

9543

Diag. Cht. No. 8556-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT
(HYDROGRAPHIC)

Type of Survey Hydrographic
Field No. FA-20-4-75
Office No. H-9543

To Date

LOCALITY

State Alaska
General Locality Shelikof Strait
Locality Halla Bay and Vicinity...

19 75

CHIEF OF PARTY

R. E. Alderman

LIBRARY & ARCHIVES

DATE 3/21/77

Area 6
charts
8556

9543

HYDROGRAPHIC TITLE SHEET

H-9543

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

FIELD NO.

FA-20-4-75

State Alaska

General locality Shelikof Strait

Locality Hallo Bay and Vicinity

Scale 1:20,000 Date of survey 24 July - 14 August 1975

Instructions dated 25 April 1975 Project No. OPR-478-FA-75

Vessel FA-3 (Hull No. 1240, EDP 2023), FA-4 (Hull No. 1233, EDP 2024), FA-5 (Hull No. 1001, EDP 2025), FA-6 (Hull No. 1243, EDP 2026)

Chief of party CDR Richard E. Alderman, NOAA

Surveyed by LTJG J. Gulley, LTJG D. Astle, ENS R. Morris, ENS S. Poole

Soundings taken by echo sounder, ~~echo sounder~~ ROSS Fineline Fathometers (S/N's 20465, 1046, 1047, 1054)

Graphic record scaled by Ross Digitizers

Graphic record checked by FAIRWEATHER Personnel

Positions verified

~~checked~~ by Bruce Alan Olmstead Automated plot by PMC Kynetics Plotter

Soundings verified

~~checked~~ by Bruce Alan Olmstead

Soundings in fathoms ~~met~~ at ~~LOW~~ MLLW

REMARKS: All survey records were kept on GMT. The mean longitude of the survey is 153°56'W. This ~~sheet~~ sheet is complete and adequate for charting.

Applied to plots 7/11/77
CAF

05 00 00

04 00 00

15 00 00

OPR-478-FA-75 PROGRESS SKETCH

SHELIKOF STRAIT, ALASKA
CDR RICHARD E. ALDERMAN CMDG
NOAA SHIP FAIRWEATHER (MSS-20)
SCALE OF C&GS CHART 8556

- ⊙ RECOVERED TRI STA.
- △ ESTABLISHED TRI STA.
- ⊕ TIDE GAGE
- FIELD EDIT
- ⊙ MARTEK
- ⊖ NANSEN CAST

	MAY	JUNE	JULY	AUG
LN M SOUNDING LINE	223	884	971	1530
SO NM SOUNDING LINE	26	103	112	270
BOTTOM SAMPLE	0	186	223	129
STD CAST (NANSEN)	0	0	1	1
MARTEK	0	3	0	1



HORIZONTAL CONTROL RECOVERED AND ESTABLISHED - MAY

- 1 ILKTUGITAK, 1908
- 2 ACTOR, 1975
- 3 BRAD, 1975 (MINI-RANGER)
- 4 POLK, 1975
- 5 BAY, 1975
- 6 ISLE, 1975
- 7 HIDDEN, 1975
- 8 CAPE I, 1975
- 9 ATUSHAGVIK 2, 1967
- 10 CAPE UGAT, 1908 (RAYDIST)
- 11 NUN, 1941 (RAYDIST)
- 12 PINNACLE ROCK NO. 2, 1941
- 13 NUKSHAK, 1908-1967 (RAYDIST, MINI-RANGER)

HORIZONTAL CONTROL RECOVERED AND ESTABLISHED - JUNE

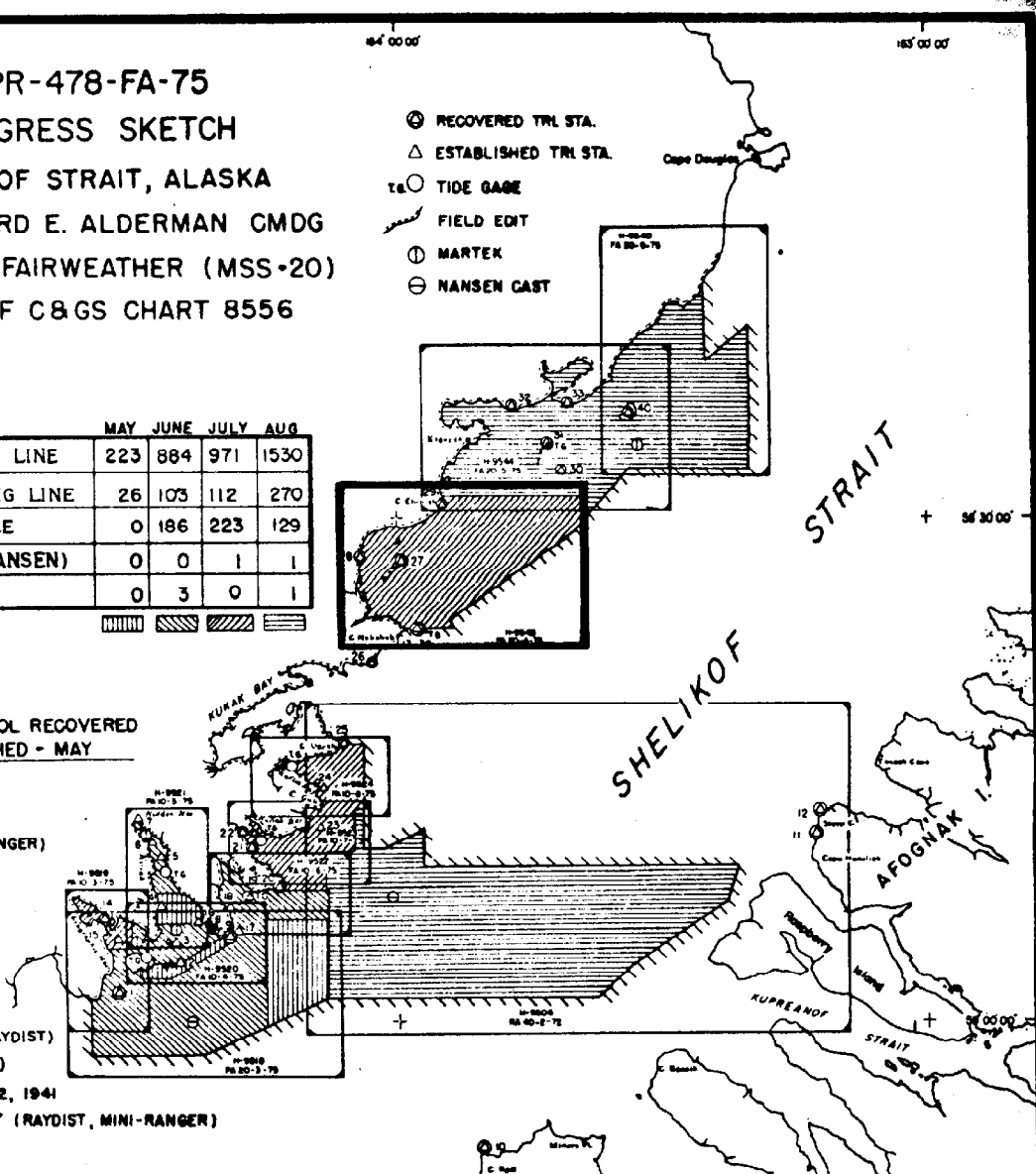
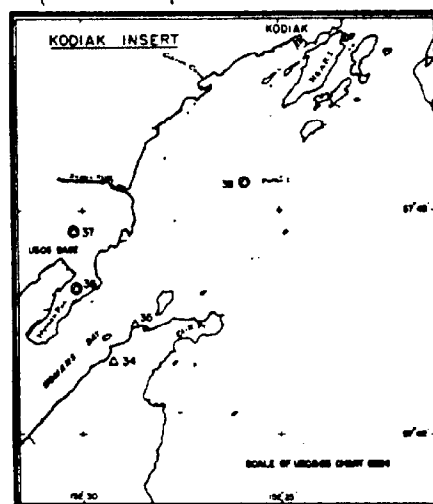
- 14 GEO, 1975 (MINI-RANGER)
- 15 AMALIK, 1975 (MINI-RANGER)
- 16 RUSSIAN, 1975 (MINI-RANGER)
- 17 SHAG, 1975
- 18 MISS, 1975 (MINI-RANGER)
- 19 AK, 1975 (MINI-RANGER)
- 20 KULIAK, 1908-1967
- 21 ROCK, 1967
- 22 HEAD, 1967 (MINI-RANGER)

HORIZONTAL CONTROL RECOVERED AND ESTABLISHED - AUGUST

- 39 NUKSHAK, 1908 RM 7-1975 (MINI-RANGER)
- 40 KIUKPALIK, 1908-1967 (MINI-RANGER)

HORIZONTAL CONTROL RECOVERED AND ESTABLISHED - JULY

- 23 GRASSY, 1975 (MINI-RANGER)
- 24 KOMO, 1975 (MINI-RANGER)
- 25 DIME, 1949
- 26 YUGNAT, 1949
- 27 NINAGIAK, 1967
- 28 HOOK, 1967 (MINI-RANGER)
- 29 CHINIAK, 1967
- 30 SHAKUN ROCK, 1908-1971
- 31 SHAK 2, 1971
- 32 SWIKSHAK, 1967
- 33 BARNEY, 1971
- 34 WOMANS BAY REAR RANGE LT., 1975
- 35 WOMANS BAY FRONT RANGE LT., 1975
- 36 EWE, 1933
- 37 CHINIAK S.W. BASE, 1907-1967
- 38 PUFFIN ISLAND, 1967



DESCRIPTIVE REPORT ✓

NOAA SHIP FAIRWEATHER (MSS-20)

OPR-478-FA-75

SURVEY H-9543 (FA-20-4-75)

A. PROJECT

This survey was accomplished in accordance with project instructions OPR-478-FA-75, Shelikof Strait, Alaska, dated 25 April 1975, changes 1, 2, and 4 dated 6 May 1975, 28 May 1975, and 29 July 1975 respectively, and the PMC OORDER. ✓

B. AREA SURVEYED

The area surveyed on sheet FA-20-4-75 is located in the vicinity of Hallo Bay on the northwestern coast of Shelikof Strait. It is bounded on the north and south by latitudes $58^{\circ} 32' 28''$ N and $58^{\circ} 23' 30''$ N respectively. The shoreline forms the western boundary and a diagonal line between the following points forms the eastern boundary: $58^{\circ} 32' 28''$ N, $153^{\circ} 38' 25''$ W and $58^{\circ} 23' 30''$ N, $153^{\circ} 55' 35''$ W. Hydrography was accomplished between July 24 and August 14, 1975. ✓

C. SOUNDING VESSELS

Hydrography on this sheet was accomplished by launches FA-3(hull no. 1240, EDP 2023), FA-4(hull no. 1233, EDP 2024), FA-5(hull no. 1001, EDP 2025), FA-6(hull no. 1243, EDP 2026). ✓

D. SOUNDING EQUIPMENT

All launches used Ross Fineline fathometers. A TRA corrector of +0.4 fathom, based on bar checks taken as often as seas permitted during the project, was used for the launches. The sound velocity correctors were determined from a Nansen cast taken within the project area. For details see Report on Corrections to Echo Soundings, OPR-478-FA-75. ✓
The depths of sounding on this survey range from 0 to 76 fathoms.

Sounding Instruments:

<u>Vessel</u>	<u>Instrument</u>	<u>Model</u>	<u>S/N</u>
FA-3	Ross Fineline	200-A	204065
FA-4	Ross Fineline	5000	1047
FA-5	Ross Fineline	5000	1046
FA-6	Ross Fineline	5000	1054

 ✓

E. BOAT SHEET

The boat sheet projection used was a modified transverse Mercator. The scale is 1:20,000 and the skew is 0°. Two plotter sheets were required. The origin for FA-20-4A-75 is 58°22'15"N, 154°06'30"W. The origin for FA-20-4B-75 is 58°26'40"N, 154°06'30"W. All data was plotted by the shipboard Hydroplot system, utilizing the ship's PDP 8/e computer(S/N M-40-00000-1006) and Complot plotter(model DP-3, S/N 5848-17). Copies of the parameter tape printouts are appended. ✓

F. STATION CONTROL

Horizontal control for this survey consisted of existing triangulation stations, with the exception of NUKSHAK 1908 RM 7 1975 which was established by third-order traverse especially for this project. ✓

One calibration buoy was established on the east end of a long reef in Hallø Bay by theodolite cuts and cross-checked by Miniranger rates and a sextant fix. See Electronic Systems Calibration Report, OPR-478-FA-75. All other calibration signals were located over existing triangulation stations. ✓

No photogrammetrically-located signals were used for this survey. The 1927 North American datum was used for all computations, which are located in the Horizontal Control Report, OPR-478-FA-75, with the exception of the computations of the position and electronic lane count of the calibration buoy, which are included in the calibration report as mentioned above. ✓

G. POSITION CONTROL

The Hastings Raydist electronic positioning equipment, operating in the range-range mode, was used to control all the hydrography accomplished by FA-5 on this sheet. ✓

The pattern I station was located over NUN 1941 at Cape Nuniliak near Raspberry Strait, and the pattern II station over NUKSHAK 1908 1967 off Cape Nukshak. Launch FA-5 was equipped with a Raydist mobile transmitter, navigator, strip chart recorder, and a 9 ft whip antenna. The strip chart was monitored and annotated at all times between calibrations. Electronic correctors were determined by averaging the calibrations normally taken twice daily. ✓

Calibration of the Raydist navigator normally was accomplished by three point sextant fixes utilizing signals located over triangulation stations. Calibration was also accomplished, during days of low visibility, at a fixed buoy located by theodolite cuts and cross-checked by Miniranger rates and a sextant fix. ✓

Base station operation was generally satisfactory. Numerous lane jumps were experienced by FA-5 on the first day of the survey, but all were located on the strip chart and correctors applied. The correct positioning of these sounding was later verified by crosslines. ✓
On the second day of the survey FA-5 again experienced numerous lane jumps which could not be resolved so these lines were rerun. Although the original data (positions 4127-4335) is not plotted on the field sheet, it is being submitted as supplementary information.

Electronic correctors, derived from the calibration data, were applied to the observed ranges before plotting on the field sheet. Slope corrections were automatically applied. ✓

All hydrography on this survey by FA-3 and FA-4 was accomplished using range-azimuth methods with Miniranger electronic positioning equipment and a Wild T-2 theodolite. Miniranger transponders and theodolites were located over HOOK 1967, and NUKSHAK 1908 RM 7 1975 on Nukshak Island. ✓

FA-4 took a limited number of bottom samples utilizing the Miniranger electronic positioning equipment operating in the range-range mode. Transponders were located over NUKSHAK 1908 RM 7 1975 and NINAGIAK 1967. ✓
The one day of hydrography by FA-6 was also accomplished utilizing the Miniranger operating in the range-range mode with the transponders located over the same stations mentioned above. No problems were experienced in the Miniranger operations during this survey. ✓
Calibration of the Miniranger was accomplished over tellurometer-measured base lines, as discussed in the Electronic Systems Calibration Report, OPR-478-FA-75.

H. SHORELINE

Shoreline detail information was obtained from incomplete shoreline manuscripts T-13157, T-13159, and T-13160. Field edit on all sheets was completed in August 1975. The low water line was determined only in the area north and west of Ninagiak Island. The rest of the shoreline in the survey area was too rocky to permit determination of the low water line. ✓

I. CROSSLINES

Crosslines accounted for 6.5% of all hydrography completed on this survey. Comparisons at crossings agreed within one fathom. ✓

J. JUNCTIONS

The survey junctions with the 1:20,000 scale survey FA-20-5-75 (H-9544), the 1971 1:40,000 scale survey H-9201, the 1949 1:40,000 scale survey H-7812, and the 1949 1:20,000 scale survey H-7822. ✓

All junctions agreed within two fathoms with the exception of the 1949 survey H-7812 where discrepancies up to 20 fathoms were noted. It was concluded that not only did the 1949 survey not utilize modern hydrographic methods, but also the junction area was near the northern limits of their visual control. ✓

K. COMPARISON WITH PRIOR SURVEYS

This survey junctioned with the prior survey H-2986(1908, scale 1:200,000). Soundings at the junction agreed within one fathom. ✓

There were no pre-survey review items located in the area of the survey. ✓

L. COMPARISON WITH CHART

The survey compares well with chart 16603(4th edition July 13, 1974, scale 1:30,000) with most soundings agreeing within two fathoms, but discrepancies of 3 to 8 fathoms were noted at three soundings. ✓

Two soundings from chart 16580(5th edition May 17,1975, scale 1:350,000) lie within the survey area and both disagree with the present survey by up to 9 fathoms. This is probably due to the extreme difference in scale between the surveys. ✓

Two submerged rocks hazardous to navigation and which do not appear on chart 16580(5th edition May 17, 1975, scale 1:350,000)were located on the present survey. One rock(rock bares 3 ft. 0159Z 8/7/75) is located at 58°27'04"N, 153°57'50"W. The second rock(rock bares 3 ft. 1703Z 8/6/75) is located at 58°26'43"N, 153°58'44"W. There were no other hazards to navigation found which do not appear on chart 16580. ✓

M. ADEQUACY OF SURVEY

All fathogram field survey records were scanned and checked for deeps and peaks with appropriate changes made to the original records. The survey is complete and adequate to supersede prior surveys for charting. ✓

N. AIDS TO NAVIGATION

There were no aids to navigation located within the survey area. ✓

O. STATISTICS

<u>Vessel</u>	<u>Total Positions</u>	<u>Hydrography, n.m.</u>
FA-3	361	96.7
FA-4	513	131.8
FA-5	883	364.1
FA-6	19	7.9
	1776	600.5

Total area - 55.5 sq. n.m.
Total bottom samples - 50

P. MISCELLANEOUS

Greenwich Mean Time was used for all survey records. Velocity corrections have not been applied to the soundings plotted on the field sheet. ✓

Q. RECOMMENDATIONS

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

R. REFERENCES TO REPORTS

Report on Corrections to Echo Soundings, OPR-478-FA-75.
Electronic Systems Calibration Report, OPR-478-FA-75. ✓
Coast Pilot Report, OPR-478-FA-75.
Field Edit Reports, OPR-478-FA-75,
Horizontal Control Report, OPR-478-FA-75.

S. DATA PROCESSING PROCEDURES

FA-3 and FA-4 used ASI Loggers to acquire and compile all on-line hydrographic data. FA-5 and FA-6 used program RK 111, version 8/7/74, on their PDP 8/e computers to acquire and compile all on-line hydrographic data. The ship used RK 211, version 8/16/74, on it PDP 8/e computer to plot the field sheet. Programs RK 216, version 2/14/75, and RK 212, version 4/1/74, to plot the range-azimuth data. ✓

Submitted by:

Deborah Astle

Lt(jg) Deborah Astle, NOAA

FIELD TIDE NOTE ✓

Field tide reduction of soundings was based on predicted tides from Seldovia, Alaska corrected to Kukak Bay, Alaska, which were interpolated by PDP8/e computer utilizing RK 530. All times of both predicted and observed tides are based on GMT.

Eight Bristol Bubbler tide gages were installed at eight locations in the project area. Locations and periods of operation were as follows:

<u>SITE</u>	<u>LOCATION</u>	<u>PERIOD</u>
Nukshak Island	58°23.5'N 153°57.5'W	86 days 22 May - 20 Aug.
Kinak Bay	58°09.0'N 154°26.4'W	41 days 19 May - 28 June
Takli Island	58°03.8'N 154°28.6'W	64 days 19 May - 29 July
Geographic Harbor	58°06.5'N 154°34.4'W	39 days 14 June - 23 July
Missak Bay	58°07.6'N 154°16.5'W	26 days 18 June - 14 July
Kuliak Bay	58°11.0'N 154°16.0'W	16 days 8 July - 24 July
Kaflia Bay	58°15.0'N 154°12.0'W	20 days 9 July - 29 July
Shakun Island	58°33.0'N 154°43.0'W	34 days 17 July - 20 Aug.

NUKSHAK ISLAND

Bubbler gage (S/N 67A10292) and staff were installed 17 May 1975. The gage ran from 22 May until 25 May at which time a storm severed the orifice line. A new orifice was set and the gage restarted 31 May. The gage ran satisfactorily until removal on 20 August 1975. The gage was in operation a total of 86 days. The marigram reads 7.1 feet greater than the staff.

KINAK BAY

Bubbler gage (S/N 62A297) and staff were installed 19 May 1975 and ran satisfactorily for 41 days until removal on 28 June 1975 with the

following exceptions: Twice during the operation of the gage, the chart paper was found off the drive sprockets. Hourly heights were not tabulated for the periods in question, 23 May to 29 May and 20 June to 26 June. Data from these periods may be usable. Determination of this should be done by Tides Branch. During the first of the above periods one day of hydrography (23 May) was run. The tide gage at Takli Island will serve to control this day's hydrography. The marigram reads 3.0 feet greater than the staff.

TAKLI ISLAND

Bubbler gage (S/N 73A231) and staff were installed 19 May 1975 and ran satisfactorily until 7 June 1975 when the orifice tubing was severed in a storm. A new orifice was installed and the gage restarted on 11 June 1975. The gage ran until 21 June 1975 at which time the chart paper ran out. The gage was restarted on 25 June and ran well until its removal on 29 July 1975. The gage was in operation for a total of 64 days. The marigram reads 3.2 feet greater than the staff (on the second orifice) and 9.3 feet greater than the staff (on the first orifice).

GEOGRAPHIC HARBOR

Bubbler gage (S/N 67A16205) and staff were installed 14 June 1975 and ran satisfactorily until removal on 23 July 1975. The gage was in operation for 39 days. The marigram reads 15.2 feet greater than the staff.

MISSAK BAY

Bubbler gage (S/N 64A11030) and staff were installed on 18 June 1975 and ran satisfactorily for 26 days until removal on 14 July 1975. The marigram reads 2.8 feet greater than the staff.

KULIAK BAY

Bubbler gage (S/N 73A234) and staff were installed on 8 July 1975 and ran satisfactorily for 16 days until removal on 24 July 1975. The marigram reads 9.0 feet greater than the staff. Hydrography was run on June 29, 30 and July 1 before installation of the gage. The gage at Missak Bay will serve to control the hydrography run on these days.

KAFLIA BAY

Bubbler gage (S/N 73A233) and staff were installed on 9 July 1975 and ran satisfactorily for 20 days until removal on 29 July 1975. The marigram reads 7.4 feet greater than the staff.

SHAKUN ISLAND

Bubbler gage (S/N 73A232) and staff were installed 17 July 1975 and ran for 34 days until removal on 20 August 1975. The marigram from 29 July through 12 August displays intermittent dampening and shifting of the tide curve. Also shown are several shifts attributed to orifice movement occurring on 31 July and 12 August. These shifts were never more than 0.5 feet and the tide curve was interpolated for these periods. The marigram reads about 2.4 feet greater than the staff.

TIME & HEIGHT DIFFERENCES

Takli Island - Kinak Bay: Times of highs and lows varied from 0 to 20 minutes in either direction. Differences in height ranges varied from 0 to 0.5' with the Kinak Bay gage having the greater range.

Takli Island - Geographic Harbor: Differences in times of highs and lows varied from 0 to 35 minutes with the events arriving later at the Geographic Harbor gage. There were no significant height differences.

Missak Bay - Kuliak Bay: Highs and lows occurred 20 Min. earlier to 5 Min. later at Missak Bay, the average being around 10 min. early. The height range at Kuliak Bay was about 0.2' greater.

Kuliak Bay - Kafliä Bay: Events occurred 0 to 15 minutes earlier at Kuliak Bay, the average being around 5 minutes earlier. The height range at Kafliä Bay was 0.5' to 0.7' greater.

Nukshak Island - Shakun Island: There were no significant differences in the times of highs and lows between these gages. The height range at Shakun Island was 0' to 0.6' greater.

LEVELS

All levels closed within the required limits of accuracy. Comparison of levels made at the installation and removal of each tide gage showed no apparent tide staff shifts, with the following exceptions: The staff stop at Missak Bay appears to have sunk 0.015' during its period of operation. The staff stop at Takli Island appears to have risen 0.01' and the staff stop at Kinak Bay appears to have risen 0.044'.

MISCELLANEOUS

Of the eight gages installed this project, only three had Nupro valves. While this was not a serious problem, these valves do perform better than the standard dampening valves and we would like to see them made available on all gages.

Because of the logistical difficulties involved in servicing some gages infrequent staff observations resulted in some cases. Often it was impossible to tend the gages more frequently because of combinations of such factors as weather, distance and an insufficient number of operating skiffs or available launches.

In two cases during the project severe storms literally tore the orifice tubing from the orifices. This illustrates the necessity of giving the orifice and tubing as much lee as possible from the prevailing weather, and of assuring that the tubing is securely attached to the orifice assembly.

As per the project instructions, only the gages at Nukshak and Takli Islands and at Cape Douglas (replaced by Shakun Island) required at least 30 days of observations. The remaining gages had only to be operated during periods of hydrography in the vicinity.

As per changes 3 and 4 to the project instructions, the requirements for Dakavak Bay, Raspberry Island, Cape Douglas and Kaguyak tide gages were deleted. The tide gage at Shakun Island was substituted for the gage at Cape Douglas.

ZONING

It is recommended that data from the tide gages in the project area be used to control hydrography on the field sheets as shown below:

<u>Field Sheet</u>	<u>Tide Gage</u>
FA-10-3-75 (below 58°05'43"N)	. Takli Island
FA-10-3-75 (above 58°05'43"N)	. Geographic Harbor
FA-10-4-75 . . . . .	. Takli Island
FA-10-5-75 . . . . .	. Kinak Bay
FA-10-6-75 . . . . .	. Missak Bay
FA-10-7-75 . . . . .	. Kuliak Bay
FA-10-8-75 . . . . .	. Kafli Bay
FA-20-3-75 . . . . .	. Takli Island
FA-20-4-75 . . . . .	. <u>Nukshak Island</u>
<u>FA-20-5-75</u> . . . . .	. <u>Shakun Island</u>
FA-20-6-75 . . . . .	. Shakun Island
RA-40-2-72 . . . . .	. Nukshak Island

Hydrography run on FA-10-5-75 on 23 May, when the Kinak Bay gage was inoperative, may be controlled by tide data from the Takli Island gage.

Hydrography run on FA-10-7-75 on 29, 30 June and 1 July, before the Kuliak Bay tide gage was installed, may be controlled by tide data from the Missak Bay tide gage.

VELOCITY TABLE 0001 ✓

SOUND VELOCITY CORRECTOR ABSTRACT

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

RA-40-2-72 ✓
FA-20-6-75 ✓
FA-20-4-75 ✓
FA-20-5-75 ✓

(H-9306) ✓
(H-9540) ✓
(H-9543) ✓
(H-9544) ✓

DEPTH (FATHOMS)

CORRECTOR (FATHOMS)

0.0-3.0 ✓
3.1-9.2 ✓
9.3-16.2 ✓
16.3-23.5 ✓
23.6-33.0 ✓
33.1-43.0 ✓
43.1-54.5 ✓
54.6-72.0 ✓
72.1-98.2 ✓
98.3-260.5 ✓
260.6-273.4

+ 0.0 ✓
0.1 ✓
0.2 ✓
0.3 ✓
0.4 ✓
0.5 ✓
0.6 ✓
0.7 ✓
0.8 ✓
1.0 ✓
0.8 ✓

ABSTRACT OF RAYDIST EQUIPMENT UTILIZATION ✓

H-9543

BASE STATION LOCATIONS

JULIAN DAYS 206 thru 226

Unit S/N 124, Frequency 1650.015 KHz, 35 ft whip antenna on a 20 ft. tower with a 50 ft radial ground plane.
Location: NUN 1941, 58°11'09.814"N, 153°13'00.407"W.

Unit S/N 125, Frequency 1650.425 KHz, 35 ft. whip antenna on a 30 ft. tower with a 50 ft. radial ground plane.
Location: NUKSHAK 1908 1967, 58°23'30.078"N, 153°57'43.076"W.

MOBILE TRANSMITTER

FA-5: Model TA-96B, S/N 96, Frequency 3300.465 KHz.

MOBILE NAVIGATOR

FA-5: Model ZA-75C, S/N 21, Frequency 435/385 Hz.

OPR 478

SHELIKOF STRAIT, ALASKA

SUMMER 1975 ✓

STATION LIST: H-9543

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STA	0	LATITUDE	LONGITUDE	CRT	ELEV	F	KHZ	SOURCE
---	-	-----	-----	---	---	---	---	-----
		NUN 1941						
001	0	58 11 09814	153 13 00407	250	0046	330040	Q	58153
		MISS 1975						
025	0	58 06 40858	154 18 45667	250	0011	000000	(1)	
		KOMO 1975						
033	0	58 13 59053	154 08 13381	250	0020	000000	(1)	
		DIME 1949						
034	0	58 16 33710	154 06 06581	139	0016	000000	Q	58154
		TP-12 1975						
035	0	58 15 39970	154 10 19362	250	0007	000000	(1)	
		NUKSHAK 1908 RM7 1975						
036	0	58 23 30702	153 57 44232	250	0038	000000	(1)	
		NUKSHAK 1908 RM6 1971						
037	0	58 23 29514	153 57 40528	139	0035	000000	Q	58153
		YUGNAT 1949						
039	0	58 21 22216	154 02 36319	139	0012	000000	Q	58154
		NUKSHAK 1908 1967						
040	0	58 23 30078	153 57 43076	250	0041	330040	Q	58153
		NINAGIAK 1967						
041	0	58 27 30973	153 59 12817	139	0056	000000	Q	58153
		HOOK 1967						
042	0	58 27 42600	154 04 23981	250	0005	000000	Q	58154

(1) REFER TO HORIZONTAL CONTROL REPORT, OPR-478-FA-75

APPROVAL SHEET ✓

Field No. FA-20-4-75

Register No. H-9543

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



Cdr. Richard E. Alderman
Commanding Officer
NOAA Ship FAIRWEATHER (MSS-20)

Report On Corrections To Echo Soundings
 OPR-478
 Southern Alaska, Shelikof Strait
 1975

INTRODUCTION

Two Nansen casts and four Martek TDC casts were taken in Shelikof Strait, Alaska, during OPR-478, as follows:

<u>Type</u>	<u>Date</u>	<u>Depth, m</u>	<u>Latitude</u>	<u>Longitude</u>
Nansen #1	25 July 75	315	58/00/00 N	154/23/10 W
Nansen #2	19 August 75	220	58/07/30 N	154/00/30 W
Martek #1	17 June 75	150	58/06/00 N	154/24/00 W
Martek #2	17 June 75	70	58/11/00 N	154/28/00 W
Martek #3	17 June 75	125	58/05/00 N	154/30/00 W
Martek #4	20 August 75	127	58/38/00 N	153/18/00 W

FATHOMETERS

<u>Vessel</u>	<u>Instrument</u>	<u>Model</u>	<u>S/N</u>
FA-3	Ross Fineline	200-A	204065
FA-4	Ross Fineline	5000	1047
FA-5	Ross Fineline	5000	1046
FA-6	Ross Fineline	5000	1054
Ship	Ross Fineline	5000	1047

TRANSDUCER AND INITIAL CORRECTIONS

	<u>TRA Corr</u> (fathoms)	<u>Initial Corr</u> (fathoms)	<u>Total Corr</u> (fathoms)
FA-3	+0.4	0.0	+0.4
FA-4	+0.4	0.0	+0.4
FA-5	+0.4	0.0	+0.4
FA-6	+0.4	0.0	+0.4
Ship	+2.6	0.0	+2.6

The launch TRA corrections are based on bar checks taken as often as weather and seas permitted. The ship TRA correction is based on the ship's known draft and previous lead line comparisons.

SOUND VELOCITY CORRECTORS

Sound velocity correctors were obtained with program RK-530, version dated 06/25/74, on the ship's PDP 8/E. Correctors for sheets H-9519, H-9520 and H-9521 were obtained by meaning the first three Martek casts. Correctors for sheets H-9518, H-9522, H-9523 and H-9524 come from the first Nansen cast. Correctors for sheets H-9306, H-9540, H-9543 and H-9544 come from the second Nansen cast. Data from the fourth Martek cast (20 August 1975) was not used in the computation of the velocity correctors because of the shallowness of the cast. The values from the second Nansen cast, which were in excellent agreement with the Martek values, were used to correct the soundings on the sheets in the vicinity of the fourth Martek cast.

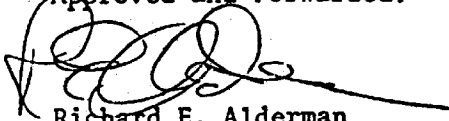
Velocity corrector curves were drawn using these values and correctors scaled in accordance with the Hydrographic Manual. Tables of velocity correctors are enclosed in this report. Due to the temperature profile of the water column in Kinak and Amalik Bays during the months of June and July, correctors are generally less than 0.5% of the depth at all depths. According to the Hydrographic Manual, these correctors are therefore negligible and are not individually tabulated (See Velocity Table 0002). Correctors for the second Nansen cast in August are generally greater than 0.5% of the depth and are tabulated in Velocity Table 0001.

To be consistent with the raw depths which are read to nearest tenth by the digital system, table 0002 was changed to be read as the depiction on the velocity correction graph. See velocity table 0002 on this report.

Submitted by:

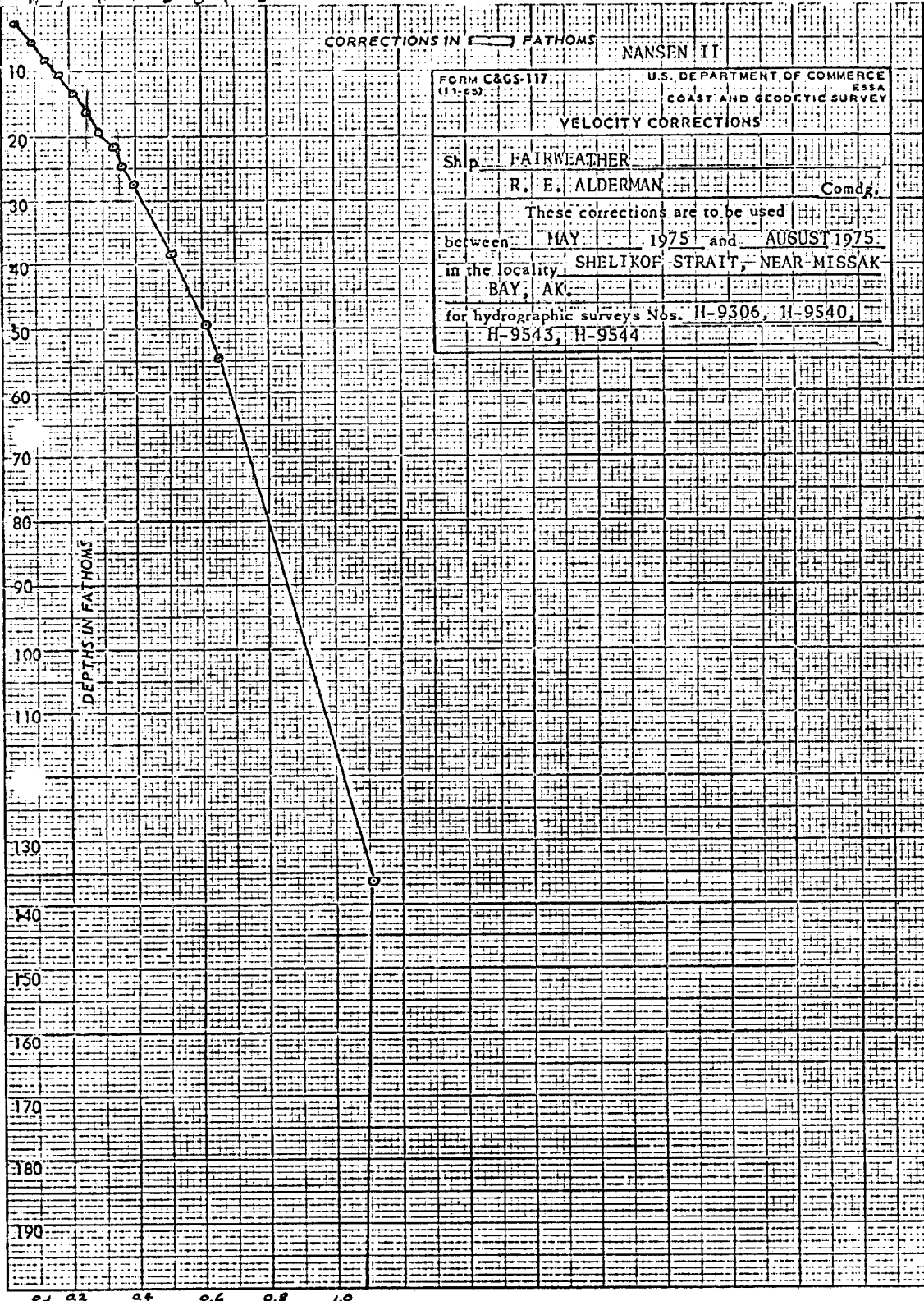
John C. Albright
for Stephen L. Poole
ENS, NOAA

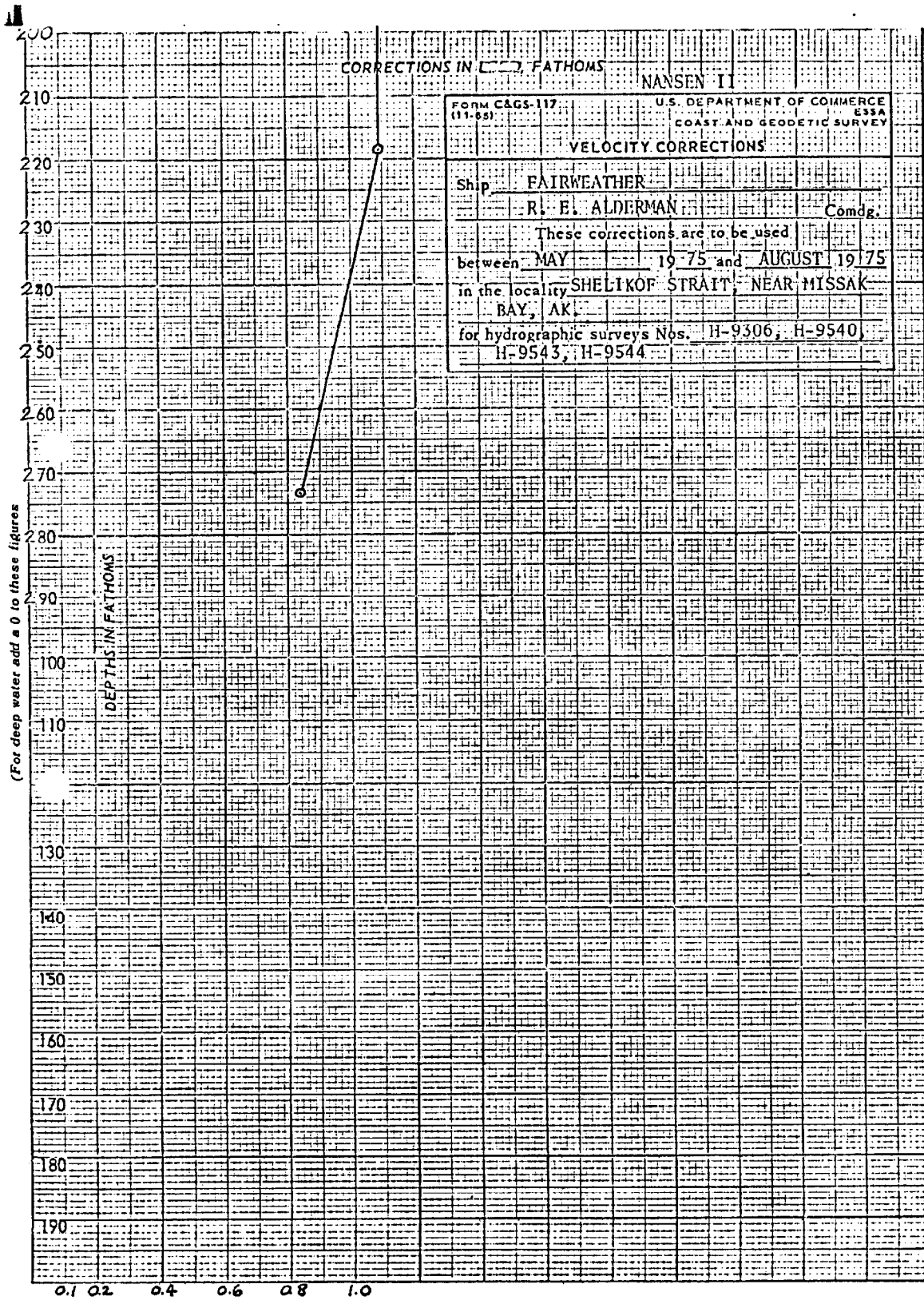
Approved and Forwarded:


Richard E. Alderman
CDR, NOAA
Commanding Officer
NOAA Ship FAIRWEATHER

1 2 3 4 5 6 7 8

(For deep water add a 0 to these figures.)





RANGE-AZIMUTH METHOD OF SURVEY ✓

I. Rationale for Using:

A large portion of the hydrographic survey of OPR-478-FA-75 in Shelikof Strait, Alaska was accomplished using Range-Azimuth survey methods. The primary factor that made Range-Azimuth the most expedient method of control was the topography of the area surveyed. Several of the bays surveyed were long, narrow, fjord-type inlets with branching inlets behind small peninsulas or with major curves or necks in them. Horizontal control in the survey area was very sparse and poorly situated for hydrographic use. The amount of horizontal control necessary to establish electronic control for Range-Range survey was monumental. To adequately survey Kinak Bay alone would have required ten setups with twenty stations to be established. By using Range-Azimuth control only four stations were necessary. Photogrammetric establishment of control points was not possible, since the majority of the manuscripts available were Preliminary and were not upgraded to Incomplete until midway into the Project.

II. Method of Acquiring Data:

Range-Azimuth surveying was done with the ASI Logger equipped, Bertram launches using Mini-Ranger III for electronic control. Horizontal control for the azimuth control station was established by third-order traverse from existing triangulation stations. Azimuth data was taken with Wild T-2 theodolites read to the nearest minute of arc. The Mini-Ranger III transponder and theodolite were set up coincident over the azimuth control station.

Data was acquired by the ASI Logger running in regular range-range mode with the channel II information superfluous. Arcs were run controlled by the Mini-Ranger III with azimuth data taken every thirty seconds to one minute depending upon sounding interval. Marks were radioed from the launch to the azimuth station. Azimuth data in return was radioed back to the launch and hand entered on the data printout for later editing. Shore stations were generally manned by one person.

III. Data Processing:

While Range-Azimuth surveying was being accomplished, the RK 337 reformatting program was not adequate to handle the data being generated. A change request was initiated to MDSP and the program changed to become sufficient for later use. The method used at the time was to reformat the ASI tape using RK 337 and then to use AM 602, Elinore, to hand enter the azimuth data in correct format and position

1/6/76

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for Form 362

Tide Station Used (NOAA Form 77-12): Nukshak

Period: July 24 - August 13, 1975

HYDROGRAPHIC SHEET: H-9543

OPR: 478

Locality: Shelikof Strait

Plane of reference (mean lower low water): 11.1 ft.

Height of Mean High Water above Plane of Reference: 12.3 ft.

Remarks: Recommended zoning:

- (1) South of $58^{\circ}27'$
- (2) North of $58^{\circ}27'$

Zone direct
Apply range ratio x1.02

James R. Harland
Chief, Tides Branch

GEOGRAPHIC NAMES

Survey No.

H-9543

Name on Survey

	A	B	C	D	E	F	G	H	K	
	On Chart No	On previous survey No	On U. S. Quadrangle Maps	From local information	On local maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
CAPE CHINIAC	✓									1
CAPE NUKSHAK	✓									2
HALLO BAY	✓									3
NINAGIAK ISLAND	✓									4
NUKSHAK ISLAND	✓									5
SHELLKOF STRAIT	✓									6
HALLO CREEK	✓									7
HOOK CREEK										8
NINAGIAK RIVER										9
										10
										11
										12
										13
										14
										15
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										19
										20
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										22
										23
										24
										25
										26

APPROVED

Chas. E. Harney

STAFF GEOGRAPHER - CS1x2

12 April 1977

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9543

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET with smooth PNO & excess overlay		1	BOAT SHEETS (2 parts, paper)		1 ²	
DESCRIPTIVE REPORT		1	OVERLAYS (3 preliminary)		3 ⁸	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES			with sawtooth 1			
CAHIERS	1-with printouts 2					
VOLUMES	1					
BOXES						
T-SHEET PRINTS (List)						
Class I Manuscripts T-13157, T-13159 and T-13160 - not received at registration 3/21/77						
SPECIAL REPORTS (List)						
1-105 mm. neg. 1-3D plot						

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				1776
POSITIONS CHECKED		1776		
POSITIONS REVISED		114		
DEPTH SOUNDINGS REVISED		210		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
	TIME (MANHOURS)			
Verification of Control	4	1		
Verification of Positions		56		
Verification of Soundings		137		
Smooth Sheet Compilation		112		
ALL OTHER WORK		16		
TOTALS	4	342	HIT 12	
PRE-VERIFICATION BY	James S. Green		BEGINNING DATE	ENDING DATE
VERIFICATION BY	Bruce Alan Olmstead		BEGINNING DATE	ENDING DATE
REVIEW BY QUALITY CONTROL BY	K. W. Wellman		BEGINNING DATE	ENDING DATE
	D.R. Engle		3-25-77	4-12-77

43 hrs.
8 hrs
5-5-77 Baumgardner 5 hrs 6-9-77
* U.S. G.P.O. 1972-769-562/439 REG.#6

Reg. No. _____

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

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

CARDS CORRECTED

DATE _____ TIME REQ'D _____ INITIALS _____

REMARKS:

Reg. No. H-9543

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

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

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQ'D _____ INITIALS _____

REMARKS:

H-9543

Information for Future Presurvey Reviews

The submerged rock charted in the vicinity of latitude 58°27.90', longitude 153°58.40' (see Verifier's Report--section VII(a)), and the submerged rock carried forward to the present survey from T-9036 in the vicinity of latitude 58°24.96', longitude 153°59.40', should be verified or disproved during future work in the area.

<u>Position Index</u>		<u>Bottom Change Index</u>	<u>Use Index</u>	<u>Resurvey Cycle</u>
<u>Lat.</u>	<u>Long.</u>			
582	1541	2	0	50 years
582	1540	2	0	50 years
582	1535	2	0	50 years

Verifier's Report

Registry No: H-9543

Field No: FA-20-4-75

State.....Alaska
General Locality.....Shelikof Strait
Locality.....Hollo Bay

Surveyed: 24 July - 14 August 1975

Project No: OFR-478

Scale: 1:20,000

Soundings: Ross 5000 Finline

Control: Raydist & RA AZ

Chief of Party.....CDR R. E. Alderman

Surveyed by.....Ship's Officers

Plotted by.....PMC Kynetics Plotter

Verified by.....B. A. Olmstead

1/18/77

Inspected by.....PMC HIT

This survey was verified and plotted at the Pacific Marine Center, Seattle, Washington. Information relating to this survey is provided as specified in Chapter 6 of the Provisional Hydrographic Manual.

I. INTRODUCTION

This survey was conducted in July thru August of 1975 by the NOAA Ship FAIRWEATHER. Operating under Project Instructions OPR-478-FA-75 dated 25 April 1975, this area of Shelikof Strait comprises a basic hydrographic survey utilizing the Navigable Area concept inshore of Hallo Bay. Ship and launches operated primarily within the sheet limits as defined by a diagonal from Cape Nukshak to Cape Chiniak including Hallo Bay eastward to depths of 76 fathoms. Shelikof Strait separates Kodiak and adjoining islands from the mainland of Alaska.

Numerous lane jumps were encountered with FA-5 using the Hastings Raydist electronic positioning equipment in the early part of the survey. This data was not plotted on the smooth field sheet but retained as supplemental information. A cursory inspection of this hydrography was made by means of a separate plot and overlaid with the PSS. Several conflicts of hydrography were readily evident, especially in agreement of crosslines. Application of correctors to positional data, was recovered from the strip chart but obviously not all errors in control were resolved and was thus resurveyed.

Copies of the smooth field sheet and Kynetics generated plot differ in several instances by 50 meters. Specifically, in those areas of hydrography where tight concentric arcs were run using Range-Azimuth. The PDP-8 computer employed straight line interpolation whereas the Harris computer system interpolated on the arc in determining a position for each sounding.

The Abstracts of Positions and Electronic Correctors as appended in the Descriptive Report do not reflect the ship's final plot. True and accurate data is reflected within the Master Corrector Tapes. The list of stations submitted within the Descriptive Report reflect the entire OPR for Project 478. The projection parameters and signal list were amended to accommodate the orientation of this individual sheet. The corrected listings for plotting and reduction of soundings are submitted with the smooth position and sounding printouts.

H-9543 (FA-20-4-75) combines the principles of a basic survey, utilizing the Navigable Area concept along the inshore reaches of hydrography. The present survey of Shelikof Strait updates an area of relatively no hydrographic information before 1975. With the exception of four prior surveys dated 1908, 1949, and 1971, no other basic surveys were conducted. A reconnaissance survey was run by the NOAA Ship RAINIER in 1972. With this data accounted for, the present survey is adequate to supersede the common areas of prior work and charted hydrography except as noted in the chart comparison section with this report.

II. CONTROL AND SHORELINE

The origin of control is given in Part F of the Descriptive Report and the Horizontal Control Report for OPR-478-FA-75.

The shoreline originates with unreviewed Class I manuscripts T-13157, T-13159 and T-13160. Photography is dated ~~November and December 1970~~, 1967. Date of field edit ~~was accomplished in June and July of 1976~~. (See Q.C. Report - item 3) ✓
is 1975.

Several revisions to the Class III shoreline manuscripts by the field editor were not reflected on the smooth field sheet. One particular feature, a rock awash located at Latitude $58^{\circ}28'42''N$, Longitude $154^{\circ}01'30''W$, is neither shown on the field edit or ~~original~~ boatsheet, as an additional item to be photogrammetrically compiled. Yet, this new information has appeared on the Class I manuscript for application to the smooth sheet.

High and low water lines are constantly changing in the vicinity of the mouth of Hallo Creek and are substantially different from the time the photographs were taken. Hallo Bay west of Longitude $154^{\circ}02'00''W$ and north of $58^{\circ}26'00''N$ is extremely shallow.

Several rocks on the T-sheet contain no height information at MLIW.

III. HYDROGRAPHY

Depths at crossings are in good agreement.

The bottom configuration was adequately developed. With the exception of a few isolated peaks, the determination of least depths was satisfactorily defined. All standard depth curves are complete and accurately delineated except for that portion of Hallo Bay which is extremely shallow. (See H.I.T. Report and Q.C. Report - item 5)

The manuscript low water line is in direct conflict with the hydrography in much of Hallo Bay. However, such can be expected as mentioned previously in the control and shoreline section of this report. A dashed orange curve was added by the verifier where insufficient sounding data would not permit an accurate determination of location.

IV. CONDITION OF SURVEY AND COMPLIANCE WITH INSTRUCTIONS (See Q.C. Report - item 6)

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements as stated in the Provisional Hydrographic Manual with the exception of;

- a. The smooth field sheet does not reflect all changes made by the field editor in red.
- b. Two Master Electronic Corrector Tapes were generated with overlapping times of hydrography for the same day (218) and containing vastly different rate correctors. ? *Two control systems used - Mini-Ranger and Raydist.*
- c. Duplicate lines of hydrography were run.

4524-4538	Day 209
4809-4823	Day 219

- d. The abstracts for positions and calibration correctors for plotting as submitted in the Descriptive Report do not reflect the final ship's plot.

This survey is in compliance with the Project Instructions with the exception of:

- a. Section 4.3 states that a tide ~~g~~age shall be operated the entire period of the survey on Cape Nukshak. The geographic coordinates as written in the instructions would place the gage on Nukshak Island. Indeed, the field tide note states a Bristol Bubbler tide gage was installed and operated satisfactorily during the survey period on Nukshak Island.

V. JUNCTIONS

An adequate junction was affected with H-9544 (FA-20-5-75) along the entire northern limits of this survey. H-9201 (RA-40-1-71) is an adjoining contemporary survey to the east along the standard 50-fathom depth curve. An extensive overlap of soundings exists from Latitude 58°26'00"N to the southern limits of this sheet. There is no overlap in the northern half and insufficient sounding data on H-9201 in this area does not permit the depiction of a 50-fathom curve. However, an adequate junction was made along the entire eastern limits. H-7822 (ELJ-2149) is a ^{reviewed} ~~pencil-drawn~~ smooth sheet ~~yet to be verified and inked.~~ (See Q.C. Report - item 7)

An acceptable junction in the extreme southeast section of the present survey was made excluding the 50-fathom curve that is not present on the 1949 work. H-7812 (LJ-4149) was not joined due to extreme differences in depth. Disagreement in the hydrography is most likely due to the absence of modern surveying methods and the limitations of visual control. (See Q.C. Report - item 8)

All curves with the adjoining surveys were inked in their entirety within the common area. (See Q.C. Report - item 9)

VI. COMPARISON WITH PRIOR SURVEYS

H-2980 (1908) 1:200,000

Very few sounding comparisons could be made with this prior work as no inshore depths were surveyed. Therefore, since this area is for the most part virgin waters, no generalizations could be drawn.

There were no pre-survey review items to be discussed on this sheet.

The present survey H-9543 (FA-20-4-75) is adequate to supersede all prior survey information within the common area.

VII. COMPARISON WITH CHART

A chart comparison was made with Chart 16580, 5th Edition, May 17, 1975 and Chart 16603, 4th Edition, July 13, 1974. The charted hydrography originates primarily with the previously discussed prior survey and reconnaissance work done by the RAINIER in 1972. (C.L. 1945 (1972))

The present survey is adequate to supersede the charted hydrography within the common area, except as noted:

- a. The submerged rock charted at Latitude $58^{\circ} 28' 54''$ N, Longitude $153^{\circ} 58' 30''$ W was searched for but not found. (No source could be readily ascertained.) Hydrography was run throughout the nearby area with no indication of the existence of rocks. Because Shelikof Strait is filled with pinnacle rocks, the verifier recommends retaining this feature on the chart.

No floating or fixed aids to navigation are located within the limits of the survey area.

VIII. ADDITIONAL FIELD WORK

The integration of basic and navigable area survey concepts produced in this portion of Shelikof Strait, result in a good hydrographic sheet. (See Q.C. Report-item 10)

Respectfully submitted,

Bruce A. Olmstead

Bruce A. Olmstead
Cartographic Technician
January 18, 1977

Examined and approved,

J. S. Green
James S. Green
Chief, Verification Branch

APPROVAL SHEET

FOR

SURVEY H-9543

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

Date:

2/15/77

Signed:

J. S. Green

Title:


Chief, Verification Branch



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

Date: 28 February 1977

To: Eugene A. Taylor, RADM
Director, PMC

From: 
Donald E. Nortrup, LCDR
Chief, Processing Division

Subject: PMC Hydrographic Survey Inspection Team Report, H-9543

This survey is a navigable area survey of a portion of the western side of Shelikof Strait, AK, including Hallo Bay. The survey was conducted by NOAA Ship FAIRWEATHER in 1975 in compliance with Project Instructions OPR-478-FA-75, dated 25 April 1975.

This is a well-executed survey which adequately delineates the bottom configuration of the area. Inshore development is generally good considering the navigable area nature of the survey. With minor exceptions, the survey delineates the one-fathom curve or extends coverage to within 200 meters of the high water line. There are a few areas in which additional hydrographic development would have been desirable; however, these areas are of relatively minor significance. Depth curves in the vicinity of 58°26.4'N, 154°00.0'W parallel sounding lines and, as a result, their placement required interpolation.

Both the Class I Shoreline Manuscript and the final Field Sheet depicted limit lines with the label "shallow". This line was construed by the inspection team to constitute an undefined surrogate depth curve and, as such, to be redundant in the presence of hydrography. This shallow limit line can easily be confused with a foul limit line. Consequently, these lines have not been depicted on the smooth sounding sheet. It is recommended that they be removed from the Shoreline Manuscripts during final review of those documents.

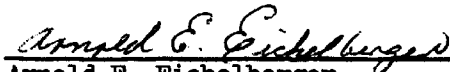
It was discovered during the inspection process that velocity correctors had been misapplied to the sounding data resulting in all smooth sheet depths being depicted in error by 0.1 fathom. The error is such

that all depths appear to be deeper than actual depths. It is the opinion of the inspection team that the magnitude of the error does not warrant replotting of the survey. Digital records have been corrected. (See Q.C. Report - item 5)

The inspection team finds survey H-9543 to be a good navigable area survey, adequate for charting purposes and to supersede common areas of prior surveys. Administrative approval is recommended.


Donald E. Nortrup, LCDR


Dean R. Seidel, LCDR


Arnold E. Eichelberger


John A. Albright, LCDR

ADMINISTRATIVE APPROVAL
H-9543

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



Eugene A. Taylor, RADM
Director
Pacific Marine Center

Date



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

C352

April 12, 1977

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

THRU: Chief, Quality Control Branch

FROM: K. W. Wellman *K. W. Wellman*
Quality Evaluator

SUBJECT: Quality Control Report for H-9543 (1975), Alaska, Shelikof Strait, Hallo Bay and Vicinity

A quality control inspection of H-9543 has been accomplished to evaluate the accuracy and adequacy of the survey with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, junctions, shoreline transfer, decisions and actions by the verifier, and cartographic presentation of data.

Junctional sheet H-9544 (1975) is not available for a quality control inspection of the junction, the adequacy of which will be considered during the course of its quality control inspection.

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

1. The smooth sheet is unnecessarily large. The standard width of 36 inches, as specified in the provisional manual, would have been more than adequate (see provisional manual--sections 1.2.4 and 7.2.2).
2. It appeared that the actual tide correctors had not been applied to the observed field edit rock elevation data on the boat sheet, thus necessitating an examination of such elevations during the quality control inspection. Several rock elevations on the verified smooth sheet found to be in error were revised. In one observation, the time was erroneously shown on the boat sheet as 1150 Z rather than 1750 Z (latitude 58°28.75', longitude 153°59.70') resulting in a 10-foot difference in the applicable tide corrector.
3. The dates of photography and field edit were misidentified as 1970-76 in section II of the Verifier's Report. The listed photogrammetric manuscripts are actually dated 1967/75.



4. Superfluous inland detail had been applied to the southwest corner of the smooth sheet from T-13159. In addition, a black, dotted, low water line, ostensibly from T-13159, was shown on the verified smooth sheet in a few areas where no such low water line is indicated on the T-sheet. During quality control inspection, the questionable dotted low water lines were replaced by a dashed zero-depth curve.

5. In some areas of the smooth sheet the 0.1-fathom sounding variance mentioned in the H.I.T. Report caused an unrealistic distortion of some of the depth curves. Selected soundings should have been reexamined and revised during processing to rectify significantly distorted depth curves. A few such revisions were made during the quality control inspection.

Section III of the Verifier's Report is supplemented by the following:

In a few instances, however, smooth sheet soundings were corrected to rectify anomalous depth curves.

6. Comments on compliance with instructions were inappropriately included in section IV of the Verifier's Report (Condition of Survey . . .). Such comments should be included in a separate section of the Verifier's Report rather than in the section entitled "Condition of Survey" (see provisional manual--section 6.6(13) and the memorandum dated March 21, 1977, "Verifier's Report Format," from the Office of Marine Surveys and Maps).

7. Reference Verifier's Report--section V: The report states that junctional sheet H-7822 (1949) is an unverified survey. This survey, H-7822, was verified, reviewed, and inspected in 1951. Apparently the verifier's copy of H-7822 was made from a superseded negative.

8. Reference Verifier's Report--section V: The bromide print of junctional survey H-7812 in the verifier's possession was also made from a superseded negative resulting in his statement of extreme differences in the junctional area. An adequate junction was effected with H-7812 (1949) on the south during quality control inspection.

9. Additional work, necessary to complete the junctions described in section V of the Verifier's Report, was accomplished during the quality control inspection of the present survey.

10. Section VIII of the Verifier's Report (Additional Field Work) is lacking any recommendation concerning additional field work (see provisional manual--section 6.6(14)) and is therefore supplemented by the following:

No additional field work is recommended.

11. The prior photogrammetric survey T-9036 (1949), determined to be the source of some of the charted topography but not reflected on any prior hydrographic survey, was compared with the present survey during quality control inspection.

Section VI of the Verifier's Report is supplemented by the following:

T-9036 (1949) 1:20,000

A comparison between the present and prior surveys reveals minor changes in the high water line in the vicinity of the mouth of Hallo Creek and, therefore, confirms the verifier's comments in section II of the Verifier's Report.

A rock awash on the prior survey in latitude $58^{\circ}24.96'$, longitude $153^{\circ}59.41'$ is not disproved by the present survey and was carried forward as a submerged rock during quality control inspection. Two additional rocks awash on T-9036 in latitude $58^{\circ}25.19'$, longitude $153^{\circ}59.18'$ and latitude $58^{\circ}25.19'$, longitude $153^{\circ}59.00'$ fall in present depths of 39 fathoms and are not shown on T-13160. Their existence in such depths is not considered likely and they were therefore not carried forward to the present survey.

cc:
C351



Cht 8556

For detailed information
use large scale charts.

