9619

Diag. Cht. No. 8553

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-20-1-76

Office No. H-9619

LOCALITY

State ..... ALASKA

General Locality ..... UPPER COOK INLET

Locality ..... SOUTHWEST OF NIKISHKA

1976

CHIEF OF PARTY
R. E. Alderman

LIBRARY & ARCHIVES

DATE ..... April 21, 1978

☆U.S. GOV. PRINTING OFFICE: 1976—669-441

9619

Charts
16660
16013

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-9619

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-20-1-76

State: Alaska

General locality: Upper Cook Inlet

Locality: Southwest of Nikishka

Scale: 1:20,000 Date of survey: 9 June 1976 to 1 August 1976

Instructions dated: Change Nos. 1, 2, 3, 4 4 Feb, 29 Mar, 7 Apr, 17 May, 30 July 1976 Project No.: OPR-469-FA-76

Vessel: Ship FAIRWEATHER Launches FA-5 (Hull #1001, EDP #2025), FA-6 (Hull #1243, EDP #2026)

Chief of party: CAPT R.E. Alderman

Surveyed by: LTJG S.L. Poole, LTJG L.R. Doering, LT D.B. MacFarland

Soundings taken by echo sounder, ~~hand lead, pole~~: Ross Fineline 5000 Fathometer (S/N 1046,1047)

Graphic record scaled by: FAIRWEATHER Personnel

Graphic record checked by: FAIRWEATHER Personnel

Positions verified ~~Plotted~~ by: Bruce Alan Olmstead Automated plot by: PMC Xynetics Plotter

Soundings Verification by: Bruce Alan Olmstead

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

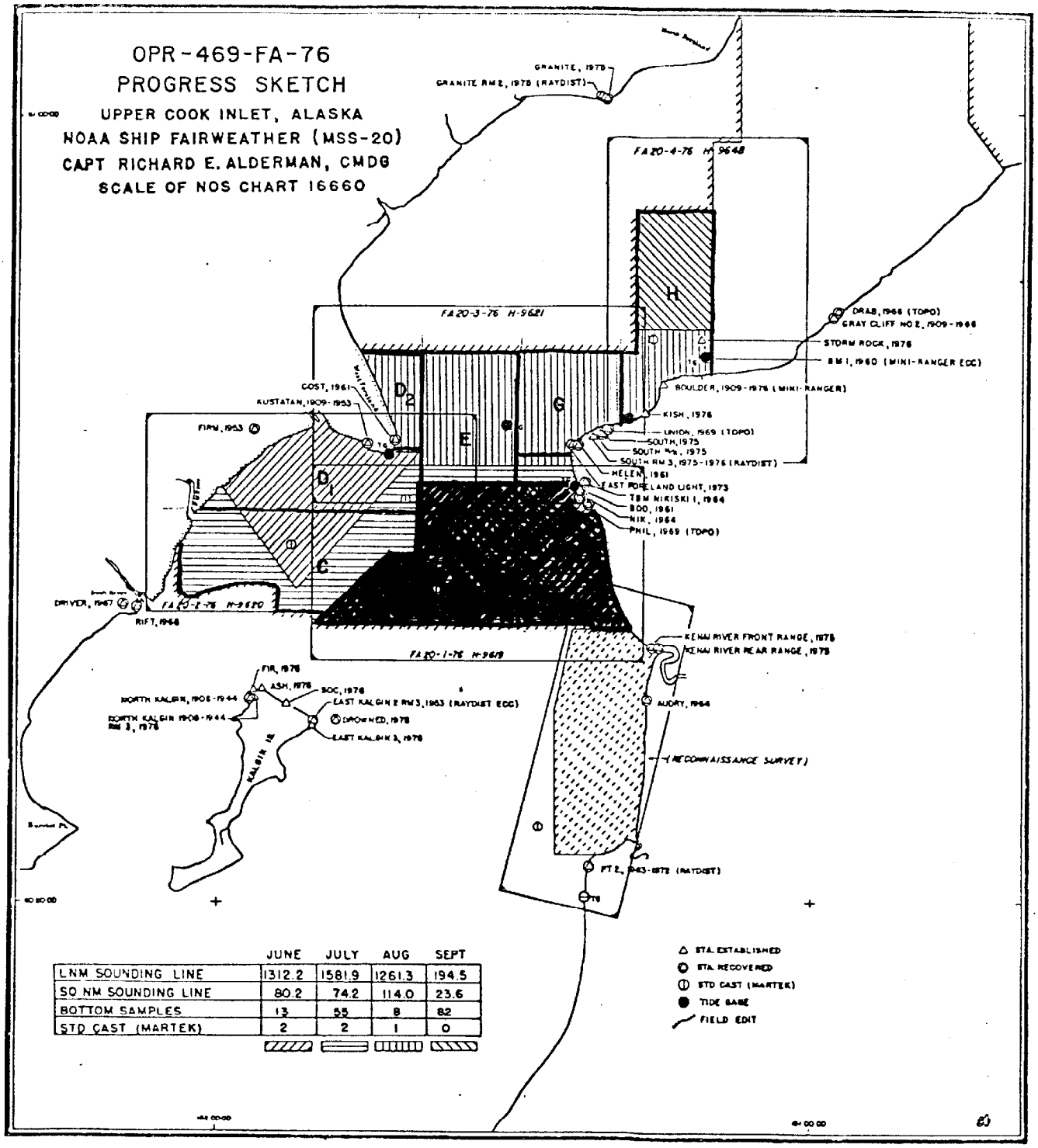
REMARKS: All records were kept on GMT. The mean longitude is 151°30'W.

This boatsheet is complete and adequate for charting.

Recommended for std 9/15/75

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

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



	JUNE	JULY	AUG	SEPT
LNM SOUNDING LINE	1312.2	1581.9	1261.3	194.5
SQ NM SOUNDING LINE	80.2	74.2	114.0	23.6
BOTTOM SAMPLES	13	55	8	82
STD CAST (MARTEK)	2	2	1	0

DESCRIPTIVE REPORT
NOAA SHIP FAIRWEATHER MSS-20
OPR-469-FA-76
Survey H-9619 (FA-20-1-76)

A. PROJECT

This survey was accomplished in accordance with Project Instructions OPR-469-FA,RA-76 Upper Cook Inlet, Alaska, dated 4 February 1976 and Change No. 2, Supplement to Instructions, dated 7 April 1976, and the PMC Oporder. Three additional Supplements to Instructions dated 29 March, 17 May and 30 July were complied with during the Project.

B. AREA SURVEYED

The area surveyed on Sheet FA-20-1-76 is located south of the East and West Forelands in Upper Cook Inlet, extending westward from the shore between Nikiski Wharf and the mouth of the Kenai River to the shoal area south of the West Foreland. The northern boundary is, latitude 60/41/12N. The western boundary is longitude 151/40/00W from the northern boundary to latitude 60/37/30N, the boundary then extends westward along this latitude until it reaches longitude 151/43/12W. From this point the boundary extends southwesterly to the intersection of longitude 151/48/00W with latitude 60/35/00N. The southern boundary is complex, running roughly along latitude 60/34/20N. The boundary juts above and below this latitude in order to junction with ~~prior~~ other surveys. (See Section ~~K. Comparison with Prior Surveys.~~ Junctions) The eastern boundary is the shoreline. Hydrography was completed from 9 June to ~~30 July~~ 1 August 1976.

C. SOUNDING VESSELS

Hydrography on this sheet was accomplished by launches FA-5 (hull #1001, EDP #2025) and FA-6 (hull #1243, EDP #2026).

D. SOUNDING EQUIPMENT

Each launch used Ross Fineline Fathometer. TRA correctors of +0.4 fathom, based on bar checks taken during the project and the known draft of the vessel, were used for each launch. Sound velocity correctors were determined from Martek casts taken in the vicinity of the survey area. For details see Report on Corrections to Echo Sounding, OPR-469-FA-76. The depths of soundings on this sheet range from approximately -1.1 fathom to 59 fathoms.

Sounding Equipment

Vessel	Instrument	Model	S/N
FA-5	Ross Fineline	5000	1046
FA-6	Ross Fineline	5000	1047

E. BOATSHEET

The area surveyed was divided into boatsheets, FA-20-1N-76 and FA-20-1S-76, due to its size. The boatsheet projections used were modified transverse

mercator. The scale of the boatsheets is 1:20,000, the skew is 0°. The origin of FA-20-1S-76 is latitude 60/32/24N, longitude 151/50/36W. The origin of FA-20-1N-76 is latitude 60/36/12N, longitude 151/50/36W. In addition to the boatsheets, there are a number of larger scale inserts of close spaced developements. These inserts are summerized below:

Insert	Scale	Origin Lat. N	Origin Long. W	Feature
FA-20-1N-76"A"	1:10,000	60/39/45	151/30/00	Shoals (looking for 6¾, 3½ & 2¼ fm sdgs)
FA-20-1N-76"B"	1:10,000	60/37/15	151/30/00	Shoal
FA-20-1N-76"C"	1: 2,500	60/40/30	151/28/00	L.D. on Shoal (2³fms)
FA-20-1S-76"A"	1: 5,000	60/36/25	151/43/00	L.D.(9fms)
FA-20-1S-76"B"	1: 5,000	60/36/10	151/26/00	L.D. on Unconfirmed Wiredrags

All data was plotted by the ship's hydroplot system, utilizing the ship's PDP 8/e computer (S/N M-40-00000-1020) and complot plotter (Model DP-3-5, S/N 5557-5). Copies of the parameter tapes are appended.

F. STATION CONTROL

Horizontal control for this survey either consisted of existing triangulation stations or was established by third-order methods. Key stations that were established during the survey were the Red Raydist bay station near EAST KALGIN 3 1976 and SOC, ASH and FIR which were used to locate the Kalgin Calibration Buoy. Other Raydist calibration points used were Boo Bumper, Ladder and Red. (See Report on Horizontal Control, OPR-469-FA-76.)

G. POSITION CONTROL

Launches FA-5 and FA-6 used the Teledyne Hastings Raydist electronic positioning equipment operated in the range=range mode. The pattern I station was located over PT-2 1963-1972. The pattern II station was located in the vicinity of KALGIN 3 1976 and was positioned from that station. Launches FA-5 and FA-6 were equipped with Panalogic Interface units, Position indicators, Navigators, Strip Chart Recorders, and Transmitters. (see the title page of OIC comments for serial numbers of all launch Raydist equipment).

Calibration of the Raydist was accomplished by fixed point method at the Kalgin Calibration Buoy and at one of the pilings at the Standard Oil pier near Nikishka, Alaska. That had been established by third-order triangulation (Boo Bumper, Ladder and Red). The position of the Buoy was checked daily using either sextant angles from the launches while moored to the Buoy or from T-2 directions from triangulation ashore.

Electronic correctors, derived from the calibration data, were applied to the observed readings before plotting on the field sheet. Slope corrections were automatically applied by the off-line plot programs.

H. SHORELINE

The shoreline details were obtained from manuscripts T-12045, T-12046 and T-12507. ✓

All shoreline and topographic details were verified by field edit. ✓ ✓

The low water line was delineated by soundings as much as possible. no locations Approach to the beach was hindered by the swift alongshore currents of nets given and ubiguitous salmon gill nets extending from shore. add note to S.S.

I. CROSSLINES

The 1151.8 n.m. of hydrography run on this sheet includes 111.6 n.m. of crosslines. The crosslines are 9.7% of the main scheme hydrography. Comparisons at crossings are good, never exceeding more than 0.5 fathom. ✓

J. JUNCTIONS

The boatsheet junctions to the north with the contemporary survey FA-20-3-76. Agreement is good, to within 1 fathom in depths from 10 to 59 fathoms. The boatsheet junctions to the west with contemporary survey FA-20-2-76. Again the agreement is good, to within 1 fathom in depths from 10 to 23 fathoms. ✓ H-9620

The southern boundary of the boatsheet junctions with ~~prior~~ surveys H-8789 (1964) scale 1:10,000, and H-9545 (1975) scale 1:20,000. The westernmost edge of the survey area junctions with prior survey H-8964 (1963) scale 1:20,000. The agreement in all cases is very good, to within 0.5 fathom in depths from 1 fathom to 40 fathoms. ✓ ✓ on the southeast (67-74)

In the vicinity of Nikiski Wharf this survey junctions with contemporary survey H-9074 (1969) scale 1:5,000. Agreement is again very good, to within less than 1 fathom in depths from 5 to 17 fathoms. ✓

K. COMPARISON WITH PRIOR SURVEYS

The soundings on the boatsheet where compared with prior surveys H-3196 (1910) scale 1:40,000, H-3198 (1910) scale 1:120,000, H-3322 (1911) scale 1:100,000, H-8617 W.D. (1961) scale 1:20,000, and H-8618 (1961) scale 1:20,000. Agreement with all the prior surveys is very good, even with the older surveys. There are some discrepancies of about 1 fathom in depths over 10 fathoms and a few differences of about 1.0 fathom in depths less than 10 fathoms. All the descrepancies can probably be attributed to position control inaccuracy rather than physical changes in the bottom. ✓

There are three major exceptions to this trend of good agreement. All three arise from wire drag hangs on survey H-8617 W.D. The northernmost

is Item 27 of pre-survey review update of 7 January 1974. It is reported as an unconfirmed 29' hang at latitude 60°38.4'N, longitude 151°22.3W and appears on chart 16660 as a 4 3/4 fathom sounding. An intensive development of this area revealed a small shoal at latitude 60°38.35'N, longitude 151°22.5'W with a least depth of 6.2 fathoms surrounded by depths of 7.6 to 9 fathoms. The developement of this shoal appears in Insert "B" of FA-20-1N-76. In view of the uncertain nature of the reported 4 3/4 fathom sounding, and the intensity of the developement, it is recommended that the charted least depth in this area be changed to the 6.2 fathom sounding at the above position.

See Verifier's Report
5 fm sdg. brought to 5.5
Retain 29' sdg. from H-8617 WO (1961) - Earthquake subsidence of minus 1ft,

The two other hangs are a pair of 6 1/4 fathom soundings reported at latitude 60°37.0'N, longitude 151°25.4'W and latitude 60°36.4'N, longitude 151°25.8'W. They also appear on chart 16660. Intensive developement was run in these two areas with the result that no soundings were found less than 7.4 fathoms in the northern, or less than 7.6 fathoms in the southern area. The 7.4 fathom sounding is at latitude 60°37.03'N, longitude 151°25.63'W. The 7.6 fathom sounding is at latitude 60°36.43'N, longitude 151°24.96'W. This developement is shown in Insert "B" of FA-20-1S-76. It is recommended that the 7.4 and 7.6 fathom soundings be charted at their respective positions in lieu of the 6 1/4 fathoms soundings.

See Verifier's Report ✓
chart from present survey

L. COMPARISON WITH CHART

The boatsheets were compared with chart 16660, Cook Inlet, northern part, 17th edition, 18 October 1975, scale 1:194,154 at latitude 61/00/00N, which is the largest scale chart that covers the entire survey area. ✓

Agreement with the chart is good. All shoal delineations and least depths coincide with charted contours and soundings with only a few exceptions. (The exceptions are a 4 3/4 fathom sounding at latitude 60°38.4'N, longitude 151°22.3'W and a pair of 6 1/4 fathom soundings at latitude 60°37.0'N, longitude 151°25.4'W and latitude 60°36.4'N, longitude 151°25.8'W. These three soundings originate from unconfirmed wire drag soundings on prior survey H-8617 (1961) and are discussed in Section K. Comparison with Prior Surveys.)

See Verifier's Report ✓

There is a 3 1/2 fathom sounding of unknown origin charted at latitude 60° 40.5' N, longitude 151° 28.2' W. This area was intensively developed (see Insert "A" on FA-20-1N-76) revealing a least depth of 8.4 fathoms at this position. This 8.4 fathoms sounding agrees with prior surveys. It is recommended that the 3 1/2 fathom sounding no longer be charted and that the 5 fathom contour line be adjusted accordingly.

See Verifier's Report ✓
90 meter line spacing
a present 2.3 fm shoal is .3 mi to N.E.

There is a 6 3/4 fathom sounding of unknown origin at latitude 60° 35.5' N, longitude 151° 25.2' W. The least depth found at this position is 8.2 fathoms, which agrees with prior surveys. It is recommended that the 6 3/4 fathom sounding no longer be charted.

See Verifier's Report ✓

The least depth on the shoal 2 n.m. due west of Nikiski Wharf was determined by closely spaced developement to be 2.0 fathoms. This is in excellent agreement with the 2 1/4 fathom sounding charted at that position. The least depths on the other shoals in the survey area were also in excellent agreement with the charted depths, to within 0.1 fathom. ✓

M. ADEQUACY OF SURVEY

All fathogram field survey records were scanned for peaks and deeps. The survey is complete and adequate to supercede prior surveys for charting. ✓

N. AIDS TO NAVIGATION

There were no aids to navigation located within the area of this survey. See Verifier's Report

O. STATISTICS

Vessel	Positions	Hydrography
FA-5	2476	777.4
FA-6	1295	374.4
		1151.8 Total n.m. ✓

Total Area: 65.3 sq. n.m.

Total Bottom Samples: 42

P. MISCELLANEOUS

Greenwich Mean Time was used for all survey records. Sea conditions, especially chop and the exceptionally strong currents, made bar checks difficult and sometimes hazardous. Bar checks were therefore supplemented by calibrating the phase set of the Ross Fathometer, usually at the beginning and end of every day. ✓

Q. RECOMMENDATIONS

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

R. REFERENCE TO REPORTS

Report on Corrections to Echo Soundings, OPR-469-FA-76 ✓
Field Edit Reports, OPR-469-FA-76

S. DATA PROCESSING PROCEDURES

Program RK-111, version (30 January 1976) was used on FA-5 and FA-6 to acquire and compile hydrographic on-line data. Program RK-211, version (15 January 1976) was used on the ship's hydroplot system to plot the field sheet.

Submitted by:

Stephen L. Poole

Stephen L. Poole, LTJG, NOAA

FIELD TIDE NOTE

OPR-469-FA-76
(H-9619), (H-9620), (H-9621), (H-9648)

Field tide reductions of soundings are based on Nikiski (control) predicted tides, and were interpolated by PDP 8/e computer utilizing AM 500. The times of both predicted and recorded tides were on GMT. Time and height corrections, applied to the Nikiski predicted tides, were as follows:

Tide zone*	Height (ratio)	High water	Low water
A	1.00	-15 min.	-10 min.
B	.93	-10	-10
C	.89	-15	-25
D_1	.87	+15	- 5
D_2	.88	+20	+20
E	.94	+20	+10
F	.98	0	0
G	.98	+25	+25
H	1.00	+35	+35

Four 0-40 Bristol Bubbler gages were installed in the project area, locations and periods of operation were as follows:

Site	Location	Period
West Foreland T-20	60°42.75' N. 151°43.60' W.	2 July 76 to 25 August 76
Nikishka No. 2 T-33	60°44.35' N. 151°18.28' W.	29 July to 12 Sep 76
Platform T-39	60°44.20' N. 151°31.80' W.	26 June to 6 Sep 76
Jumbo Rock Boulder Point	60°47.80' N. 151°10.20' W.	17 Aug to 11 Sep 76

West Foreland

Gage s/n 67A16206 was installed and began operating 2 Jun 76. Unexplainable loss of data recording, at about 0900-1800 GMT, occured daily. The reducing valve was changed, 13 June, but failed to remedy this. The gage was removed and replaced by gage s/n 68A9329 on 16 June. On 17 June the orfice tubing was found separated from the orfice. New tubing, orfice, and anchor stand was installed and gage operation restarted on 17 June. On 17 July the drive spring ran down and was restarted the same day. On 31 July the marigram paper was changed and 0-20ft paper was installed. This required correction to the actual recorded heights before final recording on the hourly heights sheets. On 19 August the nitrogen tank pressure was lost and restarted the same day. The data collection stopped on 25 August. In between all other periods gage operation was fair with slight time errors.

*see chart section pg.A-2

West Foreland cont'd
On 15-17 July and 19-25 August inconsistent time errors were encountered. The marigram reads 13.4 ft. greater than the staff , for 2 June to 16 June. New gage marigram reads 14.0 ft. greater than the staff for 16 June to 14 July. With the new staff the marigram reads 13.4 ft. greater than the staff.

Nikishka No. 2

Gage s/n 63A2921 was installed and operating on 29 June. On 27 August the orfice pressure tubing was cut and was repaired 30 August. On 10 Sept. the orfice tubing was again cut and repaired the same day. Removal was on 12 Sept. Operation and quality between all other periods was very good.

The marigram reads .09 ft. greater than the mean of the taped water heights. See Taped Water Heights pg.A-5.

Platform

This gage was checked bi-weekly by a reliable platform employee, the resulting data was clean, continous,and had numerous accurate time checks. Gage s/n 67A16204 was installed 26 June and ran well until 6 Sept. On 30 July 0-20 ft. paper was installed, this required a correction to be applied before final recording of the hourly heights sheets. The water heights were taped measurements using a weighted cloth tape that was initialed on bench mark A.

The marigram reads 1.7 ft. greater than the mean of the taped water heights, (see pg.A-6), these heights being related to an arbitary zero point 80 ft. below bench mark A.

Of interest was the recording of currents by this gage(see pg.A- 7) .Due to no orfice the gage was sensitive to slight changes of water height inside the platform leg. These water height changes were recorded and occured simultaneously with currents. Also observed was that sea and swell did not affect the gage as would be expected.

Jumbo Rock

Gage s/n 62A91 was installed 17 August and lost to the sea soon thereafter. Gage s/n 67A16206 was installed 30 August but had faulty chart paper installed. This resulted in lost data from the paper jumping the sprockets. New paper was installed 3 Sept. and the gage was operational till remeval on 11 Sept. Time errors were minor.

The marigram reads 5.2 ft. greater than the staff.

Levels

West Foreland was leveled to five previously established bench marks. The staff was destroyed and the reinstalled staff was leveled to bench mark 3

on 14 July. Removal levels of 8 Sept. showed the staff to have settled .153 ft. and bench mark 4 to have settled .030 ft.

Nikishka No. 2 was leveled to six previously established bench marks on 30 June. Checks between the initial point (for taped water heights) on the ship and two bench marks showed the ship to have settled .42 ft. by 30 August and raised .18 ft. by 8 Sept.

Platform Dillon had temporary bench mark A used as the intial for the taped water heights and was leveled to two other points. All points were described and stamped. No shifts were detected.

Jumbo Rock was leveled to one previously established bench mark and one newly established bench mark. No shifts were detected.

Zoning

No zoning was attempted in the field. It is recommended that zoning be done by the Tides Branch after review of existing and observed data. The recommended preliminary zoning supplied by the Tides Branch prior to the start of the surveys worked very well. Minor differences at crossline intersections and survey junctions supported this. Only in a few small areas did tide correction abnormalities occur, and these were minor (1 fathom).

Miscellaneous

Time errors caused by slippage of the chart paper are listed below. The West Foreland gage was corrected for and scanned for hourly heights. The Jumbo Rock problem was more erratic no hourly heights have been obtained.

West Foreland -------15-17 July, clock rate adjusted, spring ran down before rate of error could be determined.

20-23 Aug., paper slipping on sprockets.

Jumbo Rock -------30 Aug-3 Sep., paper slipping on sprockets.

Tide Note submitted by

M. F. Sullivan

VELOCITY TABLE 0001

SOUND VELOCITY CORRECTOR ABSTRACT

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

FA-20-1-76	(H-9619)
FA-20-2-76	(H-9620)
FA-20-3-76	(H-9621)
FA-20-4-76	(H-9648)

Depth (fm)	Corrector (fm)
0.0 - 3.6	+ 0.0
3.7 - 11.1	0.1
11.2 - 18.9	0.2
19.0 - 26.6	0.3
26.7 - 33.9	0.4
34.0 - 41.7	0.5
41.8 - 49.1	0.6
49.2 - 56.9	0.7
57.0 - 64.4	0.8
64.5 - 71.9	0.9
72.0 - 80.0	1.0

KALGIN ISLAND REGION SIGNAL LIST - COOK INLET, ALASKA
FA-OPR-469-76

Final Signal Tape for this Region

GREEN RAYDIST - PT-2 1963/1972 NEAR CAPE KASILOF
001 3 60 21 55694 151 22 27251 250 0018 330040

RED RAYDIST - NEAR EAST KALGIN 3 1976
002 3 60 29 08328 151 50 08046 250 0060 330040

PT-2 NO 1 1972
003 3 60 21 55543 151 22 27372 139 0018 000000

AUDRY 1964
004 3 60 30 50559 151 16 37445 139 0018 000000

ASH 1976
005 3 60 30 54366 151 55 32676 250 0058 000000

SOC POLE
006 3 60 30 09937 151 53 13735 243 0001 000000

EAST KALGIN LIGHT OFFSET
007 3 60 29 08118 151 50 06375 243 0060 000000

KENAI RIVER REAR RANGE 1975
008 3 60 33 05308 151 15 29940 139 0000 000000

DRIVER 1967
009 3 60 35 10989 152 09 43010 139 0000 000000

GRAY HOUSE
010 3 60 30 38377 151 54 47702 243 0000 000000

DROWNED 1975-1976
011 3 60 29 17294 151 48 12597 139 0000 000000

SOC 1976
012 3 60 30 09890 151 53 12913 139 0001 000000

FIRM 1953
013 3 60 44 01799 151 56 14617 139 0005 000000

PTFM DILLON - SOUTHERN MOST
014 3 60 44 08138 151 30 45892 243 0012 000000

PTFM "C" - - CENTER
015 3 60 45 50263 151 30 08560 243 0012 000000

KUSTATAN 1909
016 3 60 43 14472 151 45 07720 139 0025 000000

MICROWAVE TOWER NEAR STATION DRIVER
017 3 60 35 49478 152 09 59547 250 0035 000000

NIKISHKA #2 SIGNAL LIST - COOK INLET ALASKA
FA-OPR-469-76

Final Nikishka #2 Listing

PTFM DILLON - SOUTHERN MOST
014 3 60 44 08138 151 30 45892 243 0012 000000

PTFM "C" - NEXT TO PTFM DILLON
015 3 60 45 50263 151 30 08560 243 0012 000000

SOUTH M/R 1975
018 3 60 44 09309 151 21 13189 250 0048 000000

UNION 1969
019 3 60 44 09721 151 21 09677 139 0040 000000

BOULDER 1909
020 3 60 46 18353 151 15 25906 250 0061 000000

SOUTH 1975
021 3 60 44 09021 151 21 13213 139 0048 000000

PTFM DOLLY VARDEN WEST DERRICK - NEAR WEST FORELAND
SOUTHERN MOST PTFM
022 3 60 48 28350 151 37 59272 243 0000 000000

GRANITE RM 2 1975 - RAYDIST GREEN
023 3 61 00 42705 151 20 39358 250 0037 330040

SOUTH RM 3 1975-1976 - RAYDIST RED
024 3 60 44 09226 151 21 13309 250 0048 330040

PTFM "A" - NEXT TO PTFM BAKER
025 3 60 47 44865 151 29 45156 243 0000 000000

PTFM BAKER - NOUTHERN MOST
026 3 60 49 45665 151 29 00943 243 0000 000000

PTFM MONOPOD
027 3 60 53 48760 151 34 43901 243 0000 000000

TEXACO PTFM "A" EAST DERRICK
028 3 60 55 10227 151 33 26201 243 0000 000000

PTFM SPARK - NORTHERN MOST OF GROUP
029 3 60 44 42499 151 31 49330 243 0000 000000

KISH 1976
030 3 60 44 39625 151 17 32114 139 0048 000000

PTFM GRAYLING - EAST DERRICK
031 3 60 50 22597 151 36 46761 243 0000 000000

PTFM KING SALMON
032 3 60 51 55588 151 36 20079 243 0000 000000

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EAST FORELAND LIGHT 1973
033 3  60 43 11842 151 24 18524  139 0000 000000

BOW OF SHIPS AT NIKISHKA #2
034 3  60 44 36056 151 18 34535  139 0000 000000

ROCK GAMMA
101 3  60 45 23423 151 15 47804  253 0000 000000

ROCK A
102 3  60 46 24070 151 15 28538  253 0000 000000

JUMBO ROCK 1976
103 3  60 47 41370 151 10 13489  250 0003 000000
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ABST OF POSITIONS

APPROVAL SHEET

Field No. FA-20-1-76

Register No. H-9619

The boatsheet and all accompanying records are hereby approved. The survey was conducted under my supervision and, to the best of my knowledge, is complete and adequate to supersede the prior surveys.

Capt. Richard E. Alderman, NOAA
Commanding Officer
NOAA Ship FAIRWEATHER MSS-20

REGISTRY NO. H-9619(1976)

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 REQUIRED_____ INITIALS_____

REMARKS:

REGISTRY 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 REQUIRED_____ INITIALS_____

REMARKS:

NOAA FORM 77-27 (5-77) | U. S. DEPARTMENT OF COMMERCE NOAA | HYDROGRAPHIC SURVEY NUMBER

HYDROGRAPHIC SURVEY STATISTICS

H-9619

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS	16 7&12
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS. ARC, EXCESS	85

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	2with printouts					
VOLUMES						3
BOXES			1-smooth 1-tide			

T-SHEET PRINTS (List): Class I Manuscript T-12507, T-12045,46

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	AMOUNTS: VERIFICATION	AMOUNTS: TOTALS
POSITIONS ON SHEET			3,764
POSITIONS CHECKED		3,764	
POSITIONS REVISED		2,610	
SOUNDINGS REVISED		726	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	

PROCESSING ACTIVITY	TIME – HOURS: PRE-VERIFICATION	TIME – HOURS: VERIFICATION	TIME – HOURS: TOTALS
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	4		
VERIFICATION OF CONTROL		1	
VERIFICATION OF POSITIONS		150	
VERIFICATION OF SOUNDINGS		354	
COMPILATION OF SMOOTH SHEET		50	
APPLICATION OF TOPOGRAPHY		3	
APPLICATION OF PHOTOBATHYMETRY		0	
JUNCTIONS		5	
COMPARISON WITH PRIOR SURVEYS & CHARTS		52	
VERIFIER'S REPORT		50	
OTHER			
TOTALS	4	665	

Pre-Verification by: James S. Green	Beginning Date: 19 November 1976	Ending Date: 19 November 1976
Verification by: Bruce Alan Olmstead Bruce Alan Olmstead	Beginning Date: 16 May 1977	Ending Date: 28 Feb 1978
Verification Check by: Matthew G. Sanders, James S. Green	Time (Hours): 19	Date: 8 Mar. 1978
Marine Center Inspection by: HIT	Time (Hours): 17	Date: 20 Mar. 1978
Quality Control Inspection by: F.M. Sawbury	Time (Hours): 71	Date: 5/24/78
Requirements Evaluation by: DJ Hill	Time (Hours): 3	Date: 9/11/78

Carstens 19 hr 7/26/78

APPROVAL SHEET

FOR

SURVEY H-9619

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: 10 March 1978

Signed: [signature]

Title: Chief, Verification Branch

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-9619

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
COLLIER PIER	16660									1
COOK INLET	16660								~~12507~~ 12046 ~~12045~~	2
NIKISHKA	16660									3
PHILLIPS 66 PIER	16660									4
~~PORT NIKISKI DOCK~~	16660									5
SALAMATOF	16660								12507	6
SALAMATOF BEACH									12507	7
SALAMATOF CREEK									12507	8
~~STANDARD OIL PIER~~	16660									9
KENAI PIPE LINE CO. PIER										10
RIG TENDER DOCK										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

APPROVED

Chas. E. Harrington

CHIEF GEOGRAPHER - CBXB

28 JULY 1978

3/2/77

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): West Foreland
Nikiski

Period: June 9 - July 30, 1976

HYDROGRAPHIC SHEET: H-9619

OPR: 469

Nikiski 10.8 ft.

Locality: Upper Cook Inlet, Alaska West Foreland

Plane of reference (mean lower low water): June 4-17: 6.6 ft.
June 17-July 31: 6.9 ft.

Height of Mean High Water above Plane of Reference is
17.4 ft. - West Foreland; 19.7 ft. - Nikiski

Remarks: Recommended zoning:

(1) West of 151°40' apply - 20 minute time correction and range ration x1.03 to West Foreland.

(2) 151°40' - 150°30' apply - 20 minute time correction and range ratio x1.06 to West Foreland.

(3) East of 151°30' and south of 60°38' apply - 15 minute time correction to Nikiski.

(4) East of 151°30' and north of 60°38' zone direct on Nikiski.

James C Hubbard
for Chief, Tides Branch

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

C352/FPS

May 24, 1978

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

THRU: Chief, Quality Control Branch

FROM: F. P. Saulsbury
Quality Evaluator

SUBJECT: Quality Control Report for H-9619 (1976), Alaska, Upper Cook Inlet, Southwest of Nikishka

A quality control inspection of H-9619 was accomplished to monitor the survey for obvious deficiencies 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 stated in the report by the verifier and HIT and as follows:

1. Overlapping depth curves were made coincidental in the junctions with H-9620 (1976) on the west, H-8964 (1967-74) on the southwest, H-9074 (1969) on the northeast, and H-8789 (1964) on the southeast. In the junction with H-8964 (1967-74), because soundings acquired in 1967 are 0.1 to 0.5 fathoms shoaler than present survey depths, the 10-fathom depth curve was dashed while adhering to shoaler depths. The junctions with H-9545 (1975) on the south and H-9621 (1976) on the north will be checked in the inspections of those surveys.

2. Where soundings in an area are plotted obliquely, soundings transferred from other sources should be plotted similarly.

3. The 1964 earthquake subsidence of 1 foot or two-tenths fathoms was added to soundings carried forward from prior surveys to the present survey. The subsidence value originates with Table 2 of the publication "Prince William Sound, Alaska, Earthquake of 1964." Though the value of 1 foot is limited to observations of 1964 rather than 1964 and 1965 as others were and appears somewhat inconsistent with other data, it is accepted for the reduction factor on this survey.

The following information is submitted as supplementary in the application of the survey to the chart.

4. The tank charted as a landmark from Chart Letter 804 (1962) in the vicinity of Port Nikiski Dock, on the main section of the chart, is in an approximate position and apparently represents one of five tanks charted on the inset in that locality. A more exact plot of a tank with reference to the group such as Tank, center of group, might be more appropriate.

5. The four submerged obstructions charted on the inset in the vicinity of latitude 60°41.00', longitude 151°23.60' from Chart Letter 1940 (1968) are "deadmen" for buoys. The present survey shows two of these deadmen, one as a concrete slab, position approximate, uncovering 5 feet at MLLW and the other as a rock uncovering 1 foot at MLLW. AWOIS 52198 RWD 2/95

6. The two islets charted from T-3035 (1909) in the vicinity of latitude 60°36.80', longitude 151°20.70' do not appear on contemporary topographic surveys, were not addressed by the hydrographer, and are considered non-existent. It may be that these were boulders subsequently removed by ice flows.

7. The ten soundings addressed in the Verifier's Report under Chart Comparison in item VII-4, are charted from the boat sheet of unreviewed survey H-8618 (Bp-61577-79). The soundings do not appear on the verified smooth sheet of H-8618 and are considered discredited by present survey depths.

8. The 6-fathom sounding charted in latitude 60°37'55", longitude 151°26'00" and addressed in the Verifier's Report under Chart Comparison, item VII-5 is believed to originate with Bp-60280 and is considered discredited by present survey depths.

cc:
C35
C351

ADMINISTRATIVE APPROVAL

H-9619

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

4/11/78

Date

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

10 April 1978

TO: Eugene A. Taylor
Director, PMC

FROM: Glen R. Schaefer
Chief, Processing Division

SUBJECT: PMC Hydrographic Survey Inspection Team Report - H-9619

This survey is a basic hydrographic survey of Upper Cook Inlet, Southwest of Nikishka, Alaska. This survey was conducted by NOAA Ship FAIRWEATHER in 1976 in accordance with Project Instructions OPR-469-FA, RA-76, dated 4 February 1976 and Change Nos. 1 thru 4, dated 29 March, 7 April, 17 May and 30 July 1976, respectively.

The objectives of this survey have been met. The Verifier's Report has adequately described the specifics of the survey. No substantive comments are necessary.

The inspection team finds H-9619 to be a very good basic survey adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended.

Glen R. Schaefer

John C. Albright

James W. Steensland

A. Eichelberger

H-9619

Items for Future Presurvey Reviews

No items.

Position Index		Bottom Change Index	Use Index	Resurvey Cycle
Lat.	Long.			
603	1520	6	2	25 years
603	1515	6	2	25 years
603	1514	2	2	50 years
603	1513	3	2	50 years
603	1512	4	2	50 years
604	1514	6	2	25 years
604	1513	4	2	50 years

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO: H-9619 FIELD NO: FA-20-1-76

Alaska, Upper Cook Inlet, SW of Nikishka

SURVEYED: 9 June -1 August 1976

SCALE: 1:20,000 PROJECT NO: OPR-469

SOUNDINGS: Ross Fathometer CONTROL: Raydist

Chief of Party.....CAPT R. E. Alderman
Surveyed by.....LTJG S. L. Poole, LTJG L.R. Boering, LT D. B. MacFarland
Automated plot by.....Harris Xynetics PMC Plotter
Verified by.....Bruce Alan Olmstead
28 February 1978

I. INTRODUCTION

H-9619 (FA-20-1-76) was conducted under Project Instructions OPR-469-FA, RA-76, Upper Cook Inlet, Alaska, dated 4 February 1976. There are four amendments to instructions, dated 29 March, 7 April, 17 May and 30 July 1976. The location of this sheet lies just south of a horizontal line drawn between East and West Foreland about 10 miles northeast of Kalgin Island and extends from the shoreline to the center of Cook Inlet. Specifically, from Latitude 60°34'06"N to Latitude 60°41'12"N, Longitude 151°19'00"W to Longitude 151°48'00"W.

Waters of the inlet are much discolored by glacial silt. Tidal currents are strong and must be considered at all times. These two conditions provide an extremely hazardous situation where boulders rise as much as thirty feet above the general level of the bottom. The shoals generally consist of boulders on an otherwise flat bottom. The shoreline in this area of Upper Cook Inlet is reasonably free from boulders but there are indications that boulders do exist in the deeper water outside these banks. Due to such large ranges of tide, most of the rocks were found by sighting them at low water. One note of interest to the navigator in this geographical region should be emphasized; the dual action of floating ice and the action of strong currents can cause the moving of these boulders. Nikiski Wharf, a geographical name charted on 16660 16th Edition, September 28, 1974 has been removed and renamed Nikishka. Here, three petroleum companies (Standard Oil, Phillips 66, Collier) maintain T-shaped

piers with aids to navigation located on the extremities of each arm.
no aids shown on Collier Pier

The requirements and needs for hydrographic information have originated from increased use and future activity in Cook Inlet. Government organizations and private industry have expressed an interest in new large scale coverage for navigation. This new data will be used to update existing nautical chart coverage and to provide a new compilation base for use in ecological, pollution, engineering, fisheries and other scientific studies.

The central meridian, projection parameters, signal list and Electronic Corrector Abstract were amended during the verification process. All corrected data is listed in the smooth printouts to accompany the final PMC plot.

II. CONTROL AND SHORELINE

Two third order triangulation stations were used to control the entire hydrographic survey. Both of these stations are located off the sheet limits. Teledyne Hastings Raydist electronic positioning equipment was employed for interrogation in determining positional data during launch operations. There was no work involving ship hydrography.

Corrections to positional data were determined by a fixed point method using the Kalgin Island Calibration Buoy and one of the pilings at the Standard Oil Pier, Nikishka, Alaska. Several times during field operations evening calibration data was useless. In these cases, the morning correctors were solely applied for the entire day. Problems with tidal currents in obtaining reliable calibration data and antenna problems, (shorting and Low Signal Strength) provided much downtime. One common occurrence due to antenna failure was the discrepancy between the teletype's message of a lane jump while the brush recordings revealed normal operation. All remaining information affecting the positioning and station control of this survey is listed in Parts F and G of the Descriptive Report.

The Mean High Water Line was applied from Class I unreviewed manuscripts T-12045, T-12046 and T-12507.

	Dates of Photography	Dates of Field Edit
T-12045	Aug 1966, June 1967 July 1972	July & Aug 1976
T-12046	June 1967, July 1972	July and Aug 1976
T-12507	June 1967, July 1972	August 1976

III. HYDROGRAPHY

Soundings at crossings are in good agreement.

The bottom configuration was adequately developed. All standard depth curves common to this sheet are defined satisfactorily. Portions of the 0-fathom and 1-fathom curve could not be completed because of the alongshore currents and numerous gill nets extending from shore. Determination of least depths is adequate.

The only conflict between hydrography and the shoreline manuscript information concerns several field edited features that were not covered by tidal data as submitted by the ship to Rockville. Inferred tides from Nikiski for Julian Days 213, 237, 238 and 240 were used in computing heights to a MLLW plane of reference.

IV. CONDITION OF SURVEY

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:

1. As per 3.7, page 4, of the Project Instructions for OPR-469-FA, RA-76, all aids to navigation and objects of landmark value are to be recorded. Part N (Aids to Navigation) of the Descriptive Report stated there were no aids located within the area of this survey. The 1976 USCG Light List shows six lights. no data on landmarks in report JHS

2. Calibration correctors were incorrectly computed for several days of hydro.

3. Periods of launch hydrography were run without a record of brush recordings.

4. Rejection of data was not entered on the fathograms. They are, however, listed in the raw printouts.

5. Evening calibrations were in many cases not averaged in with the morning correctors. AM calibration was used in these instances for the entire day. Several days of evening calibration were too unreliable. (See Paragraph II, CONTROL AND SHORELINE)

V. JUNCTIONS

With the exception of the shoreline from Latitude 60°34'30"N to Latitude 60°40'00"N, the present survey is entirely bordered by five contemporary sheets dating back to 1964.

a) H-8789 (PF-10-1-64) - joins to the extreme southeastern corner with the present survey in depths to nine fathoms. All standard curves common to both sheets were made in agreement (1-fathom, 2-fathom, 3-fathom, and 5-fathom). Some minor revisions to the depth curves on the 1964 survey will be necessary.

b) H-8964 (SU-20-1-67) - This 1967 survey junctions in the extreme southwest portion of the 1976 work. The standard 10-fathom curve is common to both sheets. Some minor revisions will be necessary in order to have this curve in coincidence. Otherwise, there is satisfactory agreement with the present work.

c) H-9074 (PF-5-1-69) - Joining the immediate inshore area around Nikishka to ten fathoms, this hydrography is in good agreement.

d) H-9545 (DA-20-3-75) - Situated on the southern extremities, this survey junctions in the area of Latitude 60°34'06°N, Longitude 151°25'00"W to Longitude 151°47'00"W in depths of 5-40 fathoms. All standard depth curves are in adequate agreement. Differences of .3 to .7 fathom are readily noticeable in area less than 20 fathoms. The verifier feels these discrepancies are probably due to tides.

not req. 5/5/78

e) H-9620 (FA-20-2-76) - This junctional sheet joins on the west and southwest portions of the present survey. The 20-fathom curve is the only standard contour common to both sheets. An adequate junction was effected within the common area.

f) H-9621 (FA-20-3-76) - This contemporary survey was conducted several weeks after the completion of H-9619 (FA-20-1-76). The common area of hydrography lies along Lat. 60°41'12"N from Long. 151°25'00"W to Long. 151°39'30"W. Here, an adequate junction was effected with both sheets.

not req 5/5/78

All standard depth curves common to H-9619 (FA-20-1-76) and the contemporary junctional sheets were inked.

VI. COMPARISON WITH PRIOR SURVEYS

H-3196 (1910) 1:40,000
H-3198 (1910) 1:120,000
H-3322 (1911) 1:100,000
H-8617 (PF-20-2-61WD) 1:20,000
H-8618 (PF-20-3-61) 1:20,000

The three surveys accomplished in the early 1900's reveal very little change in the sounding depths over a period of six decades. Generally, there are differences of 1-fathom throughout the common areas. No discernible pattern of shoaling or of deepening is in evidence. A detailed comparison with H-3198 and H-3322 could not be made due to such large differences in scale. H-3196 was directly compared with and readily confirmed the small changes. The shoreline has remained fairly stable. One significant change to the High Water Line is located at Nikishka. Here, a dock and three large piers have been built since 1910-1911.

The three aforementioned prior surveys are superseded by the present survey, H-9619 (FA-20-1-76) within the common area.

H-8617 (PF-20-2-61WD) is a wire drag survey conducted in 1961. The three soundings which were hung on during dragging operations reveal differences of two to three fathoms shoaler than present survey depths. The present survey does not supersede these prior soundings located at:

1964 EARTHQUAKE SUBSIDENCE OF MINUS 1 ft or TWO TENTHS FM APPLIED TO THESE SDGS

a) 37 ft. (6.3 fms) Lat. 60°37'33"N, Long. 151°26'09"W cleared by 35' — AWOIS 52191
b) 29 ft. (5 fms) Lat. 60°38'24"N, Long 151°22'27"W not cleared — 52193
c) 38 ft. (6.5 fms) Lat 60°36'54" Long 151°25'43" cleared by 38' — 52190

2/95 RMP

H-8618 (PF-20-3-61) - No significant changes in depths have occurred since 1961. This is attributable to the hard and rocky bottom in Upper Cook Inlet. The minor discrepancies in depth seem to indicate a slight increase in depth over the past fifteen years. This trend is confirmed by the shift in the standard depth curves. The shoreline has remained relatively unchanged with the exception of that area around Nikishka. Port Nikiski Dock and two new piers (Collier and Phillips 66) have been constructed. The Standard Oil Pier farther north was in existence during the 1961 survey, although it has been enlarged upon. The Standard Tide Gage, Nikiski, is located on this pier)

A few ~~Several significant~~ shoaler soundings were carried forward to the present survey. The present survey found indications of these shoals but did not confirm the prior least depths. With the exception of these transferred soundings, the present survey supersedes the prior within the common area.

VII. COMPARISON WITH CHART

A chart comparison was made with Chart 16660, 17th Edition, October 18, 1975 and the 1:10,000 inset for Nikishka. The charted hydrography originates primarily with the previously discussed prior surveys. The verifier

recommends the following courses of action concerning several questionable items presently charted:

1) The landmark tank charted at Lat. 60°41'20"N, Long. 151°23'00"W originates from an unknown source. Its existence was not discussed in the ship's field work. The value of this item as an aid to navigation or landmark is not known. The verifier recommends retaining the tank on the chart. See QC Critique

2) The 4 3/4 fathom sounding charted at Lat. 60°38'~~30~~22"N, Long. 151°22'20"W originates from H-8617 (PF-20-2-61WD). This sounding is listed as PSR #27. The ship recommended that the 4 3/4 fathom depth be superseded by the present surveys information. Although an intensive system of sounding lines were run over this area, due to possible lane jumps, the data was rejected. Therefore, the verifier disagrees with the ship's recommendation and suggests holding the charted wire drag information. Charted 4 3/4 fm sdg. is a 29 ft. W.D. hang. with earthquake subsidence of 1-ft a 5 fm sdg was brought fwd 7PS

3) The two 6 1/4 fathom soundings charted at Lat. 60°37'00"N, Long. 151°25'24"W, Lat. 60°36'24"N, Long. 151°25'00"W originate from H-8617 (PF-20-2-61WD). The ship ran intensive developments over these areas to prove or disprove the prior least depth. Although the ship found some indications of shoaler depths in these areas within the present survey, the prior 38 ft. and 37 ft. soundings could not be duplicated. It should be noted that the two 6 1/4 fathom soundings appear charted out of position. The northernmost 6 1/4 fathom sounding has no bracket to indicate it originates from a wire drag survey. These mischarted soundings led to the ship making one of its development too far south. The verifier recommends that ~~the~~ 6 1/4 fathom ~~sounding~~ at Lat. 60°36'24"N, Long. 151°25'00"W be not superseded by the present survey ~~due to the intensive development~~ even despite the intensive development. Furthermore, the northernmost 6 1/4 fathom sounding which is charted in error, should be retained on the chart and reexamined for positional accuracy. See QC Critiq. cleared by 38 ft. the cleared depth AWOIS 52191 52190 RWD 2/95 cleared by 6½ fm.

4) Several charted soundings could not be identified from any prior sources. Many of these depths are shoaler than any current hydrography in the area. The verifier recommends that the chart compiler research the source of these soundings and if valid retain for charting. Otherwise, these soundings should be superseded by the present survey.

Source is boat sheet of H-8618 (bp 61577-79) soundings are revised on smooth sheet

a)	6 3/4	Lat. 60°41'00"N, Long. 151°28'30"W
b)	3 1/2	Lat. 60°40'30"N, Long. 151°28'00"W (See Sec. L, Para 3)
c)	7	Lat. 60°39'50"N, Long. 151°27'40"W
d)	7 1/2	Lat. 60°38'30"N, Long. 151°25'30"W
e)	9	Lat. 60°35'50"N, Long. 151°26'15"W
f)	6 3/4	Lat. 60°35'35"N, Long. 151°25'05"W (See Sec. L, Para 4)
g)	7 1/2	Lat. 60°35'00"N, Long. 151°24'55"W
h)	8 3/4	Lat. 60°34'25"N, Long. 151°26'00"W
i)	10 1/2	Lat. 60°37'25"N, Long. 151°42'00"W
j)	8	Lat. 60°38'20"N, Long. 151°27'30"W

5) The six fathom sounding charted at Lat. 60°37'55"N, Long. 151°26'00"W originates from an unknown source. The verifier recommends that the chart compiler research this particular sounding for its source and validity. Otherwise, the verifier recommends superseding this item by the present survey. See QC critique

6) The two charted lights on Collier Pier originate from the USCG Light List. Neither of these lights appear on the Class I manuscript or on a 76-40. The verifier recommends retaining these aids on the next chart edition. concur JPS

7) The dashed pre-survey review item (12 fathom sdg) charted at Lat. 60°39'30"N, Long. 151°33'30"W originates from H-3198 (1910). An intense development was accomplished in this area to prove or disprove its existence. The verifier recommends charting the present survey information. concur JPS

C. Aids to Navigation

Refer to Section 4, Item #1 of the Verifier's Report. The six charted aids to navigation adequately mark the features intended. ✓

VIII. COMPLIANCE WITH PROJECT INSTRUCTIONS

This survey complies with Project Instructions OPR-469-FA, RA-76, dated February 4, 1976 and the amendments of 29 March, 7 April, 17 May and 30 July, 1976 with the exception of:

1) Non-compliance with Section 3.7, page 4 (See Section 4, Item #1) ✓
2) Non-compliance with Section 4.0, page 4. Several days of hydrography were not covered by the portable bubbler gages in the area. These days were inferred from Nikiski ✓

IX. ADDITIONAL FIELD WORK

H-9619 (FA-20-1-76) is a very good basic survey. No additional field work is recommended.

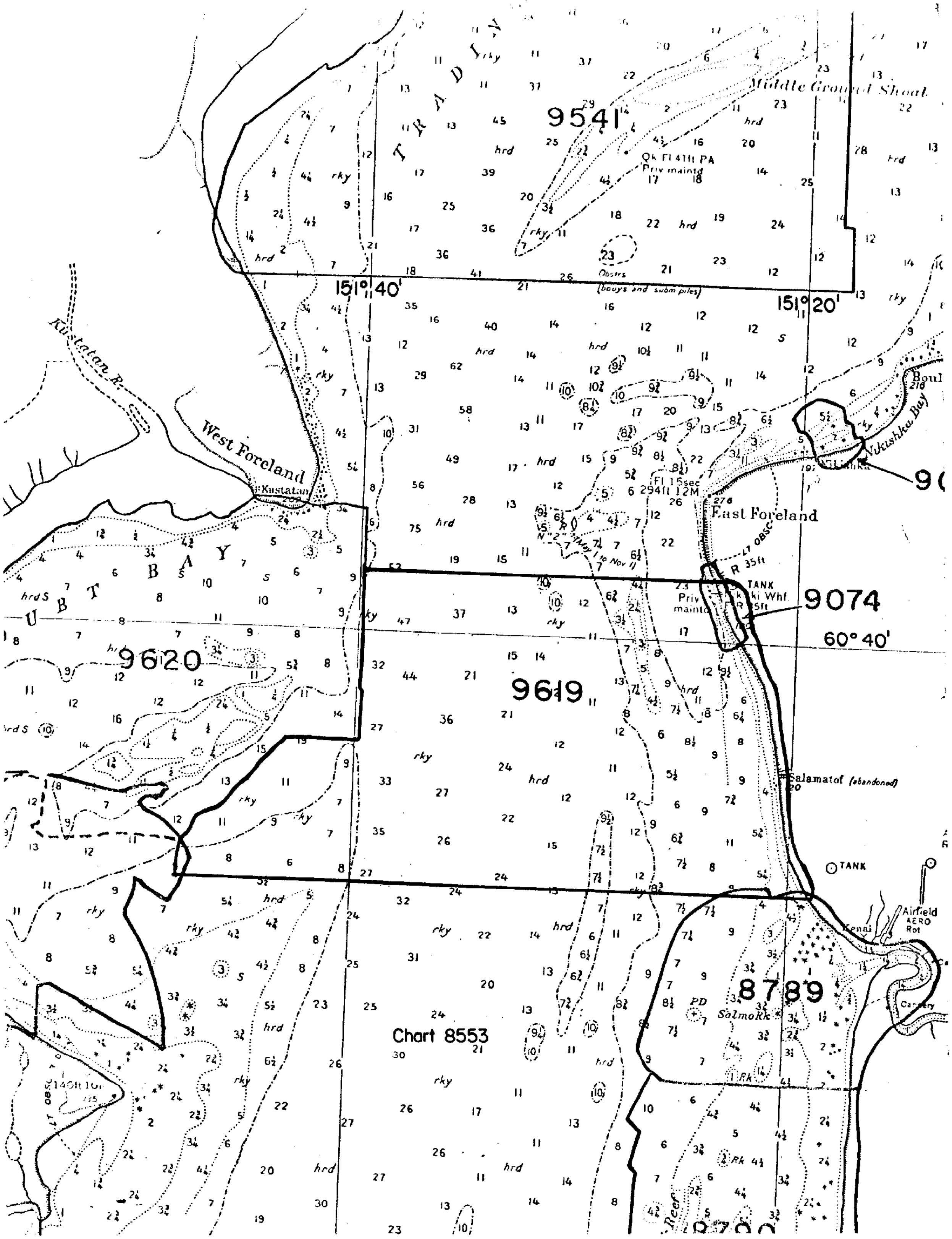
Respectfully submitted,

Bruce Alan Olmstead

Bruce Alan Olmstead
Cartographic Technician

Examined and approved,

James S. Green
Chief, Verification Branch



Middle Ground Shoal
9541
Qk Fl 41ft PA
Priv maintd
151°40'
151°20'
Kustatan R.
West Foreland
Kustatan
East Foreland
Fl 15sec 294ft 12M
9074
60°40'
9620
9619
Salamatof (abandoned)
TANK
Airfield
8789
Chart 8553
Reef

FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9619

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 before QC insp.
8553	7/17/78	James Graham	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. #24 Fully app'd hydro pending
			Q.C. inspection.
500		J Graham	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. 3 QC
16013	3/4/80	J. Bailey	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. 25 Before QC
			thru 16660 Aug 24 ok
			Full Part Before After Verification Review Inspection Signed Via
16663	7/13/81	H.J. Borawski	Drawing No. #1 Fully app'd hydro in area common
			with cht 16663
16662	10/20/81	[illegible]	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. 1 See 16662 Alaska Chart History
			items 2, 3, 5
16660	4/25/91	B. Szatkowski	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. 29
			thru 16662
16013	8-8-97	William Hazen	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. #30 Fully APPLIED THRU 16660
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

USCOMM-DC 8558-P63