

9436

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 (HYDROGRAPHIC)

Type of Survey HYDROGRAPHIC
Field No. FA-20-2-74
Office No. H-9436

LOCALITY

State ALASKA
General Locality UPPER COOK INLET
Locality SOUTHEAST OF KALGIN ISLAND

19 74

CHIEF OF PARTY
Charles A. Burroughs

LIBRARY & ARCHIVES

DATE 9/28/77

9436

Jan 6
8553
8554

LT

HYDROGRAPHIC TITLE SHEET

H-9436

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-20-2-74

State Alaska

General locality Cook Inlet, Alaska

Locality Southeast of Kalgin Island

Scale 1:20,000 Date of survey 11 July - 22 August 1974

Instructions dated 8 February 1974 Project No. OPR-469

Vessel NOAA Ship FAIRWEATHER (Hull No. 2020) and Launch FA-5 (Hull No. 2025)

Chief of party CDR Charles A. Burroughs

Surveyed by Ship's Personnel including LCDR Sowers, LCDR Albright

Soundings taken by echo sounder, ~~XXXXXX~~ Ross Fineline Fatho. (s/n/'s 1054, 1046 & 1047)

Graphic record scaled by FAIRWEATHER Personnel

Graphic record checked by Ship's Personnel

Positions verified

~~Positions~~ by Robert Montemayer/Gordon E. Kay Automated plot by PMC/Xynetics Plotter

Soundings

Verification by Gordon E. Kay

Soundings in fathoms 1 ~~XXXX~~ ^{and fathoms.} at ~~XXXX~~ MLLW

REMARKS: Survey was run on GMT. The mean longitude of the survey is 151°50'W.

This boatsheet is complete and adequate for charting. No prior field work or other reports were used for this survey.

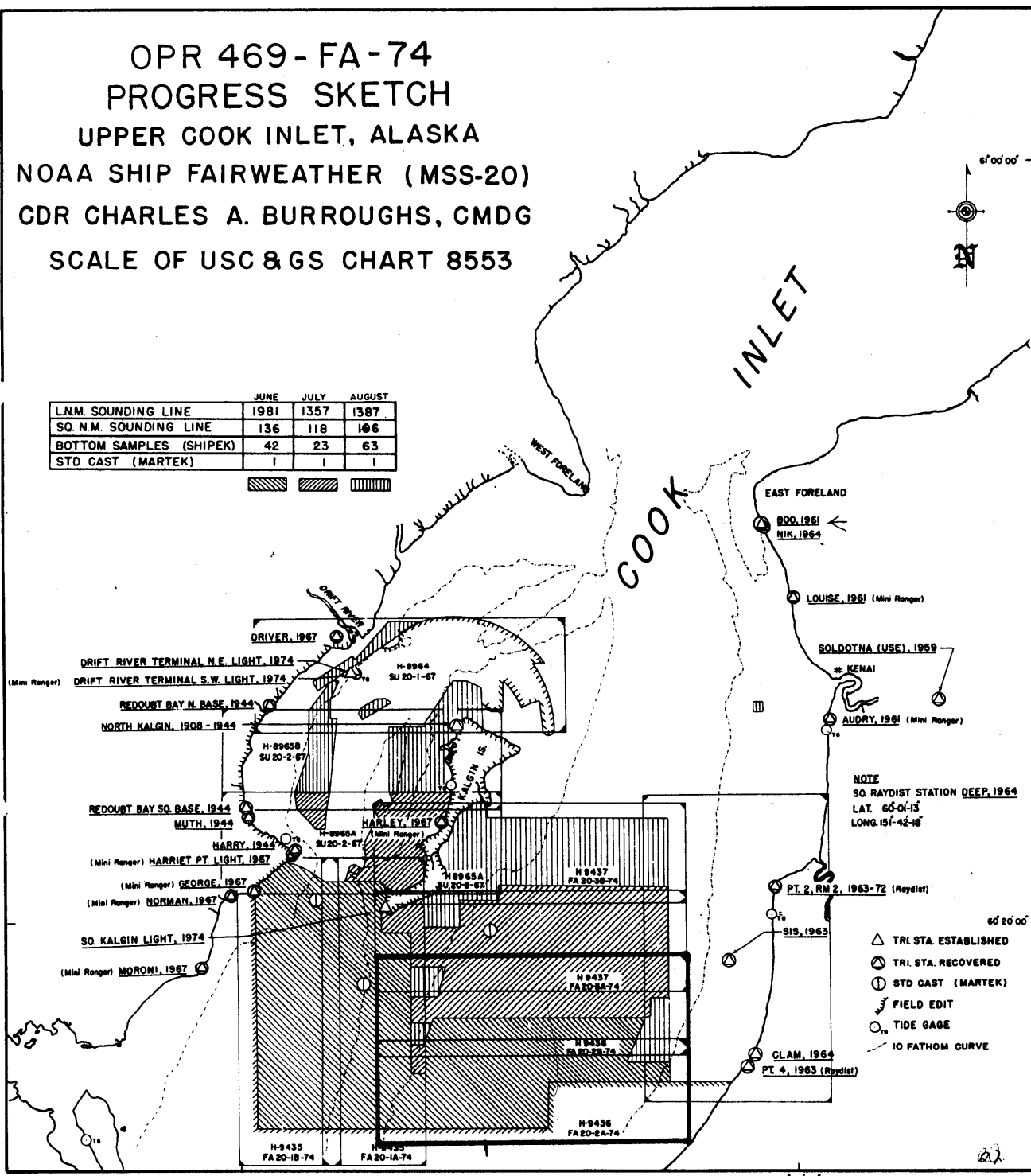
Survey Time Zone: 000° GMT

Mean Survey Longitude: 151°50'W

Field Sheet is complete.

OPR 469-FA-74
 PROGRESS SKETCH
 UPPER COOK INLET, ALASKA
 NOAA SHIP FAIRWEATHER (MSS-20)
 CDR CHARLES A. BURROUGHS, CMDG
 SCALE OF USC & GS CHART 8553

	JUNE	JULY	AUGUST
L.N.M. SOUNDING LINE	1981	1357	1387
SQ. N.M. SOUNDING LINE	136	118	106
BOTTOM SAMPLES (SHIPEK)	42	23	63
STD CAST (MARTEK)			



DESCRIPTIVE REPORT
NOAA SHIP FAIRWEATHER (MSS-20)
OPR 469-FA-74

SURVEY H-9436 (FA 20-2-74)

A. PROJECT

Project OPR 469-FA-74 was designed to provide sufficient data to fulfill general user requirements, especially in the deep draft vessel transit areas. It was carried out according to the project instructions, dated 8 February 1974 and the PMC OORDER. ✓

B. AREA SURVEYED

The survey was conducted from 11 July 1974 thru 22 August 1974, in Upper Cook Inlet, southeast of Kalgin Island. The area surveyed is bounded on the north by latitude 60°18'00" N, on the south by latitude 60°09'00" N, on the west by longitude 152°02'00" W and on the east by longitude 151°34'00" W. The survey included no shoreline. To facilitate computer plotting, the survey was divided into two computer sheets, denoted as FA 20-2A-74 and FA 20-2B-74. Computer sheet FA 20-2B-74 covers the northern portion of the survey down to latitude 60°13'30" N. Computer sheet FA 20-2A-74 covers the southern portion of the survey from latitude 60°13'30" N to the southern boundary of the survey. Sufficient overlap between computer sheets was allowed for proper junctioning. ✓

C. SOUNDING VESSELS

The survey was accomplished using the NOAA Ship FAIRWEATHER and launch FA-5. ✓

D. SOUNDING EQUIPMENT

Both vessels used Ross Fineline fathometers. A TRA corrector of +2.6 fathoms, based on previous leadline comparisons, was used for the ship. A TRA corrector of +0.4 fathom, based on bar checks taken during the project, was used for the launch. The sound velocity correctors were determined by three Martek TDC casts taken within the project area. For details see the Report on Corrections to Echo Soundings, OPR 469-FA-74. The depths of sounding on this sheet range from approximately -0.4 fathom to 40 fathoms. ✓

Sounding Instruments:

<u>Vessel</u>	<u>Instrument</u>	<u>Model</u>	<u>S/N</u>
Ship	Ross Fineline	5000	1047
Ship	Ross Fineline	5000	1064
FA-5	Ross Fineline	5000	1046

E. BOAT SHEET

All data was plotted by the shipboard Hydroplot system. To facilitate plotting, the boatsheet was divided into two computer sheets. These were plotted by the ship's PDP 8/e computer (S/N M-40-00000-1006) using a Complot plotter (Model DP-3, S/N 4670-2). The projection used was a modified transverse Mercator projection. The scale is 1:20,000. The sheets are not skewed. The origin for FA 20-2A-74 is 60°08'20" N, 152°05'35" W, and for FA 20-2B-74 the origin is 60°12'55" N, 152°05'35" W. A copy of the parameter tape printout is appended. ✓

F. STATION CONTROL

All stations and signals were either located on fixed aids to navigation with known geographic positions or over triangulation or traverse stations or reference marks. For details see the appendix of Horizontal Control Data. The North American 1927 datum was used for all work. ✓

G. POSITION CONTROL

The Hastings Raydist electronic positioning equipment, operating in the range-range mode, was used to control all the hydrography on sheet FA 20-2-74. The pattern I station was located over PT 2 1963 1972 RM 2 and the pattern II station over DEEP 1964, except for the last two days of the survey when it was located over PT 4 1963. The ship was equipped with a Raydist mobile transmitter, navigator, strip chart recorder and a 35 ft. whip antenna mounted on the foremast. Equipment on launch FA-5 was the same with the exception of the antenna which was a 9 ft. whip. ✓ The strip chart recorder was monitored and annotated at all times between calibrations. Electronic correctors were determined by averaging the calibrations, which were normally taken twice daily, weather permitting.

Calibration of the Raydist navigator was accomplished, whenever possible, by visual three-point sextant fixes utilizing signals located over, or eccentric from, triangulation stations or fixed aids to navigation with known geodetic positions. When visibility precluded visual sextant fixes, calibration of whole lane counts was accomplished using a tethered buoy, the position of which was established by Raydist based on a sextant calibration.

Equipment operation was satisfactory for the survey with the exception of the last week when only one mobile unit at a time could operate due to low signal injection level of the pattern II base station. This problem did not affect accuracy. Some signal distortion due to atmospheric was experienced, but was not of sufficient magnitude to preclude running.

Electronic correctors, derived from the calibration data, were applied to the observed ranges before plotting on the boat sheet. Slope corrections were not required.

Several sounding lines were inadvertently run in the extreme southeast corner of computer sheet FA 20-2A-74 in an area of Raydist arc intersections of less than 30°. These lines were spaced at 380 meters and were later split down to 190 meters using a different location for the pattern II base station, which provided strong arc intersections in the area. Adjacent lines compared very well, crosslines checked and the depth curves looked good. Therefore, the lines run with the weak configuration were retained.

H. SHORELINE

No shoreline was included within the survey boundaries. ✓

I. CROSSLINES

Approximately 79.0 nm., or 8.7% of the hydrography on FA 20-2-74 is crosslines. The crossline soundings agreed very well with the main scheme soundings, averaging less than one fathom variation. The maximum disagreement at no point exceeded one fathom. ✓

J. JUNCTIONS

Junctions were made only with the contemporary surveys FA 20-1-74 (H-9435) and FA 20-3-74 (H-9437), conducted by the NOAA Ship FAIRWEATHER. The three surveys are in excellent agreement, with no discernible discrepancies. ✓

K. COMPARISON WITH PRIOR SURVEYS

This survey was in generally poor agreement with H-3206 (1910). Variations of 2 to 3 fathoms over the entire area were noted. This is probably attributable to seismic disturbance and rapid tidal currents in the area. A 5 fathom variation was noted in the area near 60°17' N, 151°52' W. Survey H-3206 showed a marked depression of 31 to 32 fathoms that was not detected on this survey. ✓

L. COMPARISON WITH CHART

NOAA Chart 8553 covers the area surveyed. This chart, dated December 29, 1973, at a scale of 1:194,154, is the 15th and most recent edition and the largest scale chart of this area. The survey generally compared well with the charted soundings. Some variation was noted in areas of rapid bathymetric change, but appears to be due to the difference in scale between the survey and the chart. ✓

M. ADEQUACY OF SURVEY

All fathogram field survey records were scanned and checked for deeps and peaks. The survey is complete and adequate to supersede prior surveys for charting. ✓

N. AIDS TO NAVIGATION

There are no aids to navigation located within the limits of this survey. ✓

O. STATISTICS

<u>Vessel</u>	<u>Total Pos.</u>	<u>NM</u>
Ship	1893	749.4
FA-5	889	<u>242.0</u>
		991.4

 ✓

Total area - 102 sq. n.m.

Total bottom samples - 16

P. MISCELLANEOUS

Due to lack of time available, less than the required number of bottom samples were taken for this survey. It is felt that the coverage should be sufficient however when considering the uniformity of bottom profile over the survey area. ✓

Greenwich Mean Time was used for all survey records.

A very small area in the extreme southeast corner of computer sheet FA 20-2A-74 was surveyed with a line spacing of 190 meters rather than the specified 100 meters, because of time restrictions. The bottom in this area is very regular and no need is seen for additional sounding lines.

Q. RECOMMENDATIONS

It is recommended that this survey be accepted and used for charting purposes. ✓

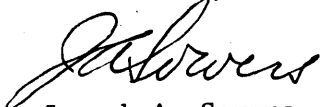
R. REFERENCES TO REPORTS

Report on Corrections to Echo Soundings, OPR 469-FA-74 ✓
Coast Pilot Report, OPR 469-FA-74
Electronic Systems Calibration Report, OPR 469-FA-74
Field Edit Reports, OPR 469-FA-74

S. DATA PROCESSING PROCEDURES

Program AM-100, version 11/10/72 was used on the ship's PDP 8/e computer to acquire and compile all ship's hydrographic on-line data. ✓
Program AM-170, version 11/10/72 was used on launch FA-5 to acquire and compile all its hydrographic on-line data.

Submitted by:




Joseph A. Sowers, LCDR, NOAA

APPROVAL SHEET

Field No. FA 20-2-74

Register No. H-9436

The boatsheet and all accompanying records are hereby approved. The survey was conducted under my personal supervision and the boatsheet and other records were examined daily. This survey is complete and adequate to supersede prior surveys for charting.


Charles A. Burroughs, CDR, NOAA
Commanding Officer
NOAA Ship FAIRWEATHER (MSS-20)
10 January 1975

✓

STATION LIST
OPR-469

STA	O	LATITUDE		LONGITUDE		CRT	ELEV(M)	F(Khz)	TYPE/NAME	SOURCE
001	4	60 17	3478	152 24	1956	139	22.0	149835	MORONI RM 2	601522
002	4	60 21	2778	152 21	0899	139	2.0		NORMAN 1967	601522
003	4	60 21	3966	152 18	4034	139	2.0	149835	GEORGE 1967	601522
004	4	60 23	4806	152 14	0644	139	24.0	149835	HARRIET PT LT.	601522
005	4	60 25	3830	152 19	1006	139	64.0		MUTH 1944	601522
006	4	60 25	2308	151 58	2115	139	2.0		HARLEY 1967	601513
007	4	60 26	0876	152 19	2639	139	3.0		R. BAY S. BASE	601522
008	4	60 31	3511	152 16	5453	139	3.0		R. BAY N. BASE	601521
009	4	60 35	1103	152 09	4301	139	5.0		DRIVER 1967	601521
010	4	60 35	0085	152 08	0633	139	2.4		RIFT 1966	601521
011	4	60 33	1344	152 08	0800	139	16.0	149835	DRT SW LT.	601521
012	4	60 20	4239	152 04	5746	139	20.0		S KALGIN LT.	601522
200	4	60 01	1332	151 42	1843	139	61.0	3300.4	DEEP 1964	601513
201	4	60 03	0385	151 39	4833	139	75.0		NINILCHIK CH.	601513
202	4	60 18	0361	151 27	1684	139	2.0		SIS 1963	601512
203	4	60 21	5578	151 22	2768	139	19.0	3300.4	PT 2 RM 2	601512
204	4	60 31	5777	151 04	5197	139	70.0		SOLDOTNA(USE)	601511
205	4	60 29	0819	151 50	0529	139	43.0		E. KALGIN LT.	601513
206	4	60 12	5342	151 24	4427	139	51.0		CLAM 1964	601512
207	4	60 30	3253	151 56	4494	139	79.0		N. KALGIN(ECC)	601514
208	4	60 12	2046	151 25	4619	139	48.0	3300.4	PT 4 1963	601512

SOUND VELOCITY CORRECTOR ABSTRACT

The following sound velocity correctors are to be applied to all soundings on sheets:

FA 20-1-74	(H-9435)
FA 20-2-74 ✓	(H-9436)
FA 20-3-74	(H-9437)
Su 20-1-67	(H-8964)
Su 20-2-67	(H-8965)
Kenai rock investigation on H-8789	

<u>Depth (fathoms)</u>	<u>Corrector (fathoms)</u>
00.0-05.5	+0.0
05.6-13.7	0.1
13.8-21.9	0.2
22.0-29.6	0.3
29.7-39.5	0.4
39.6-47.0	0.5
47.1-53.1	0.6
53.2-61.4	0.7
61.5-69.2	0.8
69.3-77.5	0.9

FIELD TIDE NOTE

Field tide reduction of soundings was based on predicted tides from Nikiski, Alaska corrected in accordance with data furnished by Tides Branch, copy attached, and with interpolation by PDP/8E computer utilizing AM500. All times of predicted tides are based on GMT. Times for recorded tides were based on 150°W time zone while tended by contract observers. The gages at Harriet Point and W. Kalgin Island were shifted to GMT when the FAIRWEATHER took over tending these gages.

Six Bristol Bubbler gages were installed by the NOAA Ship McARTHUR in six different locations in the project area. These gages were the responsibility of the McARTHUR until a minimum of 30 days of records were obtained, after which maintenance was transferred to the FAIRWEATHER. Location and period of operation is as follows:

Ninilchik	Lat. 60°03'16" N Lon. 151°40'11" W	23 May - 22 August
Chinulna Point	60°30'12" N 151°17'00" W	22 May - 22 August
Drift River	60°33'17" N 152°08'04" W	5 June - 18 August
Harriet Point	60°24'12" N 152°15'18" W	6 June - 18 August
W. Kalgin Island	60°27'09" N 151°57'24" W	11 June - 17 August
Cape Kasilof	60°20'20" N 151°22'40" W	19 June - 22 August

Ninilchik

Gage (S/N 68A9335) was installed by the NOAA Ship McARTHUR and began operation on 23 May. Records from that date to 15 July were submitted by the McARTHUR. This gage was in an area of much small boat activity and as a result of this the hose was broken several times. From 15 July to 22 August only 16 days of usable tide records were obtained. The dates for this usable data are 15 July - 20 July and 7 - 16 August. The marigram reads 18.5 feet greater than the staff.

Chinulna Point

Gage (S/N 63A2928) was installed by the NOAA Ship McARTHUR and began operation on 22 May 1974. Records from that date through 1 July were submitted by the McARTHUR. This gage gave consistently good data throughout operations. The gage and staff were removed on 22 August. The marigram reads 9.0 feet greater than the staff.

Drift River

Gage (S/N 63A2921) was installed by the NOAA Ship McARTHUR and began operation on 5 June 1974. Records from that date through 16 July were submitted by the McARTHUR. This gage gave excellent results from 17 July through removal on 18 August. The staff was placed in a location close to the high water line and gage-staff comparisons were only possible at high tides. Thus only two comparisons were made, in both cases the marigram read 22.4 feet greater than the staff.

Harriet Point

Gage (S/N 67A16206) was installed by the NOAA Ship McARTHUR and began operation on 6 June 1974. Records from that date to 15 July were submitted by the McARTHUR. Due to a clock malfunction, the data from 16 July to 6 August has been rejected. The clock was changed on 6 August and good data was obtained from that date through removal on 18 August. The marigram reads 12.5 feet greater than the staff.

W. Kalgin Island

Gage (S/N 67A16209) was installed by the NOAA Ship McARTHUR and began operation on 11 June 1974. Records from that date through 3 July were submitted by the McARTHUR. This gage gave excellent results during the entire period of operation. The marigram reads 13.8 feet greater than the staff.

Cape Kasilof

Gage (S/N 68A9329) was installed by the NOAA Ship McARTHUR and began operation on 19 June 1974. Records from that date through 12 July were submitted by the McARTHUR. Due to gage malfunctions and repeated hose fractures, data from this gage was intermittent. Good records were obtained from 13 - 24 July and 30 July to 9 August and again from 20 August through removal on 22 August. The marigram reads 12.2 feet greater than the staff.

LEVELS

The FAIRWEATHER leveled out and removed the six tide gages. No field comparison of level records was made since the most current records from the McARTHUR were not available. It is suggested that comparison be made with the last set of levels run by the McARTHUR at each gage.

ZONING

It is recommended that all zoning be done by Tides Branch after reviewing all the available tide data for the various periods of operations, including that obtained from the additional gages maintained by the McARTHUR.

Supplemental
OPR-469-FA, RA-74

RECEIVED

BY cy

SUBJECT: Tidal Zoning For Boat Sheets JUL 15 1974

NOAA FAIRWEATHER (MSS20)

Time and range corrections have been computed for each boat sheet (field sheet) and should be applied to the predicted tides for Nikiski as furnished. The recommended corrections are as follows:

Sheet	Mean Range	Ratio	Time
A			
North of 60°14'	15.5	0.89	- 1 hr.
South of 60°14'	15.0	0.86	- 1 hr. 30 m.
B			
West of 151°50'	15.8	0.91	- 1 hr. 15 m.
151°50' to 151°40'	16.5	0.95	- 1 hr.
East of 151°40'	16.8	0.97	- 1 hr. 15 m.
C			
East of Kalgin Is. to 151°40'	16.5	0.95	- 1 hr.
East of 151°40'	17.0	0.98	- 45 m.
West of Kalgin Island	15.5	0.89	- 45 m.
D			
North of 60°20'	17.4	1.00	- 45 m.
South of 60°20'	17.0	0.98	- 1 hr.
E			
West of 151°40'	16.8	0.97	- 45 m.
East of 151°40'	17.2	0.99	- 45 m.
F			
West of 151°40'	16.2	0.93	- 30 m.
151°40' to 151°30'	16.8	0.97	- 30 m.
East of 151°30'	17.4	1.00	- 15 m.*

Sheet	Mean Range	Ratio		Time
G .				
East of 151°50'	16.2	0.93	-	30m.
West of 151°50'	15.8	0.91	-	30m.
H-8963	15.5	0.89	-	45m.
H-8964				
West of 152°00'	15.5	0.89	-	45m.
East of 152°00'	16.0	0.92	-	45m.
H-8965				
West of Kalgin Island	15.5	0.89	-	45m.
East of Kalgin Island	16.5	0.95	-	1 hr.

* Time should be corrected depending on distance from the reference station, Nikiski.

5/24/76

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): Nikiski

Period: June 1 - August 22, 1974

HYDROGRAPHIC SHEET: H-9436

OPR: 469

Locality: Cook Inlet

Plane of reference (mean lower low water): 9.3 ft.

Height of Mean High Water above Plane of Reference:
18.3 ft.

Remarks: Recommended zoning:

	<u>Range Ratio</u>	<u>Time Correction</u>
1. East of 151°50' South of 60°13'	x0.93	-80 min.
2. East of 151°50' North of 60°13'	x0.93	-70 min.
3. West of 151°50' North of 60°13'	x0.87	-70 min.
4. West of 151°50' South of 60°13'	x0.87	-80 min.

James C. Hubbard
for Chief, Tides Branch

GEOGRAPHIC NAMES

Survey No.

H-9436

On Chart No. 16660 (former 1553) ~~BC53~~
 On previous survey
 On U.S. nautical charts
 From local information
 On local maps
 P.O. Guide or Map
 Rand McNally Atlas
 U.S. Light List

Name on Survey

	A	B	C	D	E	F	G	H	K	
COOK INLET	X									1
Kalgin Island (title)										2
										3
										4
										5
										6
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										10
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										23
										24
										25

APPROVED

Chas. E. Harrington

STAFF GEOGRAPHER - C51x2

3 Nov 1977

APPROVAL SHEET

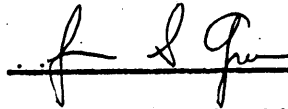
FOR

SURVEY H- 9436

- 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: 7/13/77

Signed: _____



Title: Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9436

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET with smooth PNO & excess overlay		1	BOAT SHEETS (mylar)		2	
DESCRIPTIVE REPORT		1	OVERLAYS (preliminary)		4	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	2		2-with depth records			
VOLUMES	1					
BOXES			1*			

T-SHEET PRINTS (List) * Smooth printouts, Tides & sawtooth records

SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				2790
POSITIONS CHECKED		2790	HIT	
POSITIONS REVISED		3		
DEPTH SOUNDINGS REVISED		122		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
	TIME (MANHOURS)			
Verification of Control		15		
Verification of Positions		80		
Verification of Soundings		92		
Smooth Sheet Compilation		56		
ALL OTHER WORK				
TOTALS	11	243	8	
PRE-VERIFICATION BY Arnold Eichelberger	BEGINNING DATE 2/5/75	ENDING DATE 2/6/75		
VERIFICATION BY Gordon E. Kay	BEGINNING DATE 2/13/75	ENDING DATE 7/7/77		
REVIEW BY	BEGINNING DATE	ENDING DATE		

REGISTRY NO. H-9436

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:

H-9436

Information for Future Presurvey Reviews

No significant changes have occurred in the area of the present survey since the early 1900's. A subsidence of only about 2 1/2 feet occurred in this area due to the Alaskan Earthquake of March 27, 1964.

<u>Position Index</u>		<u>Bottom Change Index</u>	<u>Use Index</u>	<u>Resurvey Cycle</u>
<u>Lat.</u>	<u>Long.</u>			
601	1514	1	2	50 years
601	1515	1	2	50 years
601	1520	1	2	50 years
601	1521	2	2	50 years

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO: H-9436

FIELD NO: FA-20-2-74

Alaska, Upper Cook Inlet, Southeast of Kalgin Island

SURVEYED: 11 July - 22 August 1974

SCALE: 1:20,000

PROJECT NO: OPR-469

SOUNDINGS: Ross Fineline Fathometer

CONTROL: Hasting Raydist,
Range/Range

Chief of Party.....CDR Charles A. Burroughs
Surveyed by.....FAIRWEATHER Personnel/LCDR's
Sowers and Albright
Automated Plot by.....PMC Xynetics Plotter
Verified and Inked by.....Gordon E. Kay
July 13, 1977

I. INTRODUCTION

Survey H-9436 is a fair basic hydrographic survey designed to provide sufficient data for deep draft vessel transit areas and to fulfill general users requirements and is adequate to supersede common areas of prior surveys and charted soundings. The area surveyed is located south, southeast of Kalgin Island in Upper Cook Inlet.

NOAA Ship FAIRWEATHER, MSS-20, conducted this survey during their 1974 summer field season, 11 July - 23 August 1974.

Projection parameters used to prepare the boatsheet have been revised to center the hydrography on the smooth sheet. These parameters and all correctors used to reduce soundings by PMC are appended in the smooth printout.

Field tide reductions of soundings are based on Nikiski, Alaska and corrected in accordance with data furnished by Tides Branch. See Field Tide Note - Ship's Descriptive Report for an adequate description of tides.

Problems were encountered in the verification process due to incomplete tides at station Ninilchik (See Field Tide Note - Ship's Report). Due to incomplete data for the entire survey, tides were derived from Seldovia for the lost days.

This data was then applied to H-9436 and H-9437 but problems occurred in shoal areas on H-9437, giving inconsistent data on alternating sounding lines. Tides Division, Rockville, was consulted and new data for application to H-9436 and H-9437 supplied to PMC with tidal data and zoning from station Nikiski. Final smooth tides from station Nikiski are utilized for this smooth sheet.

II. CONTROL AND SHORELINE

H-9436 is an offshore survey in Upper Cook Inlet with no shoreline within the limits of smooth sheet.

Reference paragraphs F, G and Appendix of Horizontal Control Data of Ship's Descriptive Report, for an adequate description of control. Adjacent sounding lines in the southeast corner of the survey were run with weak intersections resulting in up to two fathoms difference between adjacent lines. Consideration was made to the conformity of the bottom configuration and smooth fitting depth curves and portions of the weak control lines were rejected.

III. HYDROGRAPHY

The soundings embodied in this survey are comprehensive enough to delineate the bottom configuration and determine least depths, with crosslines in good agreement with main scheme soundings. Soundings agree quite favorably with one another with no problems encountered in the drawing of depth curves. Fix numbers have been changed for the smooth sheet bottom samples to avoid duplicate numbers. These are 14 bottom samples.

IV. CONDITION OF SURVEY

The overall condition of H-9436 is found to be satisfactory with the accompanying overlays and reports being adequate and conforming to the requirements of the Hydrographic Manual and the Provisional Hydrographic Manual. The following deficiencies are noted:

- a. There are two dashed Pre-Survey Review soundings that were not adequately disposed of (See Paragraph VII of this report) during the course of this survey. It would have been more ~~advantages~~ *advantageous* for the hydrographer to develop these areas at a closer line spacing than 100-200 meters.
- b. Marginal notes on raw data printouts and fathograms were either inadequately annotated or not annotated at all.
- c. The lack of organization in the labeling and storage of data in the cahier made verification cumbersome.

V. JUNCTIONS

H-9436 junctions with contemporary surveys H-9435 (1974) 1:20,000 and H-9437 (1974) 1:20,000, both are in very good agreement with H-9436. Junction notes and depth curves have been inked.

VI. COMPARISON WITH PRIOR SURVEYS

This survey was compared to the following surveys:

H-3198 (1910) 1:120,000. This survey differs from H-9436 by 1-3 fathoms, with H-3198 general having the deeper soundings.

H-3206 (1910) 1:120,000. This survey is generally 2-3 fathoms, up to 5 fathoms, deeper than present survey.

Difference in the above comparison surveys can be accounted for due to scale difference and to modern data acquisition and positioning techniques. With the transfer of a sounding from H-3206, the current survey (H-9436) is adequate to supersede H-3198 and H-3206 over its common areas.

VII. COMPARISON WITH CHART

Comparison with Chart 8553 (16660), 15th Ed., December 29, 1973, 1:194,154 was made and H-9436 is considered adequate to supersede charted hydrography with the following exception:

A 1/4 fathom sounding, Lat. $60^{\circ}17.4'$, Long. $152^{\circ}01.8'$ listed as a dashed PSR item (see above) is located 100 meters south of a 1⁰ fathom sounding. It appears that the source of this 1/4 fathom, charted sounding come from H-3206, 1:220,000 (1910) and was surveyed as a foot sounding. A 0² sounding has been transferred to the smooth sheet from H-3206 and should be charted.
See P.C. report.

A 13-fathom sounding at Lat. $60/163'$, Long. $151/425'$ listed as a dashed PSR item (see Pre-Survey Review OPR-469, dated 12/7/66) falls between two sounding lines, but lies 120 meters southwest of a 13-fathom sounding on H-9436. No further investigation is needed to dispose of this PSR item, H-9436 data should be charted.

Charted hydrography originates ^{with} ~~from~~ the prior surveys discussed previously.

There are no aids to navigation on this survey area.

VIII. COMPLIANCE WITH INSTRUCTIONS

H-9436 complies with Project Instructions OPR-469-FA, RA-74, Upper Cook Inlet, Alaska, dated 8 February 1974.

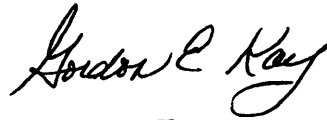
IX. ADDITIONAL FIELD WORK

This survey is a fair basic survey. Additional field work is not recommended at this time.

X. NOTES TO COMPILER

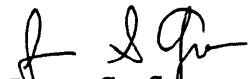
The signal list is at the beginning of the position printout. The tide corrector printout is in the raw printout cahier.

Respectfully submitted,



Gordon E. Kay
Cartographic Technician
July 13, 1977

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 Ave. E., Seattle, WA 98102

Date: 13 September 1977

To: Eugene A. Taylor, RAEM
Director, PMC

From: *Glen R. Schaefer*
Glen R. Schaefer, CDR
Chief, Processing Division

Subject: PMC Hydrographic Survey Inspection Team Report - H-9436

This survey is a basic hydrographic survey of a portion of Upper Cook Inlet, Alaska. This survey was conducted by NOAA Ship FAIRWEATHER in 1974 in accordance with Project Instructions OPR-469-FA-74, dated 8 February 1974.

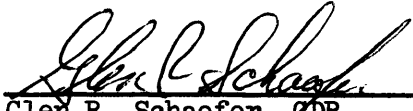
Tide correctors for this survey are questionable as is visible on the comparison of adjacent sounding lines run on different days in 10-15 fathom depths on the eastern portion of the sheet. An apparent error of about 1 fathom is evident at crosslines and when sketching in a 15 fathom depth curve. Retention of all data is recommended when considering that the tide correctors have already been supplied twice by Tides Division, that the bottom appears regular in nature, and that the area with the apparent tide problem is not critical to shipping with adjacent deep water on the western portion of the survey.

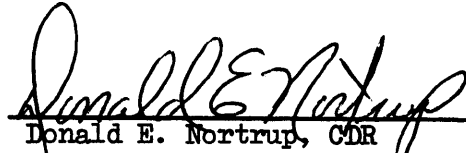
Daily Raydist calibration data was recorded in such a poor format that it is impossible to reconstruct the daily correctors. Therefore, the correctors were used as supplied by the ship, even though they could not be verified in the office.

The smooth sounding sheet was plotted on the PMC Xynetics Plotter by linear interpolation for position of intermediate soundings between fixes. Occasional additional fixes were selected from the raw data to more adequately accommodate the irregular sounding lines noted on the ship's final plotter sheet.



The inspection team finds survey H-9436 to be a fair basic survey, adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended.


Glen R. Schaefer, CDR

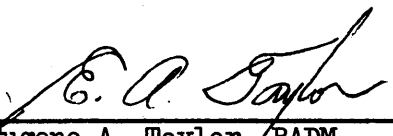

Donald E. Nortrup, CDR


Dean R. Seidel, LCDR


Arnold E. Eichelberger

ADMINISTRATIVE APPROVAL
H-9436

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



Date



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

C352

November 15, 1977

TO: *A. J. Patrick*
A. J. Patrick
Chief, Marine Surveys Division

FROM: *G. K. Myers*
G. K. Myers
Chief, Quality Control Branch

SUBJECT: Quality Control Report for H-9436 (1974), Alaska, Upper Cook Inlet, Southeast of Kalgin Island

A quality control inspection of H-9436 (1974) has been accomplished to evaluate the accuracy and adequacy of the survey with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, decisions and actions by the verifier and cartographic presentation of data.

Junctional surveys listed in section 5 of the Verifier's Report are not available for inspection of the junctions. The adequacy of the junctions will be considered during the course of their respective quality control inspections. At the project limits on the east and south, present depths are in harmony with charted depths.

In general, the present survey was found to conform to National Ocean Survey standards and requirements except as follows:

1. The label RK recorded in error on the boat sheets and sounding volume of the present survey was appropriately inked as rky on the smooth sheet by the verifier. RK or ROCK is used only when a solid rock pinnacle that protrudes sharply from the bottom or rock ledge are identified by the hydrographer. Offshore depths on the present survey portray a gradual slope in areas described by RK labels in the survey records.
2. Conflicting descriptions of bottom samples obtained by the ship are annotated at duplicated locations within the survey records.
3. In addition to differences between prior and present depths noted in the Verifier's Report, a comparison with prior surveys during quality evaluation revealed some prior depths to be as much as 4 fathoms shallower than present depths. Prior soundings in many areas appear erratic, probably as a result of methods of surveying. These soundings are considered discredited by present development.



With the addition of some bottom characteristics carried forward from the prior surveys, the present survey is considered adequate to supersede the prior surveys in the common area.

4. The 1/4-fathom sounding charted at latitude $60^{\circ}17.4'$, longitude $152^{\circ}01.8'$ was carried forward from H-3206 (1910) during verification. This sounding falls in present depths of 1 1/2 to 2 1/2 fathoms. Inasmuch as a subsidence of only about 2 1/2 feet resulted in this area due to the Alaskan Earthquake of March 27, 1964, according to the report, Volume III, Prince William Sound, Alaska Earthquake 1964 and Aftershocks, the conflict with the prior depth is considered to be due to an error in prior hand lead reading or faulty position determination. The aforementioned sounding was deleted from the smooth sheet during quality control.

5. Only one calibration phase check of the Ross Finline Depth Recorder was recorded on the graphic record by the hydrographer. (See provisional manual--appendix A.6.3.2.1)

6. The fathogram and raw data printout for fathometer soundings on day 234 between positions 1885-1916 by the Ship FAIRWEATHER are missing from the survey records.

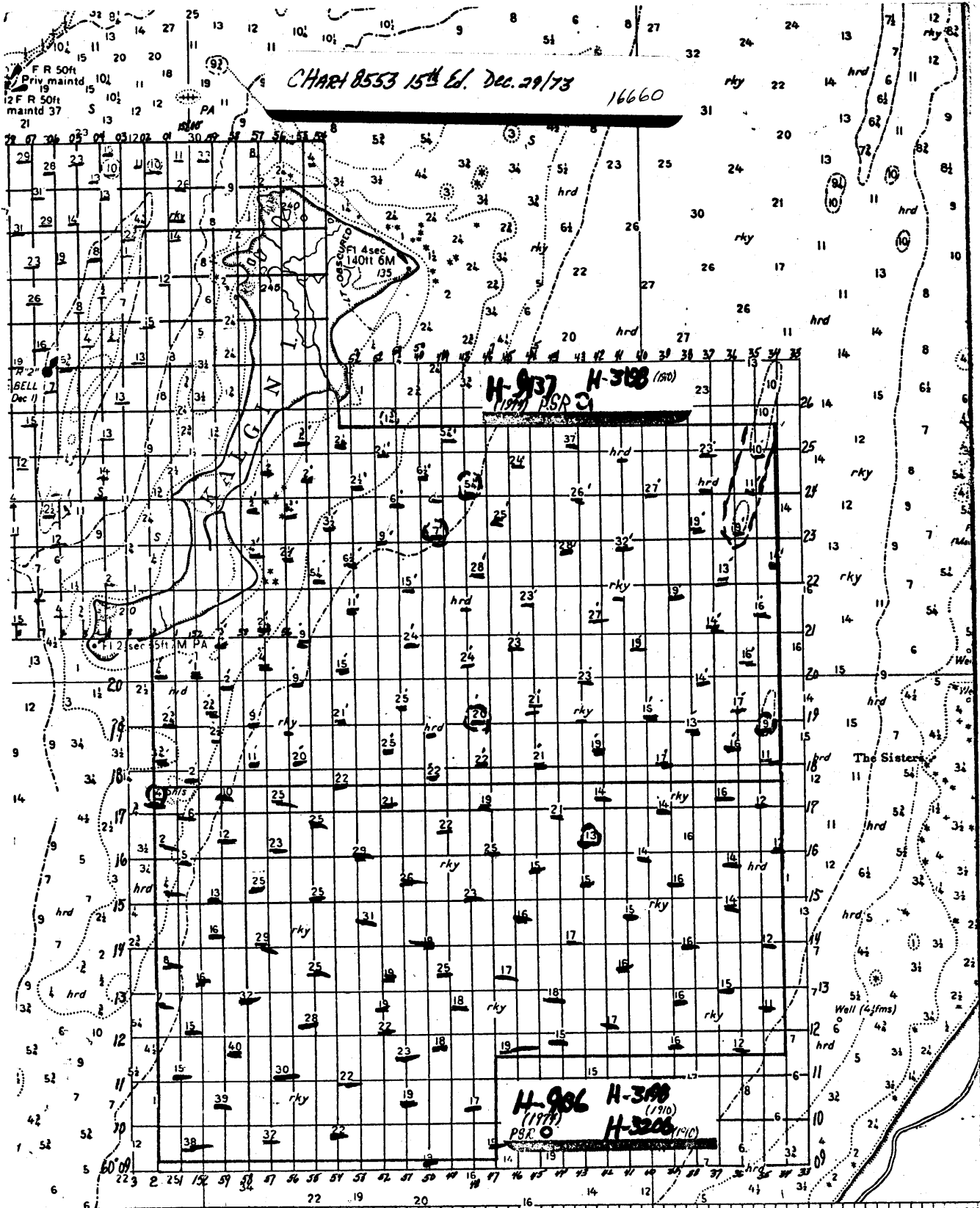
7. The brush recorder tape for position fixing on day 234 is missing from the survey records.

8. A 22-fathom sounding located at latitude $60^{\circ}09.94'$, longitude $151^{\circ}50.43'$ was erroneously scanned as a 27-fathom sounding from the fathogram.

cc:
C351

Chart 8553 15th Ed. Dec. 29/73

16660



F R 50ft
 Priv maintd
 12 F R 50ft
 maintd 37

Observed
 Fl 4sec
 140ft 6M
 135

H-937 H-398 (1970)
 (1970) PSP 3

H-986 H-398
 (1970) PSP 0
 H-300 (1970)

The Sisters

Wall (42ms)

152° (JOINS CHART 8554) 50' 40' 30'

