

10140

Diagram No. 8556-3

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. FA-10-2-84
Office No..... H-10140

LOCALITY

State Alaska
General Locality Shelikof Strait
Locality Jute Bay

1984

CHIEF OF PARTY
CAPT C. Andreasen

LIBRARY & ARCHIVES

DATE September 16, 1985

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

Area 6

CNTS:

*16570
16580
16013
531
500*

*to sign off see
Record of Application*

HYDROGRAPHIC TITLE SHEET

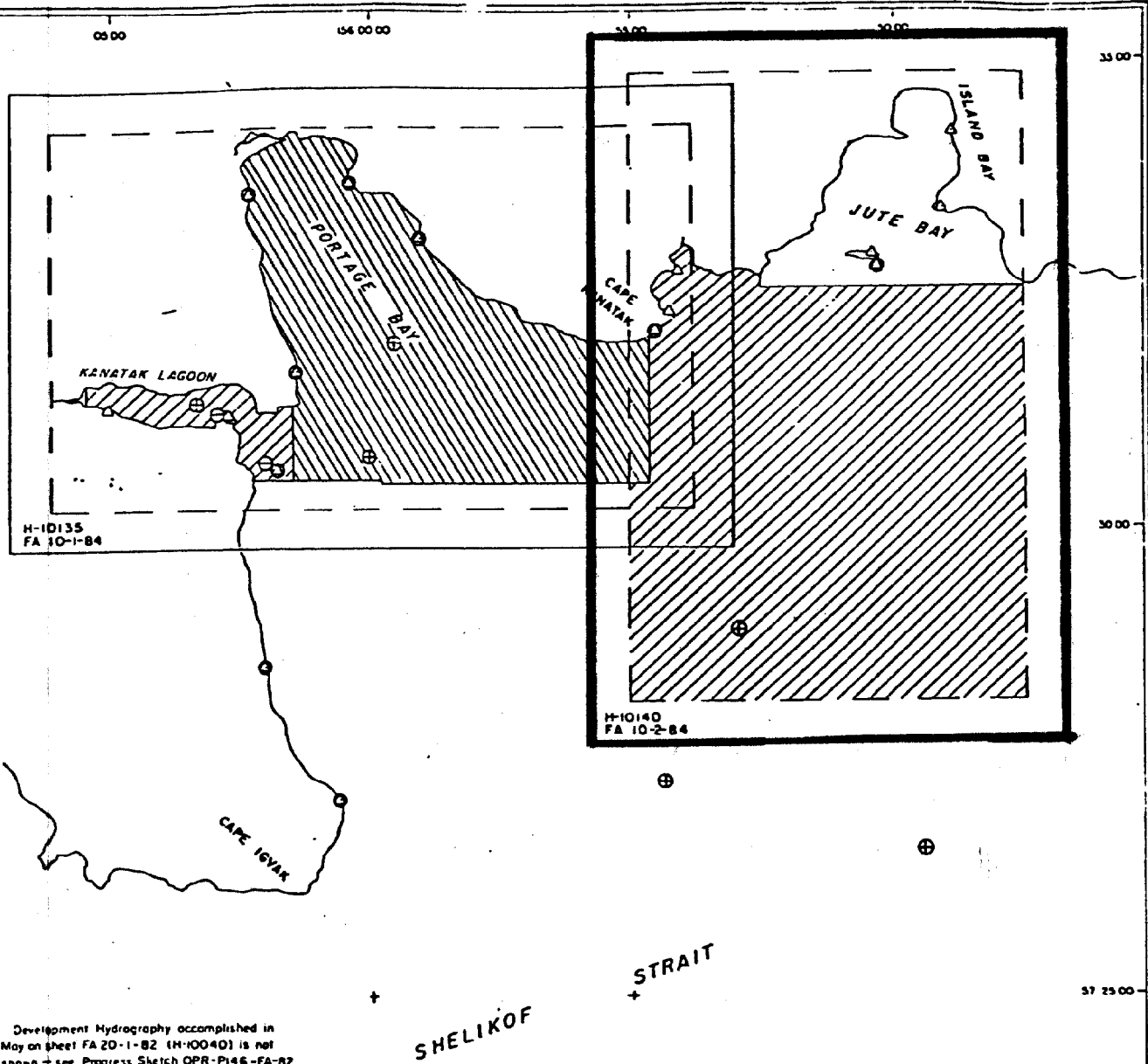
H-10140

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form,
filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

FA 10-2-84

State AlaskaGeneral locality Shelikof StraitLocality Jute BayScale 1:10,000Date of survey 11 July (JD 193) -
2 Aug 1984 (JD 215)Instructions dated 2 March 1984Project No. OPR-P146-FA-84Vessel FAIRWEATHER, Launches 2023, 2024, 2025Chief of party CAPT Christian AndreasenSurveyed by Lt. K. Andreen, Lt. T. Obsubo, Ens. J. Koch, Ens. T. Tisch,
Ens. J. Salmore, Ens. W. Mitchell, Ens. D. Timmons, CST C. KrickSoundings taken by echo sounder, hand lead, pole Ross Fineline 5000Graphic record scaled by FAIRWEATHER PersonnelGraphic record checked by FAIRWEATHER PersonnelVerified by L. Deodato~~Reviewed by~~Automated plot by PMC Xynetics PlotterEvaluated by K.M. Scott~~Reviewed by~~Soundings in fathoms ~~XXXX~~ at ~~XXXX~~ MLLWREMARKS: Revisions and marginal notes in black by the evaluator. Separates
are filed in the accordion file with the raw data.9-19-85 - STANDARDS CK'DC. LoyAlaris/Surf checks M&M 3/28/86SA 4-21-97



	MAY	JUNE	JULY	AUG.
SOUNDING LINE	4.3	10.6	17.6	2.5
LNM SOUNDING LINE	230	263	683.6	68.5
BOTTOM SAMPLE	0	22	123	9
HYDRO CONTROL STATIONS	6	8	3	2
SV/D - NANSEN CAST	3	1	2	2
WATER SAMPLES ANALYZED	3	0	0	2
TIDE GAGE INSTALLATIONS	1	2	1	0
LNM S/L VERIFICATION				
HYDROGRAPHY				

- ⊕ SV/D - NANSEN CAST
- ⊙ STA. RECOVERED
- ⊖ TIDE GAGE
- TEMPORARY POINT
- △ STA. ESTABLISHED

MONTHLY PROGRESS SKETCH
 OPR-P146-FA-84
 SHELIKOF STRAIT, ALASKA
 PORTAGE BAY TO PUALE BAY
 CAPT. CHRISTIAN ANDREASEN, CMDG
 NOAA SHIP FAIRWEATHER S-220
 SCALE FROM UGASHIK B-1, C-1 & KARLUK C-6 TOPOS

A. PROJECT

This hydrographic survey was conducted in accordance with Project Instructions OPR-PI46-FA-84 dated 2 March 1984, and Change No. 1 dated 9 May 1984. The Hydrographic Manual (Fourth Edition), the PMC OPORDER, and the Data Requirements Letter dated 13 April 1984 are also applicable. ✓

B. AREA SURVEYED

This survey is located on the northwest side of Shelikof Strait in the vicinity of Jute Bay along the Alaskan Peninsula. It is bounded on the north by the shorelines of Jute and Island Bays; on the east by longitude 155/47/22 W; on the south by latitude 57/28/06 N; and on the west by longitude 155/55/00 W. ✓

Hydrographic operations began on 11 July 1984 (JD 193) and ended on 2 Aug 1984 (JD 215). ✓

C. SOUNDING VESSELS

Soundings on this survey were obtained by Jensen survey launches FA-3 (2023), FA-4 (2024) and FA-5 (2025). FAIRWEATHER (2020) was used to obtain all sound velocity casts. No unusual sounding configurations were used on this survey. ✓

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDING

The Jensen survey launches were equipped with Ross Fineline 5000 narrow beam echo sounders. Serial numbers and days of usage are listed in Table I. ✓

Table I
Sounding Equipment

<u>Vessel/Date(JD)</u>	<u>Digitizer</u>	<u>Inverter</u>	<u>Analog</u>	<u>Transceiver</u>
FA-3 (2023)				
193-215	1016	1016	1016	1016
FA-4 (2024)				
194-196	1042	1001	1047	1040-6
197-198	1042	1001	1054	1040-6
199-208	1082	1001	1054	1040-6
209-212	1082	1001	1077	1040-6
213-215	1082	1001	1054	1040-6
FA-5 (2025)				
193-215	1036	1103	1036	1054

 ✓

The Ross recorders were phase calibrated and the belt tension was checked at the start of each day and whenever the paper was changed. The phase check was also performed at least once during the day or at the completion of hydrography. The fathometer initial was continuously monitored and adjusted as necessary. All data was scanned at least twice, to compare analog values to corresponding digital depths and to insert peaks and deeps between soundings. The effects of excessive wave and swell action were adjusted at this time in accordance with Section 4.9.8.2 of the Hydrographic Manual. ✓

All problems encountered with echo sounders during this survey occurred on FA-4 (2024) and consisted of the following: On JD 196, at the end of the day the bottom trace could not be received on the analog recorder (1047), thus it was replaced by recorder (1054). On JD 199, the digitizer (1042) was experiencing intermittent interrupt problems and was replaced by digitizer (1082). On JD 209 the paper drive in the recorder (1054) failed and was replaced by recorder (1077). On JD 213 the recorder (1077) experienced a wavering initial. It was replaced by recorder (1054). No data was lost in any of these incidents. ✓

The FAIRWEATHER's three survey launches, FA-3 (2023), FA-4 (2024) and FA-5 (2025), were tested for settlement and squat on March 1 and 6, 1984 in Shilshole Bay, Seattle, Washington. Settlement and squat measurements were conducted in accordance with Section 4.9.4.2 of the Hydrographic Manual. All launches were tested at speeds ranging from idle to top speed at 200 rpm increments. A Zeiss Ni2 level was used to read a stadia rod held over the transducer when launch speed was obtained. A tide staff was read simultaneously with the stadia rod to correct for tidal influences. The results were used to plot settlement and squat curves for each launch. ✓

According to Section 4.9.4.2 of the Hydrographic Manual, settlement and squat correctors shall be determined to the nearest 0.2 feet. However, for surveys in fathoms, Table 4.4 and section 4.9.2 state that correctors need not be applied for correctors less than 0.1 fathom. In addition, there are no available means for the Hydroplot system to accept corrector increments of less than 0.1 fathoms. Using this criteria, at no launch speed does a 0.1 fathom corrector become applicable. Therefore, settlement and squat correctors were insignificant for this survey. ✓

Bar checks were performed twice daily when possible, i.e. weather and seas permitting, equipment functioning etc. Bar check data combined with velocity correctors determined launch TRA values. For this survey FA-3 and FA-4 had a TRA of 0.3 fathoms, whereas FA-5 had a TRA of 0.4 fathoms. All data was plotted on the final field sheets with a TRA of 0.3 fathoms. Corrections have been made to the appropriate corrector tapes to reflect the change of TRA for FA-5. See Eval Rpt Sect 1

On JD 208, the left bar check line on FA-4 snapped. It was replaced by a spare bar check line. All bar check lines, including spares, were calibrated by FAIRWEATHER personnel before and after the 1984 field season. No bar check line correctors were applicable to soundings collected during this project. ✓

Velocity correctors were determined from two SV/D and one CTD casts in accordance with the Hydrographic Manual, Section 4.9.5.2. Table II shows the dates and geodetic positions of the casts. Table III shows which velocity casts were used for each velocity table and the dates for which each velocity table applies. ✓

Table II
Velocity Casts

<u>Cast Number</u>	<u>Date</u>	<u>Latitude</u>	<u>Longitude</u>
2 (SV/D)	191	57/32/00 N	155/59/30 W
4 (SV/D)	215	57/28/26 N	155/52/59 W
5 (CTD)	227	57/26/36 N	155/44/30 W

Table III
Velocity Tables

<u>Table Number</u>	<u>Cast Used</u>	<u>Effective Dates</u>
2	2	JD 193-200
3	4 and 5	JD 207-215

The SV/D casts were performed using a Plessy Model 9040 Environmental Profiling System, serial number 5632, calibrated at the Northwest Regional Calibration Center (NRCC) in February, 1984. An onboard PDP8/E FOCAL Computer program was used to convert the frequency readings of the SV/D system into engineering units for determination of sound velocity profiles. ✓

The CTD cast was performed using a different Plessy Environmental Profiling System. This system, primarily utilized for OCSEAP CTD casts consisted of a model 8700 Autoranging Signal Processor (s/n 6143), a Texas Instruments 733 ASR terminal (S/N 91098), and a Camac Power Crate (s/n 1121). ✓

Weather conditions during this survey were variable, with seas ranging from calm to 3 feet and winds ranging from 0 to 20 knots. Depths on this survey ranged from -0.6 to 61² fathoms. ✓

For more information, refer to Correctors to Echo Soundings Report OPR-P146-FA-84. ✓

E. HYDROGRAPHIC SHEETS

All field sheets were plotted aboard FAIRWEATHER using PDP8/E computers and complot plotters. This survey consists of seven final field sheets plotted on five sheets of mylar. The dimensions, scale and skew of each sheet are as follows: ✓

<u>Area</u>	<u>Dimensions</u>	<u>Skew</u>	<u>Scale</u>
FA-10-2W	20x54 inches	090	1:10,000
FA-10-2E	20x54 inches	090	1:10,000
* Development A	11x10 inches	000	1:5,000
* Development B	12x8 inches	000	1:5,000
Development C	22x36 inches	000	1:5,000
+ Development D	4.5x10 inches	000	1:5,000
+ Development E	6x12 inches	090	1:5,000

* and + are plotted on the same sheet of mylar

All hydrographic records will be forwarded to Pacific Marine Center, Seattle, Washington for verification. ✓

F. CONTROL STATIONS

Horizontal control for this survey was performed by FAIRWEATHER personnel. All new stations were established using conventional traverse and triangulation methods. Station ZIF AZ was established by the A-point method from station ZIF. All control was based on the 1927 North American Datum. All field observations and measurements were accomplished to Third Order, Class I accuracy or better. All geodetic positions for stations recovered were recomputed using the 1984 field positions for LAGOON 1923, Cape 1923 and ISLAND 1923. ✓

The following stations were used in support of this survey:

<u>Station Name</u>	<u>Signal Number</u>
CAROL r.m. (1983)	104
LAGOON 1923 r.m.	108
CAPE 1923 r.m.	116
+ISLAND 1923 r.m.	118
ZIF d.m. (1984)	126
ZIF AZ d.m. (1984)	128
+ISLAND AZ r.m. (1982)	132
SQUIRT d.m. (1984)	134
WORM d.m. (1984)	136

r = recovered, m = monumented or marked, and d = described
+ = Offshore control stations located on islands ✓

No unconventional survey methods were used, no anomalies in control adjustment or in closures were encountered. For additional information refer to the Horizontal Control Report, OPR-PI46-FA-84. ✓

G. HYDROGRAPHIC POSITION CONTROL

Hydrographic positioning control for this survey was accomplished using the Motorola Mini-Ranger III system in the standard range-range and

range-azimuth configurations. Table IV, Mini-Ranger Equipment By Vessel, is a listing of console and R/T units for each sounding vessel. ✓

Table IV
Mini-Ranger Equipment by Vessel

<u>Vessel</u>	<u>Console-R/T Units</u>	<u>JDs</u>
FA-3 (2023)	716/1538 80323/B1398	193-200, 211-215 208
FA-4 (2024)	703/B1419	194-215
FA-5 (2025)	703/B1419 506042/1527	198, 200 207-215

Mini-Ranger baseline calibrations (BLC's) were conducted in accordance with appendices M and S of the PMC OPORTER. Beginning correctors were determined from three different BLC's. The first was performed at Magnuson Park in Seattle on JD's 52 and 53 for console-R/T pairs 716/1538 and 80323/B1398 and transponders 5,6,7 and 8. The second BLC was performed at the Coast Guard Base in Kodiak on JD 174 for the same two console-R/T pairs and transponders 9,A,B and C. The third one was also performed in Kodiak along the same baseline on JD 202 for console-R/T pair 506042/1527 and transponders 5,6,8,9,A,B and C. ✓

Ending correctors were determined from a BLC performed in Kodiak on JD 230 for all console-R/T pairs and transponders except where field failures excluded some equipment. ✓

Two tables of final correctors were obtained for this survey covering the periods of JD's 193-201 and JD's 202-215. Except when instrument failures precluded ending calibrations, these correctors were normally determined by taking the mean value for the beginning and ending BLC values. For an indepth discussion of which values were used, refer to the Electronic Control Report, OPR-P146-FA-84. ✓

Critical system checks were conducted at least once each week and non-critical checks performed daily. The methods used for system checks included theodolite intersection, multi-range comparisons and launch-to-launch comparisons. Critical checks showed a mean variation of -0.7 meters with a maximum value of 4.0 meters from the baseline calibrations. ✓

The Mini-Ranger R/T units were located over the launches' transducers thus eliminating the need to apply ANDIST correctors. ✓

No unusual weather conditions adversely affected position accuracy of this survey. No hydrography was conducted with weak or less than minimum required control geometry. All signal strengths were recorded automatically or manually annotated on line to insure that all hydrography run with less than minimum signal strengths was plotted using time and course methods. ✓

H. SHORELINE

Shoreline for this survey was taken from 1:10,000 scale enlargements of TP-000628, a 1:20000 scale Class III registered shoreline manuscript. ✓

Only a small amount of the inshore hydrography was obtained on the northwest corner of this survey. In this area, hydrography confirmed the basic reef system and the mean high water line, however no shoreline verification was performed. As a result the adequacy of the shoreline manuscript was not determined. It is anticipated that this area will be completed during FAIRWEATHER's 1985 Alaskan field season with the continuation of this project. *Field work assigned for 1985 field season.* ✓

I. CROSSLINES

A total of 40.0 nautical miles of crosslines were run comprising 9.6 percent of the main scheme hydrography. Comparisons between main-scheme and crossline soundings was excellent. It agrees 100% of the time to within two fathoms and 99% to within one fathom, thus meeting the specifications of Section 1.1.2 part B of the Hydrographic Manual. ✓

J. JUNCTIONS

Survey H-10140 (FA-10-2-84) junctioned with two contemporary surveys to the west: H-10135 (FA-10-1-84, scale 1:10,000) and H-10108 (FA-10-4-83, scale 1:10,000). All junction soundings between H-10140 and H-10135 agree to within one fathom, whereas those between H-10140 and H-10108 agree to within two fathoms. This meets the requirements of Section 1.1.2 Part B of the Hydrographic Manual. ✓

K. COMPARISON WITH PRIOR SURVEYS

There were no AWOIS items within the limits of this survey. ✓

Comparison of survey H-10140 was made with 1:10,000 scale enlargements of the following prior surveys:

H-4386	Scale 1:20,000	Yr: 1924
H-4398	Scale 1:80,000	Yr: 1924
H-7197	Scale 1:40,000	Yr: 1947

Comparison between soundings from these prior surveys and H-10140 meet the requirements of Section 1.1.2 Part B of the Hydrographic Manual except as noted below. During comparisons between the prior surveys and H-10140, all soundings on the prior surveys that did not meet the general trends such that they were found to be shoaler than those obtained on H-10140 are indicated in red on the 1:10,000 scale enlargements and those soundings that were deeper are marked in blue.

See Eval
Rpt,
Sect 6

H-4386

In order to perform a comparison between the prior survey H-4386 and the survey H-10140, the plotted positions of control stations CAPE 1923 and ISLAND 1923 were matched on the two surveys since the North American Datum of 1927 adjustment was not indicated on the ship's copy of H-4386. ✓

98% agreement was obtained between soundings from H-4386 and the contemporary survey H-10140 to within two fathoms. Only two soundings on the prior survey were shown as shoaler than this survey. One is a depth of 1/26 fathom located at latitude 57/32/35 N, longitude 155/53/15 W. Survey H-10140 found depths between 4 and 7 fathoms at this location, however an area with rocks is situated approximately 100 meters away. Due to time restraints, the end of the field season, only 90 meter spacing for sounding lines were obtained. It is recommended that such line spacing be reduced to 45 meters for further development during the expected continuation of this survey in 1985. Concur, additional work assigned for 1985 field season. *transferred 0' from H-4386*
0' low. self-discovered per H-10140 investigation 9m 6/24/87

The only other sounding on H-4386 that was significantly shoaler than soundings obtained on H-10140 was a 12 fathom depth at latitude 57/31/22 N, longitude 155/47/28 W. This area was developed with 25 meter line spacing confirming the 16 to 17 fathom soundings acquired on H-10140. It is recommended that the 12 fathom sounding be superseded by H-10140. *Concur*

H-4398

In general, agreement between this prior survey and H-10140 was good except for an area bounded by latitudes 57/28/00 N to 57/29/45 N, and longitudes 155/47/22 W to 155/51/00 where the majority of the soundings were 3 to 20 fathoms shoaler on the prior survey than the corresponding depths on H-10140. Nearly all of these soundings were on two sounding lines that appear to either be misplotted or otherwise mispositioned in that there is significant disagreement, none of which could be verified through further development. Additional sounding lines were performed throughout this area resulting in 25 meter line spacing for developments and 45 meter axis lines along the two prior sounding lines both of which confirm the depths obtained on H-10140. ✓

Also indicated on survey H-4398 is the 12 fathom sounding located at latitude 57/32/25 N, longitude 155/53/18 W in which the contemporary survey H-10140 has 16 to 17 fathom depth. This is the same 12 fathom sounding discussed under prior survey H-4386. When comparing these two prior surveys, it was found that this depth was from the same sounding line which is located in the junction between the two surveys. See comparison with H-4386 above.

The only other discrepancy noted was a 25 fathom depth on the prior survey H-4398 located at latitude 57/28/24 N, longitude 155/50/47 W where corresponding depths on H-10140 are from 30 to 34 fathoms. Line spacing in this area was reduced to 45 meter spacing which verified the H-10140 soundings. It also indicated a steep rising bottom to 21 fathoms within 200 meters of the 25 fathom prior survey depth. *19.9 The 25*

fathom depth is superseded by this survey.

H-7197

Only one sounding on survey H-7197 did not agree to within two fathoms of those obtained on H-10140. This single soundings was found to be deeper than the contemporary survey and is indicated on the 1:10,000 enlargement. ✓

It is recommended that the survey H-10140 supersede prior surveys H-4386, H-4398 and H-7197 within their common areas.

Concur

L. COMPARISON WITH THE CHART

Comparisons were made between H-10140 and a 1:10,000 scale enlargement of Chart 16570; Portage and Wide Bays, scale 1:50,000; 8th Edition dated 18 February 1978. The soundings on the chart for this area were derived from the three prior surveys discussed in Section K of this report. All discrepancies noted were identical to those of the prior surveys and will not be repeated here. These discrepancies were indicated on the enlargement of the chart such that depth in red were shoaler than soundings from H-10140 while those in blue were deeper. Refer to Section K, Comparison to Prior Surveys, for additional information.

See Eval
Rpt,
Sect 7

Since the inshore hydrography and shoreline verification has not been completed, the shoreline, inshore features, and rocks on the chart were not compared to survey H-10140.

See Eval
Rpt,
Sect 7M. ADEQUACY OF SURVEY

This is an incomplete survey requiring additional work in the inshore areas of Jute and Island Bays. Sounding data was obtained and is considered complete (with three exceptions) and adequate to supersede prior surveys in the area bounded by the following limits:

See Eval
Rpt,
Sect 1

Northern limit: Shoreline of Jute Bay from longitude 155/55/00 W east to longitude 155/52/30; and latitude 57/32/33 N

Eastern limit: longitude 155/47/22 W

Southern limit: latitude 57/28/06 N

Western limit: longitude 155/55/00 W

The three exceptions noted above consist of (1) the shoreline area on the north side of Jute Bay in the vicinity of longitude 155/53/18 W where additional soundings would better define the reef system, and (2) a diver's least depth is recommended to be obtained on the 2-3 fathom shoal located at latitude 57/32/28 N, longitude 155/51/48 W and (3) line spacing should be reduced to investigate indications of shoaling at the 12th fathom sounding (latitude 57/31/48 N, longitude 155/51/00 W), shoal sounding in the area (latitude 57/32/00 N, between longitude 155/50/15W and 155/51/00W), and the shoreline area near Pinnacle Rock.

To be resolved
during 1985
field season
Until 1985
data received,
chart
according to
this survey

To complete this survey, in addition to the recommendations mentioned above, hydrography is needed in the area north of latitude 57/32/33 N and west of longitude 155/52/30 W to longitude 155/47/22 W. Also, shoreline verification is needed throughout the entire survey. ✓

N. AIDS TO NAVIGATION

No aids to navigation exist within the limits of this survey. ✓

O. STATISTICS

Vessel	2020	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>Total</u>
Positions	---	2011	2321	196	4528
Nautical Miles	---	248.1	335.1	10.5	593.7
Square Miles	---	9.7	8.8	0.8	19.3
Bottom Samples	---	---	---	85	85
Velocity Casts	3	---	---	---	3
Tide Stations	2	---	---	---	2

No magnetic or current stations were established within the survey limits. ✓

P. MISCELLANEOUS

None ✓

Q. RECOMMENDATIONS

In an effort to ensure prompt chart compilation, it is recommended that the area considered complete which was outlined in Section M of this report be treated as a totally completed survey subject to office verification with the additional work being submitted during the 1985 field season. Since no other work is expected in the same area except for the locations mentioned in Section M, this would eliminate the data being over a year old before the processing procedure began.

See Eval
Rpt.
Sect. 1

R. AUTOMATED DATA PROCESSING

All range-range and range-azimuth hydrography was processed in accordance with the Hydrographic Data Requirements Letter (Appendix Q) dated 13 April 1984. All peaks and deeps and sounding corrections for range-range hydrography were placed on the corrector tape. For the range-azimuth data all peaks and deeps that were inserted onto the arcs were edited directly onto the master tape with an interpolated range assigned to them. All other range-azimuth edits were either edited onto the master tape as a short word or placed on a corrector tape, in both cases positioning was by time and course. ✓

The following is a list of the hydroplot programs used for processing and data acquisition during this survey. ✓

<u>Number</u>	<u>Program Name</u>	<u>Version Date</u>
RK112	Range-Range Real Time Plot	10/12/83
RK201	Grid Signal and Lattice Plot	4/18/75
RK211	Range-Range Non-Real Time Plot	2/13/84
RK212	Visual Station Load and Plot	4/01/74
RK216	Range-Azimuth Non-Real Time Plot	2/24/84
RK300	Utility Package	10/21/80
RK330	Data Reformat and Check	5/04/76
RK360	Electronic Corrector Abstract	6/15/83
AM500	Predicted Tide Generator	11/10/72
RK530	Layer Correctors for Velocity	5/10/76
AM602	Elinore	12/08/82

S. REFERRAL TO REPORTS

The following is a list of additional reports for OPR-P146-FA-84 submitted separately from the descriptive reports and hydrographic records. ✓

<u>Report</u>	<u>Dates of Submission</u>
Horizontal Control Report	August, 1984
Electronic Control Report	October, 1984
Correctors to Echo Soundings Report	October, 1984
Coast Pilot Report	October, 1984



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
NOAA Ship FAIRWEATHER 5220
1801 Fairview Ave. E.
Seattle, WA 98102

6 August 1984

Commander
Seventeenth Coast Guard District
P.O. Box 3-5000
Juneau, AK 99802

Dear Sir:

The following dangers to navigation have been discovered by the NOAA Ship FAIRWEATHER during hydrographic survey operations in the Portage Bay vicinity of Shelikof Strait, surveys #H-10135 and #H-10140. Questions or comments concerning the survey may be directed to: Chief, Nautical Chart Branch, NOAA, National Ocean Service, 1801 Fairview Ave. E., Seattle, WA 98102-3767, (206) 527-6835.

Survey: Portage Bay, AK #H-10135

1. Submerged rock, covered by 0.5 fathoms at Mean Lower Low Water (MLLW); Chart No. 16570; latitude 57/33/01 N, longitude 155/59/23 W; distance 0.8 nautical miles (nm), bearing 144 degrees True from Kelp Point
2. Submerged rock, covered by 4.7 fathoms at MLLW; Chart No. 16570; latitude 57/33/00 N, longitude 156/00/09 W; distance 0.63 nm, bearing 171 degrees True from Kelp Point.
3. Submerged rock, covered by 9.1 fathoms at MLLW; Chart No. 16570; latitude 57/32/41 N, longitude 156/00/14 W; distance 0.95 nm, bearing 176 degrees True from Kelp Point.
4. Submerged rock, covered by 5.3 fathoms at MLLW; Chart No. 16570; latitude 57/33/02 N, longitude 156/00/39 W; distance 0.6 nm, bearing 192 degrees True from Kelp Point.
5. Submerged rock, covered by 5.9 fathoms at MLLW; Chart No. 16570; latitude 57/32/53 N, longitude 156/01/22 W; distance 0.93 nm, bearing 213 degrees True from Kelp Point.
6. Submerged rock, covered by 0.8 fathoms at MLLW; Chart No. 16570; latitude 57/33/21 N, longitude 156/01/24 W; distance 0.64 nm, bearing 236 degrees True from Kelp Point.
7. Submerged rock, covered by 3.5 fathoms at MLLW; Chart No. 16570; latitude 57/33/31 N, longitude 156/01/38 W; distance 0.7 nm, bearing 253 degrees True from Kelp Point.
8. Submerged rock, covered by 3.3 fathoms at MLLW; Chart No. 16570; latitude 57/33/28 N, longitude 156/01/17 W; distance 0.54 nm, bearing 243 degrees True from Kelp Point.
9. Shoal, covered by 1.2 fathoms at MLLW; Chart No. 16570; latitude 57/33/42 N, longitude 156/01/15 W; distance 0.44 nm, bearing 267 degrees True from Kelp Point.



Survey: Jute Bay, AK #H-10140

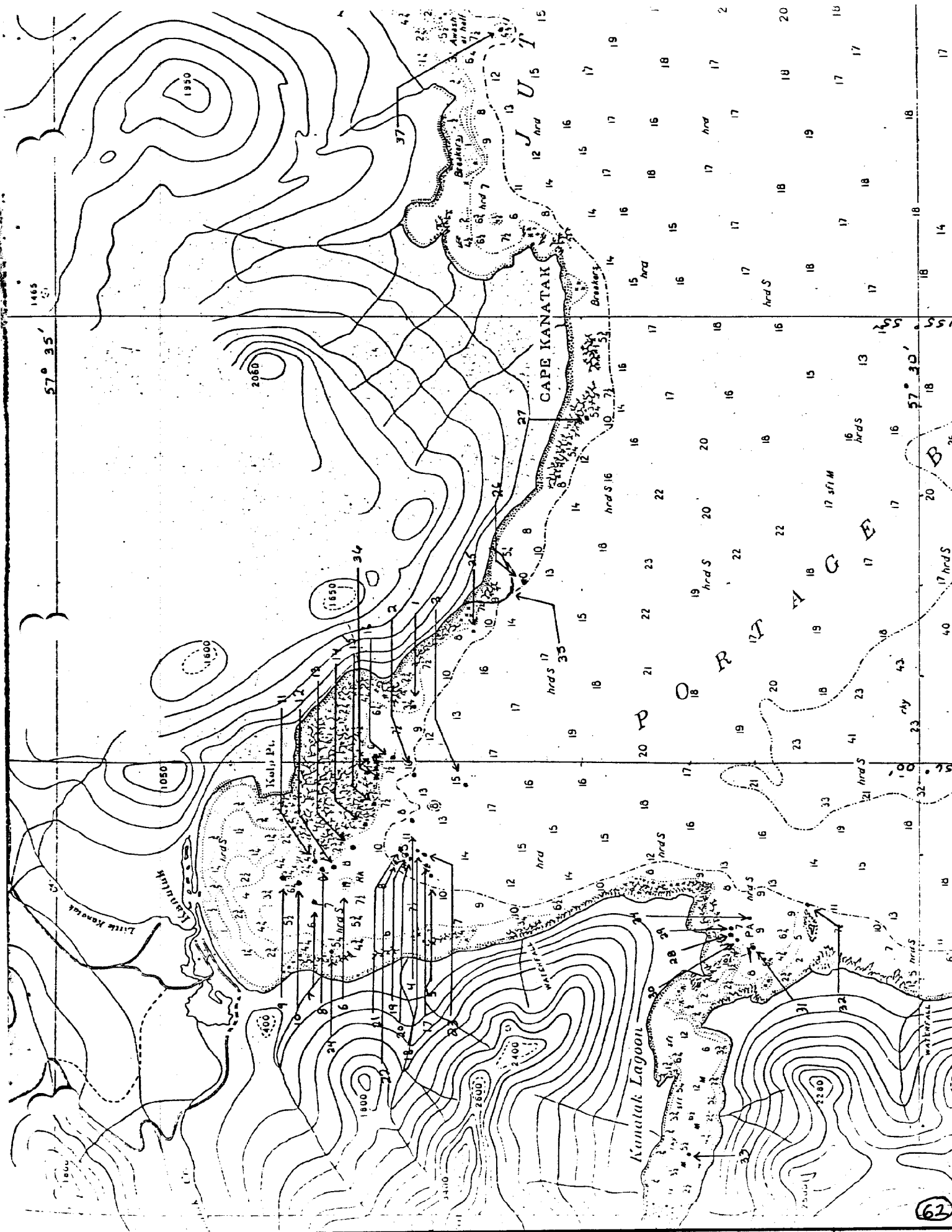
37. Shoal, covered by 2.8 fathoms at MLLW; Chart #16570; latitude 57/32/28 N, longitude 155/51/48 W; distance 1.38 nm, bearing 076 degrees True from Cape Kanatak.

Sincerely,

Christian Andreasen

Christian Andreasen
Captain, NOAA
Commanding Officer

cc: N/MOP - Director, Pacific Marine Center
N/CG22 - Chart Information Section



Approval Sheet

During field operations, the Commanding Officer inspected all field sheets and data on a daily basis. All survey sheets, reports and records are accurate. This survey is incomplete and shall require additional field work in 1985.

Submitted by:

Wayne E. Mitchell

Wayne E. Mitchell
ENS NOAA

Approved by:

Christian Andreasen
Christian Andreasen
CAPT NOAA
Commanding Officer

LIST OF STATIONS
FA-10-2-84
OPR-P146-FA-84

CAROL 1983	FAIRWEATHER 1983
104 3 57 28 34005 156 02 05427	250 0011 000000
LAGOON 1923	NGS QUAD 571561: 1010
108 3 57 31 44622 156 01 35272	250 0041 000000
CAPE 1923	NGS QUAD 571554: 1004
116 1 57 32 06716 155 54 29303	250 0016 000000
ISLAND 1923	NGS QUAD 571554: 1010
118 0 57 32 49957 155 50 11774	250 0009 000000
ZIF 1984	FAIRWEATHER 1984
126 0 57 32 16868 155 54 13486	250 0010 000000
ZIF AZ.1984	FAIRWEATHER 1984
128 0 57 32 48636 155 54 07587	250 0015 000000
ISLAND AZ.1984	FAIRWEATHER 1984
132 1 57 32 56046 155 50 19963	139 0016 000000
SQUIRT 1984	FAIRWEATHER 1984
134 2 57 34 12044 155 48 51496	139 0026 000000
WORM 1984	FAIRWEATHER 1984
136 4 57 33 25359 155 49 07710	250 0023 000000

Field Tide Note
OPR-P146-FA-84
Portage and Jute Bays, Alaska

The tide gauge at Kodiak, Alaska (945-7283) served as a reference station for the predicted tides used for correctors on surveys H-10135 and H-10140, as stated in the Project Instructions, OPR-P146-FA-84. The controlling tide gauge was Seldovia, Alaska (945-5500). Leveling and maintenance of these stations are performed by the Pacific Tide Party.

Predicted tide correctors were interpolated aboard FAIRWEATHER, using data from the 1984 West Coast Tide Tables and program AM 500 dated 10 November 1972. Tide correctors for the 1:5000 inset at Kanatak Lagoon on survey H-10135 used the zone correctors for Kanatak Lagoon. All other correctors were calculated using the zone correctors from Wide Bay.

All times of predicted and reported tides are expressed in Universal Coordinated Time (UTC). Predicted tides were acceptable for hydrography with no discrepancies in the data attributable to tide errors.

Three field tide stations were established in support of this project. Wide Bay Tide Station (945-8461) and Bird Island Tide Station (945-8361) operated throughout the duration of surveys H-10135 and H-10140. Kanatak Lagoon Tide Station (945-8365) was maintained during performance of hydrography in Kanatak Lagoon, which is a 1:5000 inset on survey H-10135.

Wide Bay Tide Station

Tide station (945-8461) Wide Bay, Alaska, located at latitude 57/21/54 N, longitude 156/24/07 W, was the primary field tide gauge for project OPR-P146-FA-84. The station was installed on 19 May 1984 (JD 140) and removed on 29 July 1984 (JD 211). Since the tide gauge site was a long distance from the main working area of this project and FAIRWEATHER personnel were unable to check the station for an extended period due to an OCSEAP project, two Fisher and Porter ADR gauges were installed, to insure continuous tidal data. Tide gauge "B", serial number 6402A4596M2, was the primary gauge and gauge "A", serial number 7210A0926M1, was the backup. Both gauges are mounted on a relic drill casing with stainless steel banding. The zero line of gauge "A" was equivalent to 0.01 feet on gauge "B".

Two tide staffs were installed in support of this station. Tide staff "1" is mounted on the seaward-most piling of an abandoned pier. Levels were run to this tide staff. A second tide staff, staff "2", is mounted on the drill casing where the tide gauges were installed. This staff was installed to allow personnel to make tide observations when the pier staff was dry or in the surf zone. A series of simultaneous staff observations was made on 23 May 1984 between the two tide staffs. The zero line of staff "1" is equivalent to 8.32 feet on staff "2". The zero line of staff "1" was also found to be equivalent to 17.4 feet on gauge "B". Both staffs remained in place at the end of the project but the pipe staff has delaminated between the 5 and 7 foot marks and should be replaced if the station is to be reoccupied.

Opening levels were run on 19 May 1984 between staff "1" on the pier and six benchmarks. A closure of three millimeters was obtained over the entire run of approximately 0.6 miles. Closing levels were run on 28 and 29 July 1984. Closure of two millimeters was obtained over the entire run and good agreement between opening and closing levels was observed. Six benchmarks were recovered and none were established at this station in 1984. For additional information see Wide Bay Tide Station Report.

Tide gauge "B" in Wide Bay and the Kanatak Lagoon tide gauge operated without problems during the project. Gauge "A" in Wide Bay, the backup gauge, experienced punch and advance problems between 29 May and 5 June. The gauge was replaced with gauge #7304A1380M7. Because the primary gauge, "B", experienced no problems, no tidal data was missed and no hydrography was lost.

Bird Island Tide Station

Bird Island Tide Station (945-8361), located at latitude 57/30/42 N, longitude 156/01/54, operated throughout the period of surveying on sheets H-10135 and H-10140. This station was installed on 3 June 1984 (JD 155) and removed on 14 August (JD 227). A Bristol Bubbler analog tide gauge was installed on the southern half of Bird Island. The gauge, serial number 73A231, had a range of 0 to 30 feet. It was wired to eyebolts set in bedrock. The orifice was bolted to a rock which was set in place by a diver. A freestanding staff was installed. The bottom of the staff was bolted to a boulder and guy wired to other rocks. The zero line of the tide staff was observed to be equivalent to 8.53 feet on the tide gauge. For additional information refer to Tide Station Report #945-8361, Bird Island, AK.

Opening levels were performed on 6 June 1984 from the tide staff to five benchmarks. Closure of three millimeters was obtained over the entire run of approximately 0.1 mile. Closing levels were performed on 1 August 1984 over the same run. Closure of two millimeters was obtained. Hydrographic operations ended on 2 August (JD 215). Five benchmarks were established in 1984. Two benchmarks are considered temporary and consist of eyebolts set in rock outcrops. Levels were run to the top of the eyebolts. Three benchmarks are previously established horizontal control marks. They are standard NOS brass disks, marked BIRD 1983, BIRD RM1 and BIRD RM2.

The gauge at Bird Island malfunctioned on two occasions. On 29 July and again on 1 August the chart drive had to be replaced. On the first occasion, the mainspring broke and the chart drive was replaced. Less than an hour of data was lost. The gears were loose on the replacement chart drive and it broke between 0000 and 0100 UTC on 31 July and 25 hours of data were lost before it was discovered and replaced.

Kanatak Lagoon Tide Station

Kanatak Lagoon Tide Station (945-8365), located at latitude 57/31/18 N, longitude 156/02/54 W, reoccupied a historical site operated in 1923. Kanatak Lagoon is a relatively deep body of water, totally enclosed except for a narrow, shallow outlet to Portage Bay. This lagoon was surveyed as a

1:5000 inset on H-10135 and Kanatak Lagoon tide gauge was maintained throughout the survey operations on the inset. This station was installed on 27 June 1984 (JD 179) and removed 2 August (JD 215). A Bristol Bubbler analog tide gauge, serial number 67A10287, with a range of 0 to 20 feet was wired to eyebolts set in bedrock. The orifice was bolted to a rock and placed at the appropriate depth by divers. The tide staff was wired and banded to an abandoned piece of mining equipment. The zero line of the staff was equivalent to 3.93 feet on the tide gauge. For more information see Tide Station Report #945-8365, Kanatak Lagoon Tide Station.

Opening levels were run on 27 June 1984 from the tide gauge to three benchmarks established in 1923. Closure of 0 millimeters was obtained over the entire run of approximately 0.5 miles. Closing levels were run on 30 July and 2 August 1984. Closure to 0 millimeters was observed over the entire run. Three benchmarks were recovered and none were established in 1984.

DATE: 10/16/84

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Marine Center: Pacific

OPR: P146

Hydrographic Sheet: H-10140

Locality: Portage Bay and Jute Bay, Alaska

Time Period: July 11 - August 2, 1984

Tide Station Used: 945 - 8361 Bird Island, AK

Plane of Reference (Mean Lower Low Water): 3.22 ft.

Height of Mean High Water Above Plane of Reference: 10.9 ft.

Remarks: Recommended Zoning: Zone Direct


Chief, Tidal Datums Section

GEOGRAPHIC NAMES

H-10140

Name on Survey	A ON CHART NO. 11650	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND McNALLY ATLAS	H U.S. LIGHT LIST	K
Cape Kanatak	X	X	X						1
Jute Bay	X	X	X						2
Shelikof Strait	X	X	X	X			X	X	3
Alaska (Title)	X								4
									5
									6
									7
									8
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NOAA FORM 77-27(H) (9-83)		U.S. DEPARTMENT OF COMMERCE		REGISTRY NUMBER H-10140	
HYDROGRAPHIC SURVEY STATISTICS					
RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.					
RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION	
SMOOTH SHEET		1		SMOOTH OVERLAYS: POS., ARC, EXCESS	
DESCRIPTIVE REPORT		1		FIELD SHEETS AND OTHER OVERLAYS	
DESCRIP- TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR- GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS
ACCORDION FILES	1			1	
ENVELOPES					
VOLUMES					
CAHIERS					
BOXES	1				
SHORELINE DATA					
SHORELINE MAPS (List):					
PHOTOBATHYMETRIC MAPS (List):					
NOTES TO THE HYDROGRAPHER (List):					
SPECIAL REPORTS (List):					
NAUTICAL CHARTS (List):					
OFFICE PROCESSING ACTIVITIES <i>The following statistics will be submitted with the cartographer's report on the survey</i>					
PROCESSING ACTIVITY			AMOUNTS		
			VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET					4112
POSITIONS REVISED			1386		
SOUNDINGS REVISED			86		
CONTROL STATIONS REVISED					
			TIME-HOURS		
			VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION					
VERIFICATION OF CONTROL			2		2
VERIFICATION OF POSITIONS			83.5		83.5
VERIFICATION OF SOUNDINGS			118.5		118.5
VERIFICATION OF JUNCTIONS					
APPLICATION OF PHOTOBATHYMETRY					
SHORELINE APPLICATION/VERIFICATION					
COMPILATION OF SMOOTH SHEET			36		36
COMPARISON WITH PRIOR SURVEYS AND CHARTS				16	16
EVALUATION OF SIDE SCAN SONAR RECORDS					
EVALUATION OF WIRE DRAGS AND SWEEPS					
EVALUATION REPORT			4	12	16
GEOGRAPHIC NAMES					
OTHER* Review, Digitizing			15	10	25
*USE OTHER SIDE OF FORM FOR REMARKS			TOTALS		
			259	38	297
Pre-processing Examination by Lt. Kenny			Beginning Date		Ending Date
					2/8/85
Verification of Field Data by L. Deodato			Time (Hours)		Ending Date
			12/26/84		6/27/85
Verification Check by S. Otsubo, B.A. Olmstead, J.S. Green			Time (Hours)		Ending Date
			35.5		7/30/85
Evaluation and Analysis by K. Scott			Time (Hours)		Ending Date
			7/16/85		7/29/85
Inspection by D. Hill			Time (Hours)		Ending Date
			4		8/13/85

PACIFIC MARINE CENTER
EVALUATION REPORT
H-10140

1. INTRODUCTION

H-10140 was accomplished by NOAA Ship FAIRWEATHER in accordance with the following project instructions:

OPR-P146-FA-84 dated March 2, 1984
Change No. 1, dated May 9, 1984

This is a basic survey of Shelikof Strait, outside Jute Bay.

Although the survey was noted as incomplete in Section M of the Descriptive Report, a decision was made to process the survey as complete and to recommend additional work for the unsurveyed portion of the project area. Furthermore, the deficiencies within the surveyed area noted in the Descriptive Report and Preprocessing Examination dated February 8, 1985, were to be resolved during the 1985 field season and included within the new survey.

Predicted tides based on the Kodiak, Alaska gage was used during field processing. Tide correctors used for the reduction of final soundings reflect hourly heights zoned from Bird Island, Alaska.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic.

The TRA corrector of 0.4 fathoms for launch FA-5 was revised to 0.3 fathoms. A review of bar check data indicates an unrounded value of 0.35 to 0.37 fathoms which deviates from the historical values for this launch. The source of the deviation cannot be identified. To insure that soundings are corrected in the interest of safe navigation the historical value of 0.3 fathoms has been used to correct all data acquired by this launch. The difference between 0.37 and 0.3 fathoms is 0.42 feet which is within the allowable limits for the application of correctors to soundings (Reference Hydrographic Manual, Table 4-4).

The electronic correctors for launch 2023 were revised to reflect differences of 11 meter due to the method of rounding.

The revised data is listed in the smooth position/sounding printouts.

2. CONTROL AND SHORELINE

Hydrographic control and positioning is adequately discussed in the Descriptive Report (sections F and G) and Horizontal and Electronic Control Reports for OPR-P146-FA-84.

Horizontal control stations used during hydrography are published and field positions based on the North American 1927 datum.

Reviewed Class III shoreline manuscript TP-00628 (scale 1:10,000 enlargement), photography June 1976, was used to transfer foreshore features. Shoreline verification was not accomplished; it is expected to be completed during the 1985 field season.

Shoreline and some geographic names are not shown on the smooth sheet in an effort to expedite office processing.

3. HYDROGRAPHY

Soundings at line crossings are in good agreement.

Delineation of the bottom configuration, development of shoal soundings, determination of least depths, and delineation of standard depth curves are adequate. Brown depth curves were added to emphasize shoal soundings. The MLLW line was defined by photogrammetric and hydrographic means.

4. CONDITION OF SURVEY

The hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change 3, except as noted in the Preprocessing Examination Report, dated February 8, 1985. Those deficiencies have been assigned to NOAA Ship FAIRWEATHER to be accomplished during the 1985 field season.

5. JUNCTIONS

H-10140 junctions with the following surveys:

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Note</u>	<u>Junctions</u>
H-10108	1983	1:10,000	Joins	Southwest
H-10135	1984	1:10,000	Joins	Northwest

Both junctions were adequately effected with some soundings and features transferred from H-10135 south of Cape Kanatak.

H-10140 also joins surveys to the north, east and south which are presently in process in the field. These surveys are preliminarily designated as BA, AJ and AX, respectively. A comparison of the present survey to chart 16570 within these junction areas indicates that depths are generally in harmony with specific differences discussed by the hydrographer in section K of the Descriptive Report.

6. COMPARISON WITH PRIOR SURVEYS

H-4296 (1923) 1:20,000
 H-4386 (1924) 1:20,000
 H-4398 (1924) 1:80,000
 H-7197 (1947) 1:40,000

Prior survey soundings and features are comparable and generally in good agreement, indicating a very stable bottom. Soundings agree within one to two fathoms except as noted by the hydrographer in section K of the Descriptive Report.

Shoal soundings have been transferred from H-4386 as follows: a 0.1 fathom sounding at latitude 57°32'35.6"N, longitude 155°53'15.5"W; and a 4.3 fathom sounding at latitude 57°32'30"N, longitude 155°53'55.9"W. The bottom configuration and lack of intensive development supports the possibility that least depths may not have been determined.

In addition, kelp symbols have been transferred from H-4386 since there is no indication on the present survey that the prior rocky conditions supporting the kelp growth have changed.

H-10140 is adequate to supersede the prior surveys within their common areas.

7. COMPARISON WITH CHART

Chart 16570, 8th Edition, dated Feb. 18, 1978

a. Hydrography - Charted information originates with the prior surveys discussed in Section 6 of this report.

Charted inshore features and rocks are confirmed by this survey. Additional features, if any, and elevation data will be available upon completion of shoreline verification conducted during the 1985 field season.

There are no AWOIS items within the limits of this survey.

Geographic names appearing on the smooth sheet originate with Chart 16570, 8th Edition.

H-10140 is adequate to supersede charted hydrography within the common area.

A Danger to Navigation Report (copy appended), dated August 6, 1984, has been submitted to the 17th USCG District by the hydrographer. No additional dangers warranting publication in the Local Notice to Mariners were identified during office processing.

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

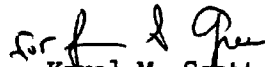
c. Aids to Navigation - There are no fixed or floating aids within the limits of this survey.

8. COMPLIANCE WITH INSTRUCTIONS

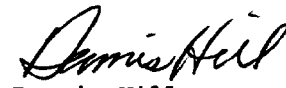
H-10140 adequately complies with the project instructions as amended and noted in Section 1 of this report.

9. ADDITIONAL FIELD WORK

This is a good basic survey. Additional field work to resolve the deficiencies noted in Section M of the Descriptive Report and in the Preprocessing Examination, February 8, 1985, has been assigned for the 1985 field season. No additional field work is recommended.


Karol M. Scott
Cartographer

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


Dennis Hill
Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10140

I have reviewed the smooth sheet, accompanying data, and reports of this hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.

Dennis Hill 8-19-85
for Chief, Nautical Chart Branch (Date)

CLEARANCE:

N/MQP2:LWMordock

SIGNATURE AND DATE:

[Signature] 8/19/85

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

Robert L. Sanborn 8/19/85
Director, Pacific Marine Center (Date)

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

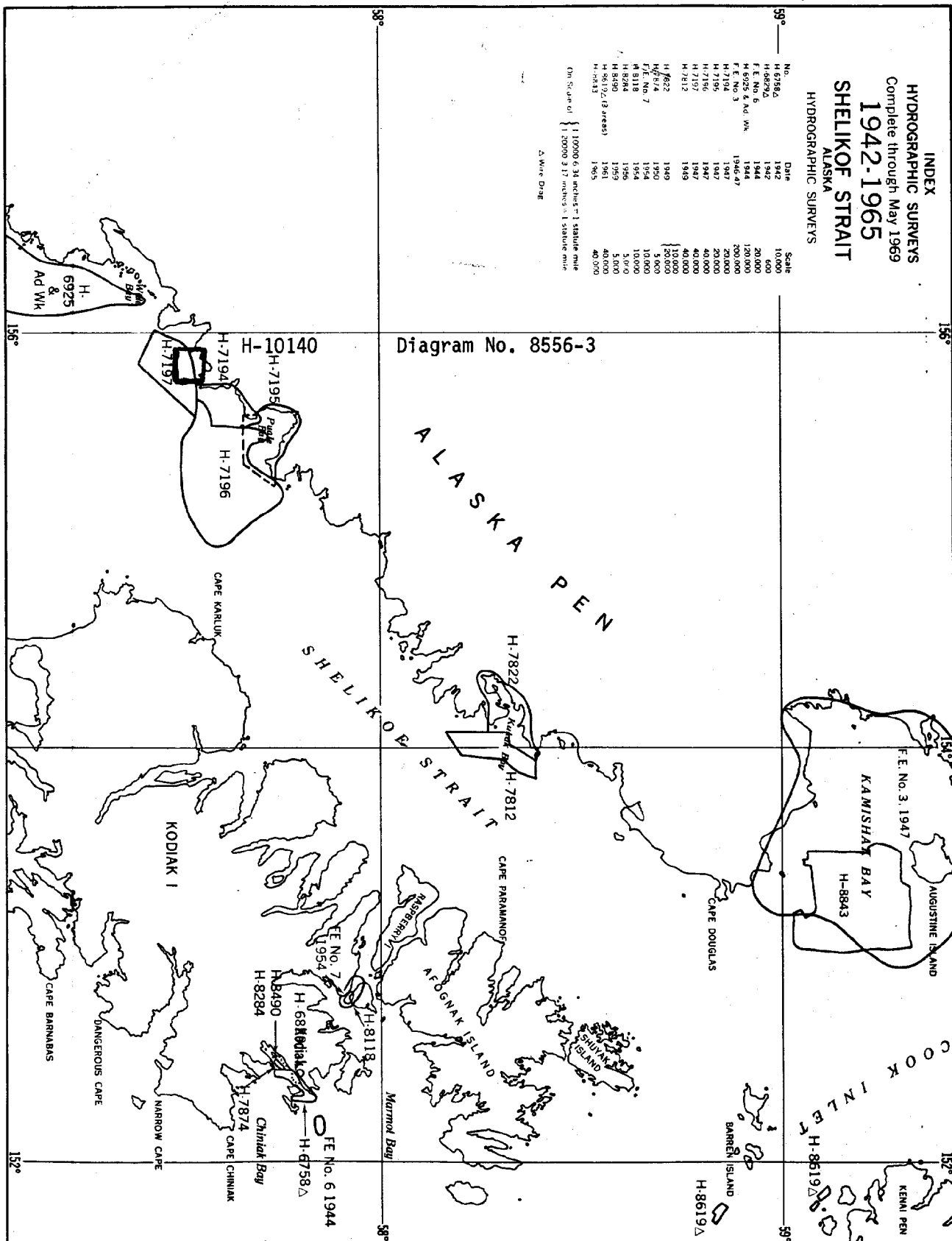
Hydrographic Index No. 116E

INDEX
HYDROGRAPHIC SURVEYS
Complete through May 1969
1942-1965
SHELIKOF STRAIT
ALASKA
HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-1886	1942	10,000
H-6929	1942	600
F.E. No. 6	1944	20,000
H-6925 & Ad. Wk.	1944	120,000
F.E. No. 3	1946	200,000
H-7194	1947	20,000
H-7196	1947	20,000
H-7197	1947	40,000
H-7198	1947	40,000
H-7212	1949	40,000
H-7222	1949	20,000
F.E. No. 7	1954	10,000
H-8284	1954	10,000
H-8290	1959	5,000
H-8291	1961	40,000
H-8292 (3 areas)	1965	40,000
H-7843	1965	40,000

On Scale of 1:100,000 34 inches = 1 statute mile
1:200,000 31 inches = 1 statute mile
Δ Water Depth

Diagram No. 8556-3



FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10140

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.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.