10183

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-10-2-85

Office No. H-10183

LOCALITY

State Alaska

General Locality Shelikof Strait

Locality Vicinity of Cape Unalishagvak

19 85

CHIEF OF PARTY
CAPT J.W.Carpenter

LIBRARY & ARCHIVES

DATE June 12, 1986

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

10183

Area 5
CHIS

16575
16570
16580
16013
500
531

TO SIGN OFF SEE "RECORD OF APPLICATION"

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-10183

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 10-2-85

State Alaska

General locality Shelikof Strait

Locality Vicinity of Cape Unalishagvak

Scale 1:10,000 Date of survey June 19- July 26, 1985

Instructions dated March 2, 1984 Project No. OPR-P146-FA-85

Vessel NOAA Ship FAIRWEATHER S220, (2020), FA-3 (2023), FA-4 (2024), FA-5 (2025) FA-6 (2026) and Monark-8 (2028)

Chief of party Capt. J.W. Carpenter, NOAA

Surveyed by LT Kenny, LT Otsubo, LTJG Salmore, LTJG Timmons, LTJG Mitchell, ENS Hurst, ENS Bresinski, ENS Crozer, ENS Abbott, CST Krick

Soundings taken by echo sounder, hand lead, pole pneumatic depth gauge

Graphic record scaled by FAIRWEATHER Personnel

Graphic record checked by FAIRWEATHER Personnel

Verification by Leonardo T. Deodato Automated plot by PMC Xynetics Plotter

Evaluation by Isagani A. Almacen

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW and tenths of fathom

REMARKS: All times are UTC. Marginal notes in black made by evaluator.

Separates are filed with hydrographic data.

STANDARDS CK'D 6-16-88
C. Loy

AWOIS/SURF MSM 9/15/88

SC 4797
KWW 8/14/92

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-665-010-1174

MONTHLY PROGRESS SKETCH
OPR-P146-FA-85
SHELIKOF STRAIT, ALASKA
JUTE BAY TO PUALE BAY

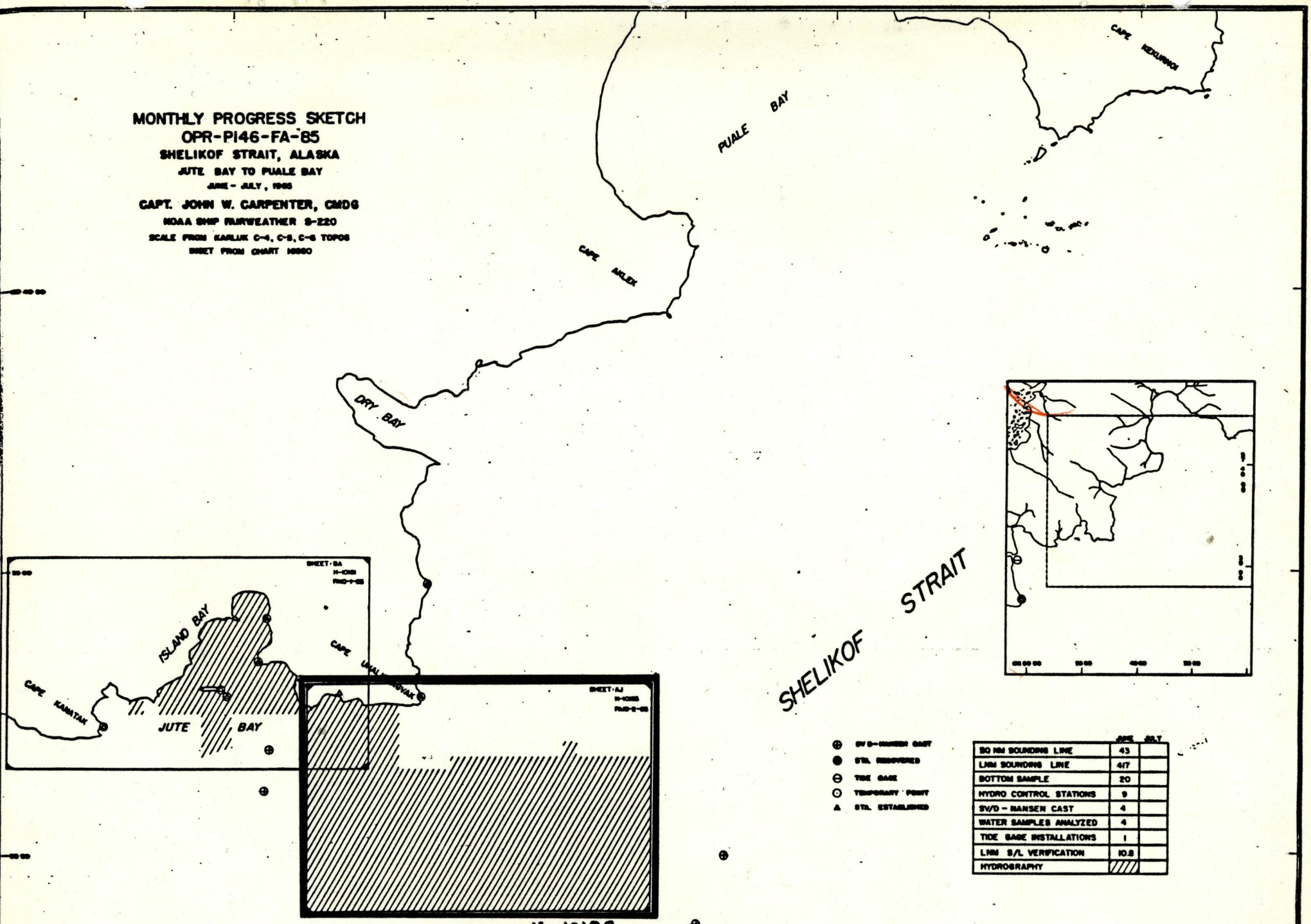
JUNE - JULY, 1985

CAPT. JOHN W. CARPENTER, CMDG

NOAA SHIP FAIRWEATHER S-220

SCALE FROM KARLUK C-4, C-5, C-6 TOPOS

SHEET FROM CHART 16660



H-10183

⊕ SV D-HANSEN CAST
● STA. RECOVERED
⊖ TIDE GAGE
⊙ TEMPORARY POINT
▲ STA. ESTABLISHED

	APPR	REV
20 NM SOUNDING LINE	43	
LNM SOUNDING LINE	417	
BOTTOM SAMPLE	20	
HYDRO CONTROL STATIONS	9	
SV/D - HANSEN CAST	4	
WATER SAMPLES ANALYZED	4	
TIDE GAGE INSTALLATIONS	1	
LNM S/L VERIFICATION	10.8	
HYDROGRAPHY	▨	

A. Project

This survey was conducted during the 1985 field season in accordance with Project Instructions, OPR-P146-FA-8~~5~~4, Shelikof Strait, Alaska, dated March 2, 1984; Change No. 1 dated May 9, 1984; Change No. 2 dated May 17, 1985; and Change No. 3 dated June 17, 1985. PMC OPORDER, the Hydrographic Manual (fourth edition), the Hydrographic Survey Guidelines and the Preprocessing Critique for H-10140 are also applicable. (2nd Change No.4 dated July 26, 1985)

Project designation for 1985 season is OPR-P146-FA-85 (See Change No. 3)

This sheet is designated as "AJ" in the project instructions.

B. Area Surveyed

The area covered by this survey extends about 3 1/2 miles to the south, 4 1/2 miles to the east and 2 miles to the west of Cape Unalishagvak. The sheet is bounded on the south by latitude 57/29N, to the west by longitude 155/~~40W~~47'40", and to the east by longitude 155/36W. To the north, the survey is bounded by the shoreline from the western limit of the sheet to longitude 155/44.5~~W~~30" Eastward of this it is bounded approximately by latitude 57/~~32~~31'45"N based on junction requirements.

This survey commenced on June 19, 1985 (DN 170) and was completed on July 26, 1985 (DN 207).

C. Sounding Vessels

Jensen survey launches FA-3 (2023), FA-4 (2024), FA-5 (2025), and FA-6 (2026) were used to collect hydrographic data. FAIRWEATHER (2020) conducted the sound velocity casts and some bottom samples. Monark-8 (2028) was used for some shoreline verification. ✓

No unusual sounding vessel configurations were used. No significant problems were encountered.

D. Sounding Equipment and Corrections to Echo Soundings

FAIRWEATHER survey launches were equipped with dual-beam Raytheon DSF-6000N echo sounders to obtain soundings during this survey. A 17-foot aluminum skiff (2028) was used for some shoreline verification and equipped with a sounding pole. See Table I for a list of equipment used by vessel and date. ✓

Table I
Sounding Equipment

Vessel	Date	Instrument/Model	Recorder
FA-3 (2023)	DN 170 to DN 207	Raytheon DSF-6000N	A 121 N
FA-4 (2024)	DN 170 to DN 206	Raytheon DSF-6000N	B 048 N
FA-5 (2025)	DN 170 to DN 183	Raytheon DSF-6000N	A 113 N
FA-6 (2026)	DN 170 to DN 206	Raytheon DSF-6000N	B 039 N
FA-8 (2028)	DN 173	Sounding Pole	-------

Echo-sounding equipment was monitored continuously while on line. All hydrographic data were scanned at least twice to insert peaks and deeps between soundings and to ensure proper depth digitization. The effects of excess wave and swell action were adjusted at this time.

Diver's least depths were obtained using a Lietz Fiberglass tape measure or pneumatic depth gauge manufactured by 3-D Instruments, Inc. (s/n 8302079 N). Data acquisition using this gauge consisted of the following procedure: the orifice of the gauge was attached to a 150-foot air hose which was held in place at the least depth position by divers. A surface tender, using air from a scuba tank, pressurized the system three times and then recorded the averaged gauge value. System calibration data can be found in the separate Corrections to Echo Soundings Report, OPR-P146-FA-85; H-10181, H-10183, and Puale Bay Field Examination. ✓

FAIRWEATHER's four survey launches were tested for settlement and squat on March 12, 1985 (DN 71) in Shilshole Bay, Seattle, Washington. Measurements were conducted in accordance with Section 4.9.4.2 of the Hydrographic Manual. It was determined that there were no applicable settlement and squat corrections for any launch when performing surveys in fathoms. Refer to the Corrections to Echo Soundings Report for details concerning methods used for settlement and squat tests.

One bar check was performed daily, wind and seas permitting. Bar checks were normally done at three fathoms, though in calm seas checks to six or seven fathoms were done. ✓

Bar checks combined with the velocity correctors determined launch TRA values. For this survey, all launches were determined to have a TRA of 0.3 fathoms. All launch soundings on the final field sheet were plotted using this TRA value. (VSSL 2025 was used for bottom sampling only. TRA submitted by field was 0.0 and used during verification.)

All the data collected by FA-8 were in feet, and were logged in feet in sounding volumes and data tapes.

Wind and sea conditions occasionally made it necessary to visually average the depth profile to correct for heave action. When heave averaging was required, soundings were corrected in accordance with Section 4.9.3.2 of the Hydrographic Manual and Hydrographic Survey Guideline No. 31. ✓

Velocity correctors were determined from six SV/D casts. Table II contains the dates and locations of all casts. Three velocity tables were determined for this survey from the six casts (see Table III). Velocity corrections were applied to echo-sounder depths plotted on the final field sheets.

Table II
Velocity Casts

Cast No.	Date (DN)	Latitude	Longitude
3	176	57 31.2 N	155 49.0 W
4	176	57 28.7 N	155 34.5 W
5	182	57 31.1 N	155 48.8 W
6	183	57 29.8 N	155 34.6 W
8	205	57 31.1 N	155 49.0 W
9	206	57 29.0 N	155 39.4 W

Table III
Velocity Tables

Table No.	Based on Casts	Dates (DN)
2	3,4	170-180
3	5,6	181-200
4	8,9	203-207

The SV/D casts were performed using a Plessy Model 9040 Environmental Profiling System, (s/n 5647). This instrument was calibrated at the Northwest Regional Calibration Center (NRCC) in February 1985. An onboard PDP8/e FOCAL computer program was used to convert the frequency readings of the SV/D system to engineering units for determination of sound velocity profiles. Two Nansen bottles, one at the surface and one at depth, and/or surface temperatures were also taken during SV/D casts as a check on the Plessy system. These were not used in the determination of the velocity tables. Calibration data for the reversing thermometers and salinometer can be found in the Corrections to Echo Soundings Report.

Sounding correctors determined for this survey apply to both the narrow- and wide-beam sounding data for DN 200 through the end of the survey. Prior to DN 200 some bar check results showed the narrow- and wide-beam traces differing by up to 0.2 fathoms. On DN 200 all DSF-6000N echo sounders were adjusted to bring the wide-beam trace into coincidence with the narrow beam. As the digitized depths were obtained from the the narrow-beam tranducer for all days of hydrography, digitized depths were not affected by the 0.2-fathom discrepancy.

TC/TI tapes were made in accordance with PMC OPORDER, Appendix Q, dated April 16, 1985. Printouts of TC/TI tapes are included in Appendix IV of this report. *filed with separates.*

Predicted tide correctors were applied to the soundings plotted on the field sheets for this survey. The tide correctors used were from the 1985 West Coast of North and South America Tide Tables. Kodiak, Alaska was the reference station for this survey with times and heights corrected to Lee's Cabin, Wide Bay, Alaska and interpreted by program AM-500. For further information, refer to Appendix II, "Field Tide Note".

E. Hydrographic Sheets

The final field sheets were plottted aboard FAIRWEATHER using a PDP8/e computer and complot plotter.

Sheet	Scale	Skew	Dimensions
FA-10-2N-85	1:10,000	0	20 x 54 in
FA-10-2S-85	1:10,000	0	20 x 54 in
Development A	1:2,500	0	10 x 10 in

All field records will be sent to the NOAA Pacific Marine Center, N/MOP21, for verification and smooth plotting.

F. Control Stations

All horizontal control stations used on this survey were recovered and/or established by FAIRWEATHER personnel. All geodetic positions were based on the North American 1927 Datum. Conventional traverse methods were used throughout this survey. No anomalies in control adjustment or in closures were encountered. All positions meet or exceed Third Order, Class I specifications.

Stations used in support of this survey are shown in Table IV.

Table IV
Hydrographic Control Stations

Station Name	Signal Number
ISLAND 1923	118
ZIF, 1984	126
ISLAND AZ, 1984	132
CRANK, 1984	138
FORK 1947	139
RACHEL, 1985	140
NO 1947 (not used)	141
SQUIRT	134

For abstracts, computations, and additional information, refer to the Horizontal Control Report, OPR-P146-FA-85; H-10181, H-10183, and Puale Bay Field Examination.

G. Hydrographic Position Control

Hydrographic positioning control was accomplished using the Motorola Mini-Ranger III System. The control configurations consisted of range-range and range-azimuth for all positioning control including detached positions.

Table V is a listing of console and R/T units for each sounding vessel.

Table V

Mini-Ranger Equipment by Vessel

DN	Vessel #	Console #	R/T #
172-191	2023	716	C1875
192-207	2023	703	E2716
170-207	2024	B0323	B1398
170-171	2025	716	C1875
179-207	2025	506042	B1212
170-191	2026	703	E2716
192-207	2026	716	C1875
173	2028	506042	B1212

Mini-Ranger electronic correctors were determined from baseline calibrations (BLC). The initial BLC was performed on DN's 140, 141, 150, 151, and 154 from Lake Union Pier B to Lake Union Naval Reserve Pier in Seattle, WA. The final BLC was performed on DN 200 in Kodiak, AK and on DN's 209 and 210 in Imuya Bay, AK. The final correctors were determined by averaging the initial correctors with the ending correctors.

Low signal strengths were observed from transponder code A (SN 911697) on DN 173; the data containing the low signal strengths was rejected. Critical system checks conducted on DN 170 and DN 171 and non-critical system checks conducted on DN 172 and DN 173 indicate that transponder code A was operating correctly. Data obtained using transponder code A and showing acceptable signal strengths was retained. Code A was removed from service on DN 174 and returned to PMC for replacement.

Final baseline calibrations conducted using code 6 on DN 200 produced atypical graphs and results. Ending critical system checks for the Puale Bay Field Examination FE-272 conducted on DN 195 (the last day code 6 was used for hydrography) showed code 6 observed correctors to all be within 4 meters of code 6's beginning BLCs. Data collected for this project using code 6 was retained; however, final electronic correctors for code 6 were determined using the initial BLC results. Code 6 transponder was sent to PMC for repair.

Hydrographic positioning equipment was critically system checked at least once per week using theodolite cuts. All hydrographic positioning equipment was found to be accurate within the limits set forth by the PMC OPORDER.

No unusual weather conditions adversely affected the positional accuracy of this survey. In all cases, the launch R/T units were located directly over the transducers thus eliminating the need for ANDIST correctors.

H. Shoreline

Shoreline details for this survey are from a 1:10,000 enlargement of the 1:20,000 Class III registered shoreline manuscript TP-00628. Shoreline details have been verified between the western limit of the survey and longitude 155/44/25W, where the sheet junctions with H-7194. Shoreline details and features have been transferred to the final field sheet. In three areas, shoreline details were revised by the hydrographer. These changes are depicted in red on the final field sheet. ✓

Near Pinnacle Rock (latitude 57/32/35N, longitude 155/47/12W), a rock ledge was found, rather than a beach as indicated on the manuscript. Also in this area two uncharted rocks were found at latitude 57/32/~~37~~N, 37.23" longitude 155/47/~~06~~W 00" (position 1971), and at latitude 57/32/~~34~~N, 32.14" longitude 155/47/~~21~~W 20.98" (position 8062).

At latitude 57/32/47N, longitude 155/47/00W, sounding lines over the manuscript ledge showed it to be less extensive than depicted. On the final field sheet the ledge symbol was plotted at the zero depth curve. Just offshore of the revised ledge, a rock awash symbol was plotted on the final field sheet to depict the part of the ledge where a zero-fathom sounding was obtained (position 3543 + 4 Z). *See Eval Rpt. section 2*

Centered at latitude 57/32/40N, longitude 155/46/10W, the manuscript "foul" area was revised slightly (see the final field sheet for the limits). Also in this area, four uncharted rocks were found (positions 1962, 1964, 1965, 1968). *The height of rock @ PS # 1963 was reobserved and found to be 2' above MLLW*

Two stations are located seaward of the shoreline: ISLAND and ISLAND AZ.

I. Crosslines

A total of 47.1 nautical miles of crosslines were run on this survey comprising 18% of the main scheme hydrography. All crossline and mainscheme soundings agree within one fathom, meeting the specifications of the Hydrographic Manual, Section 4.6.1. ✓

In some cases, a different vessel was used for crosslines than was used for mainscheme. In these instances, equally good agreement was obtained at the crossings.

J. Junctions

This survey junctions to the west with H-10181 (1:10,000; 1985) and H-10140 (1:10,000; 1984), to the north with H-7194 (1:20,000; 1947), and to the northeast with H-7196 (1:40,000; 1947). There is no contemporary survey to the south and ~~southeast~~ east. ✓

All junction soundings agree with one fathom, except as noted. Where junction soundings failed to agree, hydrography was continued farther into the junction survey until good agreement was obtained.

46.66" 49.27" 16.7

At latitude 57/31/~~46~~N, longitude 155/38/~~50~~W, a ~~16~~-fathom depth on the present survey was found among 18- to 19-fathom soundings on H-7196.

At latitude 57/31/34N, 155/37/50W, a 24-fathom depth was found on the present survey where an 18-fathom sounding was plotted on H-7196 (this sounding had been carried forward from H-4398, 1924). Line spacing was reduced in this area to 45 meters. No indication of shoaling was found. It is recommended that the 24-fathom sounding from this survey supersede the 18-fathom sounding on H-7196. concur

K. Comparison with Prior Surveys

The following AWOIS items all originate with prior survey H-4386 (1:20,000; 1924) and lie within the survey limits. These items are all charted submerged rocks which were not identifiable on the aerial photographs. They are described below by their AWOIS listing number. ✓

50746 and 50747 - Submerged rocks located at 57/32/34.0N, longitude 155/47/24.2W, and latitude 57/32/34.2N, longitude 155/47/19.6W, respectively. The positions were listed in the AWOIS file as scaled from H-4386.

This area was searched at low tide by vessel 2028 during shoreline verification (DN 173, 1931Z to 1946Z). On this day, the sea and wind were calm, and water visibility was about six feet. In the area around item 50746, no rock was found. The only feature present was the rock ledge as described in Section H. The depth at this location from a sounding line was 4.6 fathoms (position 6812). Close proximity of the AWIOS item to the ledge prohibited side scan or bottom drag investigation over this area. Safe navigation by a launch for a full echo-sounder investigation was not possible due to breakers, rocks, and ledge. It is recommended that the rock charted at latitude 57/32/34.0N, longitude 155/47/24.2W be deleted and the ledge in the area be charted as shown on the final field sheet. concur
The revised rock, ledge, and two (2) rocks (Pos # 8062 & 8063) delineate the hydrographers' findings. This should provide sufficient information to supercede charted data.

At the position for item 50747, a submerged rock was found as charted, covered one foot at MLLW (position 8063). Excessed for ledge.

50748 - Line of seven submerged rocks centered at latitude 57/32/46.4N, longitude 155/46/45.9W. The position of the center rock was scaled from the prior survey. These rocks were searched for during three days with unusually calm weather.

On DN 180, from 2240Z to 2300Z, the rocks were searched for by vessel 2023 with calm wind and seas, and water visibility of about ten feet. Using the range-range program, the launch searched a 50-meter diameter area at each of the charted sites. During this initial search, no rocks were found visually or with the echo sounder. Also on this day, range-azimuth hydrography was run at 90-meter spacing with no sign of any rocks. The bottom in the area was found to be smooth with no irregularities. Additionally, the theodolite observer on station RACHEL, 170-meters above the cove on a cliff, searched the area by eye and by theodolite and saw no sign of the rocks. ✓

On DN 181, vessel 2024 ran additional hydrography over the area, reducing line spacing to 22 meters. On this day, the seas were about one-half foot and water visibility was about ten feet. During sounding operations, a lookout was stationed continuously on the bow. Again, no sign of the rocks was found by the bow lookout, theodolite observer on RACHEL, or by the echo sounder.

On DN 183, the offshore limit where the bottom was visible to the theodolite observer was more precisely determined by vessel 2023. On this day the seas were zero to one foot and the wind was calm to ten knots. The sea floor was found to be visible to the observer at station RACHEL from the beach southward to a line connecting Pinnacle Rock, position 1972 and position 1962. Divers, working in conjunction with the theodolite observer, verified his observations that there is a sand bottom in this area by diving to the bottom in random locations. This covered the entire area where the seven rocks were charted. Again, no sign of the rocks was found.

It should be noted that during these investigations, it was possible to search far inside the normal breaker line due to the unusually calm weather.

It is recommended that the line of seven submerged rocks centered at latitude 57/32/46.4N, longitude 155/46/45.9W be deleted. concur

The Preprocessing Examination of H-10140 (N/MOP21/DWY, February 8, 1985) required that hydrography be superseded at the inshore area west of Pinnacle Rock, and that a 7.3 fathom sounding at latitude 57/32/29N, longitude 155/47/28W be investigated. The hydrography was superseded as required, and a divers' search found a ledge with a rock peak whose least depth is 7.4 fathoms (position 1961) using predicted tides. 7.4 Rk (based on actual tide)

The survey was compared to the following prior surveys: H-4386 (1:20,000; 1924), H-4398 (1:80,000; 1924), and H-7197 (1:40,000; 1947). Overall, the present survey agrees within one fathom with the prior surveys in the inshore areas and within two fathoms on the offshore areas, where soundings on this survey were generally shoaler than on H-4386.

Two significant differences were found between this survey and the prior surveys. At latitude 57/31/~~14~~13.21"N, longitude 155/38/~~45~~42.58"W, a 12-fathom sounding was found on the present survey (position 1707+4) among 19- to 26-fathom soundings on H-7197. This item was investigated in "Development A" by reducing line spacing to 25 meters and running a star pattern over the shoalest point. On H-4386 at latitude 57/31/22N, longitude 155/47/28W, a 12-fathom sounding is located on the prior survey where depths of 16 to 17 fathoms were found on this survey. However, since this item is located in the junction area with H-10140 and was investigated and disproved during that survey, it is not discussed here. See Descriptive Report, H-10140, Section K, for details.

L. Comparison with the Chart

This survey was compared to the following charts:

"Portage and Wide Bays" 16570, 8th ed., Feb. 18, 1978
"Kodiak Island" 16580, 8th ed., Oct. 31, 1981.

There were no dangers to navigation to report on this survey.

Overall, there was agreement within one to two fathoms between soundings on this survey and the charts. Any significant discrepancies have been discussed in Section K. All non-sounding features are either AWOIS items or fall within foul limits as shown on the final field sheet. See sections H and K for discussions.

M. Adequacy of Survey

This survey is sufficiently complete and adequate to supersede prior surveys. No additional field work is necessary.

N. Aids to Navigation

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

O. Statistics

Vessel	2020	2023	2024	2025	2026	2028	Total
Positions	8	6 402	790 ~~689~~	32	756 ~~765~~	2	1094 ~~1896~~
Nautical Miles	0	52.9	150.6	32	113.4		348.9
Square Miles	-	--	--	--	--		18.9
Bottom Samples	8	0	0	32	0		40
Velocity Casts	8	--	--	--	--		8
Tide Stations	1	--	--	--	--		1

No magnetic or current stations were established during this survey.

P. Miscellaneous

No unusual submarine features or anomalous tidal conditions were observed during this survey. No current observations were made. In accordance with the project instructions, bottom samples were not submitted to the Smithsonian Institution.

Q. Recommendations

None.

R. Automated Data Processing

The following programs were used for data acquisition or processing.

Number	Program Name	Version Date
RK 112	Range-Range Real Time Plot	04/23/84
RK 116	Range-Azimuth Real Time Plot	10/01/84
RK 201	Grid, Signal and Lattice Plot	04/18/75
RK 211	Range-Range Non-Real Time Plot	02/13/84
RK 212	Visual Station Table Load	04/01/74
RK 216	Range-Azimuth Non-Real Time Plot	02/12/84
RK 300	Utility Computations	10/21/80
RK 330	Reformat and Data Checker	05/04/76
PM 360	Electronic Corrector Abstract	02/02/76
RA 362	330/602 Combined	08/20/84
AM 500	Predicted Tide Generator	11/10/72
RK 407	Geodetic Inverse/Direct Computation	09/25/78
AM 602	Elinore	12/08/82
RK 530	Layer Corrections for Velocity	05/10/76
RK 562	Theodolite Calibration	09/05/84

S. Referral to Reports

The following reports will be submitted separately:

Report	Date
Horizontal Control Report	09/85
Electronic Control Report	09/85
* Corrections to Echo Soundings Report	09/85
Coast Pilot Report	10/85

* Filed with the field records for H-10181
KWW 8/12/92

IX. Approval Sheet

The final field sheets and the accompanying records have been reviewed for accuracy, completeness, compliance with project instructions, and adherence to required standards and procedures. The Commanding Officer monitored field work and inspected selected portions of the data on a daily basis. This survey is complete and requires no additional field work. The data is forwarded for final review and processing.

Submitted by:

Jeffrey F. Salmore

Jeffrey F. Salmore
Lieutenant (junior grade), NOAA

Reviewed by:

Maureen R. Kenny

Maureen R. Kenny
Lieutenant, NOAA
Field Operations Officer

Approved by:

John W. Carpenter

John W. Carpenter
Captain, NOAA
Commanding Officer

VI. LIST OF STATIONS

```
ISLAND 1923                                          NGS QUAD 571554
118 0  57 32 49957 155 50 11774                      250 0009 000000

ZIF 1984                                             FAIRWEATHER 1984
126 0  57 32 16860 155 54 13486                      250 0010 000000

ISLAND AZ 1984                                       FAIRWEATHER 1984
132 1  57 32 56046 155 50 19963                      250 0016 000000
SQUIRT
134    57 34 12.051  155 48 51499                     139 0026 000000
CRANK 1984                                           FAIRWEATHER 1984
138 4  57 27 03614 156 00 43143                      250 0018 000000

FORK 1947                                            NGS QUAD 571554
139 0  57 34 46795 155 43 29350                      250 0013 000000

NO 1947                                              NGS QUAD 571554
141 0  57 32 46363 155 43 42826                      250 0015 000000
RACHEL 1985                                          FAIRWEATHER 1985
140 0  57 32 55279 155 46 32503                      0250 0170 000000
```

(not used)

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

DATE: 09/24/85

Marine Center: Pacific

OPR: P146

Hydrographic Sheet: H-10183

Locality: Cape Unalishagvak, Shelikof Straits, AK

Time Period: June 19 - July 25, 1985

Tide Station Used: 945-8361 Bird Island, AK

Plane of Reference (Mean Lower Low Water): 2.27 ft.

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

Remarks: Recommended Zoning.

Apply a -10 minute time correction and x 1.03 range ratio to all heights

James R. Hubbard
Chief, Tidal Datum Quality
Assurance Section

Field Tide Note
OPR-P146-FA-85
Jute Bay, Alaska

The tide gauge at Kodiak, Alaska (945-7283) served as the reference station for the predicted tides used for correctors on surveys H-10181 and H-10183, as stated in the project instructions, OPR-P146-FA-85. The controlling tide station 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 1985 West Coast Tide Tables and program AM 500 dated November 10, 1972. All correctors calculated were based on the zone correctors for Lees Cabins, Wide Bay, AK.

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.

One field tide station, Bird Island (945-8361) was established in support of this project. The Bird Island station, located at latitude 57/30/42 N, longitude 156/01/54 W, operated throughout the period of surveying on sheets H-10181 and H-10183. The station was installed on June 11, 1985 (DN 162) and removed on July 26, 1985 (DN 207). A Bristol Bubbler analog tide gauge was installed on the southern half of Bird Island. The gauge, serial number 68A9333, had a range of 0 to 30 feet. The orifice was bolted to a rock which was set in place by a diver. The tubing was led ashore and buried under rocks by divers. A freestanding staff was bolted to a rock outcrop at the one foot level and guyed from the top. From June 12 (DN 163) until June 19 (DN 170) zero of the staff equalled 9.56 feet on the gauge. The gauge was changed on June 19 (DN 170) and a new value for zero of the staff was noted at 8.8 feet on the gauge. This value remained constant until the staff was replaced on July 24 (DN 205). The new gauge to staff comparison was 9.1 feet. The gauge was removed on July 26 (DN 207). For further information refer to the Tide Station Report #945-8361, Bird Island, AK.

Three of the five benchmarks leveled to are standard NOS brass disks. These disks consist of station BIRD and two RM's. The other two marks are eyebolts and are to be considered temporary. Opening levels were performed on June 11, 1985 (DN 162) from the staff to the five benchmarks. Closure of four millimeters was obtained over the entire run of approximately 0.1 mile. Closing levels were performed on July 26, 1985 (DN 207) over the same run. A closure of 2 millimeters was obtained.

Because of a sticking flow meter the Bristol gauge (S/N 68A9333) was replaced by an identical gauge (S/N 67A16208) on June 19, 1985 (DN 170). No data was lost due to the gauge change. On July 24 (DN 205) it was found that the staff had been vandalized and the 2x4 on which it was mounted had been removed. The staff was replaced and levels were run to the first bench mark. The new staff was found to be 11 mm higher than the original staff. As noted eariler in this note a new gauge to staff value was obtained. No data was lost due to staff replacement. No other problems were encountered with either the gauge or the staff.

No zoning recommendations are forwarded.

ATTACHMENT E

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
NOAA Ship
1801 Fairview Avenue East
Seattle, Washington 98102-3767

August 2, 1985

TO: N/OMS12 - Chief, Tides and Water Levels Branch

FROM: Commanding Officer, NOAA Ship FAIRWEATHER

SUBJECT: Request for Approved Tide Data

Please provide the Nautical Chart Branch (N/MOP21), Pacific Marine Center, the following tide data:

1. Approved Tide Note (Form 712)
2. Approved Hourly Heights for Days of Hydrography
3. Hourly Heights on Magnetic Tape

These data are required for the processing of hydrographic survey:

Registry No.: H-10183
Project Instructions: OPR-P146-FA-85
Location: Vicinity of Cape Unalishagvak, Shelikof Strait, Alaska

~~A Progress Sketch showing survey area and~~ Abstract of Times of Hydrography/Shoreline Verification (check one):

XXX are included with this request.

have been forwarded with the final tide record package for this survey mailed on / / .

are included with this request. The final tide record package for this survey will be forwarded at the end of this month.

Tide data are required within 90 days of receipt of this request. If this schedule cannot be met, please advise the Chief of the Hydrographic Section, N/MOP211, telephone FTS 392-6853.

NOTE: The Progress Sketch will be forwarded as soon as reduced copies are received from N/MOP

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10183

Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO. 16570 & 16580	C ON U.S. QUADRANGLE MAPS 4386, 4398, 7197	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K TP-00628	
Cape Unalishagvak	x	x	x						x	1
Pinnacle Rock	x	x	x						x	2
Shelikof Strait	x	x	x						x	3
Alaska (title)										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H)
(9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER
H-10183

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	5
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	3

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	2					
ENVELOPES						
VOLUMES	1					
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List) Registered Class III Manuscript TP-00628

PHOTOBATHYMETRIC MAPS (List)

NOTES TO THE HYDROGRAPHER (List)

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List): Charts 16570 & 16580

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	*EVALUATION*	*TOTALS*
POSITIONS ON SHEET			1994
POSITIONS REVISED	—	—	1359
SOUNDINGS REVISED	—	—	143
CONTROL STATIONS REVISED	—	—	5
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION	—	—	—
~~VERIFICATION OF CONTROL~~	—	—	—
VERIFICATION OF POSITIONS	39.0	—	39.0
VERIFICATION OF SOUNDINGS	64.0	—	64.0
~~VERIFICATION OF JUNCTIONS~~	—	—	—
~~APPLICATION OF PHOTOBATHYMETRY~~	—	—	—
~~SHORELINE APPLICATION VERIFICATION~~	—	—	—
COMPILATION OF SMOOTH SHEET	33.0	—	33.0
COMPARISON WITH PRIOR SURVEYS AND CHARTS	—	9.0	
~~EVALUATION OF SIDE SCAN SONAR RECORDS~~	—	—	—
~~EVALUATION OF WIRE DRAGS AND SWEEPS~~	—	—	—
~~EVALUATION~~ REPORT		33.0	33.0
~~GEOGRAPHIC NAMES~~	—	—	—
OTHER: DIGITIZING —	—	—	
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	136.0	42.0	

Pre-processing Examination by J.D. Wilder	*Beginning Date* 10/17/85	*Ending Date*	10/23/85
Verification of Field Data by L.T. Deodato	*Time (Hours)* 136.0	*Ending Date*	3/18/86
Verification Check by S. Otsubo, B. Olmstead, J. Green	*Time (Hours)* 32.0	*Ending Date*	4/15/86
Evaluation and Analysis by I.A. Almacen	*Time (Hours)* 42.0	*Ending Date*	4/15/86
Inspection by Dennis Hill	*Time (Hours)* 1.0	*Ending Date*	4/15/86

U.S. GOVT. PRINTING OFFICE 1983 764-006/6061

PACIFIC MARINE CENTER
EVALUATION REPORT
H-10183

1. INTRODUCTION

H-10183 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
Change No. 2, dated May 17, 1985
Change No. 3, dated June 17, 1985
Change No. 4, dated July 26, 1985

This is a basic hydrographic survey of the southwest portion of Shelikof Strait, in the vicinity of Cape Unalishagvak. It extends approximately 3 1/2 miles to the south, 4 1/2 miles to the east and 2 miles to the west of the Cape. It is bounded by the shoreline and latitude 57°32'00"N to the north, by latitude 57°29'00"N to the south, by longitude 155°36'00"W to the east and by longitude 155°47'40"W to the west.

The shore from the Cape to Pinnacle Rock is mostly foul with rocks, ledges and kelp, with breakers observed along the coast. The bottom is generally mud with few patches of hard and shallow areas. Depths range from 0 to 157 fathoms.

Predicted tides based on the Seldovia, Alaska gage were used during field processing. Tide correctors used for the reduction of final soundings reflect approved hourly heights zoned from Bird Island (945-8361), Alaska.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The velocity and electronic correctors have been revised during office processing to reflect the correct sign code on the velocity correction table and the electronic correctors based on the correct baseline calibration. The revised data is listed in the smooth position/sounding printout.

A digital file for this survey has been generated and includes 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.

2. CONTROL AND SHORELINE

Hydrographic control and positioning are adequately discussed in sections F and G of the hydrographer's report and in the Horizontal and Electronic Control Reports for OPR-P146-FA-85.

Horizontal control station positions used during hydrography are either published or field positions based on North American Datum of 1927.

The applicable shoreline manuscript is TP-00628 at scale 1:20,000 enlarged to the scale of the survey. This map is registered Class III, and originates from photography dated June 1976.

There are no changes observed by the hydrographer to the high water line as shown on TP-00628, however some changes to ledge configuration and location of rocks in the vicinity of Pinnacle Rock were noted. Changes to ledges are shown in red on the field sheet and were transferred directly to the smooth sheet in black, with the exception of the ledge in the area of latitude 57°32'47"N, longitude 155°46'55"W. This ledge is shown on the smooth sheet as depicted on the shoreline manuscript. The reduced hydrographic information supports the photogrammetric depiction of this particular feature. Foul limits are drawn to reflect the hydrographer's comments and labelled as shown on the field sheet.

3. HYDROGRAPHY

Soundings at line crossings are in good agreement. The depth curves could be completely and adequately drawn. Delineation of the bottom configuration and the determination of least depths are adequate. Brown depth curves were added to highlight shoal soundings not normally covered by standard depth curves.

4. CONDITION OF SURVEY

The hydrographic records and reports conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change 3, except as noted in the Preprocessing Examination Report, dated November 5, 1985.

5. JUNCTIONS

H-10183 junctions with the following surveys:

Survey	Year	Scale	Note	Area
H-10181	1985	1:10,000	Joins	West
H-10140	1984	1:10,000	Adjoins	West
H-7194	1947	1:20,000	Adjoins	Northwest
H-7196	1947	1:40,000	Adjoins	North

Soundings were transferred from H-10181 to effect an adequate junction.

Surveys H-10140, H-7194 and H-7196 had been verified and submitted to Rockville for charting. Junction comparisons were made using file copies of these surveys. Soundings were transferred from H-10140 to delineate depth curves within the junction area. Soundings are generally in agreement; however, depth curves, particularly from H-7194 and H-7196, should be adjusted to conform with this survey.

There are no contemporary surveys to the south and east; however, a comparison with charted depths reveals good agreement with the present survey.

6. COMPARISON WITH PRIOR SURVEYS

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

Prior survey soundings are generally in good agreement, indicating fairly stable bottom. Soundings agree to within one fathom in inshore areas and within two fathoms in the offshore areas, with the exception of the 18-fathom sounding originating from H-4398 previously discussed in section J of the hydrographer's report.

AWOIS items 50746, 50747 and 50748 are adequately discussed in section K of the hydrographer's report.

H-10183 is adequate to supersede the prior surveys within their common areas.

7. COMPARISON WITH CHART

Chart 16570, 8th Edition, dated February 18, 1978; scale 1:50,000
Chart 16580, 8th Edition, dated October 31, 1981; scale 1:350,000

a. Hydrography - Most charted information originates from the prior surveys discussed in Section 6 of this report. Charted inshore features and rocks are confirmed by this survey. For further information see section L of the hydrographer's report.

Geographic names appearing on the smooth sheet are plotted in accordance with these charts.

H-10183 is adequate to supersede charted hydrography within the common area.

There have been no danger to navigation reports submitted by the ship or PMC Nautical Chart Branch for this survey

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 within the limits of this survey.

8. COMPLIANCE WITH INSTRUCTIONS

H-10183 adequately complies with the project instructions noted in section 1 of this report.

9. ADDITIONAL FIELD WORK

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

Isagani A. Almacen
Cartographer

This survey has been examined and it meets Charting and Geodetic Services 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-10183

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 4-29-06
For Chief, Nautical Chart Branch (Date)

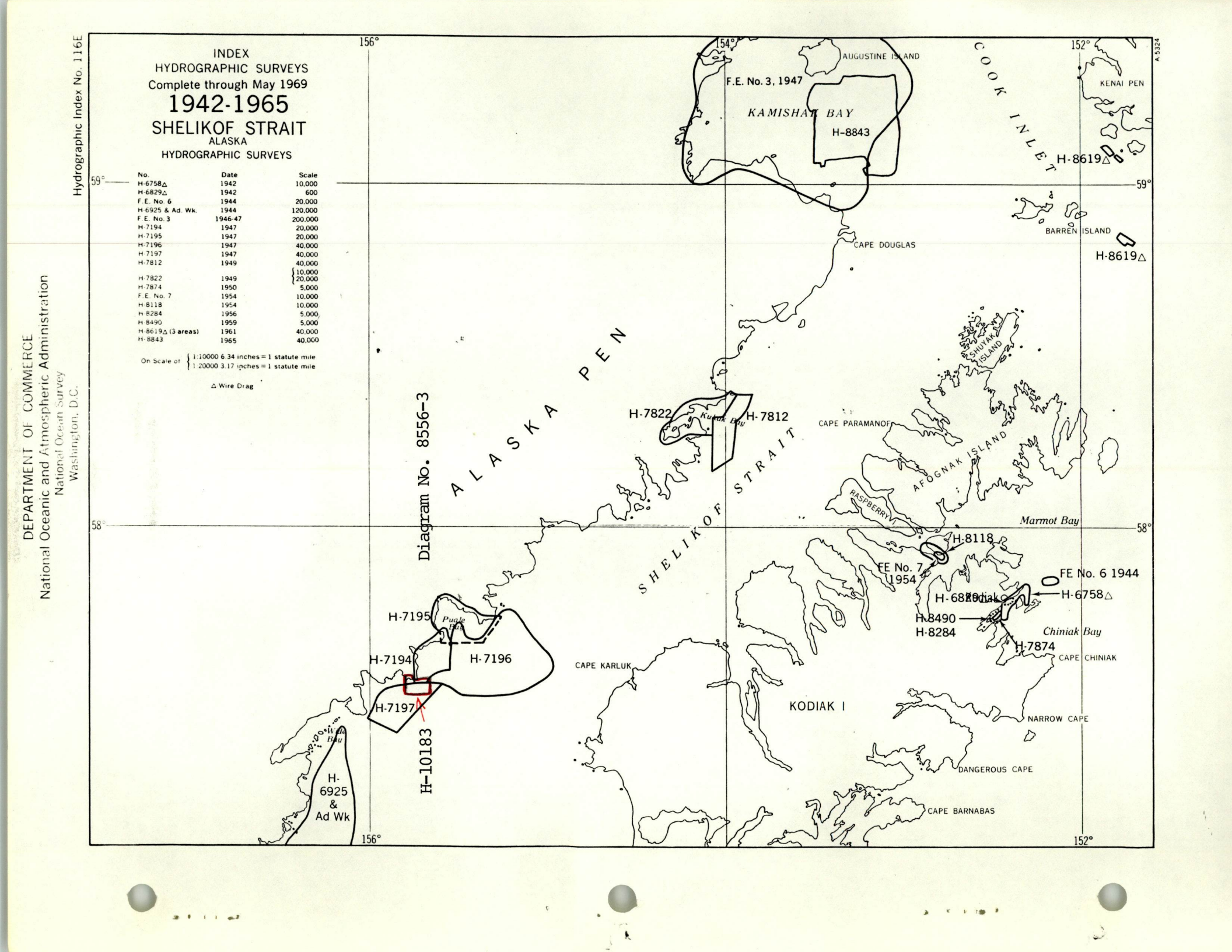
CLEARANCE: SIGNATURE AND DATE:

N/MOP2:LWMordock

4-29-06

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. Sandgat 4-29-06
Director, Pacific Marine Center (Date)


Hydrographic Index No. 116E
DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Washington, D.C.
INDEX
HYDROGRAPHIC SURVEYS
Complete through May 1969
1942-1965
SHELIKOF STRAIT
ALASKA
HYDROGRAPHIC SURVEYS
No. Date Scale
H-6758△ 1942 10,000
H-6829△ 1942 600
F.E. No. 6 1944 20,000
H-6925 & Ad. Wk. 1944 120,000
F.E. No. 3 1946-47 200,000
H-7194 1947 20,000
H-7195 1947 20,000
H-7196 1947 40,000
H-7197 1947 40,000
H-7812 1949 40,000
H-7822 1949 10,000 20,000
H-7874 1950 5,000
F.E. No. 7 1954 10,000
H-8118 1954 10,000
H-8284 1956 5,000
H-8490 1959 5,000
H-8619△ (3 areas) 1961 40,000
H-8843 1965 40,000
On Scale of 1:10000 6.34 inches = 1 statute mile
1:20000 3.17 inches = 1 statute mile
△ Wire Drag
Diagram No. 8556-3
H-10183
156°
154°
152°
59°
58°
AUGUSTINE ISLAND
F.E. No. 3, 1947
KAMISHAK BAY
H-8843
COOK INLET
KENAI PEN
H-8619△
BARREN ISLAND
H-8619△
CAPE DOUGLAS
ALASKA PEN
SHUYAK ISLAND
H-7822
Kukak Bay
H-7812
CAPE PARAMANOF
AFOGNAK ISLAND
SHELIKOF STRAIT
RASPBERRY I.
Marmot Bay
H-8118
FE No. 7
1954
FE No. 6 1944
H-6758△
H-8490
H-8284
Chiniak Bay
H-7874
CAPE CHINIAK
H-7195
Puale Bay
H-7194
H-7196
CAPE KARLUK
H-7197
KODIAK I
NARROW CAPE
DANGEROUS CAPE
CAPE BARNABAS
H-6925 & Ad Wk
A 5324

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10183

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
16570	3-9-87	Ralph B. Rass	Full ~~Part~~ Before (After) Marine Center Approval Signed Via Drawing No. 10 ~~Apply~~ Appld in full D
16575	10-3-88	J Graham	Full ~~Part Before~~ After Marine Center Approval Signed Via Drawing No. #1
16575	10-28-88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via Drawing No. Critical Corr's only NO
16570	10-28-88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via Drawing No. 10 Critical Corr's only NO
16580	10-28-88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via Drawing No. Critical corr's only DRG #20 NO
16013	10-28-88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via Drawing No. 28 Critical Corr's only NO
~~500~~	~~10-28-88~~	~~Charles E James~~	
500	10-28-88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via Drawing No. 6 Critical Corr' only NO
*	7-25-89	John Pierce	Fully Applied Exam, NC through chart 16013
531	10-28-88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via Drawing No. 19 Critical Corr' only No
16013	2-21-89	ED MARTIN	Full ~~Part Before~~ After Marine Center Approval Signed Via Drawing No. 28 EXAM. NO CORRS - FULLY APPLY JM
#531	3-6-89	ED MARTIN	Full ~~Part Before~~ After Marine Center Approval Signed Via Drawing No. 19
#500 *	7-31-89	John Pierce	Full Appd dwg #6

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.