9520

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 ..... NAVIGABLE AREA

Field No. FA-10-4-75

Office No. H-9520

LOCALITY

State ..... ALASKA

General Locality ..... SHELIKOF STRAIT

Locality ..... ENTRANCE TO KINAK BAY

.....

19 75

CHIEF OF PARTY
R. E. Alderman

LIBRARY & ARCHIVES

DATE ..... June 8, 1977

☆ U.S. GOV. PRINTING OFFICE: 1975—668-353

9520

Area 6

Charts
8502
8556
8500

8556 ✓
8502 ✓

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.: H-9520

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-10-04-75

State: ALASKA

General locality: Shelikof Strait

Locality: Entrance to Kinak Bay

Scale: 1:10,000 Date of survey: 22 May - 29 June 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: LT(jg) Deborah Astle, NOAA

Soundings taken by echo sounder, hand lead, pole: Ross Fineline Fathometer (S/N's 204065, 1046, 1047, 1054)

Graphic record scaled by: Ross Digitizer

Graphic record checked by: FAIRWEATHER Personnel

Positions verified by: F. L. Rosario Automated plot by: PMC/Xynetics Plotter

Soundings Verification by: F. L. Rosario

Smooth Survey Sheet completed by L. Deodate/E.L. Rosario

Soundings in fathoms [redacted] at [redacted] MLLW

REMARKS: All survey records were kept on GMT. The mean longitude of the survey is 154°24'00"W.

Navigable Area Survey

applied to atds 9/20/77
CAB

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

2

☆ U. S. GOVERNMENT PRINTING OFFICE: 1976—665-661/1222 REGION NO. 6

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.

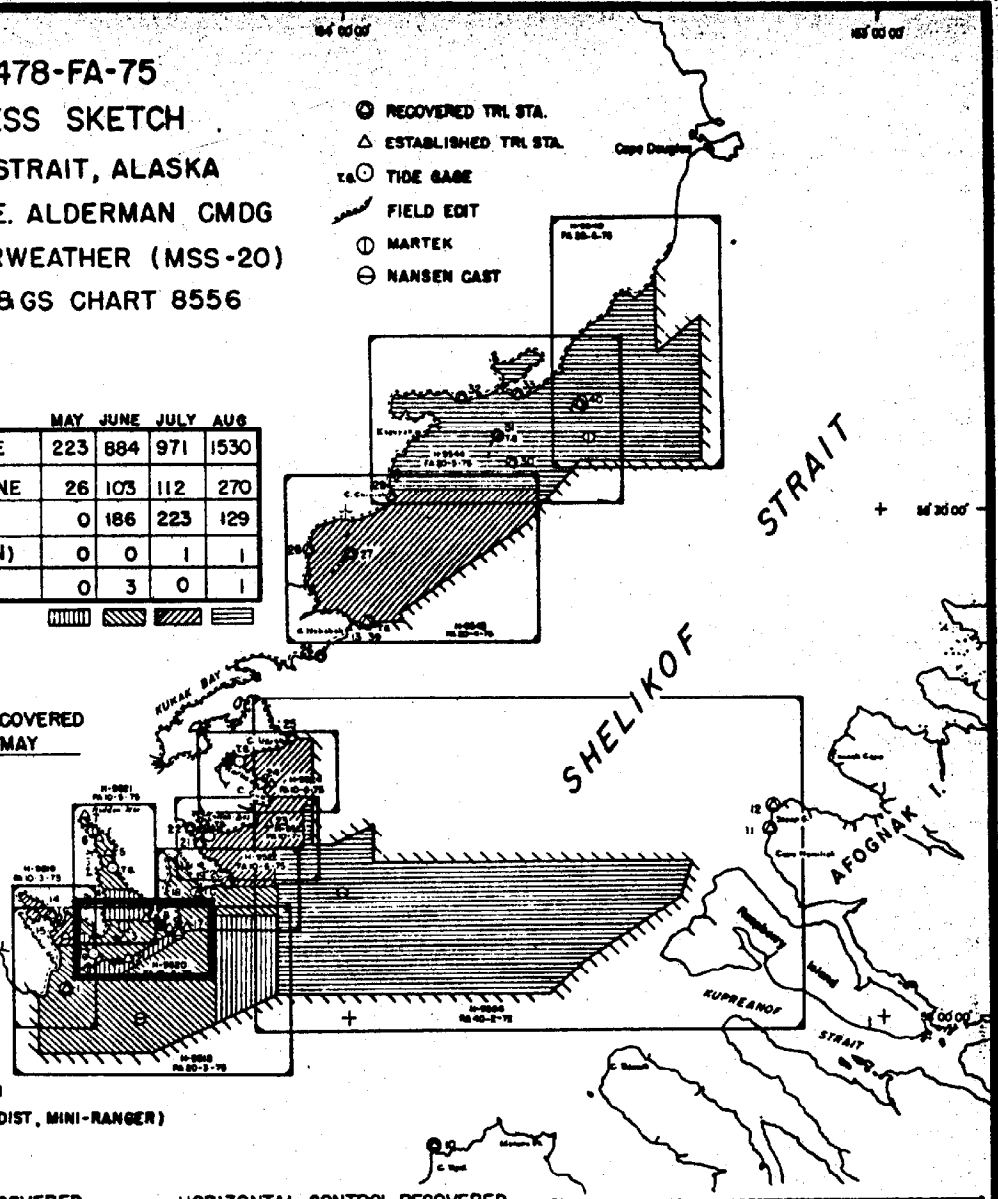
T.G. TIDE GAGE

FIELD EDIT

MARTEK

NANSEN CAST

	MAY	JUNE	JULY	AUG
LNM SOUNDING LINE	223	884	971	1530
SQ 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

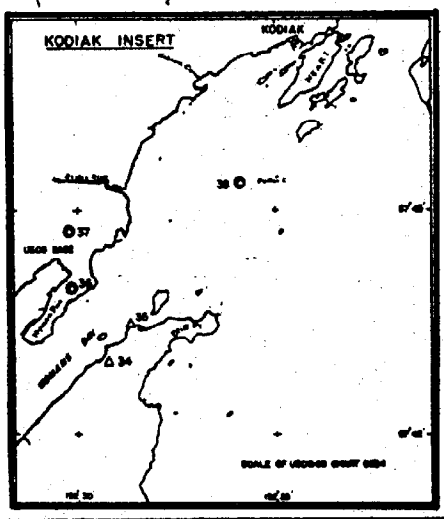
39 NUKSHAK, 1908 RM 7-1975 (MINI-RANGER)
40 KIUKPALIK, 1908-1967 (MINI-RANGER)

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

KODIAK INSERT

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



3

DESCRIPTIVE REPORT

NOAA SHIP FAIRWEATHER(MSS-20)

OPR-478-FA-75

SURVEY H-9520(FA-10-4-75)

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 3 dated 6 May 1975, 28 May 1975, and 6 June 1975 respectively, and the PMC OPORDER.

B. AREA SURVEYED

The area surveyed on sheet FA-10-4-75 is located at the entrance to Kinak Bay on the northern coast of Shelikof Strait, and extends from Takli Island to Cape Atushagvik. It is bounded on the north and south by latitudes 58°05'38"N and 58°02'45"N. The western boundary is longitude 154°29'30"W and the eastern boundary is longitude 154° 16'00"W. A diagonal line between the following points forms the southeast boundary: 58°04'35"N, 154°18'30"W and 58°02'38"N, 154° 24'43"W. Hydrography was accomplished between May 22 and June 29 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), and 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 during the project, was used for each launch. The sound velocity correctors were determined from three Martek TDC casts taken within the project area. For details see Report on Corrections to Echo Soundings, OPR-478-FA-75. The depths of soundings on this survey range from 0 to 116 fathoms.

Sounding Instruments:

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

E. BOAT SHEET

The boat sheet projection used was a modified transverse Mercator. The scale is 1:10,000 and the skew is 0°. Two plotter sheets were required. The origin for FA-10-4A-75 is 58°02'18"N, 154°30'42"W. The origin for FA-10-4B-75 is 58°04'08"N, 154°30'42"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 the 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 ACTOR 1975, BRAD 1975, CAPE I 1975, POLK 1975, and RUSSIAN 1975. These stations were established by third-order traverse especially for this project. The pattern I Raydist base station was located over NUN 1941, and the pattern II station over CAPE UGAT 1908. Miniranger transponders were located over ACTOR 1975, ATUSHAGVIK 2 1967, POLK 1975, and RUSSIAN 1975.

All calibration signals were located over existing triangulation stations or stations established by third-order traverse especially for this project.

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; that report describes in detail the establishment of the additional control.

G. POSITION CONTROL

The Hastings Raydist electronic positioning equipment, operating in the range-range mode, was used to control most of the hydrography accomplished by FA-5 and FA-6 on this sheet.

The pattern I station was located over NUN 1941 at Cape Nuniliak near Raspberry Strait, and the pattern II station over CAPE UGAT 1908. Launches FA-5 and FA-6 were each equipped with a Raydist mobile transmitter, navigator, strip chart recorder, and a 9 ft. whip antenna. The strip charts were 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 was accomplished by three-point sextant fixes utilizing signals located over triangulation stations. Some difficulty with calibrations was experienced early

in the survey because of poor visibility, rough seas, and inexperienced personnel.

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 ACTOR 1975, ATUSHAGVIK 2 1967, RUSSIAN 1975, and BRAD 1975.

Hydrography was also accomplished by FA-6 utilizing Miniranger positioning equipment operating in the range-range mode. Transponders were located over POLK 1975 and RUSSIAN 1975. FA-6 experienced electronic failures in the positioning equipment and computer throughout the survey resulting in the delay of its completion.

No problems were experienced by the other launches in the Miniranger or Raydist operations during the survey.

H. SHORELINE

Shoreline detail information was obtained from shoreline manuscripts T-13174(Incomplete), and T-13175(Preliminary). Field edit on both sheets was completed in June 1975.

Delineation of the 0 fathom curve was not possible along most of the shoreline because of the rocks and ledges near shore.

I. CROSSLINES

Crosslines accounted for 8.1% of all hydrography completed on this survey. Comparisons at crossings agreed within one fathom except over steep bottom where discrepancies of up to two fathoms were noted.

J. JUNCTIONS

This survey junctions with the 1:20,000 scale contemporary survey FA-20-3-75(H-9518), and the 1:10,000 scale contemporary surveys FA-10-3-75(H-9519), FA-10-5-75(H-9521), and FA-10-6-75(H-9522). All junctions agreed within one fathom.

K. PRIOR SURVEYS

The only prior survey of the project area is survey T-2901, 1908 (1:19,170) and major discrepancies of up to 40 fathoms were found between the two surveys. A valid comparison cannot be made with the 1908 survey because no information was available regarding the positioning control used or the possible difference between the datum on which the survey was based(Valdez Datum) and the present

North American 1927 datum.

There were no Pre-Survey Review items in the area of this survey.

L. COMPARISON WITH CHART

The survey does not compare well with chart 16580(5th edition May 17, 1975, scale 1:350,000), although a meaningful comparison is difficult because of the large difference in scale between the chart and the survey. The depths appearing on this chart were probably taken from the prior survey T-2901, 1908, which apparently was based on a different datum then the North American 1927 datum, so a valid comparison between the chart and survey cannot be made. Soundings presently charted appear to be of a reconnaissance nature and should be revised in accordance with the results of this survey.

Four hazards to navigation were located during the survey. The first is a 1.7 fathom shoal in general depths of (continued on p. 5)

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 surveyed area.

O. STATISTICS

Vessel	Total Positions	Hydrography, n.m.
FA-3	116	26.4
FA-4	686	85.0
FA-5	28	3.3
FA-6	697	121.8
	1527	236.5

Total area - 12.7 sq. n.m.
Total Bottom Samples - 116

P. MISCELLANEOUS

Greenwich Mean Time was used for all survey records. The least depths at the following positions were determined by scuba divers: 58°04'26"N, 154°26'58"W(position 8657), and 58°04'26"N, 154°28'22"W (position 8658).

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 Reports, 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 range-range data and RK 216 version 2/14/75 to plot the range-azimuth data on the field sheet.

Submitted by:

Deborah Astle

LT(jg) Deborah Astle, NOAA

Section L continued

12-17 fathoms, located at latitude 58° 04.38', longitude 154° 20.23', 0.5 mile south of Cape Atushagvik. This uncharted shoal falls seaward of a charted 6 fathom sounding and represents a very real danger to navigation. Time limitations prevented a thorough development of this area and for this reason, and in the interest of safety, it is recommended that this feature be charted as a rock submerged 1.7 fathoms.

The other three hazards to navigation are a submerged reef and two submerged rocks located northeast of Takli Island at latitude 58° 04.05', longitude 154° 25.26', latitude 58° 04.43', longitude 154° 26.96', and latitude 58° 04.44', longitude 154° 28.37' respectively. The reef was developed by launch and the submerged rocks were investigated by divers. All three features are presently charted as rocks awash, on 1:350,000 scale chart 16580, the only existing chart covering this area.

APPROVAL SHEET

Field No. FA-10-4-75

Register No. H-9520

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.

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

OPR 478 SHELIKOF STRAIT, ALASKA SUMMER 1975

STATION LIST: H-9520

STA	O	LATITUDE	LONGITUDE	CRT	ELEV	F	KHZ	SOURCE
		NUN 1941						
001	0	58 11 09814	153 13 00407	250	0046	330040		Q 58153
		CAPE UGAT 1908						
002	0	57 52 26662	153 50 49444	250	0036	330040		Q 57153
		ACTOR 1975						
004	0	58 03 35541	154 24 53307	250	0030	000000		(1)
		BRAD 1975						
005	0	58 04 55029	154 25 06830	250	0024	000000		(1)
		ATUSHAGVIK 2 1967						
006	0	58 04 59861	154 18 52259	139	0018	000000		Q 58154
		CAPE 1 1975						
007	0	58 05 17609	154 20 01459	139	0126	000000		(1)
		POLK 1975						
008	0	58 06 59960	154 26 49393	250	0015	000000		(1)
		RUSSIAN 1975						
012	0	58 05 ~~50380~~ 50.160	154 22 ~~46050~~ 46.570	250	0011	000000		(1)
		MISS 1975						
025	0	58 06 40858	154 18 45667	250	0009	000000		(1)
		AK 1975						
026	0	58 07 33094	154 16 28408	250	0012	000000		(1)

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

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VELOCITY TABLE 0002

SOUND VELOCITY CORRECTOR ABSTRACT

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

FA-20-3-75	(H-9518)
FA-10-3-75	(H-9519)
FA-10-4-75	(H-9520)
FA-10-5-75	(H-9521)
FA-10-6-75	(H-9522)
FA-10-7-75	(H-9523)
FA-10-8-75	(H-9524)

DEPTH (FATHOMS)	CORRECTORS (FATHOMS)
0.0 - 273.4	+ 0.0

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): Takli Island

Period: May 22 - June 29, 1975

HYDROGRAPHIC SHEET: H-9520

OPR: 478

Locality: Shelikof Strait

Plane of reference (mean lower low water): May 19-June 8: 12.0 ft.
June 11-July 29: 5.9 ft.

Height of Mean High Water above Plane of Reference: 12.2 ft.

Remarks: Zone direct.

James E. Hubbard
for Chief, Tides Branch

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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 53Ø. 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:

SITE	LOCATION	PERIOD
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 occuring 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 occured 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 - Kaflia Bay: Events occured 0 to 15 minutes earlier at Kuliak Bay, the average being around 5 minutes earlier. The height range at Kaflia 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:

Field Sheet	Tide Gage
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	Kaflia Bay
FA-20-3-75	Takli Island
FA-20-4-75	Nukshak Island
FA-20-5-75	Shakun Island
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.

GEOGRAPHIC NAMES

Survey No.

H-9520

Name on Survey	On Chart No. -10- (A)	On previous survey No. (B)	On U.S. quadrangle Name (C)	From local information (D)	On local maps (E)	P.O. Guide or Map (F)	Rand McNally Atlas (G)	U.S. Light List (H)	Photogrammetric Manuscript (K)	
AMALIK BAY	16580		Quad A-2						T-13174	1
CAPE ATUSHAGVIK	16580		Quad A-1, A-2						13175	2
KINAK BAY	16580								13174	3
MISSAK BAY	16580								13175	4
RUSSIAN ANCHORAGE	16580								13175	5
SHELIKOF STRAIT	16580		Quad A-2						13175	6
KLI ISLAND	16580		Quad A-2						13174	7
										8
										9
										10
										11
										12
										13
										14
										15
										16
						APPROVED				17
						Chas. E. Harrington				18
						STAFF GEOGRAPHER			C542	19
						24 JUNE 1977				20
										21
										22
										23
										24
										25

17

APPROVAL SHEET

FOR

SURVEY H-9520

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: 5/23/77

Signed: [signature]

Title: Chief, Verification Branch

NOAA FORM 77-27 (9-72) (PRESC. BY HYDROGRAPHIC MANUAL 20-2, 6-94, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-9520

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, mylar)	~~1~~ 2
DESCRIPTIVE REPORT	1	OVERLAYS (preliminary)	4

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES			1-smooth pos. & sndg. & tides			
CAHIERS	2 1-with printouts					
VOLUMES	1					
BOXES			1			

T-SHEET PRINTS *(List)*

SPECIAL REPORTS *(List)*

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS: PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				1527
POSITIONS CHECKED		1527		
POSITIONS REVISED		4		
DEPTH SOUNDINGS REVISED		200		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		6		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
	TIME (MANHOURS)			
Verification of Control		27		
Verification of Positions		77		
Verification of Soundings		155		
Smooth Sheet Compilation		97		
ALL OTHER WORK	4	102		
TOTALS	4	458		

	BEGINNING DATE	ENDING DATE
PRE-VERIFICATION BY James S. Green	2/20/76	2/20/76
VERIFICATION BY Felipe L. Rosario — Felipe Rosario/Leo Deodato	7/1/76	3/17/77
REVIEW BY Insp. RW Derlazarian 64 hrs		7/25/77

Critique DWHill 9-7-77 4 Hrs

Cantrantano 13 hr 8/17/77

U.S. G.P.O. 1972-769-562/439 REG. #6

Reg. No. H-9520

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: pos. 2301
2306
4029-4050
6274
6386
6413
8102
8374
8534
8526-8527
8542-8544
8548-8550
8589
8732

Reg. No. _____

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

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

MAGNETIC TAPE CORRECTED

DATE_____ TIME REQ'D._____ INITIALS_____

REMARKS:

H-9520

Information for Future Presurvey Reviews

This survey falls in an area of a stable bottom and little change should be expected in future surveys. Future surveys should include least depth determination of the shoal in latitude 58°04.45', longitude 154°26.45', not fully developed by the present survey.

Position Index		Bottom Change Index	Use Index	Resurvey Cycle
Lat.	Long.			
580	1543	1	0	50 years
580	1542	1	0	50 years

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PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO: H-952Ø

FIELD NO: FA-1Ø-Ø4-75

Alaska, Shelikof Strait, Entrance to Kinak Bay

SURVEYED: May 22 to June 29, 1975

SCALE: 1:1Ø,ØØØ

PROJECT NO: OPR-478

SOUNDINGS: Ross Fineline Fathometer

CONTROL: Hastings Raydist
Mini-Ranger
Range (M/R)/Azimuth

Chief of Party.....R.E. Alderman, CDR, NOAA
Surveyed by.....D. Astle, LT(JG), NOAA
Automated Plot by.....Xynetics Plotter (PMC)
Verified and Inked by.....F.L. Rosario, Cartographic Tech.
L. Deodato, Sr. Survey Tech.,
NOAA Ship RAINIER
March 29, 1977

I. INTRODUCTION

Field work on H-952Ø, 1:1Ø,ØØØ (1975) was conducted 22 May to 29 June 1975 by the NOAA Ship FAIRWEATHER, MSS-2Ø. The Hastings-Raydist and the Mini-Ranger, both in the range-range mode, were used as the "pure" electronic positioning control. A WILD T-2 theodolite and the Mini-Ranger were used for the range/azimuth portions of this survey.

Soundings were obtained with Ross Fathometer. See Section D, Ship's Report.

Projection parameters used to prepare the boatsheet have been revised to plot H-952Ø. Parameters used by PMC are appended in the smooth printout. All correctors used to plot and reduce soundings on H-952Ø can be located in the smooth printout.

The data gathered reflects a highly irregular bottom, as indicated by the available foreshore soundings - at least to the 1Ø-fathom depth curve.

Verification and processing of this survey was affected by:

a. Sections of several days' fathograms had to be re-scanned when raw data notes indicated that the event marker was malfunctioning.

b. "Margin" notes were lacking, in many instances, either on the fathograms or the raw-data printouts.

Many sounding lines ended from 150 to 400 meters offshore. This fact, coupled with the inconsistency in spacing between sounding lines, precluded the inking of smooth depth curves in many inshore areas.

Field tide reductions of soundings are based on predicted tides from Seldovia, Alaska - corrected to Kukak Bay, Alaska. Soundings on the smooth sheet are reduced from Takli Island, Alaska, observed tides as obtained by bubbler tide gage (SN 62A297) and approved by the Tides Division, Rockville, Maryland.

Velocity computations performed by the FAIRWEATHER reflected correctors equal to less than 1/2 of 1 percent of the depth. Consequently, as per Provisional Hydrographic Manual (4-220), all velocity correctors were given as 0.00 for all depths. Refer to "Report on Corrections to Echo Soundings", OPR-478-FA-75 for graphs and computation printouts.

Smooth Survey Sheet inking and final checking was accomplished by L. Deodato (SST, Ship RAINIER), on temporary assignment to Verification Branch, PMC for cross-training purposes.

II. CONTROL AND SHORELINE

See Paragraphs F and G of the Descriptive Report for an adequate discussion on control for this survey.

The following Class I unreviewed manuscripts were used to transfer shoreline:

a. T-13174 of 1967-75
b. T-13175 of 1967-75

III. HYDROGRAPHY

The ~~basic~~ navigable area hydrography incorporated in this survey is adequate to delineate most of the bottom configuration.

H-9520 reflects a hybrid type of hydrographic operations in which basic hydrography was applied to all areas except shoreline and extensive shoal or foul areas where the "Navigable Area Survey" concept was followed.

In general, this survey depicts a very irregular bottom configuration down to depths of approximately 10 fathoms. Although it would have been desirable to have the sounding lines closer-spaced at these shoaler and/or foul areas, the Project Instructions were, in fact, adhered to.

See H IT Report
See Q.C. Report, para 7.

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IV. CONDITION OF SURVEY

The Project Instructions were faithfully adhered to. However, a slight more consistency in sounding line spacing (towards the foreshore areas) could have improved this survey. A glaring example is the strip from approximately Lat. 58°Ø2'45" to Lat. 58°Ø5'ØØ" and from approximate Long. 154°23'4Ø" to Long. 154°25'3Ø" down to the 2Ø-fathom curve. Likewise are the sounding lines (down to the 2Ø-fathom depths) in the vicinity of Cape Atushagvik.

Except for the aforementioned deficiencies, this hydrographic survey, the overlays, smooth sheet and reports are adequate and conform to the requirements of the Provisional Hydrographic Manual. It adequately complies with the 1975 PMC OPORDER and the Project Instructions, dated 25 April 1975, Change 1, 2 and 3, dated 6 May, 28 May and 6 June 1975, respectively.

V. JUNCTIONS

This survey junctions to the southeast with contemporary survey H-9518 (FA-2Ø-Ø3-75). Junction agreement was satisfactory with the depth curves inked accordingly.

Junction to the west with H-9519 (FA-1Ø-Ø3-75) was also satisfactory. Two shoal soundings of 1.6 fms and 3.7 fathoms (at approximately Lat. 58°Ø2'53", Long. 154°29'1Ø") were transferred from H-9519 (in red ink). These two soundings originated from a northwest to southeast sounding line (vs. the north-south sounding lines on H-952Ø) and tended to support a shoaling ~~trend~~ feature in this area. Also transferred from H-9519 was a 12-fathom sounding which fell among 14.7+ fathom soundings (at approximately Lat. 58°Ø2'42", Long. 154°29'15"). As was the trend on OPR-478-FA-75, the spacing of the sounding lines was often excessive and the foreshore ends of many sounding lines ended between 15Ø-4ØØ meters offshore.

To the northwest is the junction with H-9521 (FA-1Ø-Ø5-75). Soundings agreed reasonably well. Depth curves were inked accordingly.

Junction was made with H-9522 (FA-1Ø-Ø6-75) to the northeast. There, too, soundings were in good agreement, where common areas exist. The aforementioned deficiencies of lines ending way offshore and the excessively spaced soundings are very much in evidence.

VI. COMPARISON WITH PRIOR SURVEYS

T-29Ø1, 19Ø8 (Scale 1:19,17Ø)

The comparison with T-29Ø1 is of little value because of the unknown datum, scarcity of data and uncertainty of positioning accuracy of the prior. H-952Ø is adequate to supersede T-29Ø1 in the area of common coverage.

See Q.C. Report, para. B.

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There are no pre-survey review items in the area of this survey.

VII. COMPARISON WITH THE CHART

Chart #1658Ø (5th Edition, May 17, 1975; scale 1:35Ø,ØØØ) was used for a comparison of the surveyed area. However, the scale differences, the uncertainty of datums, and the lack of more representative soundings on the chart make for a very meaningless comparison.

The sparcity of charted soundings and the seemingly reconnaissance nature of the prior survey T-29Ø1 (19Ø8), scale 1:19,17Ø, makes H-952Ø, at the least, an adequate survey to supersede the charted soundings in the areas of common coverage.

There were no charted aids to navigation within the survey area. The four hazards to navigation uncovered during the survey (as referred to in Section L of the Descriptive Report) either substantiates features previously charted and/or are recommended to be charted. In the latter case is the 1.7 fathom shoal (in general depths of 12-17 fathoms) located at Lat. 58°Ø4.38', Long. 154°2Ø.23'.

VIII. COMPLIANCE WITH INSTRUCTIONS

Refer to Item IV. "CONDITION OF SURVEY" of the Verifier's Report.

IX. ADDITIONAL FIELD WORK

Additional field work is not recommended.

Respectfully submitted,

Felipe L. Rosario

Felipe L. Rosario
Cartographic Technician
March 29, 1977

Examined and approved,

James S. Green
Chief, Verification Branch

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

Date: 4 May 1977

To: Eugene A. Taylor, RADM
Director, PMC

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

Subject : PMC Hydrographic Survey Inspection Team Report, H-9520

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

This survey is in general compliance with the provisions of the project instructions. The approach to Kinak Bay is adequately delineated. A holiday, approximately 350 X 400 meters, exists at 58°04.3'N, 154°24.9'W. There appears to be clear channels between the islands and reefs off the east side of Takli Island. It would have been desirable to have at least one sounding line through these channels. Lines of hydrography parallel depth curves in the area west of Cape Atushagvik making the delineation of depth curves difficult.

It would have been desirable to have had additional development for least depth over several shoal soundings including the following:

6.6 at 58°03.2'N, 154°23.8'W
4.4 at 58°03.8'N, 154°25.1'W
4.2 at 58°04.6'N, 154°19.7'W
4.1 at 58°05.6'N, 154°21.4'W

Despite the detail deficiencies cited above, it is the opinion of the inspection team that none are sufficiently serious to warrant additional field work. This survey is considered to be a fair navigable area survey, adequate for charting and to supersede common areas of prior surveys. Administrative approval is recommended.

Donald E. Nortrup, LCDR

A. E. Eichelberger

John C. Albright, LCDR

Dean R. Seidel, LCDR

ADMINISTRATIVE APPROVAL
H-9520

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.

E. A. Taylor

Eugene A. Taylor, RADM
Director
Pacific Marine Center

24 May 1977
Date

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

C352

July 25, 1977

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

THRU: Chief, Quality Control Branch

FROM: R. W. DerKazarian
Quality Evaluator

SUBJECT: Quality Control Report for H-9520 (1975), Entrance to Kinak Bay, Shelikof Strait, Alaska

Survey H-9520 was inspected to evaluate the accuracy and adequacy of the survey with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. In general, it was found to conform to the National Ocean Survey's standards and requirements except as follows:

1. Adequate junctions were completed with surveys H-9518, H-9519, H-9521, and H-9522 of 1975 at the time of the quality evaluation. Several soundings were transferred to delineate curves, and numerous curves were revised. The position of the 12.6-fathom sounding on H-9518 in approximate latitude 58°02.8', longitude 154°28.9', previously falling in depths of 20-24 fathoms, has been adjusted by time and course to bring it into agreement with the present survey.

2. The dashed limit lines as shown on the smooth sheet depicting foul or kelp are too close to the low water line to be of any value in many areas. The dashed limit lines need not have been shown but a description "foul" or a kelp symbol, whichever the case may be, would have been appropriate.

3. The transfer of topographic details to the boat sheet as outlined in the Provisional Hydrographic Manual section 4.2.7 was not adhered to. Offshore rocks, limit lines, foul areas, and the low water line should have been inked in blue, then inked in black after field verification. The boat sheet information was inked in red which is commonly depicting a high water feature.

4. Several foreshore characteristics shown as "Rocky" on the present smooth sheet would have been more appropriately described as stones and boulders or rocks.

5. Signal "Russian, 1975" as so listed on the signal list was approximately 10 meters out of position compared with the smooth sheet plotting. The signal list has been corrected to agree with the listing in the printout.

6. Seven lines of soundings south of Cape Atushagvik have been adjusted. An apparent 1 lane electronic control correction in excess of the actual correction was applied; a -2.00 lane correction is indicated in the smooth position print but an actual -3.00 was applied displacing the soundings approximately 75 meters out of position. Affected positions were 4029-4050 which have been corrected during the quality evaluation.

7. Discussion of the inking of the depth curves in the inshore areas and the inadequacy in sounding line spacing should have been stated in the section of "Hydrography" of the Verifier's Report but were stated in the sections of "Introduction" and "Condition of Survey," respectively. (See memorandum dated March 21, 1977, from the Office of Marine Surveys and Maps, entitled "Verifier's Report Format.") No mention was made as to the adequacy of the crosslines.

Depths at crossings are in good agreement.

8. Several rocks in the vicinity of latitude 58°03.3', longitude 154°25.7' from prior survey T-2901 (1908) have not been verified or disproved by the present survey and have been carried forward. As control on T-2901 was largely plane table triangulation, some error in position probably exists.

With the addition of the rocks carried forward, the present survey is adequate to supersede the prior survey in the common area.

9. The shoal in the vicinity of latitude 58°04.45', longitude 154°26.75' was inadequately developed to reveal the configuration of the bottom. Divers secured a least depth of 1 fathom on the west end of the shoal but provide no information that the east end was examined. A rock awash, position approximate, on T-2901 in latitude 58°04.6', longitude 154°26.45' is in range between this shoal and a possible plane table setup. Further development of this shoal would be appropriate.

10. The Hydrographic Inspection Team did not enter their time on the "Hydrographic Survey Statistics" sheet.

cc:
C351

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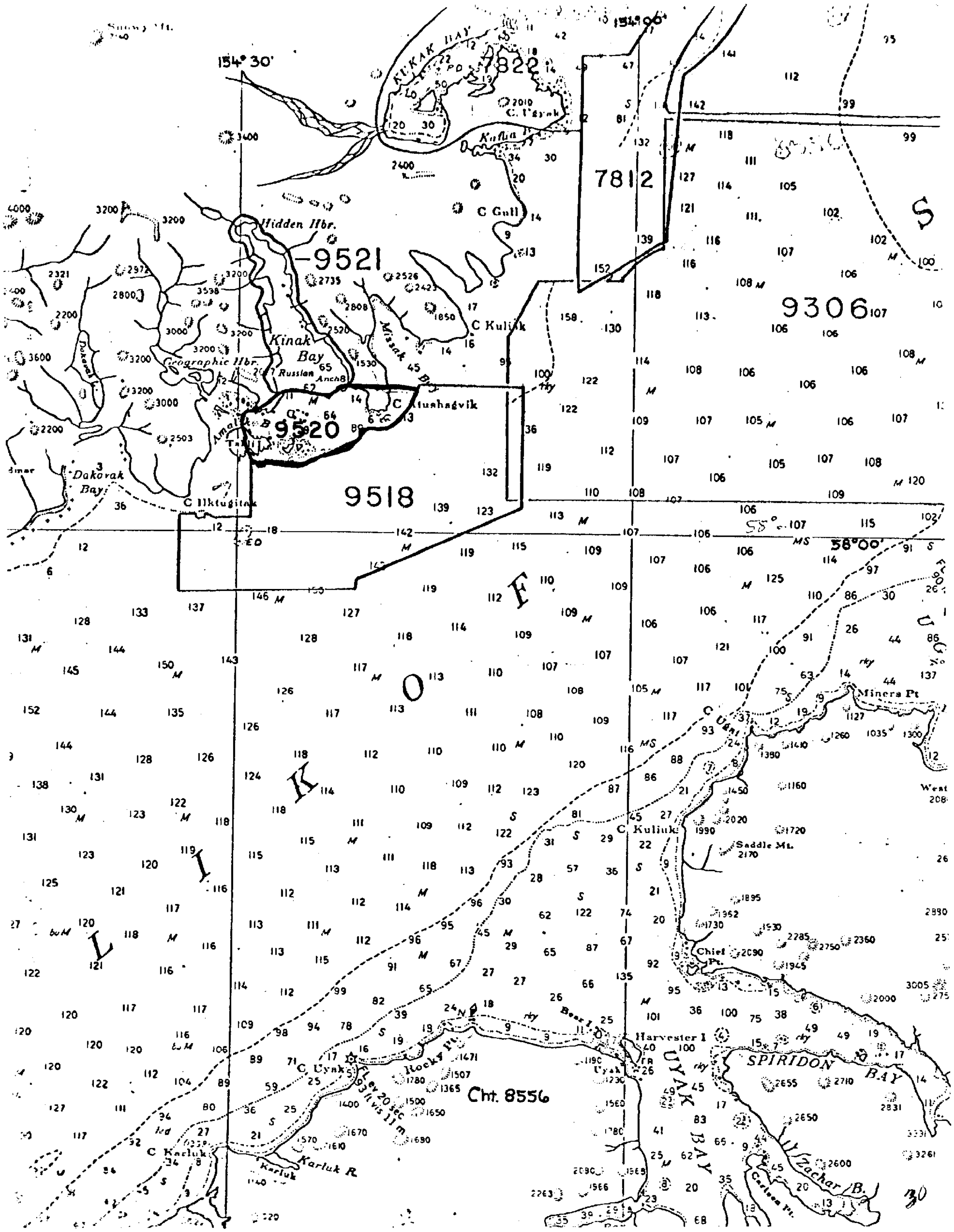
154° 30'
154° 00'
KUKAK BAY
C. Ugyak
7822
7812
9306
9521
9520
9518
Hidden Hbr.
Kinak Bay
Geographic Hbr.
Russian Anch
Amalik B
Missak B
C Kuliak
C Gull
C Atushagvik
Dakavak Bay
C Ikkugitak
58° 00'
Minera Pt
C Kuliuk
Saddle Mt.
Chief Pt.
Harvester I
Bear I
Rocky Pt
C Uyak
Uyak
UYAK BAY
SPIRIDON BAY
Zachar B.
C Karluk
Karluk
Karluk R.
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(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9520

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
8500	9/29/77	Lennon, DJ.	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No. Added ~~X~~ to chart at
			Lat. 58°03'15"-154°24'10"; Lat 58°04'20"-154°20'15"
8556	10/17/77	DM Perkins	Full ~~Part~~ ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No. 18
8502	2/3/78	J. Baily	Full ~~Part Before~~ After ~~Verification Review~~ Inspection Signed Via
			Drawing No. 14 Fully applied thru 8556
531	8-6-79	J Stenbel	Full ~~Part~~ ~~Before~~ After Verification Review Inspection Signed Via
(8500)			Drawing No. 16 Fully appld thru 16013/8502
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
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FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

USCOMM-DC 8558-P63

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