10252

Diagram No. 8553-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey ... Hydrographic

Field No. ... FA-10-5-87

Registery No. ... H-10252

LOCALITY

State ... Alaska

General Locality ... Cook Inlet

Sublocality ... Northwest of Karluk Reef

1987

CHIEF OF PARTY
CAPT J.W. Carpenter

LIBRARY & ARCHIVES

DATE ... December 18, 1987

☆U.S. GOV. PRINTING OFFICE: 1985—566-054

10252

Area 5
CHTS:
16662
16660
16013
531 N/C

} CARTOGRAPHER; please sign off on form in BACK —

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-10252

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 10-5-87

State Alaska

General locality Cook Inlet

Locality Northwest of Karluk Reef

Scale 1:10,000 Date of survey (DN202) July 21 - August 13, (DN225) 1987

Instructions dated July 13, 1987 Project No. S-P928-FA

Vessel FAIRWEATHER (2020), 2023, 2024, 2025, 2026

Chief of party Captain John W. Carpenter

Surveyed by LCDR Kenny, LT Ruiz, ENS Cone, ENS Lynch, ENS Bernard, ENS Nodine, ENS Lemon, ENS Birk, CST Krick

Soundings taken by echo sounder, ~~hand lead, pole~~ and pneumatic depth gage

Graphic record scaled by FAIRWEATHER personnel

Graphic record checked by FAIRWEATHER personnel

~~Protracted by~~ Verification by L. Deodato Automated plot by PMC Xynetics Plotter

~~Verification by~~ Evaluation by C.R. Davies

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

REMARKS: All times are UTC. Marginal notes in black by evaluator. All separates are filed with the hydrographic data; as a result page numbering may be interrupted or non-sequential.

AWOIS / SURF MSM 8/29/88

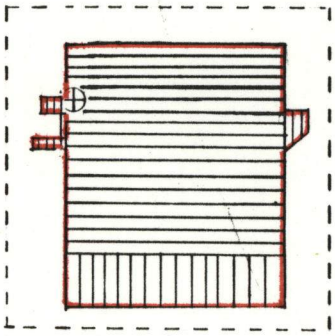
KWW

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

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

60 30 00

COOK INLET



H-10252
FA 10-5-87

Audrey

60 25 00

KASILOF RIVER

PT2

	JULY	AUG
SQ NM SOUNDING LINES	2	1
LNM SOUNDING LINES	223	256
LNM SIDE SCAN	38	43
BOTTOM SAMPLES	9	26
HYDRO CONTROL STATIONS	3	0
SV/D NANSEN CAST	2	2
HYDROGRAPHY		

⊙ STA RECOVERED

⊕ SV/D NANSEN CAST

MONTHLY PROGRESS SKETCH

S-P928-FA

COOK INLET

NORTHWEST OF KARLUK REEF

NOAA SHIP FAIRWEATHER S-220

CAPT JOHN CARPENTER CMDG

SCALE FROM CHART 16662

JULY - AUGUST 1987

151 30 00

151 20 00

Descriptive Report
to Accompany Hydrographic Survey H-10252
Field No. FA 10-5-87, Scale 1:10,000
NOAA Ship FAIRWEATHER S220
Captain John W. Carpenter, Commanding
1987

A. PROJECT ✓

Hydrographic survey H-10252 was conducted in accordance with Project Instructions S-P928-FA dated July 13, 1987, Change No. 1 dated July 13, 1987, and radio message R 241933Z JUL 87 (see Appendix VIII, Supplemental Information). In addition, PMC OPORDER, the Hydrographic Manual (fourth edition) through Change No. 3, and the Hydrographic Survey Guidelines are also applicable.

This is a basic survey for the purpose of verifying or disproving the existence of a submerged obstruction northwest of Karluk Reef, Cook Inlet, Alaska. On July 2, 1987, the T/V GLACIER BAY, an oil tanker drawing 32.5 feet, began leaking oil after reporting that a submerged obstruction was struck while anchoring. This investigation was requested by the U.S. Coast Guard.

This sheet is designated as "A".

B. AREA SURVEYED ✓

The survey area is centered on the reported position of the obstruction at latitude 60/29.4N, longitude 151/26.4W. Approximate limits extend from this position to the north one mile, to the east one mile, to the south one mile, and to the west one-half mile.

The field work for this survey commenced on July 21, 1987 (DN 202) and was completed August 13, 1987 (DN 225).

C. SOUNDING VESSELS ✓

Hydrographic data for this survey was collected with Jensen survey launches FA-3, FA-4, FA-5, and FA-6, designated vessel number's 2023, 2024, 2025, and 2026, respectively. The NOAA Ship FAIRWEATHER (vessel number 2020) was used for all sound velocity casts, bottom samples were collected by vessel 2025, and all side scan work was accomplished from vessel 2024.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS ✓

Four of FAIRWEATHER's survey launches, each equipped with dual-beam Raytheon DSF-6000N echo sounders, were used to obtain soundings for this survey. See Table I for a list of equipment by vessel and day number.

Table 1
Sounding Equipment
RAYTHEON DSF-6000N SERIAL NUMBERS

Date	2023	2024	2025	2026
DN 202-222	A104N	A121N	B049	B048N
DN 222-225	A104N	A113N	B049	B048N

Echo-sounding equipment was monitored continuously while on line. All hydrographic data was scanned at least twice to insert peaks and deeps between soundings and to ensure proper depth digitization.

No mechanical problems that degraded data quality were encountered with the DSF-6000N echo sounders during this investigation. Bar checks at three and four fathoms were done daily to ensure that the Raytheon DSF-6000N echo sounders were operating properly. Sounding corrections determined for this survey apply to both the high- and low-frequency sounding data.

The high-frequency beam data was digitized for all launches except vessel 2024. When side scan data was being collected, the DSF-6000N echo sounder had to be operated in the low-frequency only mode. It was found that use of the DSF-6000N high-frequency beam caused interference with the side scan resulting in excessive noise on the sonargram. This interference was due to the short cable lengths being used to maintain the shallow side scan towfish depths used in this survey. Therefore, no high-frequency beam data could be collected concurrently with side scan sonar operations.

Diver's least depths were obtained using a pneumatic depth gauge manufactured by 3-D Instrument, Inc. (s/n 8302079 N). System calibration information can be found with the data forwarded for this survey.

All of FAIRWEATHER's survey launches were tested for settlement and squat on May 22, 1987 (DN 142) in Womens Bay, Kodiak, Alaska. The test results were used to plot settlement and squat curves for each launch. Measurements were conducted in accordance with Section 4.9.4.2 of the Hydrographic Manual. It was determined that there were no applicable settlement and squat corrections for any launch at speeds run while surveying in fathoms. Details concerning settlement and squat determinations can be found with the data forwarded for this survey.

An accurate determination of launch transducer depths was obtained through physical measurement. An oversized carpenter's square was constructed of angle iron, with foot and tenth markings noted on the rise. Divers held the foot of the carpenter's square flush against the transducer while the rise was leveled by personnel on the pier using a circular bubble level. On March 27, 1987 a transducer draft of 0.3 fathoms was recorded for all launches. All launch soundings on the final field sheet were plotted using this TRA value.

Velocity correctors were determined from four SV/D casts in accordance with section 4.9.5.2 of the Hydrographic Manual. Table II shows the date and locations of the casts. Program VELTAB was used to compute tables from cast data. The results of SV/D casts were similar enough to average and combine into one table (Velocity Table 1). Velocity corrections were not applied to echo sounder depths plotted on the final field sheets. However, this will not significantly affect depths as the maximum velocity corrector is 0.2 fathoms. Velocity corrections were applied during office processing.

Table II
Velocity Casts

Cast No.	Date (DN)	Latitude	Longitude
10	203	60/30.0N	151/27.4 W
11	206	60/30.0N	151/27.4 W
12	218	60/28.0N	151/28.2 W
13	222	60/28.0N	151/28.2 W

The SV/D casts were performed using a Plessy Model 9040 Environmental Profiling System (s/n 5647). This instrument was calibrated at the Northwest Regional Calibration Center (NRCC) on March 9, 1987 for the 1987 field season. Surface temperatures were taken during the SV/D casts as a check on the Plessy System.

TC/TI tapes were made in accordance with the PMC OPORDER. Printouts of TC/TI tapes are included in the separates following the text of this report.

Predicted tide correctors (generated using HYDROPLOT program AM 500) were applied to the soundings plotted on the final field sheets for this survey. The tide correctors used were from the 1987 West Coast of North and South America Tide Tables. Tide correctors are from Nikishka, Alaska corrected to the survey area per section 5.9 of the Project Instructions. The height correction range ratio is "x 1.02"; the time correction equals minus 0 hours 34 minutes at high water and minus 0 hours 25 minutes at low water. FAIRWEATHER personnel leveled the Nikishka tide station on July 22, 1987 (DN 203) and on August 10, 1987 (DN 222). No tide gages were required to be installed by FAIRWEATHER. (Note: A Field Tide Note is not appended as all applicable information is included in this section.)

E. HYDROGRAPHIC SHEETS ✓

The final field sheets were plotted aboard FAIRWEATHER using a PDP/8e computer (s/n 12335) and complot plotter (s/n 6167-25). The final field sheets were plotted at 1:5,000 scale to better display the data. Positioning accuracies meet 1:10,000 scale requirements as specified in the Project Instructions. This survey consists of the following sheets:

2	Final Field Sheets	1:5,000
2	Overlays (used to display 11-meter line spacing)	1:5,000
14	Developments (used to display splits at 6-meter spacing)	1:1,000
2	Side Scan Sonar Position and Contact Overlays	1:5,000

Numerous other plots were generated for ease of ship processing and will also be forwarded. These include position track plots for many of the developments and preliminary semi-smooth sheets showing scour marks and significant side echos in the survey area. The development sounding plots (1:1,000 scale) do not display the basic 11-meter splits. These can be found on the final field sheets and overlays for the areas. Significant least depths are shown on the final field sheets.

All hydrographic data for the survey will be forwarded to the Pacific Marine Center in Seattle, Washington for ~~verification and smooth plotting~~ Office processing.

F. CONTROL STATIONS ✓

All horizontal control stations used on this survey were recovered by FAIRWEATHER personnel. All geodetic positions are based on the North American Datum of 1927. A list of control stations can be found in Appendix IV.

G. HYDROGRAPHIC POSITION CONTROL ✓

Hydrographic position control was accomplished using the Motorola Mini-Ranger III system. The control configuration consisted of range/range and range/azimuth for all positioning. Table III contains a list of console and R/T units for each sounding vessel.

Table III

Mini-Ranger Equipment by Vessel

Vessel Number	Console/RT Number
2023	703/B1398
2024	506042/E2716
2025	716/1108
2026	B0323/1875

Mini-Ranger base line calibrations (BLC's) were conducted in accordance with the PMC OPORDER and radio message R 301937Z JUL 87 (see Appendix IX, Supplemental Information).

Beginning BLC's were performed on DN's 142 and 146 along a distance of 855.4 meters, between two recoverable points in Womens Bay, Kodiak, Alaska. All combinations of codes and consoles were calibrated. Ending calibrations were performed on DNs 226 and 229 at the same location.

As the differences between beginning and ending BLC's were five meters or less, the beginning and ending calibrations were not averaged. The beginning correctors were used as the final correctors. Final baseline correctors and minimum signal strengths can be found with the data forwarded with survey H-10252.

Hydrographic positioning equipment was critically system checked at least once per week. Non-critical system checks were conducted once per day when critical system checks were not performed. All hydrographic positioning equipment used to collect sounding data was found to be accurate within the limits set forth by the PMC OPORDER. Critical system checks were accomplished using theodolite and EDMI. Theodolites used for this survey are as follows: Wild T-1 theodolites with serial numbers 13008 and 12932 and Wild T-2 theodolites with serial numbers 26336 and 276503. The EDMI used was a Hewlett-Packard HP 3808A with serial number 1723A00172.

In all cases, the launch R/T units were located directly over the transducers, eliminating the need for ANDIST correctors.

The antenna-to-tow-point distance for use in calculating the position of the side scan sonar towfish is 5.2 meters. This value was obtained by measuring the distance between the launch R/T unit and the block for the cable on the stern. The length of cable deployed while towing astern (measured from the block to the towfish) is noted on each sonargram.

H. METHODS OF INVESTIGATION

A 200% side scan sonar investigation was accomplished over the entire survey area. The side scan sonar (Klein towfish serial number 412M and Klein side scan recorder serial number 248) was operated on a range scale of 150 meters with line spacing of 75 to 100 meters depending on the depth of water. The lines ("tracks") were run alternately in north and south directions ensuring that the bottom was scanned from two different directions.

Proof of coverage was established by performing a coverage analysis of the tracks run (as specified in the Provisional Side Scan Sonar Manual, Section 3.1.3.2). All tracks run to the north achieved 100% coverage and all tracks run to the south also achieved 100% coverage, resulting in 200% total coverage. This coverage includes the required overlap (27.5 meters) between adjacent scanning swaths based on the project specified scale of the survey (1:10,000) and the side scan sonar range scale in use (150 meters). Sonar Coverage Abstracts were completed for all tracks run.

Confidence checks were run at least twice daily except on DN 219 when adverse weather conditions prohibited the ending check. The side scan sonar worked well that day. Contacts were well defined until high waves were superimposed on a 2.5 knot current and operations had to be ceased due to excessive movement of the towfish. Confidence checks were achieved by towing past FAIRWEATHER, the anchor chain, or the 4.1-fathom significant rock found during survey operations (position 0001).

The side scan system was tuned using the Klein "Hands Off Tuning" (H.O.T.) from DN 204 to 216 and tuned in manual mode from DN 217 to 222 as expertise increased. In all cases, bottom return was tuned across the full width of the sonargram channel. The side scan sonar was operated at a vertical beamwidth of 20 degrees and a down angle of 10 degrees.

Towfish stability was maintained by towing approximately into the current (note that currents up to 4.7 knots were experienced in the work area). During the brief periods of slack water, towing in both directions was possible. When attempting to tow with the current, it was found that towfish instability occurred degrading the sonargram and that the speed over the bottom was too fast to ensure target detection.

All sonargrams were scanned by two individuals familiar with side scan operations. All contacts of significance had target heights computed and noted on the sonargram using the abbreviation "CTH". Sonar contact numbers were then assigned to targets rising more than 1 meter off the bottom. Sonar Contact Lists and Sonar Contact Overlays were prepared in accordance with the Provisional Side Scan Sonar Manual specifications.

All significant side scan sonar contacts were examined using the DSF-6000N echo sounder. A basic framework of 22-meter line spacing was accomplished over the entire survey area. To establish the reliability of the side scan sonar over bottom topography found in this part of Cook Inlet, line spacing was reduced to 11-meters over a one-square mile area centered about the reported position of the obstruction. All peaks rising more than 1 fathom off the bottom that were found by the echo sounder in this area were also observed on the sonargram as contacts.

Thorough review of the echograms showed that wherever a significant point feature ("spike") occurred, a depression or hole up to 1.5 fathoms deep was also present adjacent to the spike. These depressions are thought to be scour marks around the spikes which may be formed from the high current action found in Cook Inlet. Noting the locations of the scour marks on sounding plots facilitated choosing areas requiring further echo sounder investigation.

Due to the strong currents and the brief periods of slack water, determining least depths by leadline was considered infeasible. On two separate occasions dives were made on a significant contact located at latitude 60/29/36N, longitude 151/26/10W (position number 0001). These dives were possible only for short periods during slack water. Since there is no visibility in these waters, dive searches could be accomplished by feel only (slack water time restrictions prohibited large circle searches),

decreasing the effectiveness and accuracy of a diver determined least depth. Therefore, echo sounder search was used as the primary method of obtaining least depths.

I. SHORELINE ✓

Not Applicable

J. CROSSLINES ✓

All crosslines were run at 90 degrees with respect to the mainscheme lines. Crosslines account for 8.1% of the total coverage.

During review of the mainscheme, mainscheme splits, and crossline sounding data, it was noted that comparison of mainscheme to adjacent sounding lines run at different times shows discrepancies of up to 1 fathom. These differences are partly due to the irregular nature of the bottom. However, given the extreme tide range in the area, predicted tide problems are suspected. When smooth tides are applied, it is expected that agreement should be good. There is no systematic problem that would account for differences in these areas.

Crosslines generally agree with mainscheme and mainscheme splits within 0.3 fathoms. This reasonably good agreement can be attributed to the high occurrance and variance of depths available at each crossing location due to the close line spacing and the suspected predicted tides problem.

No differences were attributed to the use of different vessels for crosslines and mainscheme hydrography.

K. JUNCTIONS ✓

Not Applicable

L. COMPARISONS WITH PRIOR SURVEYS *See Eval Report Section 6*

The survey area is covered by the following prior surveys:

H-9545, 1975	1:20,000
H-8790, 1964	1:10,000

Comparing sounding to sounding, there is excellent agreement between surveys H-9545 and H-10252, and H-8790 and H-10252. Depths generally agree within 0.3 fathoms. On survey H-8790 in the vicinity of latitude 60/29/33N, longitude 151/25/44W, (over a 100-meter radius area) the present survey has depths shoaler by 0.7 fathoms. This may be due to the problems

associated with using predicted tides previously dicussed under Section J, Crosslines, or due to shoaling that may be occurring in the area from sediment deposit. No significant differences were noted after Office processing.

Due to the denser line spacing of the present survey, numerous new point features were found that are located randomly throughout the survey area. Least depths over these features are shown on the final field sheets. Depths should be charted as shown on survey H-10252. The significant items that were reported as dangers to navigation are specifically discussed under Section M, Comparison with the Chart (AWIOS Item Number 51216). concur

M. COMPARISON WITH THE CHART See EVAL Report Section 7

Comparisons were made between H-10252 and Chart 16662 (April 9, 1983, 1st Edition, 1:100,000). Charted soundings in the survey area were derived from the prior surveys discussed in Section K and that discussion will not be repeated in this section.

Survey H-10252 is, in its entirety, an investigation of AWOIS Item Number 51216: a verification or disproval of a submerged object located at latitude 60/29/24N, longitude 151/26/24W. The methods of investigation and general survey findings have been discussed in previous sections of this report and will not be repeated in this section. It is recommended that soundings be charted as found by this survey. concur

Numerous uncharted point features were found during this survey by using side scan sonar and echo sounder investigation (maximum of 22-meter line spacing). The least depth found in the survey area is 4.~~1~~ 3 fathoms (MLLW based on ~~predicted~~ actual tides) located at latitude 60/29/~~36~~ 34.48N, longitude 151/26/10~~W~~ 11W, 425 meters ~~from~~ N.W. of the reported position of the obstruction (position number 6565+2). This item was found both by echo sounder (while running 11-meter splits) and by the side scan sonar. A 6-meter development of east-west and north-south lines was run to determine the least depth. In addition, the object was investigated by divers on two separate occasions (see position number 0001 for both dive descriptions) with a least depth of 4.~~2~~ 3 fathoms measured. Note that water visibility was zero and the high point of the object was found by feel. On the second dive, divers obtained two rocks from the site. These rocks were turned over to the Coast Guard on July 27, 1987. This object was reported to the Seventeenth Coast Guard District and DMAHTC as a danger to navigation. See attached letter

Two other depths that are significantly different from the chart within the survey area were also reported as dangers to navigation. They are as follows:

ITEM	LATITUDE	LONGITUDE	POSITION NO.	DEVELOPMENT
Rock covered 4.~~5~~ 7 fm	60/28/~~22~~ 21.56N	151/25/36~~W~~ .29W	8261+1½	MM
Rock covered 5.~~5~~ 9 fm	60/29/05.19N	151/25/~~22~~ 1.63W	3720+1½	JJ

In areas where peaks were noted on turns (except in the vicinity of Karkuk Reef on the east side of the survey area where the bottom became highly irregular), sheet limits were expanded to allow investigation. In

addition, during side scan sonar confidence checks about FAIRWEATHER's anchor in the vicinity of latitude 60/29/40N, longitude 151/28/09W, (outside the main survey area) numerous contacts were observed. These contacts were located with 100% side scan sonar coverage and further developed by echo sounder with 5-meter spacing to determine least depths. As a result two danger to navigation items were forwarded to the Coast Guard and DMAHTC.

ITEM	LATITUDE .32	LONGITUDE .37	POSITION NO.	DEVELOPMENT
Rock covered 6.8 fm	60/29/42N	151/27/58W	9269+4	00
Rock covered 6.5 fm	60/29/55N .36	151/27/53W 2.73	3840+3½	NN

Least depths from these "ship anchorage" developments are shown on the final field sheets, and on the smooth sheet.

As can be seen on the chart, the southeast portion of the survey area adjacent to Karluk Reef was found to be irregular. Numerous ridges running northeast to southwest are obvious on the sonargram. Contacts were assigned Sonar Contact Numbers in this area only if they rose significantly above the bottom, not appearing to be part of the ridge line. Echo sounder investigation of the ridges using 22-meter line spacing was used to development the area. Results can be seen on the final field sheets, and on the smooth sheet.

It should be noted that all dangers to navigation found during this survey are point features. That is, the features rise abruptly from the bottom and, in most cases, were not observed on the echogram 11 meters from the object. The hydrographer believes these features to be boulders scattered throughout the survey area. This hypothesis can not be verified as the objects can not be seen due to zero water visibility. However, the intertidal zone was observed to be widely scattered with large boulders.

Copies of the danger to navigation letters and radio messages to the Seventeenth Coast Guard District and DMAHTC can be found in Appendix VII, Dangers to Navigation. Attached

N. ADEQUACY ✓

This survey is complete and fully adequate to supersede all prior surveys in their common areas. No additional field work is necessary within the survey limits. concur

O. AIDS TO NAVIGATION ✓

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

P. Statistics ✓

Vessel	2020	2023	2024	2025	2026	Total
Positions	-	2265	183	35	2303	4786
Nautical Miles	-	225	7	-	247	479
Side Scan Positions	-	-	734	-	-	734
Nautical Miles Side Scan	-	-	81	-	-	81
Sonar Contact Numbers	-	-	111	-	-	111
Square Miles						3
Bottom Samples	-	-	-	35	-	35
Velocity Casts	4	-	-	-	-	4
Tide Stations						0
Days of Production						18

Q. MISCELLANEOUS ✓

Because of the discrepancies between adjacent sounding lines that are thought to be due to the use of predicted tide correctors (previously discussed under Section J, Crosslines), it was impractical to draw depth curves as specified in the Hydrographic Manual. Therefore, dashed curves were drawn for the 10-fathom curve using the hydrographer's best approximation. *After approved tides were applied, all curves could be drawn as specified in the Hydrographic Manual.*

In accordance with Project Instructions, bottom samples were not submitted to the Smithsonian Institution. Therefore, Log Sheet M is also not submitted per Hydrographic Survey Guideline Number 36.

Observed periods of slack water were found to correspond well with predicted times of slack water. No difference in water visibility was found by divers between an ebb or flood slack water. Slack water after a flood current was observed by divers to be of a longer duration than slack water after an ebb current.

R. RECOMMENDATIONS ✓

Based on the findings of this survey, the cautionary notes on Charts 16662 and 16660 concerning the numerous uncharted and dangerous submerged boulders which exist in the eastern portion of Cook Inlet should be retained. The notes properly describe the nature of the bottom topography in this area. *concur*

As noted in Section D, Sounding Equipment and Corrections to Echo Soundings, the DSF-6000N echo sounder on vessel 2024 was operated in the low-frequency only mode during side scan sonar operations due to interference problems. Therefore, it is recommended that this low-frequency data not be plotted on the smooth sheet generated at the Pacific Marine Center nor that it be considered during sounding excess selection. High-frequency echo sounding data was obtained throughout these areas and should be used in lieu of the low-frequency sounding data. *See Evaluation Report section I*

S. AUTOMATED DATA PROCESSING ✓

The following programs were used for data acquisition or processing.

Number	Program Name	Version Date
RK 112	Range-Range Real Time Plot	04/23/84
RK 116	Range-Azimuth Real Time Plot	03/01/86
RK 201	Grid, Signal and Lattice Plot	04/18/75
RK 221	Range-Range Non-Real Time Plot	07/25/86
RK 226	Range-Azimuth Non-Real Time Plot	07/25/86
RK 300	Utility Computations	10/21/80
RK 330	Reformat and Data Checker	05/04/76
RA 362	RK 330/602 Combined	08/20/84
AM 500	Predicted Tide Generator	11/10/72
AM 602	Elinore	12/08/82
	VELTAB	02/01/85

T. REFERRAL TO REPORTS ✓

The following reports will be submitted separately:

Report	Date
Coast Pilot Report	September 1987

SIGNAL TAPE LISTING
S-P928-FA
H-10252

QUADS 601511,2,3

AUDRY 1961
200 0 60 30 50558 151 16 37445 250 0011 000000

FT 2 1963
220 0 60 21 55694 151 22 27250 250 0015 000000

KENAI RUSSIAN CHAPEL SPIRE 1964
240 0 60 33 14103 151 16 03145 139 0000 000000

EAST KALGIN 3 1976
250 0 60 29 06855 151 50 09440 250 0061 000000

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
NOAA Ship FAIRWEATHER
1801 Fairview Ave. East
Seattle, Washington 98102

August 3, 1987 1703-01.05

Commander (OAN)
Seventeenth Coast Guard District
P.O. Box 3-5000
Juneau, Alaska 99802

Dear Sir:

This letter confirms my radio message P 280025Z JUL 87.

The following item was noted by the NOAA Ship FAIRWEATHER during survey operations northwest of Karluk Reef, Cook Inlet, Alaska (FA-10-5-87) and is considered a danger to navigation. Questions concerning this survey may be directed to Chief, Nautical Chart Branch, telephone (206) 526-6835.

The following statement is recommended for inclusion in the Local Notice to Mariners:

"A rock covered 4.1 fathoms (MLLW based on predicted tides) at latitude 60/29/36N, longitude 151/26/10W, bearing 330 degrees true at a distance of 7.3 nautical miles from Kasilof River Channel Light (Light List Number 26310) (Charts 16662 and 16660, NAD27 datum)."

Sincerely,

John W. Carpenter
Captain, NOAA
Commanding Officer

Attachment: Copy of P 280025Z JUL 87

cc: N/CG222 - Chart Information Section, with chartlet
N/MOP21 - Nautical Chart Branch, with chartlet

CO
XO
FUO
CSC

TOD
NOI/280147ZJUL87
EXP/4.3320 MHz RTTY

PTTUZYUW RUHPTEB0253 2090025-UUUU--RUHPSUU.
ZNR UUUUU
P 280025Z JUL 87
FM NOAAS FAIRWEATHER
TO CCGDSEVENTEEN JUNEAU AK
INFO NOAAMOP SEATTLE WA
DMAHTC WASHINGTON DC//NVS//
COGARD MSO ANCHORAGE AK
DANGER TO NAVIGATION
1. THE FOLLOWING ITEM WAS FOUND DURING SURVEY OPERATIONS NORTHWEST OF KARLUK REEF, COOK INLET, ALASKA (SURVEY FA-10-5-87) AND IS CONSIDERED A DANGER TO NAVIGATION.
2. ROCK COVERED 4.1 FATHOMS (MLLW BASED ON PREDICTED TIDES) AT LATITUDE 60/29/36N LONGITUDE 151/26/10W, BEARING 330 DEGREES TRUE AT A DISTANCE OF 7.3 NAUTICAL MILES FROM KASILOF RIVER CHANNEL LIGHT (LIGHT LIST NO. 26310) (CHARTS 16662 AND 16660).
3. CONFIRMATION LETTER CONTAINING SAME INFORMATION WILL BE SENT.
BT
#0253

NNN

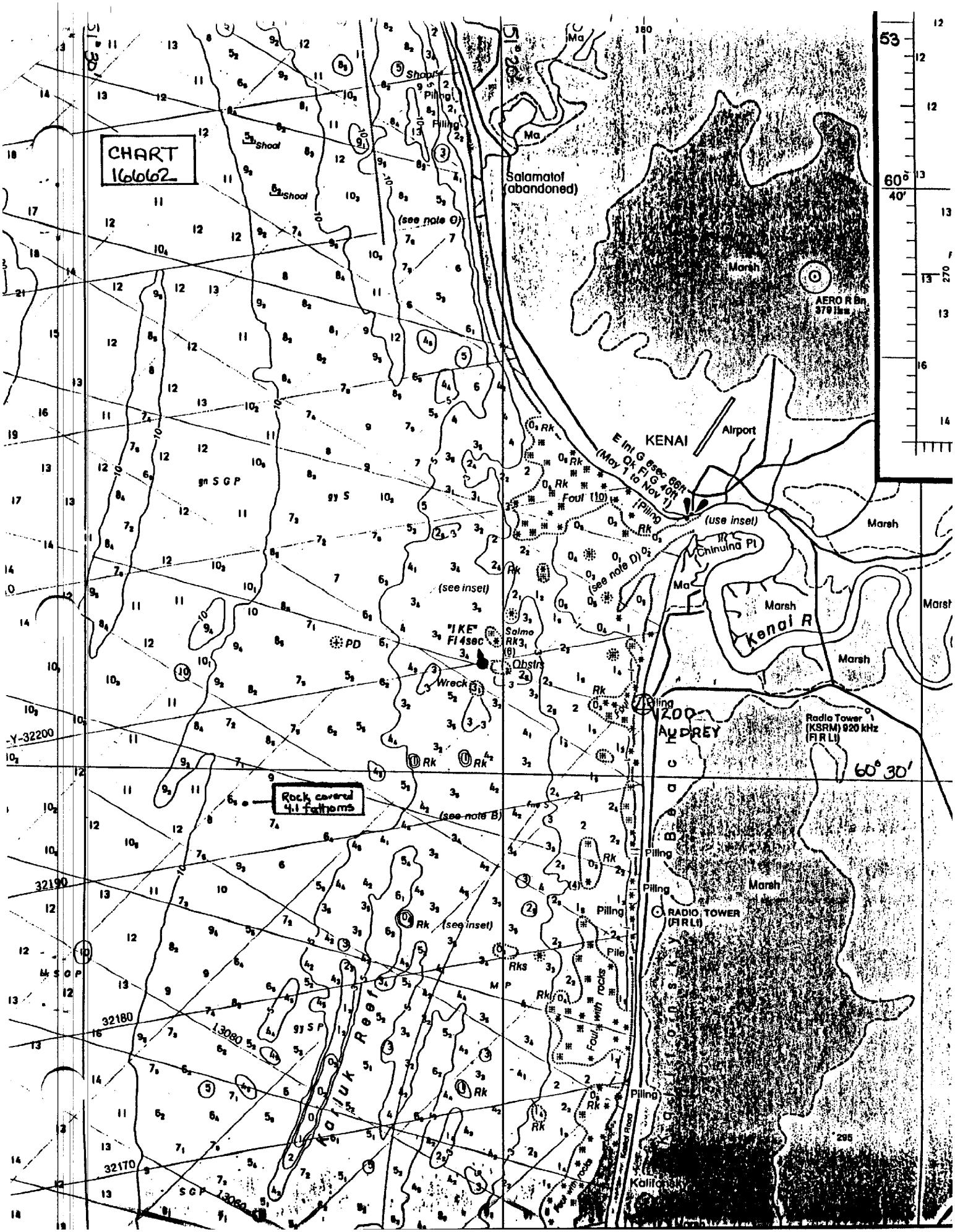


CHART
16606
Salamatof
(abandoned)
Marsh
AERO R Bn
379 fms
KENAI
Airport
E Int G 6sec 66ft
(May 1 to Nov 1)
Ok Fl G 40ft
Piling
(use inset)
Foul (10)
(see note D)
Chinulna Pt
Marsh
Kenai R
Marsh
Marsh
(see inset)
"IKE"
Fl 4sec
Salmo
Rk 3
(6)
Obstr
Wreck
PD
Rock covered
4.1 fathoms
(see note B)
ZOO
AUDREY
Radio Tower
(KSRM) 920 kHz
(Fl R Lt)
60° 30'
RADIO TOWER
(Fl R Lt)
Foul with rocks
Kalifornsky Beach Road
Kalifornsky
Foul
Rk
Rks
Pile
Piling
Shoal
(see note G)
(see inset)
32190
32180
32170
13080
Y-32200
53
60° 40'
295

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

August 15, 1987 1703-01.05

Commander (OAN)
Seventeenth Coast Guard District
P.O. Box 3-5000
Juneau, Alaska 99802

Dear Sir:

This letter confirms my radio message, P 150002Z AUG 87.

The following items were noted by the NOAA Ship FAIRWEATHER during survey operations northwest of Karluk Reef, Cook Inlet, Alaska (hydrographic survey H-10252) and are considered dangers to navigation. Questions concerning this survey may be directed to Chief, Nautical Chart Branch, telephone (206) 526-6835.

The following statement is recommended for inclusion in the Local Notice to Mariners:

"The following rocks were found northwest of Karluk Reef, Cook Inlet, Alaska, and should be added to Charts 16662 and 16660 (NAD27 Datum). All depths are reduced to MLLW based on predicted tides.

	LATITUDE	LONGITUDE	FROM KASILOF RIVER CHANNEL LIGHT (LIGHT LIST NO. 26310) BEARING	DISTANCE(nm)
A. Rock covered 4.5 fm	60/28/22N	151/25/36W	146 T	6.1
B. Rock covered 6.8 fm	60/29/42N	151/27/58W	144 T	7.9
C. Rock covered 6.5 fm	60/29/55N	151/27/53W	146 T	8.0
D. Rock covered 5.5 fm	60/29/05N	151/25/22W	150 T	6.7"

Note that the distance from Kasilof River Channel Light to Item C was incorrectly transmitted by radio message as 8.1 nautical miles. The correct value is 8.0 nautical miles.

Sincerely,

John W. Carpenter
Captain, NOAA
Commanding Officer

Attachment: Copy of P 150002Z AUG 87

cc: N/CG222 - Chart Information Section, with chartlet
N/MOP21 - Nautical Chart Branch, with chartlet

RTTUZYUW RUHPTEB0290 2270002-UUUU-RUHPSUU
ZNR UUUUU
P150002Z AUG 87
FM NOAAS FAIRWEATHER
TO CCGDSEVENTEEN JUNEAU AK
INFO NOAAMOP SEATTLE WA
DMAHTC WASHINGTON DC/NVS//
COGARD MOS ANKORAGE AK
ACCT CM-VCAA
BT
UNCLAS DANGERS TO NAVIGATION
1. THE FOLLOWING ITEMS WERE NOTED BY NOAA SHIP FAIRWEATHEER DURING SURVEY OPERATIONS NORTHWEST OF KARLUK REEF, COOK INLET, ALASKA (SURVEY H-10252) AND ARE CONSIDERED DANGEROUS TO NAVIGATION.

ITEM	LATITUDE	LONGETUDE	BEARING	DIST
A. ROCK COVERED 4.5 FATHOMS	60/28/22N	151/25/36W	146	6.1
B. ROCK COVERED 6.8 FATHOMS	60/29/42N	151/27/58W	144	7.9
C. ROCK COVERED 6.5 FATHOMS	60/29/55N	151/27/53W	146	8.1
D. ROCK COVERED 5.5 FATHOMS	60/29/05N	151/25/22W	150	6.7

2. BEARING (DEGREES TRUE) AND DISTANCES (NAUTICAL MILES) ARE FROM KASILOF RIVER CHANNEL LIGHT (LIGHT LIST NUMBER 26310). ALL ITEMS PERTAIN TO CHARTS 16662 AND 16660 (NAD27 DATUM). DEPTHS ARE REFERENCED TO MLLW BAESD ON PREDICTED TIDES.
3. CONFERMATION LETTER CONTAINING SAME INFORMATION WILL BE SENT.
BT
#0290

NNNN

TOD 55
NOS 1500562
HAND CA

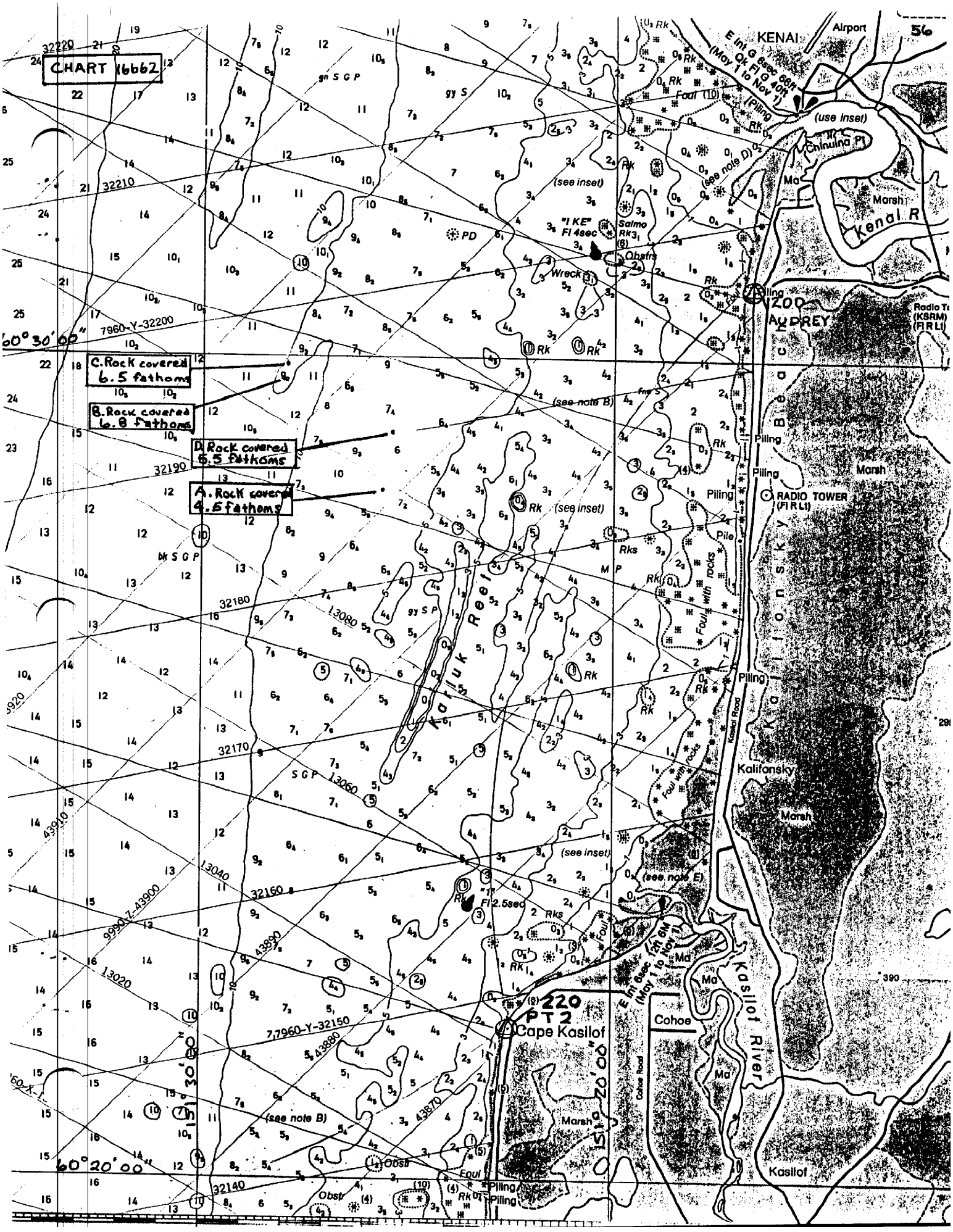


CHART 16662
C. Rock covered 6.5 fathoms
B. Rock covered 6.8 fathoms
D. Rock covered 6.5 fathoms
A. Rock covered 4.5 fathoms
KENAI
Airport
56
(use inset)
Chinulna Pt
Marsh
Kenai R
"I KE" Fl 4sec
Salmo RK3
Obstr
Wreck
PD
ZOO
AUDREY
Radio Tr (KSRM) (Fl R Lt)
Piling
RADIO TOWER (Fl R Lt)
Pile
Rks
Foul with rocks
Kalifonsky Beach
Kalifonsky
Kasilof Road
Kasilof River
Cohoe
Cohoe Road
Cape Kasilof
PT 2
Kasilof
Foul
Obstr
(see inset)
(see note B)
(see note D)
(see note E)
E int 6sec 16ft (May 1 to Nov 1)
E int G 6sec 66ft Oc Fl G 40ft (May 1 to Nov 1)
7960-Y-32200
7960-Y-32150
9990-Z-43900
60° 30' 00"
60° 20' 00"
32220
32210
32190
32180
32170
32160
32140
13080
13060
13040
13020
43910
43890
43880
43870

57

NAT | TOD 272253 AUG 87
4.332 0MHz RTTY

CO
XO
OPS-

```
RTTUZYUW RUHPTEB0321 2392230-UUUU--RUHPSUU.
ZNR UUUUU
R 272230Z AUG 87
FM NOAAS FAIRWEATHER
TO CCGDSEVENTEEN JUNEAU AK
INFO NOAAMOP SEATTLE WA
     DMAHTC WASHINGTON DC/NVS//
     COGARD MSO ANCHORAGE AK
ACCT CM-VCAA
BT
UNCLAS
A. MY P 150002Z AUG 87
CORRECTION TO DANGER TO NAVIGATION LISTING
1. REF A INCORRECTLY STATED BEARINGS FOR THE FOUR DANGERS LISTED.
2. CORRECT BEARINGS (FROM KASILOF RIVER CHANNEL LIGHT) ARE ONE
   HUNDRED EIGHTY (180) DEGREES GREATER THAN LISTED.  NEW
   BEARINGS ARE AS FOLLOWS (IN SAME ORDER AS REF A, PAR. NO.1):
     A. 326
     B. 324
     C. 326
     D. 330
BT
#0321



NNNN
```

Map CO XO FOO CST

RTTUZYUW RUHPTEB0278 2220418-UUUU--RUHPSUU. TOD

NOI 1015172 Aug87
EWA 3.2070 MHz RTTY

ZNR UUUUU
R 100418Z AUG 87
FM NOAAS FAIRWEATHER
TO NOAAMOP SEATTLE WA
ACCT CM-VCAA
BT
UNCLAS
FA-PMC-203-185-159-167-172
H-10252 DATA SUBMISSION
1. REQUEST PERMISSION TO SUBMIT H-10252 ON 1:5000 SCALE SHEETS EVEN THOUGH SURVEY CONDUCTED IN ACCORDANCE WITH 1:10000 SCALE SPECIFICATIONS AND ACCURACY REQUIREMENTS. CLOSE LINE SPACING (VARING FROM 22 TO 6 METERS) REQUIRED TO PERFORM ADEQUATE INVESTIGATION IS THE REASON FOR THIS REQUEST.
2. REQUEST NOTIFICATION ASAP AS TO DECISION SINCE PROCESSING H-10252 IS A HIGH PRIORITY.
BT
#0278

NNNN

TOR
NOS 12 1838Z
USS 4.3320 MHZ RTT

ZNR UUUUU
R 111719Z AUG 87
FM NOAAMOP SEATTLE WA
TO RUWMBBA/NOAAS FAIRWEATHER
ACCT CM-VCAA
BT
UNCLAS
FA187-202-187//MOP2X1
A. YR 10P0418Z AUG 87
1. REQUEST TO SUBMIT H-10252 ON 1:5000 SCALE SHEETS HAS BEEN APPROVED BY MOP21.
BT

NNNN

The final field sheets and the accompanying records have been reviewed for accuracy, completeness, compliance with the project instructions, and adherence to required standards and procedures. The data is forwarded for final review and processing.

Submitted by:

Maureen R. Kenny
Lieutenant Commander, NOAA
Field Operations Officer

Reviewed by:

Nicholas A. Prahl
Commander, NOAA
Executive Officer

Approved by:

John W. Carpenter
Captain, NOAA
Commanding Officer

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

DATE: September 2, 1987

Marine Center: Pacific

OPR: P928

Hydrographic Sheet: H-10252

Locality: Northwest of Karluk Reef, Cook Inlet, Alaska

Time Period: July 23 - August 10, 1987

Tide Station Used: 945-5761 Nikishka, AK

Plane of Reference (Mean Lower Low Water): 8.10 ft.

Height of Mean High Water Above Plane of Reference: 19.8 ft.

Remarks: Recommended Zoning:

1. Apply a - 0hr 30 minute time correction and X1.02 range ratio to all heights.

James S. Howard

Chief, Tidal Datum Quality Assurance Section

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10252

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	
ALASKA (TITLE)										1
COOK INLET										2
KARLUK REEF (TITLE)										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
					Approved:					18
										19
					Charles E. Harrington					20
					Chief Geographer - NOAA					21
					OCT 13 1987					22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

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

FILE COPY

October 7, 1987 N/MOP21x2/MM

TO: Commanding Officer
NOAA Ship FAIRWEATHER

FROM: for N/MOP - Robert L. Sandquist

SUBJECT: Preprocessing Examination of H-10252, Alaska, Cook Inlet, Northwest of Karluk Reef

Hydrographic survey H-10252 has been reviewed in accordance with Hydrographic Survey Guideline No. 15, and the Preprocessing Examination Critique for this survey is attached. Hydrographic survey H-10252 is accepted for Pacific Marine Center processing.

The hydrographer is commended for the obvious time and effort expended in acquiring and thoroughly analyzing the data from this survey.

The Preprocessing Examination Critique is designed to provide information which will be useful to the Command for maintaining the quality of future hydrographic surveys. I encourage you to use this information constructively. Your comments on specific critique items are welcome.

Attachment

cc: N/MOP2x1
N/MOP21x2
N/MOP211
N/CG2

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Pacific Marine Center
Nautical Chart Branch
7600 Sand Point Way NE
Seattle, Washington 98115-0070

October 5, 1987 N/MOP21x2/MM

TO: N/MOP - Robert L. Sandquist

FROM: for N/MOP21 - Thomas W. Richards

SUBJECT: Preprocessing Examination for H-10252

I. SURVEY INFORMATION

A. Field No. FA-10-5-87	Registry No. H-10252
B. State:	Alaska
General Locality:	Cook Inlet
Sublocality:	Northwest of Karluk Reef
C. Project Instructions:	S-P928-FA-87
Original dated:	July 13, 1987
Change #1 dated:	July 13, 1987
Change #2 dated:	August 12, 1987
Change #3 dated:	September 2, 1987
D. Dates:	
Field Work Commenced:	July 21, 1987
Field Work Completed:	August 13, 1987
plus 6 weeks:	September 24, 1987
Data received at Marine Center:	September 8, 1987
plus 1 month:	October 8, 1987

Examination critique transmitted to field October 7, 1987

Target date for completion of Marine Center processing March 7, 1988

II. PREPROCESSING EXAMINATION CRITIQUE

Hydrographic survey H-10252 was performed by personnel of the NOAA Ship FAIRWEATHER, Captain John W. Carpenter, Commanding Officer. The following personnel supervised portions of the data acquisition: Lieutenant Commander Kenny, Lieutenant Ruiz, Ensigns Cone, Lynch, Bernard, Nodine, Lemon, Birk and Chief Survey Technician Krick.

In accordance with the Preprocessing Examination System set forth in Hydrographic Survey Guideline (HSG) No. 15, Section III, the following items are brought to your attention:

A. Danger to Navigation Report:

FAIRWEATHER reported five dangers to navigation within the limits of H-10252.

No additional dangers to navigation were identified during the preprocessing examination.

B. Compliance with Instructions:

Hydrographic survey H-10252 complies with the Project Instructions. The item investigated during this survey is AWOIS #51216.

C. Final Field Sheet:

The final field sheets and overlays are very neat and legible.

D. Descriptive Report:

The Descriptive Report was very well written. All sections contained discussions that were succinct and complete.

E. Echograms:

The echograms reviewed during this examination were well-annotated and contained all applicable stamp information. No problems with scanning completeness or interpretation were evident.

The dates annotated on the front of approximately half of the echograms were listed in month/day/year sequence. Processing echogram data would proceed more efficiently if the dates were annotated by day number (DN).

F. Raw Data Printouts:

The raw data printouts reviewed during this examination contained complete descriptive annotations. All applicable stamp information was complete.

A non-standard abbreviation, "LG", was used in the raw data printouts and echograms for DN 216, VESNO 2023. Examination of the final field sheet and notes on the raw data printout show the line broke to navigate around FAIRWEATHER and a fishing boat and was later resumed. The small gap in the

sounding line is not considered a deficiency as the side scan sonar unit was towed to assure 200% bottom coverage over the entire area. Abbreviations used in data records should either conform with those found in Table E-1 of the Hydrographic Manual or any non-standard abbreviations and their meaning should be noted at the beginning of the raw data printouts.

K. Special and/or Ancillary Reports:

The organization and content of the Sonar Coverage Abstract, Sonar Contact List and Sonar Contact Examination Records which were reviewed were excellent.

L. Automated Data Check:

The hydrographer is commended for the excellent labelling and organization of the data tapes forwarded with the survey.

The times of the first soundings on one pair of master and corrector tapes did not agree. The error was corrected and spooling proceeded smoothly.

M. General Comments:

The hydrographer is commended for the thorough investigation and documentation of the area surveyed.

N. Survey Acceptance:

The preprocessing examination of H-10252 was conducted under the time constraints of HSG 15. Therefore, all comments contained herein are based on a spot check of the data.

Hydrographic survey H-10252 is in compliance with the Project Instructions. I recommend that H-10252 be accepted for Nautical Chart Branch processing.

Prepared by:
Marlene Mozgala.
Marlene Mozgala

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

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10252

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET		SMOOTH OVERLAYS: POS., ARC, EXCESS	7
DESCRIPTIVE REPORT		FIELD SHEETS AND OTHER OVERLAYS	4

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	3					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	*EVALUATION*	*TOTALS*
POSITIONS ON SHEET			3481
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	38		38
VERIFICATION OF SOUNDINGS	62		62
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	26		26
COMPARISON WITH PRIOR SURVEYS AND CHARTS		4	4
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		22	22
GEOGRAPHIC NAMES			
OTHER* Digitizing			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	126	26	

Pre-processing Examination by M. Mozgala	*Beginning Date*	*Ending Date* 10/7/87
Verification of Field Data by L. Deodato	*Time (Hours)* 126	*Ending Date* 10/29/87
Verification Check by S. Otsubo, B. Olmstead	*Time (Hours)* 27	*Ending Date* 10/30/87
Evaluation and Analysis by C.R. Davies	*Time (Hours)* 26	*Ending Date* 11/3/87
Inspection by D. Hill	*Time (Hours)* 4	*Ending Date* 11/30/87

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

PACIFIC MARINE CENTER
EVALUATION REPORT
H-10252

1. INTRODUCTION

H-10252 is a basic hydrographic survey accomplished by the NOAA Ship FAIRWEATHER under the following project instructions.

S-P928-FA-87, dated July 13, 1987
Change Number 1, dated July 13, 1987
Change Number 2, dated August 12, 1987
Change Number 3, dated September 2, 1987

The survey was requested by the U.S. Coast Guard to investigate an area in the vicinity of Karluk Reef in lower Cook Inlet, Alaska. The purpose was to verify or disprove the existence of a reported submerged obstruction which the vessel GLACIER BAY struck on July 2, 1987. The survey is centered at latitude 60°29'24"N, longitude 151°26'24"W, the position of the reported obstruction (AWOIS item 51216). It extends one nautical mile north, south, and east and one-half nautical mile west. The bottom is very irregular and is composed of sand, pebbles, stone and gravel. Isolated shoal depths are believed to originate from scattered boulders. Depths range from a deep of 12.1 fathoms to 4.3 fathoms, a least depth on a rock.

The project instructions required a survey at 1:10,000 scale. Because of the close line spacing, 22 to 6 meters, required to perform an adequate investigation the hydrographer requested authority for a 1:5,000 survey with 1:10,000 specifications and accuracy requirements. Approval was granted by Pacific Marine Center on August 11, 1987, by radio message (copy attached).

Following a review of the data during office processing it was determined that plotting the data on a smooth sheet at 1:5,000 scale more effectively documents the hydrographic investigations by providing a more detailed display of the bottom topography than would be possible at 1:10,000 scale. Approval for a scale change was granted by the Hydrographic Surveys Branch, N/CG24, through a telephone message. To ensure that users of the smooth sheet are informed of the difference between the data acquisition and the plotting scales a note has been added to the smooth sheet.

200% side scan sonar coverage was also accomplished over the entire survey area. All contacts on the sonargrams rising one fathom or more off the bottom were investigated with the DSF-6000N echo sounder.

Processing was conducted in partial compliance with the hydrographer's recommendation, contained in Section R, to avoid plotting low frequency echo sounder data acquired while conducting the side scan sonar investigation. None of these data are plotted on the smooth sheet, however, the data were plotted and examined to ensure that no significant information had been overlooked. These soundings are contained in the Excess file and appear on the Level 5 Excess Overlay. The conclusion is that enough high frequency echo sounder and side scan data were acquired during this survey to provide adequate coverage.

5. JUNCTIONS

No junctions were required by the project instructions. A comparison with charted depths reveals good agreement.

6. COMPARISON WITH PRIOR SURVEYS

H-9545 (1975) 1:20,000
H-8790 (1964) 1:10,000

H-9545 covers the area west of longitude 151°26'00"W. H-8790 covers the area east of longitude 151°26'00"W. Soundings generally agree within 0.3- to 0.4-fathoms. Differences are attributed to densified sounding coverage resulting in the location of additional shoal features.

There are no AWOIS items originating from these prior surveys applicable to the present survey.

H-10252 is adequate to supersede the prior surveys within the common areas.

7. COMPARISON WITH CHART

Chart 16662, 1st Edition, dated April 9, 1983; scale 1:100,000

a. Hydrography - Charted information originates from the prior surveys discussed in Section 6 of this report and requires no further discussion. For more details see Section L of the hydrographer's report.

H-10252 is adequate to supersede charted hydrography within the common area.

b. AWOIS - AWOIS item 51216, the USCG report of the GLACIER BAY incident, is adequately discussed in Section L of the hydrographer's report supplemented as follows:

AWOIS item 51216, an obstruction reported at latitude 60°29'24"N, longitude 151°26'24"W, was investigated by the hydrographer. A submerged rock with a diver-determined least depth of 4.3-fathoms was discovered at latitude 60°29'35.98"N, longitude 151°26'10.31"W. Other significant shoal depths located by the hydrographer are listed in Section M of the hydrographer's report and are shown on the smooth sheet. It is recommended that the submerged rock at the above position and the other significant shoal soundings be charted according to this survey. It is also recommended that the presently charted Note B, which informs mariners of the potential for uncharted and dangerous submerged boulders in this area, be retained as charted.

c. Controlling Depths - There are no charted channels with controlling depths within the area of this survey.

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

e. Geographic Names - Names appearing on the smooth sheet are approved by the Chief Geographer and plotted in accordance with this chart.

Field processing used predicted tides for Nikishka, Alaska. Office processing used approved hourly heights zoned from the Nikishka, Alaska gage (945-5761).

The field sheet parameters were revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The TRA, sound velocity and electronic control correctors are adequate. An accompanying computer printout contains the revised data.

A digital file, generated for this survey, includes categories of information required to comply with N/CG2 Hydrographic Survey Guideline No. 23, Completion of Digital Hydrographic Surveys, September 7, 1983. Certain descriptive information, however, may not be included in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Sections F and G of the hydrographer's report contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are published values based on the NAD 27. The computation of positions accomplished during office processing used these same values. The smooth sheet and accompanying overlays are annotated with NAD 83 adjustment ticks based on values determined by N/CG121. Geographic positions based on NAD 83 may be plotted on the smooth sheet utilizing the NAD 27 projection by applying the following corrections:

Latitude: 2.075 seconds (64.2 meters)
Longitude: - 8.006 seconds (-122.2 meters)

There are no shoreline manuscripts applicable to this survey.

3. HYDROGRAPHY

Hydrography is adequate to:

a. Delineate the bottom configuration, determine least depths, and to draw the standard depth curves.

b. Reveal there are no significant discrepancies or anomalies requiring further investigation.

c. Show the survey was properly controlled and soundings plotted correctly.

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the PMC OPORDER, except as noted in the Preprocessing Examination Report, dated October 7, 1987 (copy attached).

f. Dangers to Navigation - The hydrographer submitted two danger to navigation reports to the 17th Coast Guard District on July 28 and August 15, 1987, respectively (copies attached). No additional dangers were identified during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

H-10252 adequately complies with the project instructions mentioned in Section 1 of this report.

9. ADDITIONAL FIELD WORK

This is an excellent basic survey. No additional field work is recommended.

Charles R. Davies

Charles R. Davies
Cartographer

This survey has been examined and it meets Charting and Geodetic Services' standards and requirements for use in nautical charting. Approval is recommended.

Dennis Hill

Dennis Hill
Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10252

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

Thomas W. DiCenzo 12-4-87
Chief, Nautical Chart Branch (Date)

CLEARANCE:

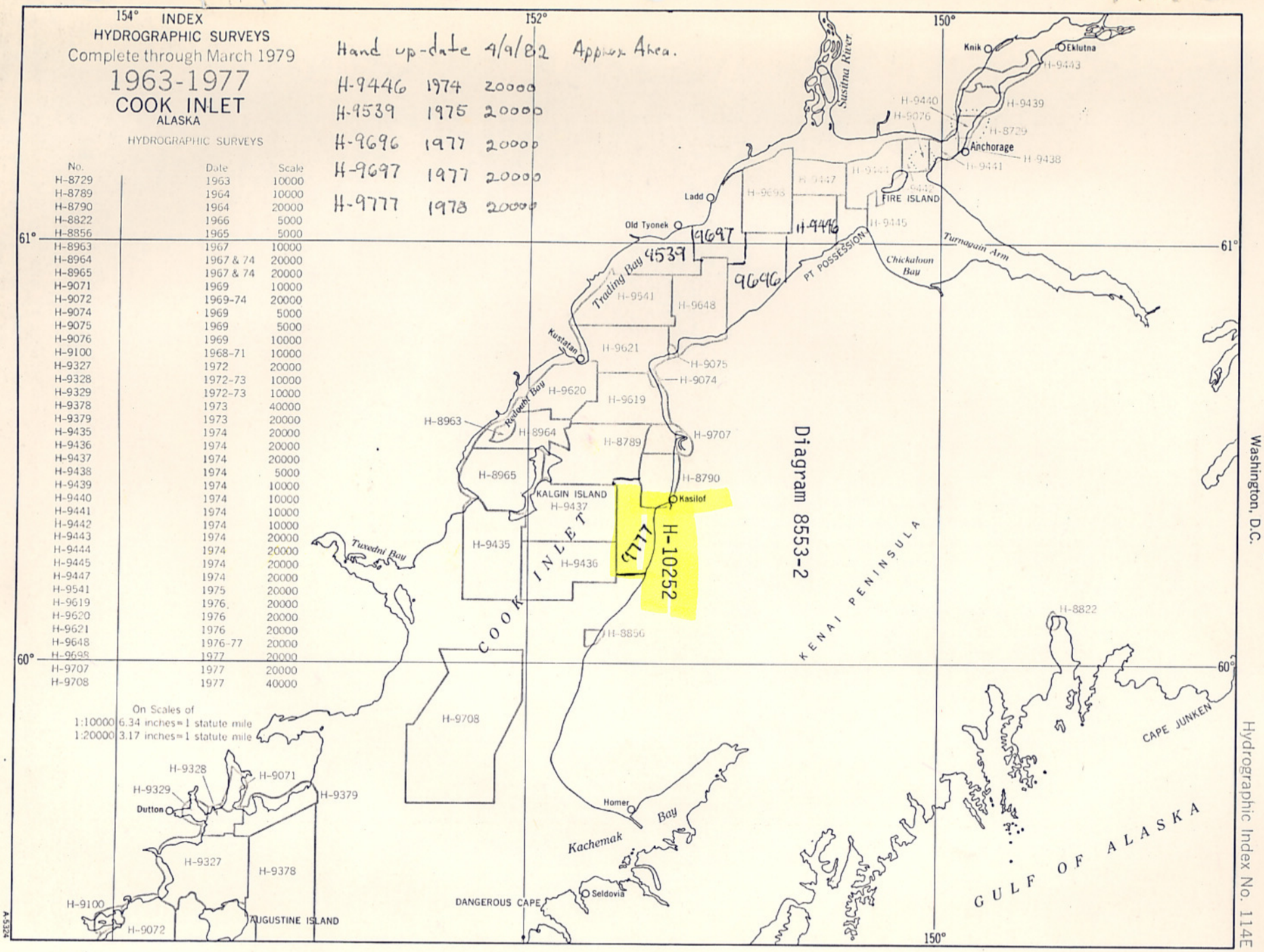
SIGNATURE AND DATE:

N/MOP2:LWMordock

Lawrence W. Mordock 12-4-87

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

Robert L. Sanford 12-4-87
Director, Pacific Marine Center (Date)



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

Hydrographic Index No. 114E

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10252

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
16662	9-13-88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. 1 Exam. for Critical Corr's only No Corr
16660	9-13-88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. 28 Exams, for critical corr's only No. corr
16013	9-13-88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. 28 Exam, for critical corr's only No. corr
531	9-13-88	Charles E James	~~Full~~ Part ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. 19 Exam, For Critica corr's only NO corr
16662	2-21-84	Ernest V. Monte	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 1 Applied in full.
16013	2-21-89	ED MARTIN	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 28 Exam No Corr's
16660	4-20-89	Russell Kennedy	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 27 through 16662
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.

Appd to Stds 8-22-88 Br