Motorola Mini-Ranger III electronic positioning equipment was also utilized in Range/Azimuth mode to locate field edit rocks within the limit of the survey area. ✓

No unusual problems were encountered during office verification of the sheet.

2. CONTROL AND SHORELINE

Horizontal control used on this survey consisted of existing triangulation stations.

No photogrammetrically located stations were used on this survey.

Shoreline detail information was obtained from unreviewed Class I, Shoreline Manuscripts T-12349 and T-12354.

The dates of photography and field edits are as follows:

- a. T-12349: July 1967 & July 1970—June, July & August 1978
- b. T-12354: July 1970—June, July & August 1978

Aside from the rocks already incorporated on the above mentioned shoreline manuscripts, additional field edit rocks located during this survey were plotted on the smooth sheet based on the original field edit records returned to PMC, Processing Division by the Coastal Mapping Division in Rockville. Coastal Mapping Division considered these records more of a field hydrographic data rather than field information needed in photogrammetric compilation. See Q.C. Report, para 10.

Rock elevations appearing on the smooth sheet, except those already on Class I Manuscripts and not verified on this survey are based on actual tides.

The low water line was properly delineated on this survey.

3. HYDROGRAPHY

Crossline soundings were in good agreement throughout the survey.

The present bottom configuration is adequately delineated and least depths determined on this survey, except in some areas to be discussed in the following sections of this report.

The construction of depth curves on the smooth sheet is complete.

4. CONDITION OF SURVEY

The automated plotting of smooth sheet with its accompanying overlays, hydrographic records, reports and the field procedures are adequate. It conforms to NOS hydrographic standards.

5. JUNCTIONS

H-9776 See Q.C. Report, para 4
H-9771[^] (1978) and H-9773 (1978-79), 1:20,000

Junctions with these ~~two~~ ^{three} ³ (2) contemporary surveys along the southern and western limits of the sheet are in good agreement. These surveys agree to within 0.2 fathoms on junctions areas. Depth curves and notes were inked on the smooth sheet.

H-9435 (1974), 1:20,000

Junctions with this survey of 1974 is considered good. However, because of the differences in the method of plotting soundings between the two surveys, a final comparison could not be made at this time. The present survey plots soundings to the nearest tenths of a fathom up to 21 fathoms, while the older survey was plotted to the nearest tenths of a fathom up to only 11 fathoms and the rest were rounded off to the nearest unit. It is recommended that the reduced soundings to the nearest tenths of a fathom from the smooth sounding printout for H-9435 be used to compare depths within the junctional area during quality control inspection and depth curves adjusted accordingly.

An adequate junction was effected with H-9435(74) on the east during q.e.

Depth curves and note were inked on the smooth sheet.

6. COMPARISON WITH PRIOR SURVEYS

This survey was compared to the following prior surveys:

H-3318 (1911), 1:40,000
H-3319 (1911), 1:20,000
H-3355 (1911), 1:100,000

Comparison between these prior surveys and the present survey shows the following changes: See Q.C. Report, para 8.

a. The inshore areas up to 20 fathoms has no significant changes noted. The 1911 and the present soundings still agree to within 0.2 fathoms, however some minor changes have occurred in random areas of the bottom, probably as a result of natural causes.

b. The area offshore from 20-fathom depths between Latitude $60^{\circ}10'00''N$ and Latitude $60^{\circ}14'00''N$ was found to shoaler by approximately 2 to 5 fathoms on this present survey.

Four (4) rocks awash originating from survey H-3318 of 1911 and charted as follows: Latitude $60^{\circ}11'58.0''N$, Longitude $152^{\circ}30'34''W$; Latitude $60^{\circ}11'26.3''N$, Longitude $152^{\circ}30'21''W$; and Latitude $60^{\circ}15'54''N$, Longitude $152^{\circ}27'52''W$, and Latitude $60^{\circ}16'58.0''N$, Longitude $152^{\circ}25'05''W$ were not investigated nor mentioned in the ship's report. These rocks were carried forward on the smooth sheet and should be retained as charted. in the vicinity of

A 14-fathom depth charted at Latitude $60^{\circ}15'27.0''N$, Longitude $152^{\circ}22'50.0''W$ originating from H-3355 (1911) was found to be in the area of 25 to 26 fathoms on this survey. No hydrographic investigation was done in the field to verify the existence of this sounding. ~~The shoal depth was carried forward on the smooth sheet and should be retained as charted until properly investigated and disproven in the future.~~

See Q.C. Report, para. 5.

The following are Presurvey Review Items covered on this survey:

a. PSR Item 5: The sunken rock charted at Latitude $60^{\circ}12'06''N$, Longitude $152^{\circ}30'24''W$ originating from survey H-3318 (1911) was investigated in the field and no indication of the rock was found. ~~However, the hydrographic development lines of 100-meters interval at this area is considered not sufficient to disprove the existence of the rock. It is recommended that the sunken rock be retained as charted. It has been plotted on the smooth sheet.~~ ^{deleted from the} See D.R., para K.

b. PSR Item unnumbered: The development to investigate the 18-fathom depth originating from survey H-3355 (1911) charted at Latitude $60^{\circ}11'33.0''N$, Longitude $152^{\circ}17'48''W$ was considered sufficient to disprove the existence of the shoal depth. No depths shoaler than 23 fathoms were found. I agree with ship's recommendation to delete the 18-fathom charted depth and incorporate the recent soundings on the future edition of the chart of the area. The 18fm depth was determined by the less accurate means of a pressure tube.
The current survey is adequate to supersede the prior surveys of 1911

for areas of common coverage, with the addition of the rocks, soundings and bottom characteristics carried forward.

7. COMPARISON WITH CHART

This survey was compared with Chart 16660 (C&GS 8553), 1:194,154, 19th Edition, 10 September 1977. Depths and other features on this chart primarily originated from the 1911 prior surveys of Cook Inlet. In general, the agreement is satisfactory, except in some areas previously mentioned in the preceding section of this report where changes have been noted.

A 20-fathom charted depth from unknown source at ^{approximate} Latitude 60°11'35"N, Longitude 152°25'15"W within the survey area, ~~has not been disproven and should be retained as charted.~~ ~~It~~ was possibly charted in error. See Q.C., para 6.

There are no aids to navigation on this survey.

This survey is adequate to supersede charted hydrography within the common area.

8. COMPLIANCE WITH PROJECT INSTRUCTION

This survey complies with the project instruction.

9. ADDITIONAL FIELD WORK

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

10. NOTES TO COMPILER

In some instances field edit rocks were located more than once during this survey.

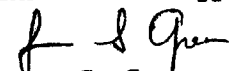
On this survey some field edit rocks were either omitted or were erroneously plotted on the boat sheet.

Submitted by:



Isagani A. Almacan
Cartographic Technician
13 November 1979

Examined and approved,



James S. Green
Chief, Verification Branch

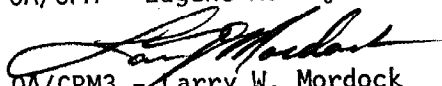


U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Pacific Marine Center
1801 Fairview Avenue E
Seattle, WA 98102

DATE : January 11, 1980

OA/CPM3/LWM

TO : OA/CPM - Eugene A. Taylor

FROM :  Larry W. Mordock

SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9770

This survey is a basic hydrographic survey of the southern portion of Cook Inlet off Redoubt Point, Alaska. This survey was conducted by NOAA Ship FAIRWEATHER in 1978, in accordance with Project Instructions OPR-P-114-FA-78 dated April 17, 1978 and Supplemental Information for Project Instructions dated April 25 and May 2, 1978.

The following items were noted:

1. Insufficient hydrography hindered development of the 20-fathom curve in three areas. Prior survey data was carried forward and should be retained as charted. ~~See Verifier's Report 6 b, para 3 for 14 fathom item.~~

2. ~~PSR Item 5 should be retained due to insufficient hydrography for disapproval. See D.R. para K.~~

3. Four rocks awash (6 b, para 2, Verifier's Report) should be retained as charted. They were ignored in ship's report.


4. ~~A 20 fathom charted depth was not disproved and should be retained as charted. See Verifier's Report 7, para 2., and Q.C. Report, para 6.~~

The inspection team finds H-9770 a good basic survey adequate to supersede common areas of prior surveys and charted hydrography with the exception of the aforementioned items. Administrative approval is recommended.


Larry W. Mordock


Pamela R. Chelgren

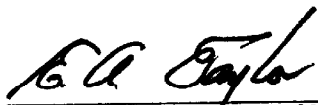

James W. Steensland


Arnold E. Eichelberger



ADMINISTRATIVE APPROVAL
H-9770

The smooth sheet and reports of this survey have been examined and the survey is adequate for charting and to supersede common areas of prior surveys.



Eugene A. Taylor, RADM
Director
Pacific Marine Center

JAN 14 1980

Date



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

OA/C352:RWD

September 25, 1980

TO: Glen R. Schaefer *GRS for*
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch *gm*

FROM: R. W. DerKazarian *R.W. DerKazarian*
Quality Evaluator

SUBJECT: Quality Control Report for H-9770 (1978), Alaska, Cook Inlet,
Vicinity of Redoubt Point

A quality control inspection of H-9770 was accomplished to monitor the survey for adequacy with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, shoreline transfer, sounding line crossings, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. Revisions and additions to the smooth sheet, plus helpful comments made to the verifier, are identified on a one-half scale copy of the survey to be furnished the verifier.

In general, the survey was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report, the HIT Report, and as follows:

1. The Descriptive Report is incomplete in that a comparison with all the most recent prior surveys in the area common to the present survey is not discussed by the hydrographer. (See section 5.3.4 of the Hydrographic Manual.)
2. The cartographic presentation of depth curves is considered deficient in several areas due to the improper delineation of the bottom configuration. Rescanning the graphic depth records to smooth curves is not essential; however, it is desirable cartographically, to show the continuity of a feature when possible. In several areas adjustments were readily made during quality evaluation after a cursory inspection of the graphic depth records. (See sections 6.3.4.4 and 7.3.1.1 of the Hydrographic Manual.)
3. Sunken rocks, covered 3 feet or more at MLLW, are not shown on the present survey as prescribed by the Hydrographic Manual. Sunken rock



symbols with covering depth notes in feet are shown for these features, instead of soundings in fathoms with "Rk" appended. Since the information as shown is clear with no danger of misinterpretation, it was not revised during quality evaluation.

4. An adequate junction was effected to the southeast with H-9776 (1978) during quality evaluation. The adequacy of the junctions to the west with H-9771 (1978) and to the south with H-9773 (1978-79) will be considered at the time of evaluation of those two surveys.

5. The 14-fathom depth charted in latitude $60^{\circ}15.4'N$, longitude $152^{\circ}22.8'W$ from H-3355 (1911) is an unsupported sounding which was determined by the use of a pressure tube. The feature is in conflict with general depths of the present survey and is considered to be in error. Therefore, the 14-fathom sounding should be disregarded. Chart the information as shown on the present survey.

6. The following supplements paragraph 7 of the Verifier's Report:

This depth does appear on earlier editions of the chart on which the 1911 surveys were applied and was possibly charted in error. It is recommended that present survey depths be charted.

7. Paragraphs 2, 3, and 4 addressed in the Hydrographic Inspection Team (HIT) Report are redundant.

8. Causes of differences between the prior and present surveys are not addressed in the Verifier's Report. (See C35x2 memorandum, March 21, 1977, "Verifier's Report Format," and section 6.3.7.2 of the Hydrographic Manual.)

A statement in the Verifier's Report suggests that the present survey is 2 to 5 fathoms shoaler than the prior survey in depths of greater than 20 fathoms between latitudes $60^{\circ}10'N$ and $60^{\circ}14'N$. This area is in common with H-3355 (1911). The reconnaissance nature of the prior smaller scale survey provides only general information of this area. In general only unimportant differences are noted between prior and present depths. A few prior soundings appear erratic, probably as a result of the methods of surveying. The present survey reveals the delineation of the bottom in much greater detail and is adequate to supersede the prior survey in the common area.

9. The final sounding listing is incomplete in that the field edit data were entered without the observed elevation value and tide correctors. These features also are improperly identified as missed soundings (cartographic code 251) rather than by cartographic code identities for rocks (094, 262, 265, or 291) in the final sounding listing.

H-9770

3

10. Three "Field Edit" volumes containing raw data are filed with the records of the present survey. Field edit data for H-9773 and H-9776 are also included in these volumes.

cc:
OA/C351



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

JAN 8 1981

OA/C351:DJ

TO: OA/CPM - Charles K. Townsend

FROM: ~~OA/CS~~ - Roger F. Lanier

SUBJECT: H-9770 (1978), OPR-P114, Alaska, Cook Inlet, Vicinity of Redoubt Point, Report of Compliance with Project Instructions

The smooth sheet and Descriptive Report for the subject survey have been examined. This survey, except as noted in the Quality Control Report, dated September 25, 1980 (copy attached), and the Hydrographic Survey Inspection Team Report, dated January 11, 1980, is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-P114-FA-78, dated April 17, 1978.

Attachment

**cc:
OA/C352 w/o att.**



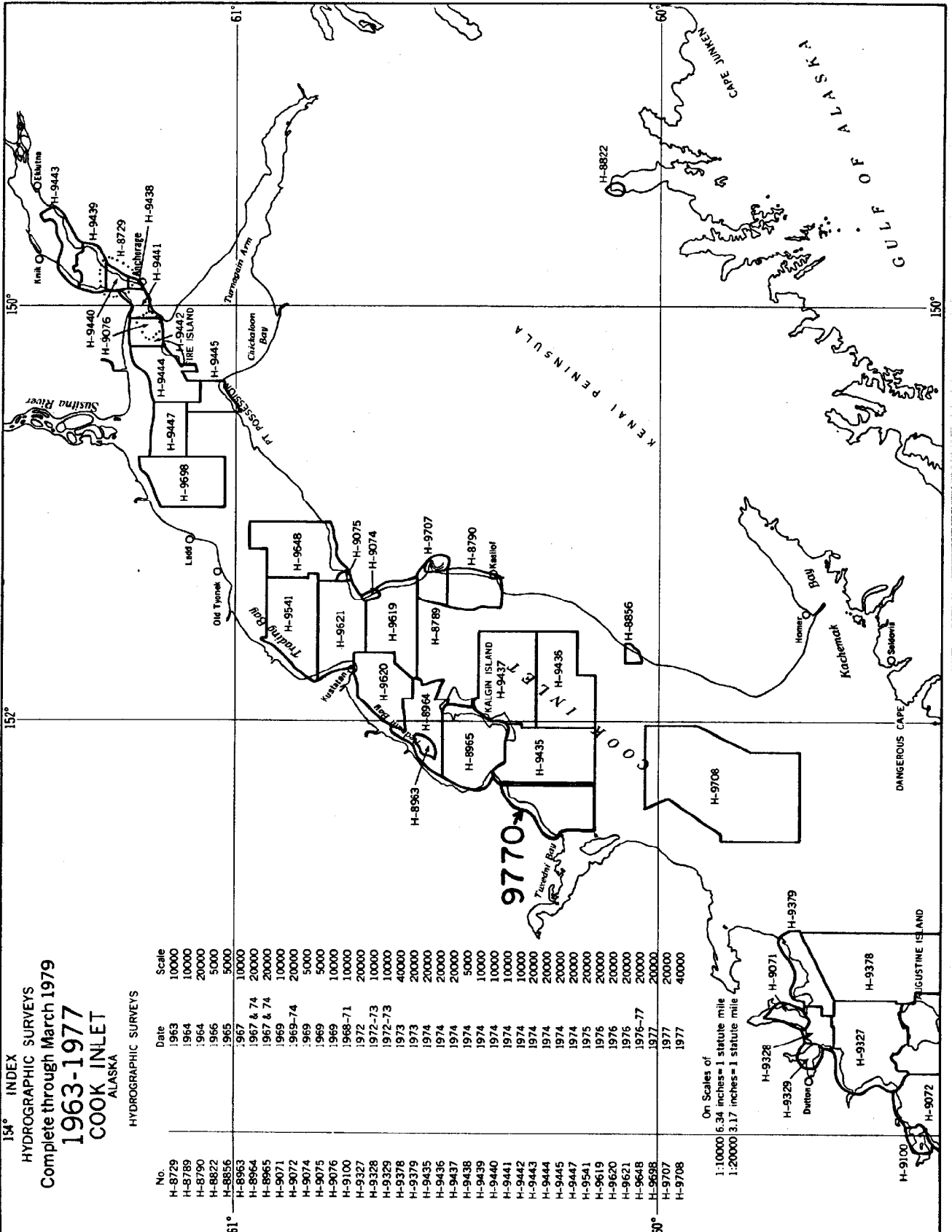
10TH ANNIVERSARY 1970-1980

National Oceanic and Atmospheric Administration

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

Hydrographic Index No. 114E



154° INDEX
HYDROGRAPHIC SURVEYS
Complete through March 1979
1963-1977
COOK INLET
ALASKA

HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-8729	1963	10000
H-8789	1964	10000
H-8790	1964	20000
H-8822	1966	5000
H-8856	1965	5000
H-8963	1967	10000
H-8964	1967 & 74	20000
H-8965	1967 & 74	20000
H-9071	1969	10000
H-9072	1969-74	20000
H-9074	1969	5000
H-9075	1969	5000
H-9076	1969	10000
H-9100	1968-71	10000
H-9327	1972	20000
H-9328	1972-73	10000
H-9329	1972-73	10000
H-9378	1973	40000
H-9379	1973	20000
H-9435	1974	20000
H-9436	1974	20000
H-9437	1974	20000
H-9438	1974	5000
H-9439	1974	10000
H-9440	1974	10000
H-9441	1974	10000
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H-9445	1974	20000
H-9447	1974	20000
H-9541	1975	20000
H-9619	1976	20000
H-9620	1976	20000
H-9621	1976	20000
H-9648	1976-77	20000
H-9698	1977	20000
H-9707	1977	20000
H-9708	1977	40000

On Scales of
1:10000 6.34 inches=1 statute mile
1:20000 3.17 inches=1 statute mile

