

9958

Diagram No. 8554-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. RA-20-3-81
Office No..... H-9958

LOCALITY

State Alaska
General Locality Cook Inlet
Locality Entrance to Kachemak Bay

19 81

CHIEF OF PARTY
CDR R.J. Land

LIBRARY & ARCHIVES

DATE February 24, 1984

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

AREA: 6
SPTS:
10645
10646
10647
10648
10649
10650 } to sign off see
 } Record of Application

HYDROGRAPHIC TITLE SHEET

H-9958

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-20-3-81

State Alaska

General locality Cook Inlet

Locality Entrance to Kachemak Bay

Scale 1:20,000 Date of survey July 11 - August 19, 1981

Instructions dated January 8, 1981 Project No. OPR-P114-RA-81

Vessel NOAA Ship RAINIER Launches 2123, 2124, 2125

Chief of party CDR Ralph J. Land, NOAA

Surveyed by LT M. Kretsch, LTJG F. Ohlinger, SST R. Hastings, Mr. G. Eaton

Soundings taken by echo sounder, hand lead, pole

Graphic record scaled by RAINIER Survey Department

Graphic record checked by RAINIER Survey Department

Verification ~~checked~~ by Richard Shipley Automated plot by PMC Xynetics Plotter

Evaluation ~~checked~~ by Gordon E. Kay

Soundings in fathoms feet at MLW MLLW and tenths of fathoms

REMARKS: AW015-316184 JPA

App'd to 576' 2-27-84 JPA

PROGRESS SKETCH
 OPR-P114-RA-81
 HYDROGRAPHIC SURVEY
 SOUTHERN COOK INLET, ALASKA

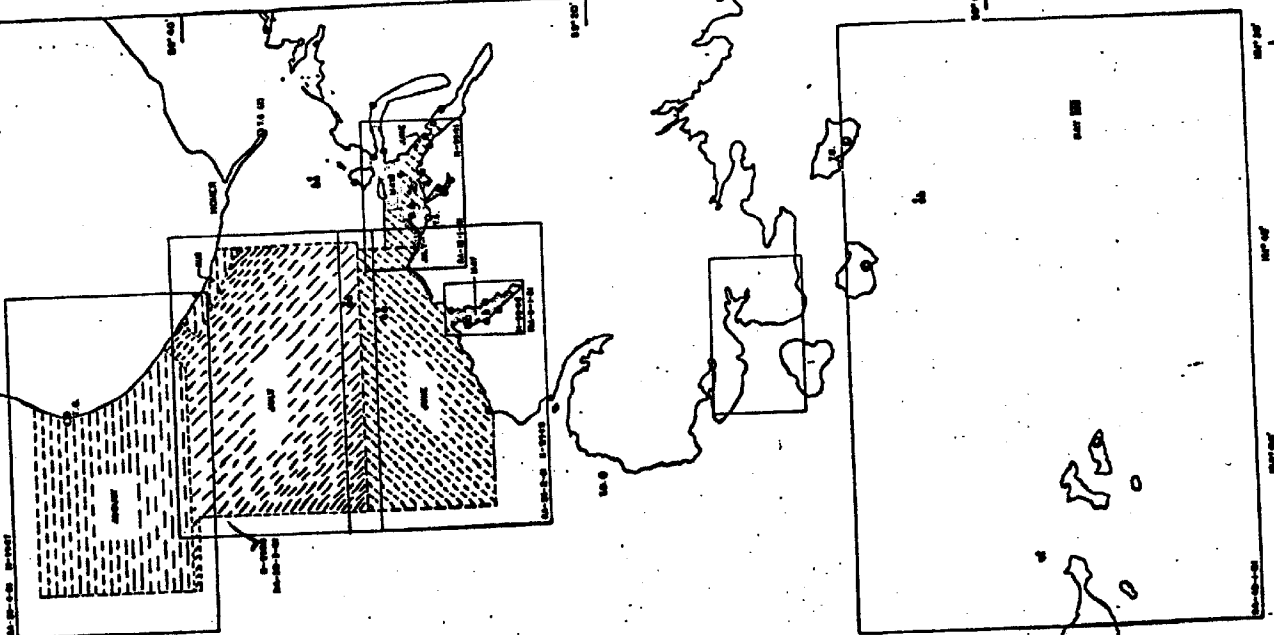
MAY 4 - AUGUST 22, 1981

NOAA SHIP RAINIER
 WAYNE L. MOBLEY, CAPT., NOAA
 (FROM JULY 2, 1981)
 RALPH J. LAND, CDR., NOAA
 (FROM JULY 9, 1981)

COMD'G
 FROM CHART 16640

DATE	TIME	NO.	NO.	NO.
1981	0700	100	100	100
1981	0800	100	100	100
1981	0900	100	100	100
1981	1000	100	100	100
1981	1100	100	100	100
1981	1200	100	100	100
1981	1300	100	100	100
1981	1400	100	100	100
1981	1500	100	100	100
1981	1600	100	100	100
1981	1700	100	100	100
1981	1800	100	100	100
1981	1900	100	100	100
1981	2000	100	100	100
1981	2100	100	100	100
1981	2200	100	100	100
1981	2300	100	100	100
1981	2400	100	100	100

NO. SUR. STATIONS
 L.W. SOUNDING LINE
 L.W. MISCELLANEOUS DISTANCE
 BOTTOM SAMPLES TAKEN
 WATER SAMPLES ANALYZED (SALINITY)
 CONTROL STATIONS ELECTRONIC
 TEMPERATURE, DEPTH, CONDUCTIVITY
 WINDSPEED, WIND DIRECTION
 TIDE GAUGE
 STATIONS ESTABLISHED BY TRANSVERSE



A. PROJECT

This project was accomplished in accordance with Project Instructions OPR-P114-RA-81, Southern Cook Inlet, Alaska, dated January 8, 1981. Supplements to these instructions include Change Number 1, February 23, 1981, Change Number 2, March 10, 1981, and Change Number 3, June 4, 1981. ✓

B. AREA SURVEYED

Survey H-9958 was conducted near Bluff Point on the north shore of the mouth of Kachemak Bay, Alaska. The approximate limits of the sheet are : ✓

59°31.5' N to 59°40.5' N
152°01.5' W to 151°36.5' W

The beach below Bluff Point infringes upon these limits in the north-east corner of the survey. Sounding lines were run 180 m apart in all areas except south of 59°35' where the coverage was expanded to 360 m and 720 m due to increasing depths. The 125 square mile area was surveyed at a scale of 1:20,000 over a 39 day period from July 11, 1981 (JD 192) to August ~~18~~¹⁹, 1981 (JD ~~230~~²³¹). ✓

Hydrography was run inshore to the foul limit. This limit was determined by field edit and was transferred to the boatsheet before hydrography was run. The few crosslines that actually cross the foul limit do so because of the extreme height of tide at which they were run. ✓

C. SOUNDING VESSELS

The following vessels were used to perform this survey:

<u>Vessel</u>	<u>EDP No.</u>	<u>Hull No.</u>	<u>Usage</u>
RA-3	(2123)	1007	Range/Range Hydrography
RA-4	(2124)	1016	Range/Range Hydrography
RA-5	(2125)	1003	Range/Range Bottom Samples

 ✓

No unusual sounding vessel configurations or problems were encountered. Both hydrographic launches showed excellent agreement in their soundings.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Introduction

The echo sounding corrections contained in this report are to be applied to Hydrographic Survey RA-20-3-81 (H-9958) in Cook Inlet, Alaska. This survey was conducted between July 11, 1981 and August ~~18~~¹⁹, 1981 (JD 192-~~230~~²³¹). The following echo sounding corrections are discussed: sound velocity corrections, launch draft corrections, settlement and squat ✓

corrections and instrument corrections for blanking, initial, and phase errors. Sea and swell errors were not found to be significant during this project and were not corrected for. ✓

Sounding Equipment

Echo soundings obtained during this survey were taken with Ross Fine-Line fathometer systems which include the following components: Ross Model 4000 Transceiver, Ross Model 5000 Analog Recorder, Ross Model 6000 Digitizer and a 100 kHz transducer. The following table summarizes the serial numbers of the various components used in each vessel. ✓

Echo Sounder Component Serial Numbers

<u>Component</u>	<u>RA-3(2123)</u>	<u>RA-4(2124)</u>	<u>RA-5(2125)</u>
Transceiver	1041	1042	1040
Analog Recorder	1042	1071	1040
Digitizer	1041-4	1042	1040

Sound Velocity Correctors

Seven Nansen and four Martek casts were performed during OPR-P114-RA-81 (see H.O. 607, Instruction Manual for Obtaining Oceanographic Data, Third Edition, U.S. Naval Oceanographic Office, 1968). Final sound velocity correctors were derived from the Nansen casts only. Some Martek data was questionable because of inconsistent conductivity readings, therefore were not used. ✓

The Martek TDC Instrument, Serial Number 357 was last calibrated at the Northwest Regional Calibration Center in Bellevue, Washington in April 1981.

The details of the Nansen and Martek casts which apply to this survey are presented in the following table.

Nansen/Martek Cast Data

<u>Cast Type</u>	<u>Date</u>	<u>Location</u>	<u>Applicable Survey</u>	<u>Velocity Table</u>
Nansen	6/5/81	59/33/36 N	H-9941	3,4
Martek		151/29/42 W	H-9945	
			H-9958	
			H-9967	
Nansen	7/13/81	59/28/48 N	H-9941	4
		151/33/00 W	H-9945	
			H-9958	
			H-9967	

Nansen	7/17/81	59/30/48 N 151/42/54 W	H-9941 H-9945 H-9958 H-9967	4,5	✓
Nansen Martek	8/14/81	59/32/30 N 151/42/42 W	H-9941 H-9945 H-9958 H-9967	6	

Samples from the Nansen casts were analyzed for salinity using standard laboratory procedures (see H.O. 607). The salinometer used for these analyses was a portable Hytech salinometer (SN 4919) which was last calibrated in April, 1981, by the Northwest Regional Calibration Center in Bellevue, Washington. ✓

Results from the Nansen casts were input into computer program RK 530 Velocity Correction Computations and run on the RAINIER's PDP 8/e Digital Computer, SN 1026. ✓

For more information on sound velocity corrections, refer to the Corrections to Echo Soundings Report, OPR-P114-RA-81. ✓

Launch Draft Corrections

Corrections for launch draft were determined from standard bar checks (see Hydrographic Manual). Bar checks were performed each day by each launch prior to and at the completion of survey operations. Graduations on bar hand lines were compared with steel measuring tapes prior to and at the completion of OPR-P114-RA-81 and were found to be accurate. ✓

The mean fathometer depth values were subtracted from the corresponding true bar depths to obtain a series of "bar check correctors." Bar check correctors were co-plotted on the sound velocity correction curve. The sound velocity correction was subtracted from the bar check data to obtain the true TRA value. These were then averaged to obtain final launch draft corrections. ✓

Since these corrections were not available until completion of the project an estimated launch draft correction of 0.3 fathoms was used for plotting of boat, semi-smooth and smooth field sheets. Computed launch draft correctors, in the TC/TI tape listings are included in the separates to this text. ✓

Launch Settlement and Squat Corrections

Settlement and squat tests on RA-3, RA-5, and RA-6 were performed April 15, 1981 off Sandpoint Naval Support Activity on Lake Washington. ✓

Tests were performed on RA-4 on April 27, 1981. The RA-3 full speed test was performed at Kawaihae, Hawaii on October 3, 1981. Tests were performed by the following method: a level rod, graduated in feet, was held above the transducer in each launch. A self leveling Zeiss Ni 2 level was set up on stable ground and readings were taken at different speeds as the launch headed directly toward the level operator. Since the tests were run on an inland lake, no tidal effects were considered. Tides were accounted for on the RA-3 full speed test by comparing the launch 0 RPM elevation before and after the test. The speeds utilized were the same normally used by RAINIER personnel in the field.

The corrections obtained from the tests are included in the attachments to this report for reference but they were not placed on TC/TI tapes or applied to field plotting sheets. These corrections are considered insignificant for this project in accordance with PMC OORDER 3-03.06X1, page 3-31:

"Settlement and squat errors are commonly ignored when operating in areas of irregular bottom, at various speeds, as this error is usually insignificant if the sounding unit is fathoms."

Since launch RA-4 was not used above 2400 RPM, the largest potential error from settlement and squat during this project is 0.07 fathoms.

Sounding Instrument Corrections

During survey operations, the "blanking" depth, when used, was set to a value slightly shoaler than the shoalest bottom depth expected, and was adjusted as the depth changed. Corresponding analog depths were substituted for missed digital soundings during field scanning operations.

The initial trace on the analog recorder was frequently monitored and was adjusted, when necessary, to prevent errors. To prevent belt length error or stylus/paper misalignment on the analog recorders, RAINIER personnel performed "phase calibrations" of the recorders each day.

Manual Sounding Corrections

Manual soundings were taken with hand-held lead lines where required. Depth markings on these lead lines were compared with a steel measuring tape before and after OPR-P114-RA-81, and were found to be accurate. Since the recording of lead line soundings was often interspersed with fathometer soundings, special care was taken to prevent the application of sound velocity corrections to lead line depths.

For additional information, refer to the Corrections to Echo Soundings Report, OPR-P114-RA-81.

E. HYDROGRAPHIC SHEETS

All hydrographic field sheets including the smooth field sheet were prepared using the PDP 8/e complot system on board the RAINIER. A modified transverse mercator projection was used for plotting the hydrographic data. The list of parameters used to define the hydrographic sheets is included in the separates following the text. All field records will be sent to the Pacific Marine Center, Seattle, Washington for verification. ✓

The survey was conducted at a scale of 1:20,000 with no irregularities in projection or scale. ✓

F. CONTROL STATIONS

Horizontal control during this project was provided by the recovery of 35 existing stations and establishment of 26 new stations. This survey was controlled using 6 of those stations. A copy of the Master Station List is included in the attachments to this report. *see smooth sheet control listing* The stations used each day are listed in the raw records, and found on the Master Station List. The new stations were established using Third Order, Class I traverse methods, and were monumented and described. The North American 1927 datum was used in the survey.

The following stations appear on this sheet: TP#10, BLUFF POINT 2, 1956, TP#11, KILLER LADY, 1981. ✓

Details concerning the location and recovery of each station, including the field records and processing computations are located in the Horizontal Control Report, OPR-P114-RA-81. ✓

G. HYDROGRAPHIC POSITION CONTROL

Electronic range/range methods were used for hydrographic position control during this survey. Both Teledyne-Hastings Raydist and Motorola Mini-Ranger III systems were employed. ✓

Raydist mobile equipment used is listed below:

<u>Vessel</u>	<u>Transmitter</u>	<u>Navigator</u>	<u>Lane Follower</u>	<u>Panalogic</u>	✓
2123	TA-96B #170	ZA-75C #117	187,188	35 (13 after JD 163)	
2124	TA-96B #167	ZA-75C #115	181,162	17	
2125	TA-96B #166	ZA-75C #114	170,118	12	

Raydist shore stations were:

<u>Raydist</u>	<u>Station</u>	<u>Signal #</u>	<u>Transmitter #</u>	<u>Frequency</u>
RED	MOUND, 1913	101	232	1648.015 kHz
GREEN	RED, 1979	102	120	1648.425 kHz

Propane fueled thermal generators supplied power to both Raydist sites.

Mini-Ranger mobile equipment used was:

<u>Vessel</u>	<u>Console #</u>	<u>R/T #</u>
2123	720	2710
2124	30269	SM312
2125	711	1646

The Mini-Ranger transponders used on shore stations were:

<u>Code</u>	<u>Station #</u>	<u>Transponder S/N</u>
B	150	4951
C	138	1628
D	211	1569
F	129	912698

Mini-Ranger shore stations were powered by two 12 volt auto batteries in series. On some stations, a solar panel array was installed to maintain battery charge.

Raydist Performance

The Raydist installation gave excellent line of position intersection angles and signal reception throughout the survey area. Other than the following, no problems were encountered with the physical installation.

A faulty thermal generator was replaced at the Red Raydist station August 3, 1981. The generator voltage had been slightly low, causing a weak signal. No further problems were experienced with the Raydist shore stations.

Due to mistuned equipment, the RA-3 Panalogic unit drifted on JD 205. The affected data was rejected. No further problems occurred.

Raydist Calibration and Correctors

Calibration of the Raydist equipment was performed in the field at the beginning of each survey day, at the end, and at any time system integrity was in doubt. ✓

Calibration was achieved by taking at least five observations of visual angles to signals over Third Order, Class I or better geodetic control stations. All electronic-visual observations agreed within the standards set forth in section 1.3.3.2.4 of the Hydrographic Manual; that is, within 10 m or 0.5 mm at the scale of the survey, whichever is less. For all Raydist calibrations, that tolerance was 10 m or approximately 0.2 lanes. *

On two days, when visual signals were not visible for the evening Raydist calibration, the Mini-Ranger system on board the launch was used. At least five Mini-Ranger range/range fixes were collected for Raydist calibration purposes, adhering to the above mentioned accuracy standards. The Mini-Rangers used were checked by visual fixes earlier in the day to check their operation. *

Mini-Ranger ranges were often collected and recorded during Raydist controlled hydrography to provide a check of Raydist lane count, and to assist in isolating lane jumps. *

Morning and evening Raydist correctors were meant to provide daily correctors for plotting the data. When lane jumps were encountered, the strip chart was analyzed to locate the jumps. Correctors were then applied at the appropriate times to account for the lane jumps. On the data where lane jumps could not be positively located, the survey data was rejected. *

Morning and evening Raydist correctors agreed within 0.5 mm at the scale of the survey on all but the following day: ✓

RA-20-2-81 (H-9958)

203/204 2123 3678-3846 RED: 1.0 mm, GREEN 0.6 mm

When correctors for this day were meant, the morning and evening correctors agreed within ± 0.5 mm of the mean at the scale of the survey. *

Mini-Ranger Performance

Performance of all Mini-Ranger equipment was satisfactory throughout the course of OPR-P114-RA-81. All shore stations were situated over Third Order, Class I geodetic control stations or better. The transponders were one to three meters above the stations. ✓

* See letter March 19, 1981 and March 26, 1981 attached to this report.

During data collection, Mini-Ranger performance was monitored and noted on the raw data printout. When signal strengths fell below the cutoff values determined by the baseline calibrations, data collection was discontinued until acceptable signal strengths could be obtained. ✓

Mini-Ranger Calibration and Systems Checks

Mini-Ranger daily checks were performed by sextant fixes to visible Third Order, Class I stations and met tolerances specified in section 1.3.3.2.4 of the Hydrographic Manual, and the PMC OORDER, Appendix M. ✓

Mini-Ranger baseline calibrations were performed at the Homer Airport per PMC Operational Order, Appendix M. The initial baseline calibration values were used to rough plot data and the initial and ending calibrations were meant for smooth plotting. Initial baseline calibrations provided the low signal strength cutoff values used during the survey. ✓

No unusual problems or configurations were encountered. Further information can be found in the Electronic Control Report, OPR-P114-RA-81, submitted separately.

H. SHORELINE

Shoreline was transferred to the field sheet from the 1:20,000 Class III photomanuscripts TP00802 and TP00799. ✓

Field edit was accomplished throughout the area of H-9958 concurrently with survey operations. Field edit information has been transferred to the field sheet. There were no discrepancies discovered or revisions required of the shoreline manuscript by the hydrographer. Stations 216, 218, and 231 are seaward of the mean high water line and are described in the Horizontal Control Report, OPR-P114-RA-81. ✓

I. CROSSLINES

One hundred thirty-five miles of crosslines, comprising 11% of the sounding lines were run. All crossings agreed within the specifications in Section 1.1.2 Part B.II.1 of the Hydrographic Manual except one which was 0.5 fm off. In general, crossline agreement was excellent. ✓

J. JUNCTIONS

This survey junctions with H-9877 (1:20,000 dated 1980) and with concurrent surveys H-9945 (RA-20-2-81) and H-9967 (RA-20-4-81). All junction soundings agreed within 1 fathom utilizing the 1.5 mm displacement rule for comparison of soundings. Junction agreement is very good. The few disagreements which slightly exceed the specifications of Section 1.1.2 Part B.II.1 are in areas of irregular bottom. ✓

topography where small disagreements are expected due to the non-coincidence of the compared soundings. ✓

K. COMPARISON WITH PRIOR SURVEYS

Prior surveys covering the survey area are:

<u>Survey</u>	<u>Scale</u>	<u>Date</u>
H-3204	1:40,000	1910
H-3206	1:120,000	1910

Soundings from H-3206 agreed within 2 fathoms of those measured in H-9958. Soundings from H-3204 were within 3 fathoms of those found in this survey except in the area south of $59^{\circ}34.5'$ N and east of $151^{\circ}43.0'$ W. This area shows a disagreement of up to 20 fathoms. The numbers of soundings involved indicate an actual change in the bottom. Considering past seismic activity, and the considerable time between surveys, and the strong currents in the area, there might well have been a general scouring and shifting of the bottom over time. Present soundings in the other areas of the sheet are also generally deeper than those shown in the prior surveys. One feature discovered is a narrow trench running NW-SE from $59^{\circ}37.5'$ N, $151^{\circ}50'$ W to $59^{\circ}39'$ N, $151^{\circ}54.5'$ W. This feature is not shown on the prior surveys. ✓

(see Descriptive Report H-9967)
The fishtrap, PSR item No. 28^A ($59^{\circ}40.3'$ N, $151^{\circ}42.5'$ W) was searched for by the field editor at various stages of tide. Nothing was found at the location, but a mile north along the shore there were some pilings from a fishtrap. These were located. The G.P. of PSR Item 28 plots inshore of the foul limit as determined by field edit. It is recommended that this item be removed from the chart. ✓

It is recommended that this survey supersede prior surveys for charting. ✓

L. COMPARISON WITH THE CHART

H-9958 was compared to Chart 16645, 13th Edition (10/4/80). Agreement between soundings was quite good, with 78% agreeing within a fathom and another 20% within 2 fathoms. The area of large disagreement discussed in Section K appears here as well. ✓

A charted rock awash at $59^{\circ}39.1'$ N, $151^{\circ}40.2'$ W was not found by this survey. Depths in this area were 4 to 5 fathoms, and no indication of this rock was seen. It is recommended that this rock be removed from the chart. All other charted rocks fall within the foul limit delineated by the field editor. ✓

It is recommended that this survey supersede charted soundings in charts and updates of this chart. ✓

M. ADEQUACY OF SURVEY

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

N. AIDS TO NAVIGATION

There are no aids to navigation in the area of H-9958.

O. STATISTICS

<u>Vessel</u>	<u>Position</u>	<u>Linear Nautical Miles</u>	<u>Square Nautical Miles</u>
RA-3 (2123)	1545 1548	632.8	61.8
RA-4 (2124)	2297 2554	728.1	63.0
RA-5 (2125)	187 191	(Bottom Samples)	
TOTAL	4029 4293	1360.0	124.8

P. MISCELLANEOUS

On JD 203, 204 and 205, vessel 2124 experienced "jumps" in the computer time counter, causing the hydroplot system to record the wrong time when recording fixes and soundings. The sounding interval did not vary, but the recorded times are in error. These errors were identified by comparing computer indicated time to actual clock time, and by examining the computer indicated sounding intervals. The time errors were corrected on the electronic master tapes, and the computer was thoroughly cleaned. No further time problems occurred.

Land jumps in the Raydist positioning equipment caused irregular spacing between sounding lines on the western part of this sheet. In order to meet specifications for line spacing, some of these lines were split, accenting the irregularity of the spacing.

Q. RECOMMENDATIONS

This survey is considered complete and adequate for charting. No additional field work is recommended. There are no known plans for dredging or construction which will affect this area in the near future.

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished per instructions in the Hydrographic Manual (4th edition), Manual Automated Hydrographic Surveys, the PMC OORDER, and the Hydrographic Data Requirements for 1981 field season.

Soundings and positions were taken by a hydroplot system using range-range program RK III. There are daily master tapes and corresponding corrector tapes which include the TRA for the launches, electronic

control calibration correctors for Raydist and 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>
RK 111 Range-Range Real Time Plot	1/30/76
RK 201 Grid, Signal & Lattice Plot	4/18/78
RK 211 Range-Range Non-Real Time Plot	2/02/81
RK 300 Utility Computations	2/05/76
RK 330 Reformat and Data Check	5/04/76
PM 360 Electronic Corrector Abstract	2/02/76
AM 500 Predicted Tide Generator	11/10/72 ✓
RK 530 Layer Corrections for Velocity	5/10/76
RK 561 Geodetic H/R Calibration	2/19/75
AM 602 Elinore-Line Oriented Editor	5/20/75
AM 603 Tape Consolidator	10/10/72
RK 606 Tape Duplicator	8/22/74

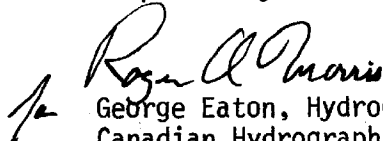
The HP-9815 and HP-97 calculators were used to compute geographic positions of electronic control stations and visual signals for calibrations.

S. REFERRAL TO REPORTS

The following reports, submitted separately to PMC, contain information related to this survey: ✓

Horizontal Control Report, OPR-P114-RA-81
Electronic Control Report, OPR-P114-RA-81
Corrections to Echo Soundings, OPR-P114-RA-81
Coast Pilot Report, OPR-P114-RA-81
Field Edit Descriptive Reports, TP-00799, TP-00802,
OPR-P114-RA-81

Respectfully Submitted,


George Eaton, Hydrographer
Canadian Hydrographic Service

INDEX TO ATTACHMENTS FOLLOWING TEXT

Hydrographic Sheet Projection
Parameters

Field Tide Note

Master Station List

ASCII Signal Tape Listing

Velocity Graphs

Velocity Corrector Tape Listing

Abstracts of TC/TI Tape Computations

Abstracts of TC/TI Tapes

Settlement and Squat Test Results

Abstract of Positions

Bottom Samples (Log Sheet M)

Final Baseline Correctors

Electronic Corrector Abstracts

Abstract of Times of Hydro

Geographic Names

Nonfloating Aids or Landmarks for
Charts (76-40)

Approval Sheet

HYDROGRAPHIC SHEET PROJECTION PARAMETERS

(FA-20-3-81)--(H-9958)

FA-20-3A-81
SKEW=C, 22, 54
FEST=66000
CLAT=6515000
CMEP=152/30/00
GFID=60
FLSCL=20000
FLAT=59/35/00
FLON=152/04/00
VESNO=2123
YF=81
ANDIST=C.C

FA-20-3E-81
SKEW=C, 22, 54
FEST=66000
CLAT=6515000
CMEP=152/30/00
GFID=60
FLSCL=20000
FLAT=59/31/00
FLON=152/04/00
VESNO=2123
YF=81
ANDIST=C.C

FIELD TIDE NOTE

Field tide reduction of soundings for OPR-P114-RA-81 was based on predicted tides from Seldovia, Alaska (945-5500), for all hydrography field sheets. Correctors were obtained from the Preliminary Zoning OPR-P114-RA/FA-79. Correctors for Sheet "V" (RA-40-1-81) were obtained from the Project Instructions. The predicted tides were interpolated using Program AM-500 on a PDP-8/E computer. All predicted tide data is based on GMT.

Five Bristol Bubbler gages and one ADR gage were installed within the project area. The locations and periods of operation are listed below.

<u>Site</u>	<u>Location</u>	<u>Period</u>
Seldovia (945-5500)	59°26.4'N 151°43.0'W	Control Station
Kasitsna Bay (Bubbler) (945-5517)	59°28.1'N 151°33.9'W	5/12/81 - 8/21/81
Flat Island (Bubbler) (945-5452)	59°19.8'N 151°59.5'W	5/17/81 - 8/19/81
Coal Point (ADR & Bubbler) (945-5558)	59°36.2'N 151°24.5'W	5/8/81 - 8/21/81
Anchor Point (Bubbler) (945-5606)	59°46.2'N 151°52.7'W	5/29/81 - 8/21/81
East Chugach (Bubbler) (945-5415)	59°07.6'N 151°29.5'W	5/15/81 - 5/21/81

SELDOVIA (945-5500)

This is the reference station used for all predicted tides in the Kachemak Bay area. An ADR and Bubbler gage are being operated there by the Pacific Tide Party. Levels were run by the RAINIER on 5/4/81 and 8/20/81. RAINIER personnel visited the tide observer and gage often to insure proper operation. On 7/13/81 - 7/15/81 the Pacific Tide Party made its annual inspection of the station and ran second-order levels. They also replaced the ADR gage with a Leuphold and Stevens ADR gage (#78737-77). All data from this station is submitted directly to the Pacific Tide Party.

KASITSNA BAY (945-5517)

Kasitsna Bay tide gage was installed on 5/13/81 and removed on 8/21/81. Levels were run on 5/13/81 and 8/20/81. Two different gages were used at this site, but not simultaneously. Gage time was set to GMT. The first gage reads 22.6 ft. greater than the staff. The second gage reads 23.3 ft. greater than the staff. Observations showed no orifice movement.

Gage Problems

There were time keeping problems with gage 64A-11031. The initial time setting was $\frac{1}{2}$ hour off, but was adjusted on the following day. The gage lost much time, so it was removed on 6/2/81 and gage #736220 was installed. This gage worked well with minor time adjustments. However, when this gage was installed it had a different gage/staff height comparison.

FLAT ISLAND (945-5452)

The Flat Island gage was installed and levels were run on 5/17/81. The gage was set to GMT. Staff observations were occasionally made by using a tape measure and measuring down from the tide staff to the water's edge when the staff was dry. The gage was removed and levels run on 8/19/81. At this time the staff was found to be broken off at the 7.4 ft. mark with the upper portion missing. The remaining part of the staff was still secure to the boulder.

Gage Problems

Gage #64A-11026 was installed on 5/17/81. This gage had problems with the chart drive (it would not stay wound for more than a few days) and the bellows arrangement. Hourly heights were picked off but they are separated by days when the gage malfunctioned. In addition, the values for 5/22 from 1600Z to 1900Z are suspect. It is recommended that data from this gage be discarded. This gage reads 19.9 ft. greater than the staff.

Gage #68A-2921 was installed on 6/9 to replace the above gage and it worked well with minor time adjustments. This gage reads 17.7 ft. greater than the staff.

COAL POINT (945-5558)

The Coal Point tide station has both an ADR and a bubbler. This was done because the ADR floatwell goes dry at a -2.5 ft. tide. Both gages were installed and levels run on May 8, 1981. The gages were set to Alaska Daylight Time (+9). The bubbler gage reads 10.2 ft. greater than the staff. Observations are fairly consistent. Levels were run and gages removed on August 21, 1981. ADR gage data was submitted but not analyzed.

Gage Problems - Bubbler

On May 17, from 1115 ADT until 1215 ADT, the pressure feed was off, resulting in a flat curve for that hour. The curve was approximated for the interval and a tide height was pulled off.

There were two complete gage malfunctions (i.e. no data) from 1100 ADT 6/17/81 until 1230 ADT 6/21/81 and from 0915 ADT 6/28/81 until 1400 ADT 6/29/81. Upon fixing the gage on 6/21, the marigram was set off by 12 hours. This was corrected on the abstracts of hourly heights and also on the marigram. After the second malfunction (6/27 - 6/28), the time was set correctly. Hourly heights are missing for these times. On 7/3/81 the gage ran out of paper for six hours.

ANCHOR POINT (945-5606)

The Anchor Point tide gage was installed on 5/28/81 and removed on 8/21/81. Installation and removal levels were run on 5/28/81 and 8/21/81 respectively. Levels were run on 7/12/81 from the staff stop to the first benchmark to insure that the staff stop didn't move during heavy seas on 6/30/81. Since it is impossible to install a tide staff at this location, levels were run to the water's edge by the tide observer and RAINIER personnel. On June 30 the bubbler tubing and orifice were destroyed by heavy seas. New tubing and orifice were reinstalled on 7/10/81. The gage reads 18.8 ft. less than the staff before 7/10/81 and 19.0 ft. less than the staff after this date.

Gage Problems

Problems were minor - mostly pen problems. On 6/16 from 1430 GMT to 2348 GMT, the pen ran out of ink. Later, at 0400 - 0425 GMT on 6/18 there was a plugged pen. Gage time was good, though by the end of June it was off by 5 minutes.

On 7/15/81 (1500 - 1900 GMT) there was no trace and the data had to be interpolated. From 7/19/81 - 8/4/81, small abnormal jumps occurred on the marigram trace. These jumps may be a result of periodic blocking of the orifice by kelp or small periodic movement of the orifice caused by the strong current in this area. Some data around these jumps had to be interpolated. Jumps occurred on the following dates at the approximate times (GMT).

7/19/81	1700
7/20/81	0500, 1300
7/21/81	1230
7/22/81	0200
7/26/81	0400, 2400
7/28/81	1230
7/30/81	0600, 2200
7/31/81	2300
8/1/81	0200, 1500
8/2/81	0030, 1900
8/4/81	0200, 1200, 2000

On 8/13/81 (2130 GMT) the bubbler tubing was cut, apparently by vandals. It was repaired and operating by 8/14/81 (1900 GMT).

EAST CHUGACH (945-5415)

The East Chugach Island Tide Gage was located on E. Chugach Island, Alaska at 59° 07.6' N, 151° 29.5' W. It was used to control hydrography on RA-40-1-81 (PSR item 48) on May 16, 1981. It was installed 5/15/81 and removed 5/21/81. On 5/21/81 the bubbler tubing was found piled up on the beach due to breaking waves. Installation and removal levels were run on 5/15/81 and 5/21/81 to three TBM's.

Staff observations were made to the waters edge since no staff could be easily installed. Leveling to the water's edge was performed every twelve minutes for one hour and then for two hours on the following day. One to two foot surf encountered. The gage reads 32.9 feet less than the staff.

Observations were fairly consistent. Initial conversion from meters to feet was in error and corrected on the marigram.

There were no missing hourly heights.

Levels

Third Order closed-loop levels were run during the installation and removal of each tide station. Levels for all tide stations showed no staff movements greater than 0.02 feet. The following tables show bench mark elevations above zero of tide staff.

SELDOVIA (945-5500)

<u>BM No.</u>	<u>5/04/81</u>	<u>8/20/81</u>
20	32.612 ft	32.615 ft
19	32.746 ft	32.759 ft
22	32.385 ft	32.405 ft
30	--	35.928 ft
13	--	30.069 ft

KASITSNA BAY (945-5517)

<u>BM No.</u>	<u>5/12/81</u>	<u>8/20/81</u>
5517F	5.758 ft	5.758 ft
5517G	4.290 ft	4.295 ft
5517H	8.708 ft	8.707 ft

FLAT ISLAND (945-5452)

<u>BM No.</u>	<u>5/17/81</u>	<u>8/19/81</u>
5452C	31.506 ft	31.526 ft
5452B	26.007 ft	26.020 ft
5452D	28.484 ft	28.501 ft
5452E	29.124 ft	29.140 ft
5452A	26.438 ft	26.453 ft

COAL POINT (945-5558)

<u>BM No.</u>	<u>5/09/81</u>	<u>8/21/81</u>
5558A	26.024 ft	26.043 ft
C103	26.090 ft	26.109 ft
B103	26.018 ft	26.043 ft
No. 6	26.418 ft	26.440 ft
5558B	26.123 ft	26.145 ft

ANCHOR POINT (945-5606)

<u>BM No.</u>	<u>5/28/81</u>	<u>7/12/81</u>	<u>8/21/81</u>
5606E	66.165 ft	66.155 ft (A check on the staff stop)	66.155 ft
4	66.414 ft		66.404 ft
5	66.683 ft		66.666 ft
7	65.003 ft		64.987 ft
6	65.259 ft		64.243 ft
8	65.102 ft		65.085 ft

EAST CHUGACH (945-5415)

<u>BM No.</u>	<u>5/16/81</u>	<u>5/21/81</u>
TBM A	60.459 ft	60.466 ft
TBM B	61.456 ft	61.463 ft
TBM C	60.531 ft	60.538 ft

Recommended Zoning

It is recommended the following zoning be used:

Boat Sheet

RA-20-4-81, (H-9967), F
RA-20-3-81, (H-9958), EE
RA-20-2-81, (H-9945), FF
RA-5-1-81, (H-9940), JJ
RA-10-1-81, (H-9941), GG
RA-40-1-81, V

Tide Station(s)

945-5606
945-5558, 945-5606
945-5452
945-5500
945-5517
945-5415

MASTER STATION LIST
OPR-P114-RA-81
COOK INLET, ALASKA

FINAL VERSION

101	3	59	22	16846	153	21	10454	250	0104	329646	
/MOUND 1913 RED RAYDIST STATION 591532											
102	3	59	54	58131	152	42	28706	250	0006	329646	
/RED 1979 GREEN RAYDIST STATION 591532											
103	4	59	27	09854	151	43	08282	250	0015	000000	
/BALSA 1956 591513											
104	3	59	25	30907	151	44	06800	250	0007	000000	
/DIXIE 1956 591513											
105	1	59	24	52738	151	42	56607	250	0000	000000	
/ELBOW 1956											
106	4	59	25	24124	151	42	59646	250	0001	000000	
/POWDER 1956 591513											
107	4	59	26	34818	151	43	08884	250	0000	000000	
/WATCH 1956 581513											
108	0	59	25	31891	151	40	00000	250	0000	000000	
/GRACE 1981 VOL. 1 PAGES 30-31											
109	3	59	26	22102	151	44	15441	250	0000	000000	
/ATLAS 1956											
110	5	59	24	52737	151	42	56900	243	0000	000000	
/ELBOW 1956 ECG.											
115	4	59	30	41909	151	22	54160	139	0000	000000	
/OBIN 1980											
116	2	59	30	35922	151	26	59763	139	0000	000000	
/GHINOOK 1980											
117	6	59	28	39254	151	26	33320	139	0000	000000	
/DOUBT 1980											
118	3	59	27	57930	151	26	33200	139	0000	000000	
/TUT 1980											
119	3	59	28	09991	151	25	48936	139	0000	000000	
/BATH 1980											

~~120 3 59 26 02820 151 24 50874 139 0000 000000~~
~~/BUSH 1980~~

~~121 3 59 26 53564 151 24 59113 139 0000 000000~~
~~/AMOS 1980~~

~~122 4 59 27 09872 151 23 18004 139 0000 000000~~
~~/ARNIE 1980~~

~~123 7 59 27 20715 151 31 10513 243 0006 000000~~
~~/FP 6~~ VOL. 3 PAGES 8-9

129 4 59 39 37645 151 39 44972 250 0227 000000
~~/BLUFF PT 2 1956~~

~~130 4 59 30 45561 151 27 38838 250 0000 000000~~
~~/NEAL 1966~~ 591511

~~131 6 59 30 15593 151 26 57558 250 0000 000000~~
~~/POWER 1980~~ 591511

~~132 2 59 29 57436 151 29 31824 250 0000 000000~~
~~/GRASS ISLAND 1975~~ 591512

~~133 3 59 29 21048 151 29 11056 250 0000 000000~~
~~/GRASS ISLAND AZIMUTH MARK 1975~~ 591512

~~134 5 59 30 33728 151 30 25245 250 0000 000000~~
~~/SNACK 1965~~ 591514

138 3 59 31 21320 151 30 47939 250 0015 000000
~~/YUKON 1965~~

~~139 3 59 40 13542 151 33 53878 250 0356 000000~~
~~/DIAMOND 1964~~

~~140 3 59 39 47802 151 33 13438 250 0323 000000~~
~~/WOOD 1964~~

~~141 0 59 28 06964 151 30 20369 250 0004 000000~~
~~/HOLLEY 1981~~ VOL. 2 PAGE 36

~~142 4 59 28 22772 151 30 32935 250 0006 000000~~
~~/JACKIE 1981~~ VOL. 2 PAGES 33-35

~~143 3 59 28 44161 151 30 51973 250 0005 000000~~
~~/JOSHUA 1981~~ VOL. 2 PAGES 27-30

~~144 6 59 28 47211 151 30 23585 250 0005 000000~~
~~/BIRCH 1981~~ VOL. 2 PAGES 37-39

~~145 6 59 28 24999 151 29 09792 250 0004 000000~~
~~/STARK 1981~~ VOL. 2 PAGE 44

~~146 7 59 28 01379 151 29 43029 254 0007 000000~~
~~/TP#7~~ VOL. 3 PAGES 10-12

~~147 4 59 28 06309 151 29 05606 250 0005 000000~~
~~/BOB 1981~~ VOL. 3 PAGES 6-7

~~148 1 59 28 06876 151 29 19945 250 0006 000000~~
~~/TP#8~~ VOL. 3 PAGES 4-5

~~149 4 59 28 14842 151 27 36837 254 0006 000000~~
~~/TP#9~~ VOL. 3 PAGES 42-43

150 3 59 46 11106 151 51 53280 250 0022 000000
/ANCHOR POINT LIGHT 1975 591514 (1002)

~~200 4 59 26 24030 151 42 51329 139 0020 000000~~
~~/SELDOVIA CHURCH CROSS~~ 591513

~~201 5 59 26 34838 151 43 09302 139 0000 000000~~
~~/SELDOVIA ENTRANCE LIGHT~~

~~202 1 59 30 17976 151 31 20219 139 0005 000000~~
~~/SHAWN 1981~~ VOL. 2 PAGES 9-11

~~203 0 59 28 55513 151 33 26794 139 0006 000000~~
~~/BAXTER 1981~~ VOL. 2 PAGES 9-11

~~204 5 59 28 07208 151 30 01894 139 0005 000000~~
~~/DORIS 1981~~ VOL. 2 PAGES 12-14

~~205 7 59 27 35361 151 31 09864 139 0004 000000~~
~~/BUCKY B 1981~~ VOL. 2 PAGES 12-14

~~206 6 59 26 55316 151 30 38952 139 0004 000000~~
~~/ANDY 1981~~ VOL. 2 PAGES 15-16

207 7 59 28 12905 151 42 08004 139 0065 000000
/SELDOVIA 1910

208 3 59 36 09213 151 25 09280 139 0010 000000
~~/SALTY DAWG~~ HOMER SPIT SALTY PAWY TOWER, 1975

209 3 59 33 03328 151 27 54887 139 0000 000000
/COHEN ISLAND ROCK ~~LT~~ Light 1975

~~210 6 59 26 52700 151 44 57477 139 0000 000000~~
~~/WEST~~

211 6 59 25 30165 151 53 05113 139 0025 000000
/POINT POGIBSHI ~~LT~~ Light 1975

~~212 3 59 52 53502 151 47 02423 139 0071 000000~~
~~/STARISKY 1964~~ 591514 (1010)

~~213 3 59 45 29476 151 51 35934 139 0006 000000~~
~~/PINK 1968~~ 591514 (1016)

~~214 3 59 47 46312 151 50 49736 139 0065 000000~~
~~/LEE 1968~~ 591514 (1013)

215 4 59 42 52220 151 48 38514 139 0050 000000
/NEW 2 1981 VOL. 3 PAGES 16-17,39-40,43-45

216 4 59 39 36355 151 40 37161 243 0003 000000
/TP 11 VOL. 3 PAGE 31

218 4 59 39 54943 151 41 25800 139 0003 000000
/KILLER LADY 1981 VOL. 3 PAGES 32,46-47

~~219 3 59 41 02323 151 37 41274 139 0000 000000~~
~~/KGTL TWR~~

220 4 59 42 00054 151 46 45905 139 0005 000000
/MILLARD 1981 VOL. 3 PAGES 29-30

230 4 59 41 09914 151 44 36646 243 0003 000000
/TP 13 VOL. 3 PAGE 33

231 4 59 38 56877 151 38 21328 243 0002 000000
/TP 10 VOL. 3 PAGES 29-30

~~232 3 59 46 10101 151 51 53359 243 0011 000000~~
~~/TP 17~~ VOL. 4 PAGE 13

~~233 4 59 26 28318 151 43 07025 243 0000 000000~~
~~/FIXED CALIBRATION POINT~~

ASCII SIGNAL TAPE LISTING
OPR-P114-RA-81

101	3	59	22	16846	153	21	10454	250	0104	329646
102	3	59	54	58131	152	42	28706	250	0033	329646
129	4	59	39	37645	151	39	44972	250	0227	000000
134	5	59	30	33728	151	30	25245	250	0000	000000
138	3	59	31	21320	151	30	47939	250	0015	000000
150	3	59	46	11106	151	51	53280	250	0022	000000
201	5	59	26	34830	151	40	09300	139	0000	000000
202	3	59	30	17976	151	31	20219	139	0005	000000
207	7	59	28	12905	151	42	08004	139	0065	000000
208	3	59	36	09213	151	25	09280	139	0010	000000
209	3	59	33	03328	151	27	54887	139	0000	000000
210	6	59	26	52708	151	44	57477	139	0000	000000
211	6	59	25	30165	151	53	05113	139	0025	000000
212	3	59	50	53580	151	47	02400	139	0071	000000
213	3	59	45	09476	151	51	05904	139	0006	000000
214	3	59	47	46210	151	50	40736	139	0065	000000
215	4	59	42	52220	151	48	38514	139	0050	000000
216	4	59	39	36355	151	40	37161	243	0000	000000
218	4	59	39	54943	151	41	25800	139	0000	000000
219	3	59	41	00300	151	37	41074	139	0000	000000
220	4	59	42	00054	151	46	45905	139	0005	000000
230	4	59	41	09914	151	44	36646	243	0000	000000
231	4	59	38	56877	151	38	21328	243	0000	000000
232	3	59	46	10101	151	51	53359	139	0000	000000
233	4	59	26	20018	151	40	07025	243	0000	000000

17-9941 also

(Let 3 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathoms for shoal.)

CORRECTIONS IN FEET, FATHOMS

NOAA FORM 15-21 U.S. DEPARTMENT OF COMMERCE
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEANIC SURVEY

VELOCITY CORRECTIONS

SHIP RAINIER

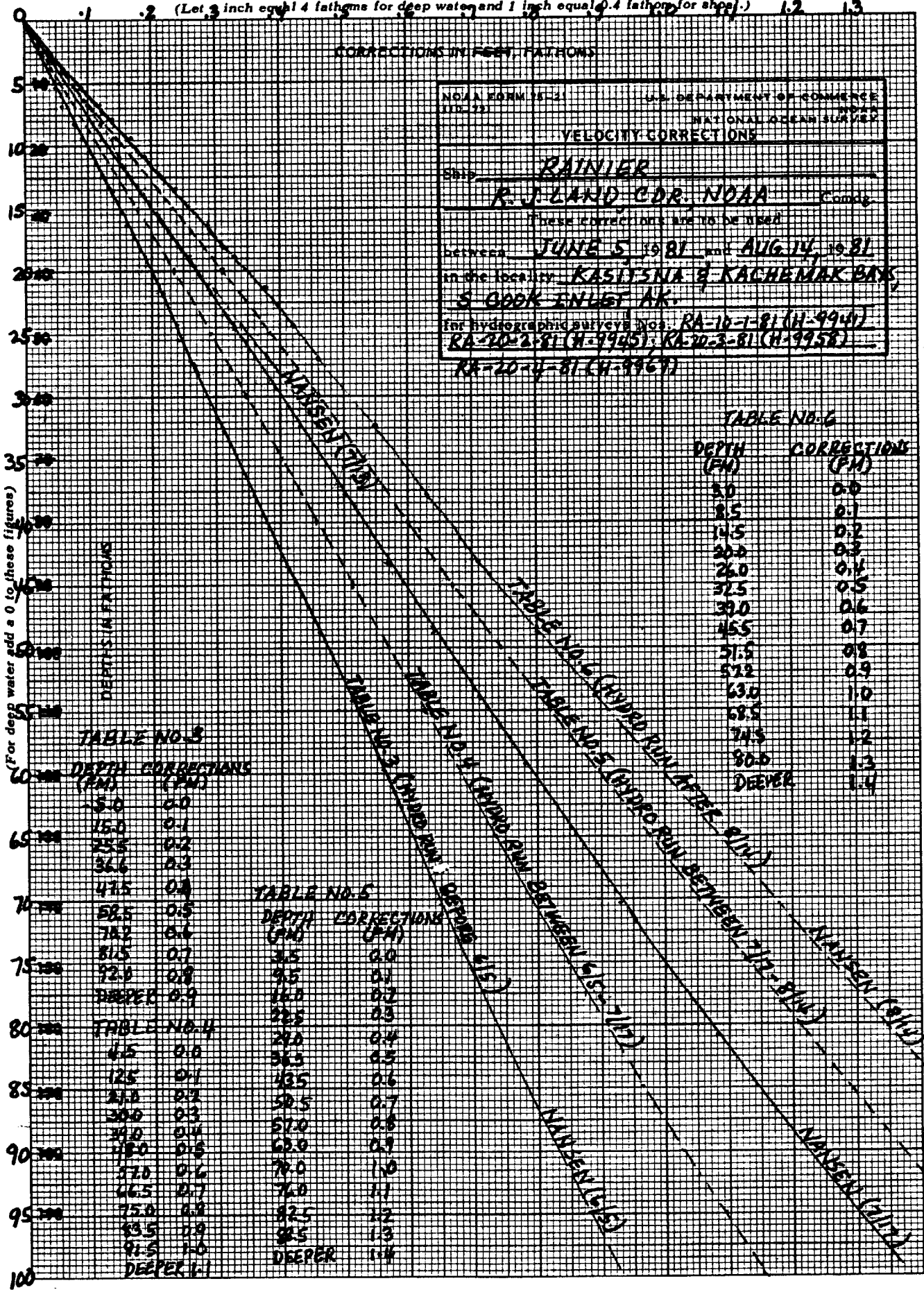
OFFICER R. J. LAND, CDR, NOAA Comdr

These corrections are to be used

between JUNE 5, 1981 and AUG 14, 1981

in the locality KASITSNA & KACHEMAK BAYS, S. COOK INLET AK.

for hydrographic surveys Nos. RA-10-1-81 (H-9941)
RA-10-2-81 (H-9945); RA-10-3-81 (H-9958)
RA-10-4-81 (H-9967)



(For deep water add a 0 to these figures)

TABLE NO. 3

DEPTH (FM)	CORRECTIONS (FM)
5.0	0.0
15.0	0.1
25.5	0.2
36.6	0.3
47.5	0.4
58.5	0.5
70.2	0.6
81.5	0.7
92.0	0.8
DEEPER	0.9

TABLE NO. 4

6.5	0.0
12.5	0.1
21.0	0.2
29.0	0.3
37.0	0.4
45.0	0.5
52.5	0.6
60.5	0.7
68.5	0.8
75.5	0.9
82.5	1.0
DEEPER	1.1

TABLE NO. 5

DEPTH (FM)	CORRECTIONS (FM)
3.5	0.0
9.5	0.1
16.0	0.2
22.5	0.3
29.0	0.4
35.5	0.5
42.5	0.6
49.5	0.7
57.0	0.8
64.0	0.9
71.0	1.0
78.0	1.1
85.5	1.2
92.5	1.3
DEEPER	1.4

TABLE NO. 6

DEPTH (FM)	CORRECTIONS (FM)
5.0	0.0
8.5	0.1
14.5	0.2
20.0	0.3
26.0	0.4
32.5	0.5
39.0	0.6
45.5	0.7
51.5	0.8
57.2	0.9
63.0	1.0
68.5	1.1
74.5	1.2
80.0	1.3
DEEPER	1.4

46 1240

K&E 20 X 20 TO THE INCH • 7 X 10 INCHES KEUFFEL & ESSER CO. MADE IN U.S.A.

VELOCITY TAPE LISTING

PA-1E-1-81(H-9941)

PA-2E-2-81(H-9945)

PA-2E-3-81(H-9953)

TABLE NO. 4

220045	C	2230	0004	201	000000	250000
000125	C	0001				
000210	C	0002				
000300	C	0003				
000390	C	0004				
000480	C	0005				
000570	C	0006				
000665	C	0007				
000750	C	0008				
000835	C	0009				
000915	C	0010				
999999	C	0011				

VELOCITY TAPE LISTING

PA-10-1-81(H-9941)
PA-20-2-81(H-9945)
PA-20-3-81(H-9958)
PA-20-4-81(H-9967)

TABLE NO. 5

000035 0 0000 0005 001 000000 000000
000095 0 0001
000160 0 0002
000225 0 0003
000290 0 0004
000360 0 0005
000435 0 0006
000505 0 0007
000570 0 0008
000630 0 0009
000700 0 0010
000765 0 0011
000825 0 0012
000885 0 0013
999999 0 0014

VELOCITY TAPE LISTING

PA-10-1-81(H-9941)

PA-20-3-81(H-9958)

PA-20-4-81(H-9967)

TABLE NO. 6

000030	0	0000	0006	001	000000	000000
000085	0	0001				
000145	0	0002				
000200	0	0003				
000260	0	0004				
000325	0	0005				
000390	0	0006				
000455	0	0007				
000515	0	0008				
000572	0	0009				
000630	0	0010				
000685	0	0011				
000745	0	0012				
000800	0	0013				
999999	0	0014				

RA-20-3-81
(H-9958)

TRA (TC/TT) TAPE: VESSEL 2124 (RA-4) SURVEY FATHOMETER S/N 1071 YR 81 PAGE 1 OF 1

From TIME	TRA CORR.	DAY	VEL. TBL.	TRA CORR. INITIAL	SCALE-PHASE	DRAFT	F. ARC	S. / SQUAT	COMMENTS
220448	0.3	192	4	0.0	0.0	0.3	0.0	0.0	HYDRO BEGINS.
003745	0.2	193	4	0.0	0.0	0.3	0.0	-0.1	
194734	0.3	193	4	0.0	0.0	0.3	0.0	0.0	
234340	0.2	193	4	0.0	0.0	0.3	0.0	-0.1	
190707	0.3	197	4	0.0	0.0	0.3	0.0	0.0	
195527	0.2	197	4	0.0	0.0	0.3	0.0	-0.1	
201019	0.2	203	5	0.0	0.0	0.3	0.0	-0.1	
215625	0.3	208	5	0.0	0.0	0.3	0.0	0.0	3-32
223508	0.2	208	5	0.0	0.0	0.3	0.0	-0.1	
225600	0.3	208	5	0.0	0.0	0.3	0.0	0.0	
232645	0.2	208	5	0.0	0.0	0.3	0.0	-0.1	
235631	0.3	208	5	0.0	0.0	0.3	0.0	0.0	
002350	0.2	209	5	0.0	0.0	0.3	0.0	-0.1	
195235	0.3	219	5	0.0	0.0	0.3	0.0	0.0	
191641	0.2	230	6	0.0	0.0	0.3	0.0	-0.1	
043000	0.2	231	6	0.0	0.0	0.3	0.0	-0.1	HYDRO ENDS.

TRA (TC/TT) TAPE: VESSEL 2123 (RA-3) SURVEY (H-9958) FATHOMETER S/N 1042 YR 81 PAGE 1 OF 1

RA-20-3-81

From TIME	TRA CORR.	DAY	VEL. TBL.	TRA corr. is the algebraic sum of these columns INITIAL SCALE-PHASE DRAFT F. ARC S./ SQUAT	COMMENTS
202404	0.3	192	4	0.0 0.0 0.3 0.0 0.0	HYDRO BEGINS
003748	0.3	203	5	0.0 0.0 0.3 0.0 0.0	
030000	0.3	225	5	0.0 0.0 0.3 0.0 0.0	HYDRO ENDS

3-32

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	
222630	0.0	217	0	0.0	0.0	0.0	0.0	BOTTOM SAMPLES BEGIN
030000	0.0	227	0	0.0	0.0	0.0	0.0	BOTTOM SAMPLES END.

3-32

TC/TI TAPE LISTING
RA-20-3-81(H-9958)

VESSEL - 2124(RA-4)
FATHOMETER S/N 1071

220448	0	0003	0004	192	212400	000000
003745	0	0002	0004	193	000000	000000
194734	0	0003				
234340	0	0002				
190707	0	0003	0004	197	000000	000000
195527	0	0002	0004	197	000000	000000
201019	0	0002	0005	203	000000	000000
215625	0	0003	0005	208	000000	000000
223508	0	0002				
225600	0	0003				
232645	0	0002				
235631	0	0003				
002350	0	0002	0005	209	000000	000000
195235	0	0003	0005	219	000000	000000
191641	0	0002	0006	230	000000	000000
043000	0	0002	0006	231	000000	000000

VESSEL - 2123(RA-3)
FATHOMETER S/N - 1042

202404	0	0003	0004	192	212300	000000
003748	0	0003	0005	203	000000	000000
030000	0	0003	0005	225	000000	000000

VESSEL - 2125(RA-5)
BOTTOM SAMPLES ONLY

222830	0	0000	0000	217	212500	000000
030000	0	0000	0000	227	000000	000000

NOAA Ship RAINIER

Launch Settlement and Squat Tests

1981

The settlement and squat tests on RA-3, RA-5, and RA-6 were performed on 15 April 1981 off Sand Point Naval Support Activity, Lake Washington. Tests were performed on RA-4 on 27 April 1981. The full-speed test of RA-3 was performed at Kawaihae Harbor, Hawaii, on 3 October 1981.

Tests were conducted as follows: One man with a leveling rod stood over the transducer while another on shore sighted through a level to read the mark. The boats were run to the observer at the following RPM: 0, 800 (idle), 1000, 1200, 1500, 1800, 2000, 2200, and 2400. Launch RA-4 was also run at 2600 and full throttle, 2800, and Launch RA-3 at full-speed, 2750 RPM. At each speed there were at least two readings which agreed within 0.1 feet.

RPM	RA-3 (1007)		RA-4 (1016)		RA-5 (1003)		RA-6 (1013)	
	FT	FM	FT	FM	FT	FM	FT	FM
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
800	0.0	0.0	+0.1	0.0	0.0	0.0	0.0	0.0
1000	+0.1	0.0	+0.1	0.0	+0.1	0.0	0.0	0.0
1200	+0.2	0.0	+0.1	0.0	+0.1	0.0	+0.1	0.0
1500	+0.2	0.0	+0.2	0.0	+0.2	0.0	+0.1	0.0
1800	+0.3	0.0	+0.1	0.0	+0.2	0.0	+0.1	0.0
2000	+0.2	0.0	0.0	0.0	+0.2	0.0	0.0	0.0
2200	+0.1	0.0	-0.2	0.0	+0.1	0.0	-0.2	0.0
2400	0.0	0.0	-0.4	-0.1	-0.1	0.0	-0.3	0.0
2600	--	--	-0.5	-0.1				
Full RPM	-0.4 (2750)	-0.1	-0.6 (2800)	-0.1				

ABSTRACT OF POSITIONS - RA-20-3-81 (H-9958)

Vessel: 2123 (RA-3)

ANDIST: 0.0

<u>Day</u>	<u>Positions</u>	<u>Ctrl</u>	<u>S1 M S2</u>	<u>Remarks</u>
192/193	3000-3109	04	138 - 211	Mainscheme
193/194	3110-3244	04	138 - 211	Mainscheme
196/197	3359-3442	04	129 - 138	Mainscheme
197/198	3443-3609	04	129 - 138	Mainscheme
198	3610-3663	04	138 - 211	Mainscheme
203	3664-3677	04	129 - 211	Mainscheme
203/204	3678-3846	04	101 - 102	Mainscheme
204/205	3847-3982	04	101 - 102	Mainscheme
205	2000-2066	04	101 - 102	Mainscheme
206/207	2117-2284	04	101 - 102	Mainscheme
207/	2285-2295	04	101 - 102	Crosslines
207/208	2296-2484	04	101 - 102	Mainscheme
209/	2485-2590	04	129 - 211	Mainscheme
210	2591-2601	04	101 - 211	Crosslines
211	2602-2624	04	101 - 102	Crosslines
211	2625-2634	04	101 - 102	Mainscheme
224-225	2660-2756	04	101 - 102	Mainscheme
225	2757-2765	04	101 - 102	Development Split Crossline Long. Approx. 151 ⁰ 45'

REJECTED POSITION NUMBERS

2190, 2579, 2702, 3115, 3152-3153, 3418, 3458-3459, 3469, 3522, 3602-3603, 3605.

DUPLICATE POSITION NUMBERS

None

ABSTRACT OF POSITIONS - RA-20-3-81 (H-9958)

Vessel: 2124 (RA-4)

ANDIST: 0.0

<u>Day</u>	<u>Positions</u>	<u>Ctrl</u>	<u>S1 M S2</u>	<u>Remarks</u>
192/193	4001-4159	04	138 - 211	Mainscheme
193/194	4160-4312	04	138 - 211	Mainscheme
194/195	4313-4472	04	129 - 138	Mainscheme
195	4473-4548	04	138 - 211	Crosslines
195	4549-4575	04	129 - 211	Crosslines
195/196	4576-4677	04	138 - 211	Crosslines
196/197	4680-4949	04	129 - 138	Mainscheme
197	4950-4995	04	101 - 102	Mainscheme
197/198	7000-7169	04	101 - 102	Mainscheme
198	7170-7191	04	101 - 102	Crosslines
198	7192-7224	04	101 - 102	Detached Positions (Shoreline)

198	7225-7300	04	101 - 102	Mainscheme
198	7302-7324	04	101 - 102	Crosslines
203	7325-7463	04	101 - 102	Mainscheme
204/205	7464-7650	04	101 - 102	Mainscheme
205/206	7651-7690	04	101 - 102	Mainscheme
206/207	7691-7904	04	101 - 102	Mainscheme
207	7905-7919	04	101 - 102	Crosslines
207/208	7920-7978	04	101 - 102	Mainscheme
208/209	9000-9076	04	101 - 102	Mainscheme
209	9076-9100	04	101 - 102	Mainscheme
211	9101-9191	04	101 - 102	Mainscheme
211	9192-9227	04	101 - 102	Crosslines
212	9228-9279	04	101 - 102	Mainscheme
212/213	9280-9311	04	101 - 102	Crosslines
219	9312-9445	04	101 - 102	Mainscheme
225	9446-9470	04	101 - 102	Crosslines
230	9471-9481	04	101 - 102	Development (Splits Crossline) Lat. Approx. 151°56' (3A)
230	9482-9562	04	101 - 102	Mainscheme
230/231	9563-9577	04	101 - 102	Development (Splits) Lat. Approx. 151°01' Lat. Approx. 152°01' (3B)
231	9578-9589	04	101 - 102	Development (Splits Crossline) Lat. Approx. 151°49' (3B)
231	9590-9597	04	101 - 102	Development (Splits) Lat. Approx. 151°47' (3B)
231	9598-9600	04	101 - 102	Development (Crosslines) Lat. Approx. 151°47' (3B)
231	9601-9609	04	101 - 102	Development (Crosslines) Lat. Approx. 151°45' (3B)
231	9610-9650	04	101 - 102	Mainscheme

REJECTED POSITION NUMBERS

4300-4301, 4390-4392, 4497-4529, 4606-4608, 4914, 7193-7199, 7301, 7965-7966, 9117-9118, 9294, 9397-9398.

DUPLICATE POSITION NUMBERS

9076 (only)

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL	SERIAL NO.	DATE	PROJ. NO.		YEAR	DEPTH (Fathoms)	WEIGHT OF SAMPLER	AP. PROX. PEN- TRA- TION	LENGTH OF CORE	COLOR OF SED- IMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dented cutter, stat. no., type of bottom relief i.e., slope, plain, disposition, etc.)	OBS. INIT.
			LATITUDE	LONGITUDE									
2125		1981	OPR-PHY-BA-81		81								
			SOUTHERN COOK INLET, ALASKA										
			RA-20-3-81										
			(A-9958)										
5000	8/5	1981	59°N	157°W	81	53.9	25 lbs		gn/gy	M			MM
5001	"	"	32	45.62	36	35.80	"		gn	Cl			
5002	"	"	33	23.93	36	50.81	46.8		gn/gy	Cl brk Sh			
5003	"	"	34	00.87	37	05.70	45.7		gn	Cl brk Sh			
5004	"	"	34	38.00	37	21.63	37.1		gn	Cl Sh			
5005	"	"	35	17.98	37	40.25	20.5		gn	M brk Sh			
5006	"	"	35	04.22	36	25.78	25.1		gn	M Cl			
5007	"	"	35	43.60	36	43.41	18.0		gn	M brk Sh sml P			
5008	"	"	35	25.64	38	50.52	19.9		gn	Cl brk Sh			
5009	"	"	34	48.61	38	33.17	27.2		gn	Cl brk Sh			
5010	8/6	"	34	10.45	38	17.25	43.0		gn	Cl			
5011	"	"	33	36.23	38	01.69	46.9		gn	Cl			
5012	"	"	32	58.06	37	46.93	45.3		gn	Cl brk Sh S			
5013	"	"	32	17.87	37	31.45	52.1		gn	Cl			
5014	"	"	31	38.64	37	20.11	57.7		gn	Cl brk Sh			
5015	"	"	31	52.12	38	21.89	56.5		gn	Cl S			
5016	"	"	32	33.43	38	42.12	47.6		gn	Cl brk Sh			MM

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

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

VESSEL	SERIAL NO.	DATE	PROJ. NO.		YEAR	SOUTHERN COOK INLET, ALASKA		AP. PROX. PENETRATION	WEIGHT OF SAMPLER	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, denting cutter, stat. no., type of bottom relief, etc.)	OBS. INIT.
			SAMPLE POSITION			CHECKED BY	DATE CHECKED							
			LATITUDE	LONGITUDE										
			2125	08P-P111-BA-81	81	RA-20-3-81	(H-9958)							
5017		8/6	33 16.15	38 53.40		44.2		25/18		gn	Cl St Sh			MM
5018		"	33 47.78	39 13.17		43.1		"		gn	Cl brk Sh			
5019		"	34 27.68	38 30.04		35.4		"		gn	Cl S brk Sh			
5020		"	35 04.82	39 47.17		23.4		"		gn	Cl S brk Sh			
5021		"	35 41.77	40 09.21		20.6		"		gn	S Cl brk Sh			
5022		"	35 49.95	41 16.36		21.0		"		gn	S P brk Sh			
5023		"	35 13.13	40 58.19		23.0		"		gn	S Cl brk Sh			
5024		"	35 36.44	40 41.41		35.1		"		gn	S M brk Sh St			
5025		"	33 58.99	40 25.32		44.4		"		gn	Cl			
5026		"	33 21.61	40 10.29		43.8		"		gn	Cl M			
5027		"	32 43.69	39 55.57		44.6		"		gn	Cl			
5028		"	32 05.51	39 42.81		46.3		"		gn	M brk Sh			
5029		"	31 40.16	40 38.79		52.9		"		gn/gy	Cl			
5030		"	32 17.89	40 53.19		44.1		"		gn/gy	M brk Sh			
5031		"	32 51.80	41 06.90		43.6		"		gn/gy	Cl			
5032		"	33 34.75	41 22.63		45.2		"		gn	Cl			
5033		"	34 12.17	41 39.25		46.4		"		gn	Cl			MM

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL	SERIAL NO.	DATE	PROJ. NO.		YEAR	DEPTH (Fathoms)	WEIGHT OF SAMPLER	AP. PROX. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, density cutter, stat. no., type of bottom relief, etc.)	OBS. INIT.
			LATITUDE	LONGITUDE									
2125		1981	OBS-R PINI-RA-81		81								
			SAMPLE POSITION										
			59° N	157° W									
			SOUTHERN COOK INLET, ALASKA										
			(H-9958)										
			RA-20-3-81										
			CHECKED BY JB										
			DATE CHECKED 8/20/81										
5034		8/6	34 46.54	41 54.74	27.3	25 lbs			gn	M fine S			MM
5035		"	35 25.90	42 13.16	20.1	"			gn	fine S M			
5036		"	35 34.42	43 29.33	20.3	"			gn/gy	fine S			
5037		"	34 57.53	43 10.41	25.4	"			gn/gy	fine S			
5038		"	34 21.47	42 57.34	42.7	"			gn/gy	CI			
5039		"	33 44.71	42 35.06	48.3	"			gn/gy	CI			
5040		"	33 07.69	42 20.34	41.9	"			gn/gy	CI			
5041		"	32 28.12	42 04.59	43.1	"			gn/gy	CI			
5042		"	31 51.30	41 57.41	46.7	"			gn/gy	M			
5043		"	32 02.75	43 03.21	42.0	"			gn/gy	M			
5044		"	32 42.60	43 17.56	41.5	"			gn	M yl spk			
5045		"	33 18.69	43 31.53	41.9	"			gn	yl spk M	Worms		
5046		"	33 55.26	43 47.27	45.0	"			gn/gy	M			
5047		"	34 32.82	44 04.94	34.2	"			gn/gy	M			
5048		"	35 11.66	44 22.66	26.6	"			gn/gy	M			
5049		8/7	35 47.14	44 41.37	21.3	"			gn/gy	M			
5050		"	35 20.25	45 36.40	27.4	"			gy	fine S			MM

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

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

VESSEL	DATE	PROJ. NO.		YEAR	SOUTHERN COOK INLET, ALASKA		CHECKED BY	DATE CHECKED	REMARKS (Unusual conditions, cohesiveness, dented cutter, stat. no., type of bottom relief i.e., slope, plain, disposition, etc.)	OBS. INIT.
		OPR-D114-RA-81	RA-20-3-B1 (H-9958)		YB	8/20/81				
SERIAL NO.	DEPTH (Fathoms)	LATITUDE	LONGITUDE	WEIGHT OF SAMPLER	AP. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION		
5051	31.9	59°04' N	151° 05' W	25 lbs			gn	M S		MM
5052	40.6			"			gy/gn	M		
5053	44.4			"			gy/gn	M		
5054	38.4			"			gy/gn	M fine S		
5055	41.3			"			gy	fine S		
5056	48.1			"			gn/gy	M fine S		
5057	42.0			"			gn/gy	fine S		
5058	40.0			"			gn	M		
5059	39.4			"			gn	M		
5060	44.8			"			gn/gy	M		
5061	33.3			"			gn	M fine S		
5062	25.3			"			gy/gn	fine S		
5063	22.0			"			gy/gn	fine S M brk sh		
5064	17.8			"			gn	fine S sh		
5065	20.1			"			gn	fine S sh		
5066	22.9			"			gn	fine S sh		
5067	34.8			"			gn	fine S		MM

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL	DATE	PROJ. NO.	YEAR		DEPTH (Fathoms)	WEIGHT OF SAMPLE	AP- PROX. PENE- TRA- TION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dented cutter, stat. no., type of bottom relief i.e., slope, plain, deposition, etc.)	DATE CHECKED
			MONTH	DAY								
2125	1981	OPR-PIN-BA-81	81	81								8/20/81
			SOUTHERN COOK INLET, ALASKA BA-20-3-81									
			SAMPLE POSITION									
			LATITUDE	LONGITUDE								
			59°N	151°W								
5068	8/7	33 11.83 46 56.16	33.7	25.16	gn				fne s sh	WORM		MM
5069	"	32 34.40 46 40.57	34.6	"	gn				fne s sh			
5070	"	31 57.15 46 25.71	37.4	"	gn				fne s			
5071	"	32 06.38 47 37.90	36.7	"	gn				fne s			
5072	"	32 45.27 47 51.30	36.9	"	gn				fne s			
5073	"	33 23.86 48 07.76	38.3	"	gn				fne s			
5074	"	33 58.73 48 23.76	25.5	"	gn				fne s			
5075	"	34 37.21 48 42.16	19.6	"	gn/gv				fne s			
5076	"	35 13.76 49 00.61	19.6	"	gn/gv				fne s			
5077	"	35 58.94 49 24.91	17.2	"	gn/gv				fne s			
5078	"	36 34.32 49 45.74	15.9	"	gn/gv				fne s			
5079	"	36 54.70 49 57.57	15.9	"	gn/gv				fne s			
5080	"	37 44.83 50 34.17	17.7	"	gn/gv				fne s brk sh			
5081	"	38 22.13 50 58.76	16.3	"	gn/gv				fne s brk sh			
5082	"	38 58.05 51 23.68	16.3	"					lrg st smLP sh S			
5083	"	39 33.03 51 47.84	14.1	"	gy				fne s lrg st brk sh			
5084	"	40 11.35 52 16.77	12.3	"					s brk sh smLP			MM

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL	SERIAL NO.	DATE	PROJ. NO.		YEAR	DEPTH (Fathoms)	WEIGHT OF SAMPLER	AP. PROX. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dated cutter, stat. no., type of bottom relief i.e., slope, plain, disposition, etc.)	OBS. (INIT.)
			2125	088-PI4-RA-81									
			LATITUDE	LONGITUDE									
5085		8/7	39 49.18	54 27.43	81	16.8	25 lbs				brk Sh P	sml Crab	MA
5086		"	38 33.79	53 30.86		15.3	"				sml P brk Sh		
5087		"	37 21.64	52 42.81		15.1	"		gn/gy		fne S Sh		
5088		"	36 08.17	51 58.03		16.3	"		gn/gy		fne S		
5089		8/8	34 54.99	51 16.57		19.2	"		gn/gy		fne S Sh	sml amount Sh	
5090		"	33 39.84	50 42.40		22.6	"		gn/gy		fne S Sh	sml amount Sh	
5091		"	32 25.93	50 11.34		33.5	"		gn/gy		fne S Sh	sml amount Sh	
5092		"	31 36.41	49 51.60		35.4	"		gn/gy		fne S Sh	sml amount Sh	
5093		"	30 51.75	53 33.05		36.7	"		gn/gy		fne S		
5094		"	31 55.66	53 56.89		34.2	"		gn/gy		fne S		
5095		"	33 09.99	54 30.03		19.9	"		gn/gy		fne S		
5096		"	34 22.94	55 08.85		19.1	"		gn/gy		fne S		
5093 DUPLICATE #		"	37 56.58	37 03.91		6.3	"				rky		
5094 DUPLICATE #		"	38 29.57	37 23.47		3.8	"		gy		fne S		
5095 DUPLICATE #		"	38 54.74	39 00.15		2.9	"		gy		S		
5096		"	38 17.26	38 33.33		5.4	"				rky		
5097		"	37 41.15	38 17.85		11.2	"		gn/gy		M brk Sh P		MM

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

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

VESSEL	SERIAL NO.	DATE	PROJ. NO.		YEAR	SOUTHERN COOK INLET, ALASKA		AP. PROX. PENETRATION	WEIGHT OF SAMPLE	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, denting cutter, strat. no., type of bottom relief i.e., slope, plain, disposition, etc.)	OBS. INIT.
			SAMPLE POSITION			CHECKED BY	DATE CHECKED							
			LATITUDE	LONGITUDE										
	2125	1981	OOR-PI14-BA-81		81	RA-20-3-81								
			59° N	151° W										
5098		8/8	37 04.51	38 00.18	15.4	25/lbs			gn/gy	M brk Sh P				
5099		"	36 23.78	37 38.96	14.8	"			gn/gy	Cl brk Sh sml P				
5100		"	35 54.28	37 55.11	16.5	"			gn/gy	Cl brk Sh sml P	Marine Life			
5101		"	36 15.43	38 50.53	16.2	"			gn/gy	Cl brk Sh				
5102		"	36 55.57	39 10.85	15.5	"			gn/gy	Cl brk Sh				
5103		"	37 30.69	39 30.27	15.7	"			gn/gy	Cl brk Sh fine S St				
5104		"	38 09.56	39 52.14	10.1	"			gn/gy	Cl brk Sh				
5105		"	38 42.71	40 15.07	5.0	"			gn/gy	S brk Sh sml P St				
5106		"	39 22.08	40 36.13	3.4	"				St Co CL				
5107		"	39 44.95	42 14.21	7.1	"				crs S brk Sh	rock bottom	plant life		
5108		"	39 10.50	41 52.75	8.0	"				brk Sh P	various sized P			
5109		"	38 33.52	41 29.65	12.0	"			gn/gy	M brk Sh				
5110		"	37 55.81	41 07.41	16.0	"			gn/gy	M fine S brk Sh				
5111		"	37 20.16	40 47.59	17.0	"			gn/gy	M S brk Sh				
5112		"	41.47 36 04.68	26.24 40 07.27	17.0	"			gn/gy	St brk Sh	bottom	Plant life		
5113		"	36 04.80	40 07.12	18.4	"			gn/gy	sty S brk Sh				
5114		"	36 31.07	41 40.55	18.6	"			gn/gy	fine S				

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL	SERIAL NO.	DATE	PROJ. NO.		YEAR	DEPTH (Fathoms)	WEIGHT OF SAMPLE	AP. PEN- TRA- TION	LENGTH OF CORE	COLOR OF SED- IMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesion, density, cutter, stat. no., type of bottom relief, i.e., slope, plain, deposition, etc.)	OBS. INIT.
			SAMPLE POSITION	LONGITUDE									
2125		1981	OPR-PIU-RA-81		81								
			LATITUDE	LONGITUDE									
5115	8/8	37 08.12	42 00.91	151° W	18.0	25 lbs			gn/gy	fne S		MM	
5116	"	37 45.50	42 22.46		17.9	"			gn/gy	fne S			
5117	"	38 23.16	42 43.25		16.9	"			gn/gy	fne S lg P brk Sh			
5118	"	38 58.35 52.55	43 05.12 01.45		13.7	"			gn/gy	fne S			
5119	"	39 36.40	43 31.35		8.5	"			rky				
5120	"	40 11.82	43 54.32		6.1	"			crs S sml P st brk Sh		rky		
5121	8/9	39 58.65	45 06.60		7.8	"			rky				
5122	"	39 22.59	44 43.82		15.2	"			bk/gy	M brk Sh	sml crab		
5123	"	38 47.09	44 20.01		17.7	"			gn/gy	fne S brk Sh			
5124	"	38 12.68	43 56.52		18.4	"			gy	fne S			
5125	"	37 34.49	43 32.46		18.7	"			gn/gy	fne S			
5126	"	36 59.71	43 12.36		19.0	"			gn/gy	fne S			
5127	"	36 22.62	42 52.08		19.5	"			gn/gy	fne S			
5128	"	36 10.25	44 05.95		20.4	"			gn/gy	fne S			
5129	"	36 47.81	44 26.18		19.6	"			gn/gy	fne S			
5130	"	37 27.19	44 48.96		19.1	"			gn/gy	fne S Sh			
5131	"	37 58.75	45 07.37		19.0	"			gn/gy	fne S		MM	

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL	DATE	PROJ. NO.	YEAR	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAMPLE	AP- PROX. PENE- TRA- TION	LENGTH OF CORE	COLOR OF SED- IMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dented cutter, stat. no., type of bottom relief i.e., INIT. slope, plain, diaposition, etc.)	OBS. INIT.
				LATITUDE	LONGITUDE								
2125	1981	OPP-P114-BA-81	81	59° N	151° W								
5132	8/9	38 39.00	45 32.90	18.4	25 lbs				gn/gy	fine s brk sh	sml amount brk sh	MM	
5133	"	39 15.98	45 32.02	17.7	"				gn/gy	fine s brk sh			
5134	"	39 53.91	46 23.71	14.0	"				gn/gy	fine s sh			
5135	"	40 15.29	48 00.99	12.2	"				gn/gy	fine s sh st			
5136	"	39 38.96	47 34.98	17.4	"				gn/gy	fine s brk sh			
5137	"	39 02.08	47 10.08	18.3	"				gn/gy	fine s brk sh			
5138	"	38 26.83	46 47.43	18.4	"				gn/gy	fine s			
5139	"	37 49.90	46 24.59	18.5	"				gn/gy	fine s			
5140	"	37 12.43	46 02.13	19.1	"				gn/gy	fine s			
5141	"	36 36.79	45 41.18	20.0	"				gn/gy	fine s			
5142	"	35 59.21	45 55.67	25.4	"				gn/gy	fine s			
5143	"	36 26.11	46 55.24	20.2	"				gn/gy	fine s			
5144	"	37 03.56	47 16.80	17.9	"				gn/gy	fine s			
5145	"	37 41.06	47 39.38	17.0	"				gn/gy	fine s			
5146	"	38 18.22	48 01.75	17.6	"				gn/gy	fine s			
5147	"	38 52.90	48 25.58	18.6	"				gn/gy	fine s			
5148	"	39 29.68	48 50.60	17.9	"				gn/gy	fine s brk sh		MM	

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL	DATE	PROJ. NO.	YEAR	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAMPLER	AP. PROX. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, graded cutter, strat. no., type of bottom relief, etc., slope, plain, disposition, etc.)	OBS. INIT.
				LATITUDE	LONGITUDE								
2125	1981	OPP-PI4-BA-81	81	59°N	151°W								
5149	8/9	40 02.51 49 17.43		14.9	25 lbs				gn/gy	P fine s	Hermit Crab - full shell	MM	
5150	"	39 53.60 50 30.28		16.1	"				gn/gy	fine s brk Sh st	Hermit crab sml amounts		
5151	"	39 17.04 50 03.90		18.0	"				gn/gy	fine s brk Sh			
5152	"	38 39.96 49 38.47		18.0	"				gn/gy	fine s brk Sh	bk spks		
5153	"	38 03.22 49 14.68		17.2	"				gn/gy	fine s brk Sh			
5154	"	37 27.29 48 52.24		17.0	"				gn/gy	fine s			
5155	"	36 49.51 48 28.33		17.7	"				gn/gy	fine s			
5156	"	36 12.94 48 07.50		17.7	"				gn/gy	fine s			
5157	"	31 44.58 51 31.66		37.1	"				gn/gy	fine s bk spk			
5158	"	32 49.18 52 19.86		30.8	"				gn/gy	fine s			
5159	"	34 01.04 52 55.32		19.6	"				gn/gy	fine s			
5160	"	35 19.26 53 35.28		17.4	"				gn/gy	fine s			
5161	"	36 33.20 54 19.07		17.6	"				gn/gy	fine s			
5162	"	37 46.65 55 06.15		15.9	"				gn/gy	crs s brk Sh			
5163	"	39 00.06 55 57.89		19.8	"				gn/gy	brk Sh (bk crs s)	EEL		
5164	"	40 11.16 56 51.82		17.5	"					brk Sh st	Various sized St		
5165	8/10	40 27.25 59 32.90		19.7	"				gy	crs s P brk Sh		MM	

Use more than one trip per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

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

VESSEL	SERIAL NO.	DATE	PROJ. NO.		YEAR	DEPTH (Fathoms)	WEIGHT OF SAMPLE FLER	AP. PROX. PENE- TRA- TION	LENGTH OF CORE	COLOR OF SED- IMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, denting, cuttes, strat. no., type of bottom relief i.e., slope, plain, deposition, etc.)	OBS. INIT.
			LATITUDE	LONGITUDE									
2125		1981	OPR-PIN-RA-81		81								
			SAMPLE POSITION										
			59°N	151°W									
5166		8/10	39 15.70	58 35.19	18.5	25.16			gy	crs S P brk Sh			MM
5167		"	38 03.24	57 40.89	17.1	"			gy	crs S brk Sh			
5168		"	36 48.56	56 50.29	18.1	"			gy	crs S brk Sh sml P			
5169		"	35 36.78	56 06.09	18.8	"			gy	crs S wh spk			
5170		"	34 21.52	55 25.75	19.5	"			gy	fine wh spk S brk Sh			
5171		"	33 07.85	54 47.97	20.3	"			gn/gy	fine S brk Sh			
5172		"	31 51.33	54 14.90	33.8	"			gy	fine wh spk S			
5173		"	32 08.71	56 37.15	22.4	"			gy	fine S brk Sh			
5174		"	33 25.37	57 13.59	21.7	"			gy	brk Sh			
5175		"	34 38.08	57 51.96	20.8	"			gy	crs wh spk S			
5176		"	35 52.48	58 35.00	19.4	"			gy	crs S brk Sh			
5177		"	37 06.21	59 23.67	19.1	"			gy	crs S brk Sh			
5178		"	38 20.05	00 15.79	17.9	"			gy	crs S brk Sh lrg P	sml amount S		
5179		"	39 31.81	01 12.70	17.2	"			gy	sml St brk Sh			
5180		8/15	31 47.09	01 02.25	24.3	"			gn/gy	fine wh spk S brk Sh			
5181		"	32 47.91	01 29.26	23.2	"			gn/gy	fine S brk Sh P			
5182		"	32 30.54	59 02.38	23.7	"			gn/gy	fine S brk Sh			MM

Use more than one line per sample if necessary.

VESSEL	SERIAL NO.	DATE	PROJ. NO.		YEAR	DEPTH (Fathoms)	WEIGHT OF SAM- PLER	AP. PROX. PENE- TRA- TION	LENGTH OF CORE	COLOR OF SEDI- MENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, denting cutter, stat. no., type of bottom relief i.e., slope, plain, disposition, etc.)	OBS. INIT.	DATE CHECKED
			LATITUDE	LONGITUDE										
2125		1981	OPR-PI4-RA-81		81									
			SOUTHERN COOK INLET, ALASKA (H-9958)											
			RA-20-3-81											
5183		8/15	59° N	150° W		23.7	25 lbs		gn/gy	S brk Sh				
5184		"	33 44.43 57	151°		22.1	"		gn/gy	S brk Sh				
5185		"	34 52.40 00	152°		20.3	"		gn/gy	brk Sh sml P fine S				
5186		"	36 11.85 01	152°		19.6	"		gn/gy	fine S brk Sh				
			37 34.87 01	152°										

FINAL BASELINE CORRECTORS
 OPR-P114-RA-81
 SOUTHERN COOK INLET, ALASKA

CONSOLE: 715
 R/T UNIT: 1538
 J.D. 130-158

J.D. 159-169

<u>CODE</u>	<u>CORRECTOR</u>
A	-4
B	-2
C	2
D	2
E	0
F	0
0	2

<u>CODE</u>	<u>CORRECTOR</u>
A	---
B	-1
C	-2
D	1
E	---
F	-1
0	3

CONSOLE: 715
 R/T UNIT: 1557
 J.D. 170-186

CONSOLE: 715
 R/T UNIT: 4926
 J.D. 187-214.

<u>CODE</u>	<u>CORRECTOR</u>
A	0
B	---
C	3
D	1
E	---
F	4
0	0

<u>CODE</u>	<u>CORRECTOR</u>
A	4
B	5
C	3
D	5
E	---
F	5
0	2

CONSOLE: 715
 R/T UNIT: 1660
 J.D. 215-233

<u>CODE</u>	<u>CORRECTOR</u>
A	0
B	4
C	1
D	0
E	2
F	2
0	4

FINAL BASELINE CORRECTORS
OPR-P114-RA-81
SOUTHERN COOK INLET, ALASKA

CONSOLE: 711
R/T UNIT: 1646
J.D. 130-158

J.D. 159-189

<u>CODE</u>	<u>CORRECTOR</u>
A	-6
B	-4
C	-1
D	-2
E	-4
F	-2
O	0

<u>CODE</u>	<u>CORRECTOR</u>
A	---
B	-4
C	-1
D	-3
E	---
F	-2
O	0

J.D. 190-233

<u>CODE</u>	<u>CORRECTOR</u>
A	-13
B	-4
C	-2
D	-4
E	-5
F	-2
O	0

FINAL BASELINE CORRECTORS
OPR-P114-RA-81
SOUTHERN COOK INLET, ALASKA

CONSOLE: 720
R/T UNIT: 2710
J.D. 130-158

J.D. 159-189

<u>CODE</u>	<u>CORRECTOR</u>
A	-1
B	-1
C	0
D	0
E	-1
F	-1
O	0

<u>CODE</u>	<u>CORRECTOR</u>
A	---
B	-2
C	0
D	0
E	---
F	-1
O	-2

J.D. 190-233

<u>CODE</u>	<u>CORRECTOR</u>
A	-7
B	-4
C	-2
D	-1
E	-2
F	-2
O	-4

CONSOLE: 30269
R/T UNIT: SM312
J.D. 190-233

<u>CODE</u>	<u>CORRECTOR</u>
A	---
B	0
C	-1
D	1
E	---
F	0
O	0

ELECTRONIC COFFECTOR ABSTRACT

VESSEL : 2123 (1)

SHEET : RA-20-3-81

TIME	DAY	FATTEFN 1	FATTEFN 2	
202404	192	-00002	-00001 +00000	M/R
202120		+00000	+00000	
202130		+00077	+00000	
202144		+00418	+00000	
202056		-00000	+00000	
205818		+00718	+00000	
205833		+00767	+00000	
215000		-00000	+00000	
202400		+07436	+00000	
223511		-00000	+00000	
000010	193	-00000	+00000	
195200	193	-00000	+00000	
000740		+00529	+00000	
200947		-00000	+00000	
000000	194	-00000	+00000	
223418	196	-00002	-00002	
000011	197	-00000	-00000	
182804	197	-00000	-00000	
194352	197	-00002	+00000	
000000	198	-00000	-00000	
185747	198	-00000	-00000	
003748	203	-00002	+00000	M/R
204640	203	-00030	-00051	RAYDIST
000002	204	-00030	-00051	
200947	204	-00021	+00050	
000006	205	-00021	+00050	
191051	206	-00015	+00042	
000003	207	-00015	+00042	
192221	207	-00008	+00044	
011726 231544		+00092	+00044	
000000	208	+00192	+00044	
013529		+00192	+00044	RAYDIST

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2125

SHEET : PA-20-3-81

TIME	DAY	PATTEEN 1	PATTEEN 2
222830	217	-00009	-00012
000100	218	00009	00010
201532		-00021	-00013
000045	219	00021	00010
192825	217	-00024	-00011
223002		-00224	-00011
233051		-00324	-00011
000642	220	-00424	-00011
010427		00004	00011
193002		-00013	-00008
000828	221	-00013	-00008
154244		+00027	-00011
175046	222	+00002	-00001
011427	227	-00012	-00071

215625 : 208 : -01998* : -00002

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2124 (2)

SHEET : RA-20-3-81

TIME	DAY	FATTEFN 1	FATTEFN 2
000011	209	-01998*	-00002
193411	209	+00014	+00008
190112	211	-00015	-00010
204627	212	•00009	+00005
000002	210	00009	+00005
183129	219	-00006	+00000
191824	225	-00007	+00014
191641	230	+00002	-00002
200102	200	+00002	00002
000004	201	+00002	00002

* accuracy unknown see COMBXR /NAW 3/19/02 and
 OA/COM 221: QWS 4/26/02

193813	209	-00002	-00001
002050	210	-00002	+00000
183533	211	+00024	-00026

ELECTRONIC CONNECTOR ABSTRACT

VESSEL : 2123 (2)

SHEET : BA-20-3-81

TIME	DAY	PATTERN 1	PATTERN 2
221119	224	-00033	+00023
011609	225	00033	+00023

ELECTRONIC COFFECTCF ABSTRACT

VESSEL : 2124 (1)

SHEET : RA-20-3-81

TIME	DAY	FATTEFN 1	FATTEFN 2
220448	192	-00001	+00001
000009	190	00001	+00001
194704	190	00001	+00001
000009	194	00001	+00001
230404	194	+00000	-00001
000007	195	+00000	-00001
193302	195	-00001	+00001
211304		+00000	+00001
222347		-00001	+00001
000056	196	00001	+00001
193907	196	+00000	-00001
000010	197	+00000	00001
190707	197	+00015	-00004
000006	198	+00015	-00004
162904	198	+00008	-00008
191707	198	+00008	00008
201019	203	+00004	+00010
000002	204	+00004	+00010
183746	204	+00005	+00003
000011	205	+00005	+00003
231936	205	+00005	+00005
000010	206	+00005	+00005
192631	206	-00004	-00006
000009	207	00004	-00006
214908	207	-00708	+00105
000034	208	00708	+00105

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

ABSTRACT OF TIME OF HYDROGRAPHY
~~AND/OR FIELD EDIT~~

Date 27 AUGUST 1981

Project No. OPR-P114-RA-81

Vessel 2123, 2124, 2125

Date of Survey 11 JULY - 19 AUGUST 1981

Field Sheet No. RA-20-3-81

Registry No. H-9958

Field Sheet is Complete/Incomplete

J.D.	Time (Z)	J.D.	Time (Z)	J.D.	Time (Z)	J.D.	Time (Z)
192	202404	-	193 025219				
193	194734	-	194 004047				
194	230404	-	195 020816				
195	191825	-	196 004620				
196	193907	-	197 023222				
197	183804	-	198 020442				
198	185747	-	199 215504				
203	201019	-	204 022031				
204	184626	-	205 033718				
205	202155	-	206 033454				
206	191051	-	207 022920				
207	192221	-	208 015355				
208	215625	-	209 002731				
209	193411	-	210 005027				
211	183533	-	211 225317				
212	204627	-	213 002802				
217	222830	-	219 020941				
218	201532	-	219 020523				
219	183129	-	220 013759				
220	193002	-	221 001852				
221	154244	-	221 211749				
222	175046	-	222 205301				
224	221119	-	225 023704				
225	191824	-	225 201533				
227	011427	-	227 022003				
230	191918	-	230 225238				
230	233102	-	231 042332				

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

ABSTRACT OF TIME OF HYDROGRAPHY
 AND/OR FIELD EDIT

Date 9/2/81

Project No. OPR-P114-RA-81

Vessel 2124 (RA-4); 2127 (RA-7)

Date of Survey 6/17/81 - 8/18/81

Field Sheet No. TP-00799 (RA-20-3-81 & RA-20-4-81) Registry No. H-9958; H-9967

Field Sheet is Complete/~~Incomplete~~

J.D.	Time (Z)		J.D.	Time (Z)
168	1907	-		
198	1800	-	198	1804
216	2144	-	216	2254
217	2043	-	217	2120
230	1940	-	230	2051
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		

J.D.	Time (Z)		J.D.	Time (Z)
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		

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

ABSTRACT OF TIME OF ~~HYDROGRAPHY~~
 AND/OR FIELD EDIT

Date 9/2/81

Project No. OPR-P114-RA-81

Vessel 2127 (RA-7)

Date of Survey 7/17/81

Field Sheet No. TP-00802 (RA-20-3-81) Registry No. H-9958

Field Sheet is Complete/~~Incomplete~~

J.D.	Time (Z)	-	J.D.	Time (Z)
198	1640	-	198	1800
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		

J.D.	Time (Z)	-	J.D.	Time (Z)
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		
		-		

GEOGRAPHIC NAMES

Name on Survey	ON CHART NO. 16645 ON PREVIOUS SURVEY NO. ON U.S. QUADRANGLE MAPS FROM LOCAL INFORMATION ON LOCAL MAPS P.O. GUIDE OR MAP GRAND MCNALLY ATLAS U.S. LIGHT LIST MANUSCRIPTS								TP-00802	1	
	A	B	C	D	E	F	G	H			
BLUFF POINT	X									TP-00802	1
COOK INLET	X									TP-00799	2
DIAMOND CREEK	X									TP-00799	3
DIAMOND GULCH	X									TP-00799	4
KACHEMAK BAY	X									TP-00802	5
											6
											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

NOAA FORM 76-40
 (2-71)
 PRESCRIBED BY
 PHOTOGRAMMETRY INSTRUCTION NO. 64.

U.S. DEPARTMENT OF COMMERCE—NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 ORIGINAL AND ORIGINAL
 FIELD INSPECTION
 FIELD EDIT
 COMPILATION
 FINAL REVIEW
 QUALITY CONTROL AND REVIEW
 (See reverse for responsible personnel)

LANDMARKS FOR CHARTS
 DATE

TO BE CHARTED
 TO BE DELETED

ORIGINATING LOCATION
Coastal Mapping Division, Norfolk, Va.

The following objects (have not) been inspected from seaward to determine their value as landmarks:

JOB NUMBER **CM-7412** SURVEY NUMBER **TA-TP-00799** DATUM **N.A. 1927**
 STATE: **Alaska**

CHARTING NAME	DESCRIPTION	POSITION		FIELD INSPECTION	COMPILATION	FIELD EDIT	CHARTS AFFECTED
		LATITUDE	LONGITUDE				
		D.M./METERS	D.P./METERS				
	<i>No MC CHARTED</i>	0 /	0 /				

114 | ROCK | " | 151/47/54.51 | FOUL LIMBS

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

REPORTING UNIT
(Field Party, Ship or Office)
Cook Inlet, East Side

STATE

LOCALITY

DATE

A.M.C. Norfolk Va

Alaska

Cape Kaslof to Barren Is

Jan 82

The following objects HAVE BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.

DATE

DATUM

POSITION

METHOD AND DATE OF LOCATION
(See Instructions on reverse side)

CHARTS
AFFECTED

OPR PROJECT NO.
P114-RA-01

JOB NUMBER
CM-741Z

SURVEY NUMBER
TP-0080Z

N.A. 1921

CHARTING
NAME

DESCRIPTION
(Record reason for deletion of landmark or aid to navigation.
Show triangulation station names, where applicable, in parentheses)

LATITUDE

LONGITUDE

° / ' " ° / ' " D.P. Meters

OFFICE

FIELD

None

ORIGINATING ACTIVITY

- HYDROGRAPHIC PARTY
- GEODETIC PARTY
- PHOTO FIELD PARTY
- COMPILATION ACTIVITY
- FINAL REVIEWER
- QUALITY CONTROL & REVIEW GRP.
- COAST PILOT BRANCH

(See reverse for responsible personnel)

APPROVAL SHEET


DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY

H-9958

RA-20-3-81

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, PMC OPORDER, and the Instruction Manual for Automated Hydrographic Surveys. The data was examined daily during the execution of the survey.

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



Ralph J. Land
Commander, NOAA
Commanding

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION	AMOUNT		
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS	2		
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS, ARC, EXCESS	5		
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS			2			
VOLUMES						
BOXES			2			

T-SHEET PRINTS (List)

SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	PRE-VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			
POSITIONS CHECKED	4293	4293	4293
POSITIONS REVISED	-0-	3953	3953
SOUNDINGS REVISED	-0-	317	317
SOUNDINGS ERRONEOUSLY SPACED	-0-	-0-	-0-
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED	-0-	-0-	-0-
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	5	* (VER)/(EVAL)	5
VERIFICATION OF CONTROL		06/04	10
VERIFICATION OF POSITIONS		40/04	44
VERIFICATION OF SOUNDINGS		110/08	118
COMPILATION OF SMOOTH SHEET		106/04	110
APPLICATION OF TOPOGRAPHY		09/00	09
APPLICATION OF PHOTOBATHYMETRY		NA	0
JUNCTIONS		06/10	16
COMPARISON WITH PRIOR SURVEYS & CHARTS		16/33	49
VERIFIER'S REPORT		10/16	26
OTHER			
TOTALS	5	303/79	387

Pre-Verification by James S. Green	Beginning Date 10/3/81	Ending Date 10/30/81
Verification by Russ Davies, Rick Shipley	Beginning Date 3/3/82	Ending Date 12/14/82
Evaluation by Gordon Kay	Date 10/26/82	Date 1/10/83
Verification Check by James L. Stringham, James S. Green	Time (Hours) 46	Date 10/27/82
Marine Center Inspection by HIT	Time (Hours) 10	Date 1/24/83
Quality Control Inspection by	Time (Hours)	Date
Requirements Evaluation by	Time (Hours)	Date

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

PACIFIC MARINE CENTER
VERIFICATION/EVALUATION REPORT

REGISTRY NO: H-9958

FIELD NO: RA-20-3-81

Alaska, Cook Inlet, Entrance to Kachemak Bay

SURVEYED: July 11 to August 19, 1981

SCALE: 1:20,000

PROJECT NO: OPR-P114-RA-81

SOUNDINGS: Ross Model 5000

CONTROL: Range/Range
(Motorola Mini-Ranger III)
Teledyne - Hastings Raydist

Chief of Party.....CDR R. H. Land

Surveyed by.....LT Michael Kretsch
LTJG Franklin Ohlinger
SST Richard Hastings
Mr. George Eaton (CHS)

Automated Plot by.....PMC Xynetics Plotter

Verified by.....Richard Shipley

Evaluated by.....Gordon E. Kay

1. INTRODUCTION

H-9958 is a basic hydrographic survey conducted by the NOAA Ship RAINIER in accordance with Project Instructions OPR-P114-RA-81, Southern Cook Inlet, Alaska, dated June 11, 1981 and:

- Change 1, Amendment to Instructions, February 23, 1981
- Change 2, Amendment to Instructions, March 10, 1981
- Change 3, Amendment to Instructions, June 4, 1981

This survey is situated west of the entrance to Kachemak Bay in Cook Inlet, in the vicinity of Bluff Point. The survey extends from the 50 fathom contour inshore to include portions of the one fathom contour.

Projection parameters used to prepare the field sheet have been revised to center the hydrography on the smooth sheet. Smooth sheet parameters and all other correctors used by the Pacific Marine Center, Seattle, Washington, to reduce the soundings data are appended in the smooth printout. Field tide reductions are based on predicted tides from Seldovia, Alaska. See field tide note in the ship's descriptive report for an adequate description of tides. Smooth sheet reduced soundings are based on observed tides at Seldovia, Alaska (945-5500).

2. CONTROL AND SHORELINE

Horizontal control and hydrographic position control are discussed in paragraphs F and G of the Descriptive Report, Horizontal Control Report OPR-P114-RA-81 and Electronic Control Report OPR-P114-RA-81.

During verification, it was not possible to verify the daily system checks of the Motorola Mini-Ranger III system. This discrepancy was attributed to the ship's unapproved use of scaled geographic positions for horizontal control stations. (Reference letter of March 19, 1982 CPM3X2/WAW; letter of March 26, 1982 OA/CPM221:GWS at the end of this report.) Meaned baseline correctors were used on the smooth sheet, which was plotted using preliminary adjusted field positions on the North American 1927 datum.

The following unreviewed Class I manuscripts were used as the source of the shoreline shown on this smooth sheet:

<u>Number</u>	<u>Scale</u>	<u>Date of Photography</u>	<u>Date of Field Edit</u>
TP-00799	1:20,000	July 1975	August 1981
TP-00802	1:20,000	July 1975	June, July 1981

3. HYDROGRAPHY

Soundings at crosslines are in good agreement.

The bottom configuration and determination of least depths are adequate.

Standard contours were adequately developed with the exception of the 0-fathom and 1-fathom contours where hydrography was terminated at the foul limits.

4. CONDITION OF SURVEY

The hydrographic records and field reports adequately conform to the requirements of the Hydrographic Manual with the following exceptions:

a. A charted rock at latitude 59°39'06"N, longitude 151°40'10"W (source unknown) was not investigated nor was its existence confirmed or disproven. "Each charted danger must be surveyed in detail to either verify it or disprove it." H.M. 4.5.15 (see section 7 of this report).

b. The Mini-ranger systems check data contained in the survey records was not of sufficient accuracy to confirm the proper operating condition of the equipment; however, the plotted data is internally consistent, indicating no major errors occurred.

5. JUNCTIONS

H-9877, 1:20,000 (1980-81) junctions the eastern limit of H-9958 along longitude 151°36'00"W. The junction area has over .5nm of overlap. No problems were encountered in making the junction. Depth contours and marginal note (in orange) have been inked.

H-9945, 1:20,000 (1981) junctions the southern limit of H-9958 along latitude 59°32'30"N. No problems were encountered in making the junction. Depth contours and marginal notes (in red) have been inked.

H-9967, 1:20,000 (1981) junctions the northern limit of H-9958 along latitude 59°40'30"N. No problems were encountered in making the junction. Depth contours and marginal notes (in violet) have been inked.

6. COMPARISON WITH PRIOR SURVEYS

There are no presurvey review items on H-9958.

H-9958 was compared to the following:

H-3206, 1:120,000 (1910) compares well with H-9958 agreeing with the general trend of sounding information found on the present survey, but minor differences can be located. These differences are attributed to positional control and datum differences. H-9958 is adequate to supersede H-3206 over their common areas.

H-3204, 1:40,000 (1910) compares well with H-9958, agreeing with the general trend of sounding information found on the present survey. One new subterranean feature was discovered; a long narrow trench located in 20 fathoms of water, situated at latitude 59°39'00"N, longitude 151°54'00"W extending southeast 2nm's. This feature is believed to be caused by seismic activity in the area. Overall offshore differences are attributed to age and older methods of positional control. Inshore of the 3 fathom contour (18 feet) soundings compare well, with numerous soundings and one rock (in brown ink) used to supplement H-9958 in inshore areas.

With the transfer of these soundings, H-9958 is adequate to supersede H-3204 over their common areas.

7. COMPARISON WITH CHART

H-9958 was compared with Chart 16645, 13th edition, October 4, 1980, 1:82,662.

a. Hydrography - Charted information (see enclosed chartlet) originates with the previously discussed prior surveys. Soundings compare well as discussed previously. There are 16 charted rocks (9 of which come from unknown source). All but two of the rocks' existence has been confirmed by the location of nearby rocks on the present survey.

1) A rock, source unknown, charted at latitude 59°39'06"N, longitude 151°40'10"W, lies 500 meters from the shoreline in four fathoms of water. Investigation of this rock was not conducted thoroughly by the ship. The source of this rock should be confirmed by the chart compiler and, if valid, this rock should continue to be charted from its source.

2) A rock, source H-3204, was not located by the ship. It is charted at latitude 59°38'36"N, longitude 151°37'03"W and was not investigated or disproven. It has been carried forward to the smooth sheet from H-3204 and should continue to be charted.

With the exception of the above mentioned rock, H-9958 is adequate to supersede the charted information over their common areas.

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

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

8. COMPLIANCE WITH INSTRUCTIONS

H-9958 complies with the project instructions and amendments.

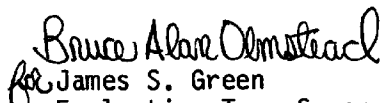
9. ADDITIONAL FIELD WORK

H-9958 is an adequate hydrographic survey. Additional field work is neither recommended nor required at this time.

Submitted by


Gordon E. Kay
Cartographer

Examined and Approved


for James S. Green
Evaluation Team Supervisor



**U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY**

Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102

March 19, 1982

CPM3x2/WAW

TO: Commanding Officer
NOAA Ship RAINIER

FROM: *John W. Carpenter*, For:
CPM3 - John W. Carpenter

SUBJECT: Hydrographic Survey H-9958

Hydrographic Survey H-9958, Entrance to Kachemak Bay, Alaska, is currently in the systematic check phase of the verification process.

Verification of some of the miniranger daily systems check values cannot be accomplished. It appears that systems check values obtained from sextant fixes utilizing program RK561 were based upon control stations with scaled geographic coordinates. This resulted in systems check values which exceeded the tolerances specified in PMC OORDER Appendix M.

These computations must be re-done utilizing the final signal list for geographic positions of the control stations before the Verification Branch can continue to process this survey. If the re-computed systems check values exceed those specified in Appendix M, then specific recommendations must be made in order to resolve the discrepancies or the data in question may be rejected.

It was noted that multiple raydist lane jumps occurred on a few of the days during the survey. As mentioned in the Descriptive Report, these lane jumps were resolved by analyzing the accompanying strip charts and applying whole lane correctors at the times the lane jumps occurred. This procedure is accepted practice; however, resolving multiple lane jumps is at best risky and somewhat subjective.

Verification of these lane jumps is difficult since office interpretation of the strip charts is also subjective, and the verifier's only alternative is to plot the data and compare the soundings to adjacent soundings. If agreement cannot be effected, then the data must be rejected, which would result in an incomplete survey and require additional field work to complete.

It is recommended that whenever using raydist position control, and multiple lane jumps are occurring during the day, a check calibration should be accomplished or the data should be rejected rather than analyzed and



10TH ANNIVERSARY 1970-1980

National Oceanic and Atmospheric Administration

resolved through strip chart interpretation. Overall, this procedure may be the most cost effective.

The records and data for H-9958 are being returned to you in order that the miniranger daily checks can be accomplished utilizing the accurate coordinates.

CPM 3X2

↓
CPM 32 (return with
survey)

[Handwritten mark]



**U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

NOAA Ship RAINIER S221
1801 Fairview Avenue East
Seattle, Washington 98102

March 26, 1982

OA/CPM221:GWS
1703-13

TO : CPM3 - John W. Carpenter

FROM: CPM221 - Ralph J. Land, CAPT, NOAA
Commanding Officer

[Handwritten signature: Ralph J. Land]

SUBJ: Hydrographic Survey H-9958

All Mini-Ranger daily systems checks were re-computed using the final signal list for geographic positions. Except for one day, all recomputations fell within the tolerances specified in PMC OORDER Appendix M. On Julian Day 193, the tolerance was exceeded by 1.21 meters. Also, more explanatory notes have been added to the raw data printouts.

The data is being transmitted back to PMC.



February 10, 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): 945-5500 Seldovia, AK

Period: July 1 - August 18, 1981

HYDROGRAPHIC SHEET: H-9958

OPR: P114

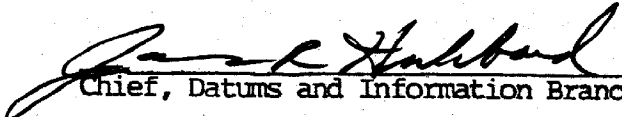
Locality: Kachemak Bay Entrance, Cook Inlet, Alaska

Plane of reference (mean lower low water): 8.15 feet.

Height of Mean High Water above Plane of Reference is 17.16 feet

REMARKS: Recommended Zoning:

1. From 152°06.0' east to 151°57.0'
 - a. North of 59°36.0' apply +15 minute time correction and x0.94 range ratio.
 - b. South of 59°36.0' apply x0.94 range ratio.
2. From 151°57.0' east to 151°50.0'
 - a. North of 59°36.0' apply +15 minute time correction and x0.97 range ratio.
 - b. South of 59°36.0' apply x0.97 range ratio.
3. East of 151°50.0'
 - a. North of 59°36.0' apply +15 minute time correction.
 - b. South of 59°36.0' zone direct.


Chief, Datums and Information Branch

GEOGRAPHIC NAMES

P

Name on Survey	A ON CHART NO. 16645 B ON PREVIOUS SURVEY NO. C ON U.S. QUADRANGLE MAPS D FROM LOCAL INFORMATION E ON LOCAL MAPS F P.O. GUIDE OR MAP G GRAND McNALLY ATLAS H U.S. LIGHT LIST MANUSCRIPT							

BLUFF POINT	X							TP-00802	1
COOK INLET	X							TP-00799	2
DIAMOND CREEK	X							TP-00799	3
DIAMOND GULCH	X							TP-00799	4
KACHEMAK BAY	X							TP-00802	5
									6
									7
									8
									9
									10
									11
									12
									13
									14
									15
									16
									17
									18
							Approved:		19
									20
							<i>Charles E. Harrington</i>		21
							Chief Geographer - N/CG 2x5		22
							19 MAY 1983		23
									24
									25

APPROVAL SHEET
FOR
SURVEY H- 9958

- A. This hydrographic survey has been verified, evaluated and inspected. It meets the requirements of the Hydrographic Manual except as noted in the Verification/Evaluation Report. The automated data file has been updated to reflect the data presented on the smoothsheet.

Date: 1/26/83

Signed: William Albert

Title: Chief, Hydrographic Section

- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the Verification/Evaluation Report.

Date: 1/26/83

Signed: Raymond M. Wood

Title: Chief, Nautical Chart Branch



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102

January 26, 1983

TO: N/CG2 - C. William Hayes

FROM: N/MOP - *Charles K. Townsend*
Charles K. Townsend

SUBJECT: Administrative Approval of H-9958, Entrance to Kachemak Bay,
Cook Inlet, Alaska

The smooth sheet and reports of this survey have been examined. The survey is adequate for charting and to supersede common areas of prior surveys with the exception of the charted rock (source unknown) located at latitude 59°39'06"N, longitude 151°40'10"W. This item was not thoroughly investigated in the field. Its source and validity should be confirmed by the chart compiler.

Retain Rock off Bluff Pt.
Histories checked and source
remains unknown.
Return to Hydro as Pre Survey Item.
Jo'Connor 9/20/85

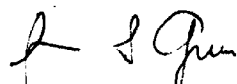


ADDENDUM TO EVALUATION REPORT FOR H-9958

The Evaluation Report for this survey is supplemented by the following statement:

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

Respectfully submitted,



James S. Green
Supervisory Cartographer
December 20, 1983

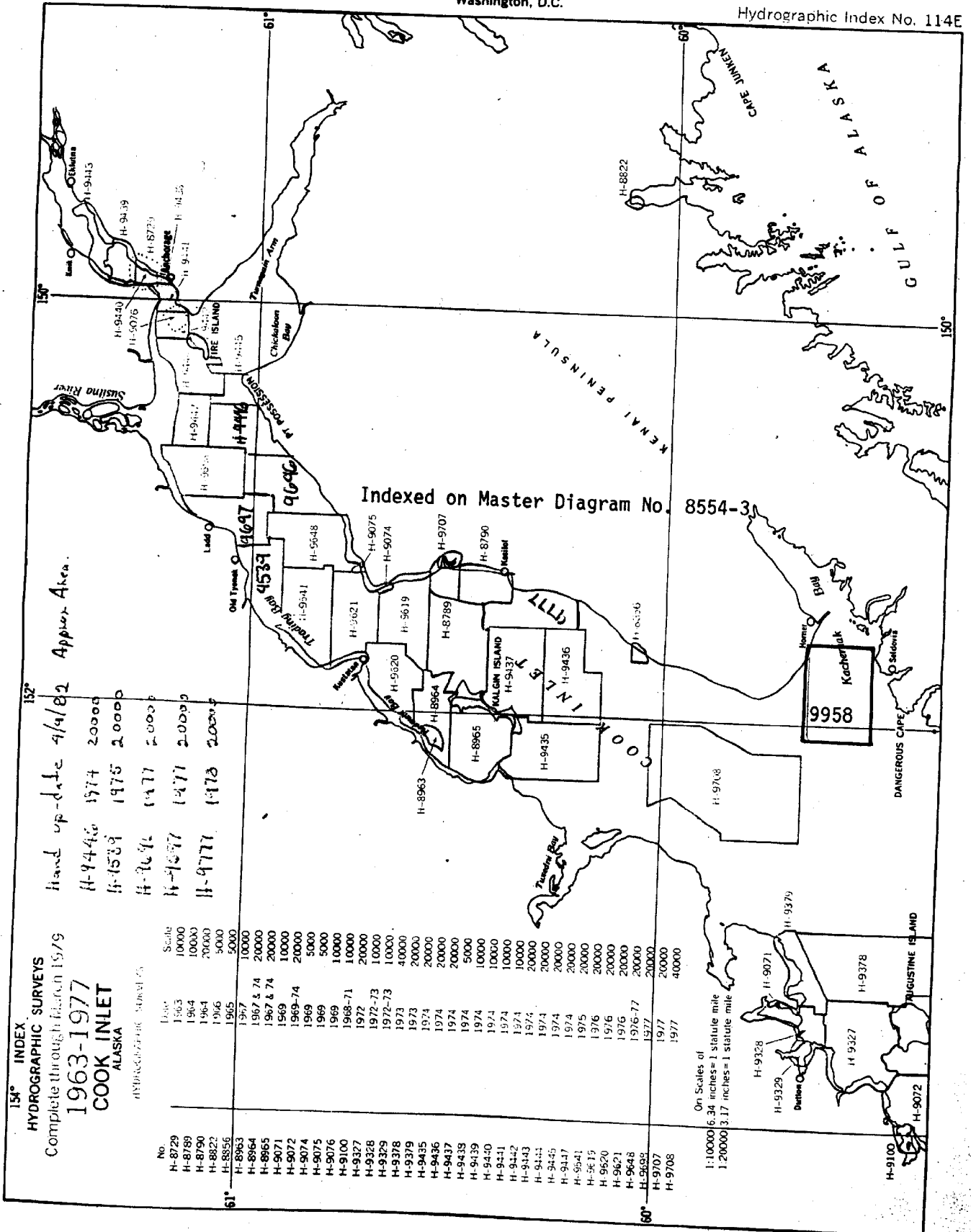
APPROVED:



Ned C. Austin
Chief, Nautical Chart Branch

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

Hydrographic Index No. 114E



Hand up-date 4/4/82 Approx Area.
H-9446 1974 20000
H-8539 1975 20000
H-9090 1977 20000
H-9097 1977 20000
H-9777 1978 20000

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-9100	1969	10000
H-9328	1968-71	10000
H-9328	1972	20000
H-9329	1972-73	10000
H-9378	1972-73	10000
H-9379	1973	40000
H-9435	1973	20000
H-9436	1974	20000
H-9437	1974	20000
H-9438	1974	20000
H-9439	1974	5000
H-9440	1974	10000
H-9441	1974	10000
H-9442	1974	10000
H-9443	1974	10000
H-9444	1974	10000
H-9445	1974	20000
H-9447	1974	20000
H-9448	1974	20000
H-9449	1974	20000
H-9450	1974	20000
H-9451	1974	20000
H-9452	1974	20000
H-9453	1974	20000
H-9454	1974	20000
H-9455	1974	20000
H-9456	1974	20000
H-9457	1974	20000
H-9458	1974	20000
H-9459	1974	20000
H-9460	1974	20000
H-9461	1974	20000
H-9462	1974	20000
H-9463	1974	20000
H-9464	1974	20000
H-9465	1974	20000
H-9466	1974	20000
H-9467	1974	20000
H-9468	1974	20000
H-9469	1974	20000
H-9470	1974	20000
H-9471	1974	20000
H-9472	1974	20000
H-9473	1974	20000
H-9474	1974	20000
H-9475	1974	20000
H-9476	1974	20000
H-9477	1974	20000
H-9478	1974	20000
H-9479	1974	20000
H-9480	1974	20000
H-9481	1974	20000
H-9482	1974	20000
H-9483	1974	20000
H-9484	1974	20000
H-9485	1974	20000
H-9486	1974	20000
H-9487	1974	20000
H-9488	1974	20000
H-9489	1974	20000
H-9490	1974	20000
H-9491	1974	20000
H-9492	1974	20000
H-9493	1974	20000
H-9494	1974	20000
H-9495	1974	20000
H-9496	1974	20000
H-9497	1974	20000
H-9498	1974	20000
H-9499	1974	20000
H-9500	1974	20000
H-9501	1974	20000
H-9502	1974	20000
H-9503	1974	20000
H-9504	1974	20000
H-9505	1974	20000
H-9506	1974	20000
H-9507	1974	20000
H-9508	1974	20000
H-9509	1974	20000
H-9510	1974	20000
H-9511	1974	20000
H-9512	1974	20000
H-9513	1974	20000
H-9514	1974	20000
H-9515	1974	20000
H-9516	1974	20000
H-9517	1974	20000
H-9518	1974	20000
H-9519	1974	20000
H-9520	1974	20000
H-9521	1974	20000
H-9522	1974	20000
H-9523	1974	20000
H-9524	1974	20000
H-9525	1974	20000
H-9526	1974	20000
H-9527	1974	20000
H-9528	1974	20000
H-9529	1974	20000
H-9530	1974	20000
H-9531	1974	20000
H-9532	1974	20000
H-9533	1974	20000
H-9534	1974	20000
H-9535	1974	20000
H-9536	1974	20000
H-9537	1974	20000
H-9538	1974	20000
H-9539	1974	20000
H-9540	1974	20000
H-9541	1974	20000
H-9542	1974	20000
H-9543	1974	20000
H-9544	1974	20000
H-9545	1974	20000
H-9546	1974	20000
H-9547	1974	20000
H-9548	1974	20000
H-9549	1974	20000
H-9550	1974	20000
H-9551	1974	20000
H-9552	1974	20000
H-9553	1974	20000
H-9554	1974	20000
H-9555	1974	20000
H-9556	1974	20000
H-9557	1974	20000
H-9558	1974	20000
H-9559	1974	20000
H-9560	1974	20000
H-9561	1974	20000
H-9562	1974	20000
H-9563	1974	20000
H-9564	1974	20000
H-9565	1974	20000
H-9566	1974	20000
H-9567	1974	20000
H-9568	1974	20000
H-9569	1974	20000
H-9570	1974	20000
H-9571	1974	20000
H-9572	1974	20000
H-9573	1974	20000
H-9574	1974	20000
H-9575	1974	20000
H-9576	1974	20000
H-9577	1974	20000
H-9578	1974	20000
H-9579	1974	20000
H-9580	1974	20000
H-9581	1974	20000
H-9582	1974	20000
H-9583	1974	20000
H-9584	1974	20000
H-9585	1974	20000
H-9586	1974	20000
H-9587	1974	20000
H-9588	1974	20000
H-9589	1974	20000
H-9590	1974	20000
H-9591	1974	20000
H-9592	1974	20000
H-9593	1974	20000
H-9594	1974	20000
H-9595	1974	20000
H-9596	1974	20000
H-9597	1974	20000
H-9598	1974	20000
H-9599	1974	20000
H-9600	1974	20000

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

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9958

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
531	6/6/84	J. Bailey	Full Part Before After Verification Review Inspection Signed Via Drawing No. 18 Exam. for critical corrs. NO CORR.
16013	6/8/84	J. Bailey	Full Part Before After Verification Review Inspection Signed Via Drawing No. 27 Exam. for critical corrs. NO CORR.
16645	8/7/84	J. Bailey	Full Part Before After Verification Review Inspection Signed Via Drawing No. 17 Revised hydro and MHW line
500	5/29/85	R.D. House	Full Part Before After Verification Review Inspection Signed Via Drawing No. 5 Considered fully appl'd, no corr.
16640	9-26-85	J.M. O'Gorman	Full Part Before After Verification Review Inspection Signed Via Drawing No. 22 Hold for application to 16647 Cook Inlet #5
16647	9-21-87	E. Bedonkofer	Full Part Before After Verification Review Inspection Signed Via Drawing No.
16640	6-23-89	Pearce Hunt	Full Part Before After Verification Review Inspection Signed Via Drawing No. 23 20th Ed.
16013	3/26/91	ARMOUR	Full Part Before After Verification Review Inspection Signed Via Drawing No. full application of sndgs. from SS thru 16640.
531	4/10/91	ARMOUR	Full Part Before After Verification Review Inspection Signed Via Drawing No. Applied three sndgs. (12, 14 & 18 fathoms) from SS thru 16013.
531	7-14-95 7-28-95	J. Elliott J. Simpson	Full Part Before After Verification Review Inspection Signed Via Drawing No. 21 APPL'D THRU 16013 #30